

ALAMEDA NAVAL AIR STATION

ALAMEDA, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: CINCPACFLT
Size: 2,634 Acres
Funding to Date: \$52,461,000
Estimated Funding to Complete: \$190,535,000

Base Mission: Maintains and operates facilities and provides services and material support operations for Naval aviation activities and operating forces

Contaminants: Acetone, chlorinated solvents, cyanide, benzene, ethylbenzene, heavy metals, pesticides/herbicides, methylene chloride, POLs, PCBs, semi-volatile solvents, toluene, volatile organic solvents, xylene

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|---|
| CERCLA: | 23 | High: | 14 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 10 | Not Required: | 0 |
| RCRA UST: | 7 | Low: | 5 | | |
| Total Sites: | 30 | | | | |

BRAC III

Sites Response Complete: 0

EXECUTIVE SUMMARY

Naval Air Station (NAS) Alameda is located on Alameda Island, which lies at the western end of the city of Alameda in Alameda County, California. NAS Alameda was listed for closure by the 1993 Base Realignment and Closure (BRAC) commission and is scheduled for closure 30 April 1997. The BRAC Cleanup Team (BCT) was initiated in FY93 and immediately began an Environmental Baseline Survey (EBS) which has been completed. A BRAC Cleanup Plan (BCP) was also completed in FY94 and is currently in its third edition. Navy operations which contributed to prominent site types include landfilling, discharge through stormdrains to create offshore sediment sites, plating and painting shops and transformer storage areas. A former oil refinery also exists at NAS Alameda. The Navy has changed its operational processes to prevent further contamination. Prominent installation restoration sites include soil, groundwater and sediment contamination of substances like petroleum, SVOCs, TCE, PCBs and metals. A Federal Facilities Site Remediation Agreement (FFSRA) was initiated in FY93 with the State of California but has not been signed. However, a Remedial Action Order from the state exists for the Skeet Range and several other sites.

NAS Alameda is predominantly a man made extension to Alameda Island. The fill layer of unconsolidated sediments ranges from 7 to 30 feet deep. The base is surrounded on three sides by waters of the San Francisco Bay. There are no naturally occurring surface streams or ponds on NAS Alameda. Surface water either infiltrates to the groundwater or runs off into storm drains that discharge to San Francisco Bay. Many of these storm drains are at sea level. Presently groundwater under the base is designated as a municipal drinking water source though no groundwater is used for water supply on NAS Alameda. NAS Alameda and the Regional Water Quality Control Board are re-evaluating the designation and probable beneficial uses of the groundwater to determine the most appropriate cleanup levels.

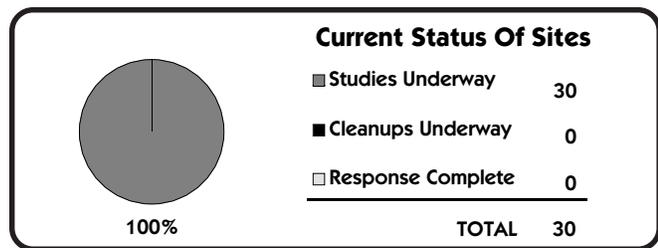
Information Repositories are located at the Main Alameda Public Library and at the NAS Alameda Library. A Technical Review Committee (TRC) was formed in FY90 and converted to a Restoration Advisory Board (RAB) in FY93. The RAB has 32 members who meet monthly. The RAB has coordinated and advised the BCT making positive changes in the progress of the IR program and the community relations plan.

At the end of FY96, the investigation portion of the Remedial Investigation/Feasibility Studies (RI/FS) phase for 23 sites was complete. Removal actions at several sites are underway. Additionally, 5 ongoing treatability studies are helping to accelerate the cleanup at NAS Alameda. A Record of Decision (ROD) will be signed for one Operable Unit (group of sites) at NAS Alameda in FY98. The remaining three Operable Units will be signed in FY99/00 with Remedial Design (RD) in years 2000/01.

The Site 16 removal of PCBs and lead contaminated soil is scheduled for FY97. To reduce immediate hazards caused by methane gas buildup at Site 2 (West Beach Landfill), a fence was constructed around the landfill perimeter and the methane gas was vented. Studies for potential early treatability of sediments at the Seaplane Lagoon are being conducted along with studies to determine bio-availability and the lateral and vertical extent of contamination. Use of innovative technologies and active partnering will accelerate long term cleanup and decrease cost. In FY95, NAS Alameda secured a contract with the University of California, Berkeley, to explore innovative technology as applied to treatability studies.

Sixty abandoned tanks and surrounding soil were excavated and removed in FY95 from an Underground Storage Tank (UST) site. Plans for removing 44,000 feet of abandoned fuel lines were completed in FY95 at another UST site and preliminary soil and groundwater sampling has been done to facilitate cleanup.

Several parcels have been leased, including a lease to the electric car company CALSTART. Further, a large FOSL sector covering one quarter of the base is in preparation. The LRA has several companies lined up to occupy these buildings. To coordinate reuse needs with cleanup, the BCT and LRA meet monthly to discuss schedules, immediate requirements and long term goals to expedite the transfer and conversion of the base.



ALAMEDA NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Alameda NAS is located on Alameda Island. Alameda Island lies along the eastern side of the San Francisco Bay and is separated from the city of Oakland by the Oakland Inner Harbor. To the west and south of Alameda NAS is the San Francisco Bay. There are no naturally occurring surface streams or ponds on NAS Alameda. Surface water either infiltrates to the groundwater or runs off into storm drains that discharge to San Francisco Bay. Many of these storm drains are at sea level. Presently no groundwater is used for water supply on Alameda Island or in Oakland, but NAS Alameda has been examining groundwater for potability.



NATURAL RESOURCES - The endangered California Least Tern breeds and nests on Alameda Island. This is the largest colony of Least Terns in Northern California. In 1984, there were 47 nesting pairs, now there are 128 nesting pairs. This was due to an active management plan that removed the predators. The hatch of this year was at a record 200 chicks. This breakwater island is one of the only night roost areas for California Brown Pelicans in the San Francisco Bay. Many other species of birds nest here and the island is frequented by migratory birds such as Caspian Terns, Canadian Geese and Western Gulls. Elephant Harbor Seals and other marine animals also use this breakwater island.



RISK - Phase I of the Ecological Assessment Plan was completed in FY93. A survey was conducted as part of the Ecological Assessment to identify and delineate two wetland areas and to determine potential impacts on the wetlands from Installation Restoration Program (IRP) sites. Phase I of the Ecological Assessment is now completed. The ecological risk to the two wetland areas and potentially impacted offshore areas is greater than the risk to human receptors and will therefore serve as the major risk driver.

Under the DOD Relative Risk Ranking System, 12 CERCLA sites and two UST sites at NAS Alameda received a high relative risk ranking. The ASTM Risk Based Corrective Action methodology for cleanup at TPH sites is being used at NAS Alameda. Sites 4 and 22 and USTs 3 and 8 all have contaminants that include petroleum products and volatile organic compounds affecting groundwater. However, the groundwater may be designated as a non-potable source thereby relaxing cleanup levels. Site 17 (Seaplane Lagoon) and Site 20 (Oakland Inner Harbor) have contaminants that include semi-volatile organic compounds, the chemical additive PCB, pesticides and metals affecting sediment. Contaminated sediment may impact humans via the ingestion of contaminated shellfish and fish.

The remaining eight high relative risk sites include a landfill, abandoned fuel storage tanks, the former oil refinery area, a plating shop, pest control areas and a transformer storage area. Soils in these areas were found to be contaminated with the chemical additive PCB, semi-volatile compounds, pesticides, metals and petroleum products. Human receptors may include current and future on-site workers through inhalation and dermal contact. Two sites, Site 1 and Site 2 (West Beach Landfill) have contaminants that may affect soil and sediments. Receptors for these areas also include ecological receptors (flora and fauna) and numerous threatened and endangered bird species. NAS Alameda has presented its risk assessment approach to regulators and is now implementing that approach.

REGULATORY ISSUES



LEGAL AGREEMENTS - A Federal Facilities Site Remediation Agreement (FFSRA) was initiated in FY93 with the State of California. It remains in negotiations and is unsigned. The FFSRA will contain a Site Management Plan (SMP) for scheduling of cleanup activities.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in FY90 and met quarterly. The TRC was converted to a Restoration Advisory Board (RAB) in FY93. Some of the original TRC members are on the RAB. The first formal RAB meeting was held in April 1994. The RAB has 32 members from NAS Alameda the community, the Sierra Club, school district, a public health official and the Alameda Reuse and Redevelopment Authority (ARRA). The RAB meets monthly. Focus groups also meet to discuss charter interests. The RAB has developed a charter which identifies and resolves issues and ensures that all stakeholders have ample opportunity to advise the BCT in the decision-making process. The RAB had presentations and training on the CERCLA process, early actions, treatability studies and a session on geology. Some RAB members have also participated in RAB workshops. The Community Outreach Focus Group is developing ways to communicate environmental issues with the public.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in FY89 and identified the efforts that would be taken to keep the community informed on the base cleanup issues. This plan is in the process of being updated, with expected completion during FY96.



INFORMATION REPOSITORY - An Administrative Record was established in FY89. Information Repositories are located at the Main Alameda Public Library and at the NAS Alameda Library. A copy of the Administrative Record documents are contained in the local Information Repositories.

BASE REALIGNMENT AND CLOSURE



BRAC - NAS Alameda was placed on the Base Realignment and Closure (BRAC) list in September 1993. Operational closure is scheduled for April 1997.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was initiated in FY93 and is committed to the use of innovative technologies and treatability studies. This will accelerate cleanup and reduce future remedial action expenditures.



DOCUMENTS - An EBS identified 208 parcels of land for potential reuse. Parcels will be recategorized in early FY97. Transfer of parcels and accelerated cleanup actions are a high priority. A revised BCP will be completed in FY97. The Phase I EBS (Community Environmental Response Facilitation Act of 1992 (CERFA) Determination) designated six parcels as Category 1. The Phase II EBS investigated the remaining 202 parcels. Designations are expected to readjust at least 30% of the Category 7 parcels to Categories 2 and 3. Category 7 applies to those parcels where the environmental conditions have not been classified, while a Category 2 or 3 applies to parcels that are environmentally sound and available for transfer.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------|-------|-------|-------|-------|-------|-------|
| 3 | 0 | 0 | 0 | 348 | 380 | 905 |
| acres |



REUSE - The Alameda NAS reuse plan is being coordinated through the following organizations; Alameda Reuse and Redevelopment Authority (ARRA), Alameda Base Reuse Advisory Group (BRAG) and the East Bay Conversion and Reinvestment Commission (EBCRC), as well as focused interaction with the BCT. The City of Alameda has also established a Base Closure Department which supports the ARRA, coordinates with the Navy, the BRAG, as well as other commissions and agencies that have reuse jurisdiction in areas such as air and water quality, transportation planning, seaport and shoreline.

ALAMEDA NAS RELEVANT ISSUES

The City of Alameda has an Interim Reuse Plan, covering the 10-15 years following base closure. The Final Long Term reuse Plan was completed January 1996. The initial plan was to lease structures where similar current functions can be maintained. The next initiative is to lease in furtherance of conveyance and finally to transfer.



FAST TRACK INITIATIVES - Early removal actions will be used to eliminate hot spots and sources to expedite property transfer. Innovative technologies will accelerate cleanup and decrease cost. Active partnering with agencies in conjunction with responsible decision making will accelerate Findings of Suitability to Lease (FOSL), IRP and decrease cost. Several removal actions are complete and several more are planned for FY97 including two radiological removals, and the removal of PCB and lead contaminated soil.

Priority planning and streamlined contracting procedures lead to improved team work between the Navy and other agencies. All buildings at the installation were evaluated for asbestos to determine the need for further action or emergency cleanup.

Issues needing regulatory review include approaches for identifying background and ambient conditions, approaches to risk assessments and criteria for reviewing EBS material and FOSLs and for integrating new sites into the IRP. NAS Alameda has learned to make the most of its limited funds to continue cleanup programs. Base closure adds a further dimension in that it requires regulators and the Navy, to evaluate programs not only in terms of protectiveness, but also in terms of the community's reuse plan. Only with adequate funding and staffing will regulatory agencies be able to meet this new challenge creatively and meaningfully.

HISTORICAL PROGRESS

FY83

Sites 1-12 - An Initial Assessment Study (IAS) was completed and identified 12 potentially contaminated sites. Sites 8-12 (currently known as Sites 20-22, 13 and 14) were found not to pose a threat to human health or the environment. Sites 1-7 (currently known as Sites 2, 1, 17, 3, 15, 16 and 4) were recommended for further investigation because of their potential effect on human health and the food chain, in particular the endangered California Least Tern.

FY85

Sites 1-4 and 15-17 - A Confirmation Study (CS) was completed and found heavy metals and organic compounds in soils and groundwater. Resampling was recommended to confirm the groundwater results. Sites 1-4 were recommended for further investigation. Sites 15-17 were recommended for No Further Action (NFA).

FY87

Sites 1-4 and 5-20 - The EPA Region IX and the California Department of Toxic Substances Control required that these sites be studied in the RI.

FY88

The RI/FS was initiated with the development of RI/FS work plans. **Sites 1 and 2** - The California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region, required that a Solid Waste Assessment Test (SWAT) be conducted at these two sites to determine if hazardous waste was migrating from the landfill into San Francisco Bay.

FY93

Initiated Field Sampling and Data Summary report. Initiated Ecological Assessment.

Sites 1 and 2 - The Draft Final Solid Waste Water Quality Assessment Test Report (Phases 5 and 6) was completed. The report concluded that volatile and semi-volatile organic compounds appear to have migrated from these sites to off-site groundwater.

FY94

Completed Phase I of Environmental Baseline Survey. **Site 13** - An IRA to remove lead and acid contaminated soils was completed. The IRA was required by the Department of Toxic Substances and Control (DTSC) and the RWQCB San Francisco.

FY95

Basewide - Plans and specifications for removing 44,000 ft of abandoned fuel lines was complete. Preliminary soil and groundwater sampling was done to facilitate cleanup.

All Sites - Phase I of the Ecological Assessment was completed. Human Health Risk draft report was completed. A Data Summary document was completed.

Site 7 - Removal of four USTs and contaminated soil around tanks was completed.

Site 15 - Excavation of PCB and lead contaminated soils was started.

Site 5 - A bench scale testing was performed for a site demonstration by Lockheed called electrokinetic remediation, to remove metals and other ionic compounds near the old plating shop. Studies for potential early treatability of sediments at the Sea Plane Lagoon were started. Minor characterization was recommended to determine bioavailability and the lateral and vertical extent of contamination.

Site 16 - Began Engineering Evaluation/Cost Analysis (EE/CA) for removal of petroleum, the chemical additive PCB and lead contaminated soil.

Site 18 - Time-critical removal action; debris from catch basins were removed.

PROGRESS DURING FISCAL YEAR 1996

FY96

All Sites - Phase II of the Ecological Assessment underway.

Sites 1 and 2 - Radiological grid surveys was completed.

Sites 5 and 10 - Radiological surveys of radium paint areas was completed.

Site 5 - The pilot scale demonstration by Lockheed of electrokinetics ongoing.

Site 17 - Studies for potential early treatability of sediments at the Sea Plane Lagoon are underway. Minor characterization was recommended to determine bioavailability and the lateral and vertical extent of contamination.

Site 18 - The time-critical removal action continued to remove sediments from the storm sewer lines.

Sites 2, 3, 13 and 17 - Treatability studies are underway through UC Berkeley. These studies will evaluate the feasibility of using innovative technologies and examine Intrinsic Bioremediation of contaminated sediment.

Steam enhanced extraction has been evaluated (bench-scale) at Site 13.

Site 15 - Excavation of contaminated soil was completed. Site 15 was backfilled with clean soil. Contaminated soil was stockpiled at a protective area waiting for treatment.

Site 16 - Initiated a removal action.

Updated the Community Relations Plan (CRP), final revised CRP will be released in early FY97.

Revised the Long-Term Monitoring Plan.

Completed Phase I and II of EBS.

Remedial Design for UST sites, planned for FY96, postponed to FY97 due to funding constraints.

Recategorization of parcels was begun in FY96 and will be complete in FY97. Delay was due to lengthy negotiations with regulators regarding background level.

**ALAMEDA NAS
PLANS FOR FISCAL YEARS 1997 AND 1998**

FY97

Complete treatability studies for 5 sites through the CLEAN Contract.
Begin the final phase of the aquatic and terrestrial ecological assessment.
Develop a consolidated waste unit for disposal of contaminated soils.
Issue the first draft of RI report.

Sites 1 and 2 - Radiological surveys of landfills will be completed.

Sites 5 and 10 - Begin design of decontamination of elevated levels of radiation.

Sites 7 and 22 - An EE/CA for the removal of petroleum contaminated soils should be completed.

Site 14 - An EE/CA for removal of petroleum products should be completed.

Site 16 - An EE/CA for removal of the chemical additive PCB and lead should be completed. Removal action implementation is planned.

Site 18 - The removal of waste and debris from storm sewer lines and manholes will be completed.

Sites 3, 13 and 17 - Treatability studies will be complete. Potential follow on treatability studies with UC Berkeley will look at enhanced bioremediation for Sites 3 and 13, bioremediation of chlorinated solvents at Site 4 and 5, and pilot-scale treatability study of sediments from Site 17.

Site 2 - Demonstration by University of Waterloo for treatment of chlorinated solvents and BTEX (Benzene, Toluene, Ethylbenzene, Xylenes) in groundwater will be completed.

Site 5 - Demonstration by Lockheed Martin of electrokinetic removal of metals from soils at former plating shop will be completed. Demonstration by Resolution Resources of 3-D Seismic Profiling to identify DNAPL (Dense Non-Aqueous Phase Liquid) in subsurface will be completed.

FY98

Initiate basewide ROD and RD/RA.

Complete the RI report for three OU's.

Complete the FS report for one OU.

Complete the removal actions of Sites 7,14, 16 and 22.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 8 | | | | | | | |
| RI / FS | | | | 19 | 4 | | | |
| RD | | | | | 6 | 11 | 1 | 1 |
| RAC | | | | | | 3 | 11 | 5 |
| RAO | | | | | | | | 14 |
| IRA | | | 1(1) | 4(4) | 4(5) | | | |
| RC | | | | 3 | 1 | | 3 | 16 |
| Cumulative % RC | 0% | 0% | 0% | 13% | 17% | 17% | 30% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 6 | | | | | |
| CAP | | | | 5 | 1 | | | |
| DES | | | | | 5 | 1 | 1 | |
| IMP | | | | | 1 | 2 | 4 | |
| IMO | | | | | | | | 7 |
| IRA | | | 6(6) | | 2(2) | | | |
| RC | | | | | | | | 7 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

AZUSA NAVAL COMMAND CONTROL AND OCEAN SURVEILLANCE CENTER, MORRIS DAM FACILITY AZUSA, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: COMSPAWARSSCOM
 Size: 20 Acres
 Funding to Date: \$50,000
 Estimated Funding to Complete: \$3,229,000

Base Mission: Tests and evaluates torpedoes and torpedo components

Contaminants: Paint, ordnance compounds, PCBs, POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 2 | High: | 1 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 1 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 2 | | | | |

Sites Response Complete: 1

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 1 | | | | | | | |
| RI / FS | | | | | | | | 1 |
| RD | | | | | | | | 1 |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | 1(1) | | | | | | | 1(3) |
| RC | 1 | | | | | | | 1 |
| Cumulative % RC | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 100% |

BARSTOW MARINE CORPS LOGISTICS BASE

BARSTOW, CALIFORNIA

Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 5,688 Acres
Funding to Date: \$65,224,000
Estimated Funding to Complete: \$74,496,000



Base Mission: Originally conducted industrial operations; currently maintains, repairs, rebuilds, stores and distributes supplies and equipment

Contaminants: Heavy metals, PCBs, POLs, pesticides/herbicides, volatile organic compounds, dichloroethane, ethylene dibromide, tetra-chloroethylene, trichloroethylene

| | | | |
|----------------------------------|--|-------------------------|--|
| Number of Sites: | Relative Risk Ranking of Sites: | | |
| CERCLA: 38 | High: 9 | Not Evaluated: 0 | |
| RCRA Corrective Action: 1 | Medium: 5 | Not Required: 5 | |
| RCRA UST: 3 | Low: 23 | | |
| Total Sites: 42 | | | |



Sites Response Complete: 5

EXECUTIVE SUMMARY

Marine Corps Logistics Base (MCLB) Barstow is located directly east of the City of Barstow, in the central Mojave Desert, about halfway between Los Angeles and Las Vegas. MCLB Barstow consists of three separate, distinct areas: the Nebo Main Base, the Yermo Annex, and the Rifle Range. The Nebo Annex houses most of the Base's administrative activities: Base housing, military and dependent support facilities, and covered storage for warehousing activities. The Yermo Annex is utilized mainly for industrial maintenance, repair, and rebuild activities. The Rifle Range provides a secured area where Marines can practice and improve their marksmanship skills. Typical operations that contributed to contaminated sites on the facility include: vehicle maintenance, weapons repair and maintenance, missile systems maintenance and repair, communications, electronics repair, machine shop, petroleum products and chemical storage, and an Industrial Wastewater Treatment Plant (IWTP). MCLB Barstow was listed on the National Priorities List (NPL) in November 1989 due to the detection of high levels of the organic solvent TCE in groundwater monitoring wells. MCLB Barstow signed a Federal Facility Agreement (FFA) with EPA and California regulatory agencies in October 1990.

The Nebo, Rifle Range, and Yermo areas of MCLB Barstow are all fairly well isolated from neighboring communities which are located 1/4 to 1 mile from facility boundaries. Commercial land development adjacent to the facility includes sand and gravel mining and processing. Also, the City of Barstow maintains a sewage treatment plant and effluent disposal ponds adjacent to the property. Other surrounding land is generally unused and undeveloped desert land. Results from field investigation efforts have shown the groundwater contamination at both Yermo and Nebo to be the major environmental concern.

Initial Assessment Studies and other investigations conducted between FY 83 and FY 90 identified thirty-eight CERCLA sites and three Underground Storage Tank (UST) sites at Barstow Marine Corps Logistics Base. To

facilitate cleanup efforts and as a result of the Federal Facility Agreement, the CERCLA sites were divided into seven Operable Units (OU). Site types include sludge disposal areas, plating waste disposal areas, low-level radioactive storage areas, spill sites, and evaporation ponds.

Currently, 33 CERCLA sites are in the Remedial Investigation/Feasibility Study (RI/FS) phase. Four removal actions have been completed in as many sites. One Interim Remedial Action (IRA) is underway. One Underground Storage Tank (UST) site is in the Investigation (INV) phase. Investigation of UST site 2 was delayed due to regulatory review time extension.

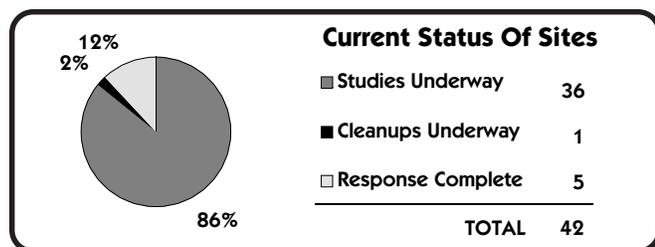
In the future, at the CERCLA sites, all RI/FSs are expected to be complete by the end of FY97 Corrective Action Implementation (IMP) will be completed at one UST site in FY97 and the other in FY98.

Granulated Activated Carbon Units have been installed on Base production wells to treat the TCE and PCE found in the groundwater. At Nebo, TCE contamination found in an off base well resulted in a Removal Action to provide base water to the 3 affected families (March 1993). At Yermo, it is also clear that PCE and TCE well above Maximum Contaminant Levels (MCLs) is migrating off-base and must be remediated, and in 1996 a removal action was performed installing carbon filtration for 2 affected off-base families.

A Technical Review Committee (TRC) was established in FY91 and meets on a regular basis. A Community Relations Plan (CRP) was completed and an Information Repository established in 1991.

As the Installation Restoration Program (IRP) moves from study to cleanup, decisions affecting land use are now being made. Large portions of land will be tied up during construction of the infiltration galleries for the Yermo groundwater treatment. Landfills covering several acres of land will get capped, affecting long term use of the land. Some areas of land are going to institutional controls, limiting the land use. Because of this, involvement by Base officials in the IRP is becoming more critical.

The success story for 1996 is the construction of the Yermo annex groundwater treatment system. The system actively treats and contains the large groundwater plume that runs across most of the Yermo annex and extends well into private property boundaries. This complete system should be ready for startup in December 1996.



BARSTOW MCLB RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Groundwater is the only source of water for both domestic and industrial use in the area. Four documented historical contaminant sources have contributed to the degradation of groundwater quality in the vicinity of Barstow. They are effluent disposal from the City of Barstow's Wastewater Treatment Plant (WWTP), irrigation water from the MCLB golf course at Nebo, waste discharged from the AT&SF rail yard at Barstow, and chlorinated solvents from the Nebo Main Base. The Mojave River recharges regional groundwater. However, groundwater conditions at the Yermo Annex are significantly different from the conditions at the Nebo Main Base. At the Yermo Annex, groundwater is encountered from between 133 and 147 feet below ground surface (bgs). At the Nebo Main Base, groundwater is encountered much shallower, between approximately 10 and 75 feet bgs in the central area of the Base and up to 175 feet bgs on the alluvial fan south of Interstate 40. In the bed of the Mojave River, groundwater has been encountered at a depth of only 4 to 5 feet bgs. The groundwater table has remained relatively stable at Nebo Main Base, but has been lowered about 70 feet at the Yermo Annex since the 1930's. The lowering of the water table can be attributed to regional groundwater withdrawal due primarily to agricultural irrigation wells with minor influences coming from private and public production wells. Currently, there are two active Yermo Annex production wells which are located within the Yermo contaminant plume. Both of these wells have carbon filtration systems to remove Volatile Organic Compounds (VOCs) to non-detectable levels. This water is currently used for various domestic and industrial uses at the Yermo Annex. The remaining production wells at the Yermo Annex are currently inactive. Production wells at Nebo Main Base have been inactive since about 1975.

The dry bed of the Mojave River is the dominant surface water feature in the Mojave Desert. A surface water drainage control system was built for the Nebo Main Base soon after the base was established. Assembly of storm drains, culverts, and paved areas distribute runoff to a main drainage canal at Nebo Main Base. This canal directs the water generally south to west and ultimately northeast across the Main Base to the Mojave River. Surface water discharge is less controlled and typically less of a problem at the Yermo Annex; however, in April 1993 the Mojave River flooded over its banks, deluging the southern portion of the Annex and destroying two monitoring wells.



NATURAL RESOURCES - Due to extensive land clearing, paving, and construction, native flora and fauna have been disturbed at Nebo, the Main Base, and at the Yermo Annex. Non-native species have been planted in some areas in both Nebo and Yermo. Outside the boundaries of the Base, relatively unaltered natural habitats still exist. The Creosote Bush Scrub, Alkali Sink and Semi-dune vegetation communities surrounding the Yermo Annex and Nebo Main Base provide diverse habitats for many species of native and non-native wildlife. The principal native vertebrates in the area are rodents, reptiles, and birds. Introduced species include pocket gophers, starlings, flickers, song sparrows, meadowlarks, and ravens. One endangered species and two threatened species have been identified on or near MCLB Barstow. The Mojave Tui Chub is endangered and the Mojave Ground Squirrel and the Desert Tortoise are both threatened species.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted as part of the Remedial Investigations (RIs). Ten sites were ranked as high relative risk in the Department of Defense (DOD) Relative Risk Ranking System. The high ranking was due to contaminated groundwater for eight of the sites and contaminated soil for three of the sites.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - MCLB Barstow was included on the National Priorities List (NPL) on 21 November 1989 based on a Hazard Ranking System (HRS) score of 37.93. The listing was due to the detection of organic solvent in groundwater monitoring wells located at the Nebo facility.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) between the Department of the Navy (DON), the EPA Region IX, the California Department of Health Services and the California Regional Water Quality Control Board (CRWQCB), Lahontan Region, was signed in October 1990. The agreement established schedules and regulatory review turnaround times for key project milestones.

Thirty-eight sites were divided into six Operable Units (OUs) in the FFA. OU 1 (Site 37) and OU 2 (Site 38) address groundwater contamination at the Yermo and Nebo Annexes, respectively. OU 3 (Sites 18, 20, 21, 23 and 34); OU 4 (Sites 2, 5, 9 and 11); OU 5 (Sites 15-17, 19, 22, 24-32, 35 and 36); and OU 6 (Sites 1, 3, 4, 6-8, 10, 12-14 and 33) address contaminated soil at 36 sites that were identified in previous Installation Restoration Program (IRP) investigations. OU 7 will be added to address any sites identified in the RCRA Facility Assessment (RFA). For tracking purposes the potential sites in OU 7 are referred to as "Sites 33-99", but the actual number of sites will be determined by the RFA. As of November 1996, the RFA is in Draft form and requires agency concurrence.



PARTNERING - A week long team building session was held in FY93. Regulatory agencies which attended were EPA Region IX, Cal-EPA, and the CRWQCB, Lahontan Region. Since then, regular meetings and conference calls have served to foster teamwork.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established yet for this base. So far, there has been no public interest in the establishment of a RAB, but the Marine Corps base will establish a RAB if such interest surfaces. However, a Technical Review Committee (TRC) was formed in November 1990, and meets as needed. The next TRC meeting is scheduled for December 1996.



COMMUNITY RELATIONS PLAN - Community Relations Plan (CRP) was completed in 1991. Fact sheets are produced on a quarterly basis. A public meeting is held at least once a year. Turnout is usually low due to lack of public interest.



INFORMATION REPOSITORY - Current and regularly maintained Information Repository and Administrative Record were established in 1991.

BARSTOW MCLB HISTORICAL PROGRESS

FY83

Sites 1-33 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in September 1983, identified 33 potentially contaminated sites at MCLB Barstow. Sites 1-14 are located at the Nebo Annex, Sites 15-32 are located at the Yermo Annex and Site 33 is located at the Rifle Range which is contiguous with Nebo.

FY86

Sites 2, 5, 9, 11, 18, 19, 21, 23, 34 and 35 - A Confirmation Study (CS), equivalent to a Site Inspection (SI) completed in February 1986 found pesticides and herbicides in soil and the organic solvent TCE in groundwater at Site 2; petroleum hydrocarbons and the pesticide DDT in soil at Site 11; petroleum hydrocarbons and heavy metals (arsenic, barium, beryllium, lead, and vanadium) in soil and petroleum hydrocarbons, the organic solvents dichloroethane and ethylene dibromide in groundwater at the Sludge Waste Disposal Area, Site 18; and heavy metals (arsenic, lead, and vanadium) in soil and petroleum hydrocarbons in groundwater at the Industrial Waste Disposal Area, Site 21; the chemical additive PCB in sludge at Site 34; and no evidence of heavy metals contamination in soil at Site 35. (Metal-contaminated sandblast grit had been suspected at Site 35, a Class III Landfill.) The report found no or insignificant levels of contamination at the Chemical Storage Area, Site 5; the Fuel Disposal Area, Site 9; the First Hazardous and Low Level Radiological Storage Area, Site 19; and the Landfill Area, Site 23.

FY89

Site 37 - An Action Memorandum (equivalent to an Interim Record of Decision (IROD)) was completed in July 1989 for installation of an activated carbon groundwater treatment system to remove volatile organic contaminants from the Yermo drinking water system. The system will continue operating as long as it is required to protect the Base's drinking water. The system has been effective in removing volatile organic compounds (VOCs) to below detection limits.

FY90

Sites 37 and 38 - In partial response to a Cleanup and Abatement Order issued in July 1989, a study was conducted in February 1990 to determine whether contamination from on-site operations had adversely impacted drinking water supplies in the vicinity of Yermo and Nebo Annexes. The results of the study indicated that, although trace amounts of volatile organic compounds were detected in two of 17 off-site wells, the detected concentrations did not pose a human health risk and were well below federal and state drinking water standards. The off-site wells are scheduled for continued monitoring during the Remedial Investigation (RI).

Site 38 - An SI was completed.

FY91

Site 36 - Another new site, the Proposed Vehicle Maintenance Shop, was identified in 1991. Although no SI was done at this site, petroleum products were found in the soil and the site was recommended for a Remedial Investigation/Feasibility Study (RI/FS).

RCRA Sites - A Preliminary Review/Visual Site Inspection (PR/VSI) Report was completed in August.

FY92

UST 1 - Forty-one Underground Storage Tanks (USTs) were removed in June 1992.

FY93

Sites 15 and 17 - A removal action involving the removal of industrial waste sludge was completed in FY93 at the Oil Storage/Spillage and IWTP Areas, Sites 15 and 17.

Sites 37 and 38 - An Interim Remedial Action (IRA) was completed in June 1993 at OU 2 (Site 38) that provided water to three families using water from an off-base well contaminated with the organic solvent TCE. Efforts are underway to improve the water supply at OU 2 and to provide a water supply to residents affected by OU 1 (Site 37). An alternative water supply is expected to be provided through FY20. A treatability study at Site 37 using a Pilot Extraction Well and Air-Sparging system was performed in FY93 to determine the appropriate removal required to control off-base migration of contaminated groundwater.

Site 35 - The percolation ponds continue to be aerated and a filter was installed in FY93 to remove the organic solvent tetrachloroethylene from water before discharge to the ponds. This is expected to continue until FY98, if sampling indicates tetrachloroethylene concentrations above the state action level.

FY94

Site 34 - A removal action to remove soil contaminated with the chemical additive PCB was conducted.

Site 2 - A removal action to remove contaminated soil was completed.

FY95

OU 7 - A RCRA Facility Assessment (RFA) at MCLB Barstow was initiated and is expected to be completed in December 1996. It is planned that sites identified during the RFA as needing further action will be investigated under CERCLA as OU 7 in an RI/FS.

Sites 1-38 - RI/FSs were underway.

OU 1 (Site 37) - The results of the pilot-scale study conducted during FY 93 and FY94 were used to prepare the Engineering Evaluation and Cost Analysis (EE/CA) and design a groundwater remediation system. An Extraction Well and Air-Sparging system is being implemented at OU 1 and will operate until FY20. A time critical/emergency removal action was conducted to provide carbon filtration of wells for private residents off Yermo Annex.

OU 2 (Site 38) - Two pilot-scale studies involving air sparging vapor extraction and a groundwater pump-and-treat system were constructed.

UST 2 - An Investigation (INV) was completed. UST 2 consists of approximately 70 additional tank locations that the California Regional Water Quality Control Board (CRWQCB), Lahontan Region, is requiring to be removed and tested. Ground Penetrating Radar confirmed the existence of only seven tanks which will be removed in FY96.

A success story during FY95 was the cost reduction of the Phase II field effort for Operable Units (OUs) 5 and 6 from \$12 million to \$4 million. This was accomplished by negotiating a lesser scope (which still met Data Quality Objectives (DQOs)) with the regulatory agencies.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 2, 5, 9, 11 and 18 (OUs 1 and 4) - RI/FSs were completed and sites were determined Response Complete.

Site 37 (OU1) - Yermo GW Removal Action success story. - The 10 million dollar groundwater removal action at Yermo consisting of air

sparging combined with vapor extraction (for source control) as well as groundwater extraction and treatment (for containment) has been started and should finalize construction in December 1996.

UST 2 - Corrective Action Plan (CAP) was completed for the removal of seven tanks .

**BARSTOW MCLB
PLANS FOR FISCAL YEARS 1997 AND 1998**

FY97

Sites 1, 3, 4, 6-8, 10, 12-33 and 35- 38 - RI/FSs will be completed at 27 sites, as well as the RODs.

Sites 1, 3, 4, 6, 8, 10, 12-19, 22, 24-33 and 36 - Will be response complete.

Site 21, 37 and 38 - Remedial site evaluations and potential removal actions are planned for initiation and completion in FY97.

UST 2 - Complete Corrective Action Implementation and expect determination that the site is Response Complete.

UST 3 - Complete Site Assessment.

FY98

Sites 23, 37, and 38 - complete RD.

Site 3999 - Complete RFI/CMS.

UST 3 - Complete CAP and its implementation. Expect determination that the site is Response Complete.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 11 | | | | | | | |
| RI / FS | | 5 | 33 | | | | | |
| RD | | | | 3 | 1 | 2 | | 1 |
| RAC | | | | | 3 | 1 | 2 | 1 |
| RAO | | | | | | | | 2 |
| IRA | 4(4) | | 3(5) | | | | | 1(1) |
| RC | | 5 | 26 | | 1 | 1 | 2 | 3 |
| Cumulative % RC | 0% | 13% | 82% | 82% | 84% | 87% | 92% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | | | | | | | | |
| RFI / CMS | | | | 1 | | | | |
| DES | | | | | | | | 1 |
| CMI | | | | | | | | 1 |
| CMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 1 | | | 1 | | |
| CAP | | 1 | | 1 | | | | 1 |
| DES | | | | | | | | 1 |
| IMP | | | 1 | 1 | | | | 1 |
| IMO | | | | | | | | |
| IRA | 1(1) | | | | | | | |
| RC | | | 1 | 1 | | | | 1 |
| Cumulative % RC | 0% | 0% | 33% | 67% | 67% | 67% | 67% | 100% |

BRIDGEPORT MARINE CORPS MOUNTAIN WARFARE TRAINING CENTER BRIDGEPORT, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CMC
 Size: 45,215 Acres
 Funding to Date: \$7,610,000
 Estimated Funding to Complete: \$11,288,000

Base Mission: Provides training and limited logistics support to deploying Marine Corps forces; develops, tests, and evaluates equipment for cold weather and mountain operations

Contaminants: POLs, methyl ethyl ketone, naphthalene, benzene, toluene, ethylbenzene, xylene

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 10 | High: | 7 | Not Evaluated: |
| RCRA Corrective Action: | 1 | Medium: | 6 | Not Required: |
| RCRA UST: | 7 | Low: | 3 | |
| Total Sites: | 18 | | | |

Sites Response Complete: 1

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 4 | | | | | | 6 |
| RI / FS | | | | 1 | 1 | 1 | | 5 |
| RD | | | | 1 | | | | 2 |
| RAC | | | | | 1 | | | 2 |
| RAO | | | | | | | 1 | |
| IRA | 2(2) | | | 1(1) | | | | |
| RC | | | | | 1 | 1 | 1 | 7 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 10% | 20% | 30% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 1 | | | | | | | |
| RFI / CMS | | | | | | | | |
| DES | | | | | | | | |
| CMI | | | | | | | | |
| CMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 1 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | | | | | | | |
| CAP | | 1 | 1 | | | | | 2 |
| DES | | | | | 1 | | | 3 |
| IMP | | | | 1 | 1 | | | 3 |
| IMO | | | | | | | | |
| IRA | 2(2) | | | | | | | 1(1) |
| RC | | | | 1 | 1 | | | 5 |
| Cumulative % RC | 0% | 0% | 0% | 14% | 29% | 29% | 29% | 100% |

CAMP PENDLETON MARINE CORPS BASE

OCEANSIDE, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 125,000 Acres
Funding to Date: \$72,859,000
Estimated Funding to Complete: \$135,351,000

Base Mission: Provides housing, training facilities, logistical support and administrative support to Fleet Marine Force Units

Contaminants: Heavy metals, pesticides, PCBs, benzene, chlorobenzene, dichloroethane, ethylbenzene, methyl ethyl ketone, tetrachlorobenzene, trichloroethane, trichloroethylene, xylene

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|-----|---------------------------------|----|-----------------------|----|
| CERCLA: | 57 | High: | 40 | Not Evaluated: | 29 |
| RCRA Corrective Action: | 113 | Medium: | 3 | Not Required: | 52 |
| RCRA UST: | 30 | Low: | 76 | | |
| Total Sites: | 200 | | | | |



Sites Response Complete: 49

EXECUTIVE SUMMARY

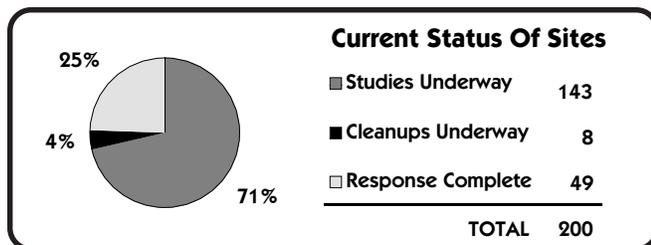
The Camp Pendleton Marine Corps Base (MCB) is located midway between Los Angeles and San Diego. It is bordered by the City of San Clemente to the north, the City of Oceanside to the south, and the City of Fallbrook to the east. The base has served as a training base since its establishment in 1941. Environmental contamination is associated with maintenance operations for vehicles and equipment used in carrying out its mission, and support facilities such as gas stations, hospitals, laundries, pest control areas, and hobby shops. These operations have generated hazardous wastes including waste oils, contaminated fuels and other petroleum products, cleaning solvents, and pesticide rinseate. Site types include landfills, surface impoundments, pesticide storage areas, fire training areas, vehicle maintenance areas, and underground storage tanks (USTs). Camp Pendleton was included on the National Priorities List (NPL) in November 1989 after the herbicide 2,4,5-TP (Silvex) was detected in two groundwater wells used to supply water. A Federal Facilities Agreement (FFA) was signed with EPA and California regulatory agencies in October 1990.

(RI/FS) phase was completed at two CERCLA sites in FY95, 8 CERCLA sites in FY96 and is underway for the remaining 43 CERCLA sites. Remedial Design (RD) has been completed for two sites and is underway at three sites. Remedial Action (RA) is underway at one site and is underway at two sites. Study is underway for 30 UST sites. RI/FSs will be completed at 32 CERCLA sites in FY97.

The base has an active Technical Review Committee (TRC). A Community Relations Plan (CRP) and Information Repositories were established in FY92.

Adjacent lands are residential, rural, and agricultural. A majority of the surrounding land is undeveloped. The Pacific Ocean is due west of the base. Hydrogeology at MCB Camp Pendleton is conducive to contaminant migration. Base personnel obtain drinking water from wells located on the base. The nearest well is within 1,320 feet of one of the disposal areas. Precipitation runs off to several nearby creeks and rivers. These creeks and rivers are used for recreational activities and some empty into coastal wetlands. There are also a number of endangered, threatened, or rare species on the base. The MCB is located on a site which has significant archaeological and historical value. Three sites located on the base are included in the National Register of Historic Places. One of these sites has also been designated a National Historical Landmark.

A total of 200 sites were found at the MCB: 113 RCRA sites, 30 UST Sites, and 57 CERCLA sites. The Remedial Investigation/Feasibility Study



CAMP PENDLETON MCB RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Groundwater is shallow, averaging 7-14 feet deep, and soils are permeable: Conditions that facilitate movement of contaminants into groundwater. The base is wholly dependent on groundwater to meet all on-base water demands, including the potable supply. The nearest well is within 1,320 feet of one of the disposal areas. Surface runoff drains to several creeks and rivers which eventually discharge to the Pacific Ocean. The San Margarita River, Las Flores Creek, and San Mateo Creek empty into coastal wetlands within two miles of Camp Pendleton. Surface waters within three miles downstream are used for recreational activities.



NATURAL RESOURCES - Within base boundaries are two natural wetland habitats which are protected by state and county agencies. These two critical habitats, vernal pools and coastal marshes, once common in Southern California, have decreased due to extensive development.

A number of species (plants, reptiles, birds, and mammals) observed on base have been listed as endangered, threatened, or rare. Most of the rare, threatened, and endangered species found on the base are located within marshlands situated at the mouths of the Santa Margarita River, Las Flores Creek, and San Mateo Creek. In addition, the coastal beaches are also suited for these species. The Santa Margarita River is a major nesting habitat for two endangered avian species, the California Least Tern which nests in the marshland and the Least Bell's Vireo which nests in the willow thickets adjacent to the Chappo Area.



RISK - The DOD Relative Risk Ranking was applied to 135 sites at MCB. Forty sites were ranked as high relative risk. These sites were ranked as high primarily due to known soil and groundwater contamination.

REGULATORY ISSUES

The installation has initiated partnering relationships with state and federal regulatory agencies. Cleanup decisions are made in advance through discussions with the regulatory agencies to minimize the document review process. For example, in FY96 the FFA project team met several times over a six month period. The outcome of these meetings was a shift in investigative paradigms from a traditional RI/FS approach to a remediation based, action oriented IR approach. During this period, the team identified

five removal actions, reached closure of six sites, decreased the IR schedule by two years, and reduce the investigation budget by \$3 million.

Also, during this period of time, the project team re-evaluated the removal designs for Sites 3 and 6. The team decided to apply an innovative stabilization technology to both sites. The team also decided to reduce the impacted area of the sites due to potential impacts to habitat.



NATIONAL PRIORITIES LIST - In 1980, two water supply wells near Site 3 were found contaminated with the Herbicide 2,4,5-TP (SILVEX). MCB Camp Pendleton obtains its entire domestic and agricultural water supply from groundwater basins within its boundaries and this potential for groundwater contamination was the primary reason for placement on the NPL. MCB Camp Pendleton was included on the NPL on 21 November 1989 based on a Hazard Ranking System score of 33.79.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) was signed by the Department of the Navy, EPA Region IX, the California Department of Toxic Substances Control, and the California Regional Water Quality Control Board, San Diego Region, in October 1990. The agreement established lead and support agency roles, work schedules, and regulatory review turnaround times for key project milestones.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established yet for this base. Marine Corps base will establish a RAB if the public indicates an interest in establishing one. A Technical Review Committee (TRC) was formed in November 1991. The base has an active TRC attended by the base communities, local agencies, and other interested members of the public.



COMMUNITY RELATIONS PLAN - A Community Relations Plan was completed in February 1992. Several Fact Sheets have been released and distributed.



INFORMATION REPOSITORY - An Information Repository and an Administrative Record were established in November 1991. The information from the Administrative Record is contained in the Information Repository.

HISTORICAL PROGRESS

FY84

Sites 1-8 - An Initial Assessment Study (IAS), equivalent to a PA, identified eight potentially contaminated sites. Site 1 consists of nine refuse burning grounds (Sites 1000-1008) and Site 2 consists of six mess hall grease disposal pits (Sites 2000-2005) scattered throughout the base.

FY88

Sites 3-5, 8 and 9 - A Site Inspection (SI) was completed in FY88. Site 9 was added during the SI at the request of the Department of the Navy to meet the requirements of the California Toxic Pits Control Act.

FY90

Site 4 - In response to a California Regional Water Quality Control Board, San Diego Region letter dated August 14, 1989, sampling and analysis were conducted in July 1990 at a concrete-lined surface impoundment in the vicinity of the MCAS Drainage Ditch. Results indicated the presence of petroleum hydrocarbons in sludge and acetone in liquid. Site 4 was expanded to include the concrete-lined surface impoundment.
Sites 19 and 21 - On March 23, 1990 and on June 19, 1990 the California Regional Water Quality Control Board, San Diego Region, listed the 31

Area LCAC-5 Two Surface Impoundments (Site 19) and the 14 Area Unlined Surface Impoundment (Site 21), respectively, as toxic pits and required the Department of the Navy to "cease discharge" and to prepare Work Plans for removal of liquid and sludge in compliance with the Toxic Pits Control Act. The Work Plans were submitted in August 1990 for regulatory agency review and approval.

FY91

Sites 8 and 20-26 - Additional investigation during FFA negotiations, involving review of existing reports and interviews with base personnel, identified seven additional CERCLA sites (Sites 20-26) and expanded Site 8 to include Las Flores Creek.

FY93

Sites 49-157 - A RCRA Facility Investigation (RFI) was completed in June 1993 for 109 sites (Sites 49-157). Twenty-eight sites were later deleted from the program due to lack of contamination.

FY94

Site 5 - A Remedial Design (RD) was completed.

CAMP PENDLETON MCB HISTORICAL PROGRESS

FY95

Sites 3-6, 9 and 24 - An RI/FS was completed.
Sites 7, 8, 10, 14, 16-20, 22, 27-48, 1000-1008 and 2000-2005 - RI/FSs were ongoing.
Sites 3 and 6 - Remedial Design (RD) was completed at the pest control washrack and the scrap yard.
Sites 1-61 - RI/FSs were completed at Group A sites and are ongoing at Groups B, C, and D sites.
Sites 4, 4A, 9 and 24 - The draft OU1 Interim Record of Decision (ROD) was completed.

Sites 19 and 21 - A Removal Action was completed at the two surface impoundment sites to remove liquids, sludge, and liners.
Sites 3 and 6 - Removal Action planned at the pest control wash area and the scrap yard site were not initiated due to funding problems, a change in treatment standards, and selection of another technology after completion of the treatability study.
UST 1 - Interim Remedial Actions consisting of soil removal and bioremediation were initiated. Vapor extraction was initiated at nine other UST sites.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 23, 25, and 26 - Completed PA/SI
Sites 4, 4A, 9 and 24 - The first Record of Decision was signed by the FFA parties. This is a no-action ROD
Sites 3, 6 and 7 - An Engineering Evaluation/Cost Analysis (EE/CAs) and Action Memorandums were completed.
Site 7 - Completed RD
Sites 3 and 6 - Begin Interim Removal Actions
Sites 8, 14 and 43-48 (OU2) - Completed FS.
Sites 4, 4A, 9 and 24 - Completed Final ROD

Site 19 - Completed 2 IRAs
Site 5 - Remedial Action to remove contaminated soil was completed at the fire training areas.
Sites 11-13 and 15 - Completed RFAs
Sites 5, 11-15, 23, 25, 26 and 44-48 - Designated RC
 Continued partnering with state and federal regulatory agencies
OU1 - Signed ROD on Dec. 95
 Due to technical changes to the scope, two IRAs were not finished in FY96 as planned but will be finished in FY97.
 Due to concerns the Federal Facilities Assessment (FFA) had with the RI/FS, the interim ROD at OU2 was not completed.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Sites 29, 30, 35, 1003 and 1004 - Scheduled to complete EE/CA.
Sites 1-3, 10, 16-20, 27, 32-34, 36, 37-42, 1000-1002, 1005-1008, 2000 and 2003-2006 - Scheduled to complete RI/FSs at Group D sites
Sites 3, 5, 6, 8, 14, 19, 20, 22, 31, 43-45 and 2001 - Scheduled for Record of Decision
Sites 9, 19, 20, 27, 28, 31, 1006-1008, 2000, 2001 and 2004 - Designated RC
Site 7 - Completed Remedial Action.
UST 1 - Scheduled to complete Implementation of corrective action
UST 13 - Completed IRA

FY98

Sites 18, 33, 34 and 37-42 - Completed RI/FS
Sites 2, 16, 22, 1001, 1004, 1005 and 2005 - Designated RC
Sites 7, 10-13, 15-18, 21, 23, 25-30, 32-42, 46-157, 1000-1008, 2000 and 2002-2005 - Complete Record of Decision
Sites 3, 6, 29, 30, 35, 1003 and 1004 - Complete removal actions
Sites 3, 6, 8, 14, 19, 20, 22, 31 and 43-45 - Begin Removal Action
Sites 8 and 22 - Complete RA

**CAMP PENDLETON MCB
PROGRESS AND PLANS**

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 22 | 3 | | | | | | |
| RI / FS | 2 | 8 | 32 | 9 | 2 | | | |
| RD | 1 | 1 | | | 4 | 1 | | 15 |
| RAC | | 1 | 1 | 2 | | | 3 | 16 |
| RAO | | | | | | | | 2 |
| IRA | 6(8) | 1(2) | | 7(7) | 4(4) | 2(2) | 2(2) | 7(8) |
| RC | 1 | 10 | 12 | 7 | 3 | 3 | 3 | 18 |
| Cumulative % RC | 2% | 19% | 40% | 53% | 58% | 63% | 68% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 36 | 4 | | | 1 | | | 72 |
| RFI / CMS | | | | | | | | |
| DES | | | | | | | | 1 |
| CMI | | | | | | | | 75 |
| CMO | | | | | | | | |
| IRA | | | | | | | | 1(1) |
| RC | 34 | 4 | | | | | | 75 |
| Cumulative % RC | 30% | 34% | 34% | 34% | 34% | 34% | 34% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | 3 | 1 | 2 | 23 |
| CAP | | | | | | | | |
| DES | | | | | 1 | 3 | 3 | 20 |
| IMP | | | 1 | | 1 | | 4 | 24 |
| IMO | | | | | 2 | | 1 | 20 |
| IRA | | | 1(1) | | | 3(6) | 5(6) | 28(49) |
| RC | | | | | | 1 | 1 | 28 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 3% | 7% | 100% |

CENTERVILLE BEACH NAVAL FACILITY

CENTERVILLE BEACH, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 25 Acres
Funding to Date: \$971,000
Estimated Funding to Complete: \$10,537,000

Base Mission: Commissioned in 1958 for oceanographic research

Contaminants: Solvents, POLs, heavy metals, PCBs

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 7 | High: | 1 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: |
| RCRA UST: | 3 | Low: | 4 | |
| Total Sites: | 10 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 2 | 4 | | | | | | |
| RI / FS | | | 1 | | | 1 | 3 | 2 |
| RD | | | | | | | | 5 |
| RAC | | | | | | | | 4 |
| RAO | | | | | | | | |
| IRA | | | 1(1) | | 1(1) | | | 1(1) |
| RC | | | | | | 1 | 1 | 5 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 14% | 29% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | 2 | | | | | | | 1 |
| DES | | | 2 | 1 | | | | |
| IMP | | | | 1 | 1 | | | 1 |
| IMO | | | | | | | | 3 |
| IRA | 1(1) | | | | | | | |
| RC | | | | | | | | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

CHINA LAKE NAVAL AIR WEAPONS STATION

CHINA LAKE, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVAIRSYSCOM
Size: 608,190 Acres
Funding to Date: \$35,317,000
Estimated Funding to Complete: \$115,390,000

Base Mission: Navy research, development test and evaluation center for air warfare systems and missile weapon systems; national range facility for parachute test and evaluation

Contaminants: Acid, asbestos, heavy metals, POLs, paint, PCBs, industrial sludge and wastewater, pesticides, plating waste, unexploded ordnance, solvents, explosive chemicals

| | | | | | |
|-------------------------|----|--|----|----------------|----|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 79 | High: | 26 | Not Evaluated: | 8 |
| RCRA Corrective Action: | 0 | Medium: | 3 | Not Required: | 46 |
| RCRA UST: | 9 | Low: | 5 | | |
| Total Sites: | 88 | | | | |

Sites Response Complete: 46

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|--------|------|------|------|------|----------------|
| PA / SI | 44 | 32 | 1 | 1 | | | | |
| RI / FS | | 1 | 3 | 8 | 2 | 2 | 6 | 6 |
| RD | | | | 3 | 2 | 3 | 1 | 11 |
| RAC | | | | | | 3 | | 16 |
| RAO | | | | | | | | 11 |
| IRA | | | 10(10) | 3(3) | 4(4) | | | |
| RC | 29 | 15 | 8 | 3 | | 2 | 2 | 20 |
| Cumulative % RC | 37% | 56% | 66% | 70% | 70% | 72% | 75% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | 4 | 2 | 1 | | | | | |
| DES | 1 | | | | | | | 3 |
| IMP | | | 5 | | | | | 2 |
| IMO | | | | | | | | 5 |
| IRA | | 1(1) | | | | | | |
| RC | 2 | | 2 | | | | | 5 |
| Cumulative % RC | 22% | 22% | 44% | 44% | 44% | 44% | 44% | 100% |

CHOCOLATE MOUNTAIN AERIAL GUNNERY RANGE NILAND, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 460,000 Acres
Funding to Date: \$126,000
Estimated Funding to Complete: \$6,282,000

Base Mission: Provides MCAS Yuma with a large and diversified assortment of ground targets for live-fire aerial gunnery, air-to-ground bombing and strafing training by Marine Corps and Navy pilots. The SEAL Camp is used for desert training and readiness operations

Contaminants: Paint, POLs, solvents, acid, ash

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 7 | High: | 0 | Not Evaluated: | 7 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 7 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | 1 | | | | 6 |
| RI / FS | | | | | | | | 1 |
| RD | | | | | | | | 1 |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | 1(2) | | | 1(1) | | | | 5(7) |
| RC | | | | | | | | 7 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

CONCORD NAVAL WEAPONS STATION

CONCORD, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVSEASYSOM
Size: 13,023 Acres
Funding to Date: \$40,790,000
Estimated Funding to Complete: \$63,413,000

Base Mission: Ships, receives, inspects, and classifies munitions (tidal area); serves as munitions storage and weapons maintenance, inspection and testing facility (inland area)

Contaminants: Heavy metals, POLs, volatile and semi-volatile organic compounds

| | | | | |
|--------------------------------|----|--|----|-------------------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 30 | High: | 16 | Not Evaluated: 9 |
| RCRA Corrective Action: | 19 | Medium: | 4 | Not Required: 21 |
| RCRA UST: | 3 | Low: | 2 | |
| Total Sites: | 52 | | | |



Sites Response Complete: 21

EXECUTIVE SUMMARY

Concord Naval Weapons Station (NWS) is about 35 miles northeast of San Francisco, California. It is surrounded by the city of Concord to the west and south (population 116,000); the city of Bay Point to the east (population 17,000) and the small town of Clyde (population 600) to the north. It is the major Naval munitions facility on the west coast and, as an ocean terminal facility, is used to transship ordnance from trucks and railcars to ships and vice versa. The base operations include shipping, receiving, inspecting, storing and maintaining munitions. Past operational practices such as improper disposal of paints and solvents, spent ordnance, treated wood, household/industrial waste, the open burning of various munitions and spills or leaks from fuel storage tanks have contributed to sources of contamination.

The environmental investigations at Concord are divided into three geographical areas; Inland, Tidal and Litigation. The Litigation Area, located in a tidal area, was purchased by the Navy in the 1970's to provide a buffer zone around the munitions handling operations. The Litigation Area is so named because of the legal actions conducted by the Navy in the late 1980's to recover Remedial Action (RA) cleanup costs from the adjacent and former property owners. Twenty three (23) sites in the Tidal and Litigation Areas were ranked as high relative risk primarily because of heavy metals contamination.

The Tidal and Litigation Areas include wetlands that provide habitat for several endangered and threatened species, including the Salt Marsh Harvest Mouse and the California Clapper Rail. The sites in these areas are subject to tidal inundation, have no containment measures and have a direct interconnection to Suisun Bay. Suisun Bay lies immediately to the north of NWS and is commonly used for water sports and fishing.

Concord NWS was placed on the National Priorities List (NPL) primarily because of surface water pathway conditions at the Tidal and Litigation Areas. As a result of its recent listing on the NPL, negotiations on a

Federal Facility Agreement (FFA) may begin with EPA once proposed changes in regulatory responsibilities associated with Superfund are resolved. In the meantime, Concord NWS is under a Federal Facility Site Remediation Agreement (FFSRA) with the State of California, which was signed in 1992, and which contains newly negotiated (1995) sites and schedules. A Site Management Plan is currently being prepared to compliment the FFSRA.

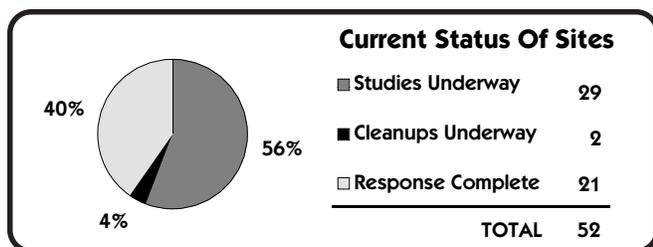
A Restoration Advisory Board (RAB) was formed in July 1995 and has 30 active members. Community members have shown a high level of interest in the Installation Restoration Program (IRP), and are providing valuable insight and comments on the IRP documents under preparation. Four committees have been formed. These committees include a procedures committee, a public relations committee, a documents review committee and a finance committee.

Nine sites in the Inland and Tidal Areas are in the Remedial Investigation/ Feasibility Study stage (RI/FS). Fourteen sites are Response Complete (RC). Seven Litigation Area Sites recently underwent a Remedial Action - four in 1994 and three in 1996. These seven sites are undergoing post-remediation Long Term Monitoring (LTM).

Two removal actions will be completed in FY97 for one Inland and one Tidal Area Sites. The third LTM event of the Litigation Area Sites will begin in the spring of FY97. The Navy is also conducting Site Inspections (SIs) at 24 Solid Waste Management Units (SWMUs). A RCRA Facility Confirmation Report will be completed in FY97 for the SWMUs. As part of the Navy's goal to expedite the investigation process, the Navy is conducting Corrective Actions (CAs) at three of these sites so that an extensive Remedial Investigation (RI) would not be required.

At four Tidal Area Sites, the final RI Report, including the human health and qualitative ecological risk assessment, is expected to be completed in FY97. The draft RI report was completed in FY96, but further analysis is required to finalize the report. Based on results of the RI fieldwork, the planned phase 1B RI and quantitative ecological risk assessment will not be required, and the sites will proceed directly to the feasibility study (FS) phase.

For four Inland Area Sites, the final RI/FS reports are expected to be completed and a Record of Decision (ROD) signed in FY98. The fifth Inland Area Site will begin a phase 2 RI in FY97 to evaluate groundwater contamination, and the FS will begin.



CONCORD NWS EXECUTIVE SUMMARY

In FY94 and FY95, risks to human health and the environment were reduced due to an RA for the Litigation Area Sites. Cleanup consisted of excavating and disposing of 43,500 cubic yards of soil contaminated with heavy metals that exceeded hazardous waste levels. The sites were then graded and revegetated. The Department of Navy (DON) prosecuted

claims to recover the costs of cleanup from 14 defendants and to require the owners of six contaminated properties adjacent to the installation to clean up their properties concurrent with the DON's cleanup. A LTM plan for soil, water, and biota is in effect to evaluate the success of the remedial action and restoration.

RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Concord NWS is bound on the north by Suisun Bay and on the south and west by the city of Concord. Soil and sediment are contaminated with metals and volatile organic compounds. Surface water is the pathway of greatest concern due to the direct interconnection of the Tidal and Litigation Areas to Suisun Bay and the lack of containment measures. The surface water runoff from Concord NWS is primarily to the north from the Inland and Tidal Areas, through the wetlands, into Suisun Bay.

Groundwater at Concord NWS is not used for drinking water due to its high Total Dissolved Solids (TDS) content. However, potable water wells available for use in drought years are located downgradient of the Inland Area Sites and could be affected by groundwater contamination. The groundwater pathway is currently being evaluated as part of the RI for the Tidal and Inland Area Sites.



NATURAL RESOURCES - Suisun Bay is a transition zone between saltwater and freshwater ecosystems and is interconnected to the Concord NWS wetland areas. This area contains a diverse population of fish and other aquatic wildlife. The Bay is also used for recreation. The upland and wetland areas at Concord NWS provide habitat for numerous flora and fauna and federal and state designated threatened and endangered species. These include the Salt Marsh Harvest Mouse, California Clapper Rail, California Black Rail, Tule Elk and the figwort family of plants including the Delta Tule Pea and Soft Bird's Beak.



RISK - A baseline human health risk assessment and an ecological risk assessment is currently being prepared for the Tidal and Inland Areas as part of the RI. At the Litigation Area, an ecological assessment is being conducted in response to the concerns of the regulatory agencies that the RA cleanup levels specified in the 1989 ROD do not adequately protect flora and fauna. The Litigation Area ecological assessment is being conducted in coordination with the ongoing LTM program that was specified in the ROD for the Litigation Areas.

Sixteen sites are ranked as high relative risk in the DOD Relative Risk Ranking system at Concord NWS primarily because of threatened and endangered species in the sensitive wetland areas and recreational users in adjoining Suisun Bay. The close proximity of NWS to the Contra Costa County Water Wells surrounding Mallard Reservoir has also contributed to the high relative risk ranking. Risks to human health and the environment have been reduced due to a remedial action for the Litigation Area Sites. This action removed 43,500 cubic yards of metals-contaminated soil which exceeded hazardous waste levels. At the Inland and Tidal areas, the Navy is planning removal or RCRA Corrective Actions to bring contaminants to safe levels which will reduce immediate threats to human health and the environment and allow several sites to be closed out, rather than requiring the sites to undergo additional investigations.



RESTORATION PROJECTS - The RA for the Litigation Area Sites consisted of excavating contaminated soils, backfilling with clean wetland soils and restoring the excavated areas. The restoration activities were designed to enhance the wetland habitat for the two endangered species of concern, the Salt Marsh Harvest Mouse and the California Clapper Rail. During the RA, elevations were lowered in several areas to enhance the wetland area. In addition, "refugial mounds" were constructed to provide refuge for the Salt Marsh Harvest

Mouse during periods of high tide. The excavated areas were revegetated with native species of wetland plants harvested from local areas as well as nursery-grown stock. A LTM plan is in effect to measure the success of the restoration.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Concord NWS was placed on the NPL on December 16, 1994, primarily because of conditions at the Tidal and Litigation Area Sites. The Hazard Ranking System (HRS) Score of 50.00 was driven by the surface water pathway, since these sites are subject to tidal inundation and have no containment measures such as runoff management structures. The Tidal and Litigation Areas have a direct interconnection to Suisun Bay.



LEGAL AGREEMENTS - A Federal Facilities Site Remediation Agreement (FFSRA) was signed by the DON, the California Department of Toxic Substances Control and the California Regional Water Quality Control Board, San Francisco Bay Region, on September 29, 1992. The agreement established a schedule for investigation and remediation for the Tidal Area and Inland Area Sites. The Litigation Area Sites were excluded from the agreement because the sites had already proceeded to cleanup.

Negotiations with EPA Region IX and the State of California for an FFA may begin once proposed changes in regulatory responsibilities associated with Superfund are resolved. In the meantime, a Site Management Plan is being prepared to complement the FFSRA.

In FY91, the DON prosecuted claims to recover the costs of cleanup for the Litigation Area Sites from 14 defendants and to require that the owners of six contaminated properties adjacent to the sites to clean up their properties concurrent with the DON's cleanup. The DON entered into seven Consent Decrees with the adjacent property owners and recovered costs for cleanup.



PARTNERING - A partnering meeting in FY93 between the Navy and contractors helped the RA project team set goals for the RA at the Litigation Area Sites. The environmental work at Concord has required close coordination with federal and state regulatory agencies to ensure protection of endangered and threatened species. The result has been the generation of analytical data by the EPA that will be used to augment the Navy's RI sampling and analysis results. The EPA has performed chemical and biological analyses on samples collected in the Tidal Area to determine appropriate reference levels for metals. The EPA is also performing chemical and biological analyses on samples collected along the boundary of the Tidal Area Landfill to evaluate whether landfill leachate is migrating off-site. The EPA is analyzing split ecological samples using standard Contract Laboratory Program (CLP) procedures, where the Navy analyzed samples using Low Detection Limit (LDL) analytical methods. Also, the project team has worked together to revise the investigative approach for the landfill site to include a presumptive remedy, which will reduce the costs for the RI/FSs.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) held one meeting in 1990 and a draft charter was prepared. No other meetings were held, but copies of environmental reports were sent to TRC members to review. The TRC was

CONCORD NWS RELEVANT ISSUES

converted to a Restoration Advisory Board (RAB) in FY95. A public notice was issued inviting members of the communities to participate in the RAB. In April and May 1995 the Navy conducted site tours for 150 community members. The tour was followed by a question and answer session led by the Navy and regulatory agencies. The first RAB meeting was held on July 20, 1995. The Navy and regulatory agencies have given technical presentations during the monthly RAB meetings. Community RAB members are reviewing draft RI Reports and providing input and comments. There are 30 active RAB members.



COMMUNITY RELATIONS PLAN (CRP) - A CRP was completed in May 1989. An updated CRP was completed in July 1995, and a final updated CRP was issued in February 1996.



INFORMATION REPOSITORY - An Information Repository was established at the Central Contra Costa Public Library. An Administrative Record was established in 1985 and is maintained at the Naval Facilities Engineering Command, Engineering Field Activity, West in San Bruno, California. A copy of the Administrative Record documents is contained in the Information Repository.

HISTORICAL PROGRESS

FY83

An Initial Assessment Study (IAS) identified 28 potentially contaminated sites at Concord NWS. Fifteen sites were recommended for no further study. Thirteen sites were recommended for further investigation.

FY85

Sites 3, 4, 25 and 26 - A Confirmation Study (CS) addressed these sites and recommended further investigation.

Sites 5, 6, 13 and 16 - A CS addressed these sites. No further action was recommended.

FY86

Sites 3-6, 25 and 26 (Litigation Area Sites) - A final Remedial Investigation/Feasibility Study (RI/FS) was completed. Ten Remedial Actions (RAs) alternatives were identified.

Site 14 - An investigation was completed and slightly elevated levels of arsenic, chromium and lead were found in groundwater. However, it was later determined the elevated levels were naturally occurring and not from a source of contamination.

FY87

Site 27 - Petroleum products and solvents were reportedly disposed on the ground surface. The site was identified after the completion of the IAS and was added to a subsequent Site Inspection (SI).

Site 28 - A source of heavy metals was found during litigation proceedings with Potentially Responsible Parties (PRPs) involving other sites and this site was added to an ongoing Remedial Investigation (RI).

FY88

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - A revised final RI was completed and found elevated concentrations of arsenic, cadmium, copper, lead, selenium and zinc in soil. A second revised Feasibility Study (FS) was completed.

Sites 3, 26 and 28 - Clam bioassay test results indicated a potential for cadmium, lead and zinc to move into surface waters at these sites. Plant and earthworm bioassays indicated movement of arsenic, cadmium, copper, lead, selenium and zinc into plants and soil-dwelling organisms that have potential toxicological impacts and potential contamination of species higher on the food chain, such as birds and mammals, with heavy metals. The soil of the Tidal Area is generally underlain with clay silts of low permeability that impede contaminant movement downward. Groundwater contamination was considered unlikely, but groundwater studies were included in the RI/FS.

FY89

Sites 3-6, 25, 26 and 28 - An RA plan was completed and identified several alternatives for each site. A Record of Decision (ROD) signed in April 1989, specified the excavation of contaminated soil from the area in each site designated for active remediation, disposal of contaminated soil in an existing Class I landfill, restoration of the excavated area and operation and maintenance, including monitoring. In addition to these actions, liming was specified for low pH soil at Site 6.

FY91

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - The DON prosecuted claims to recover the costs of cleanup for these sites from 14 defendants and to require the owners of six contaminated properties adjacent to the sites to clean up their properties concurrent with the DON's cleanup.

FY92

Sites 3-6, 25, 26 and 28 - A Remedial Design (RD) was completed for these sites.

SWMUs - Forty-nine Solid Waste Management Units (SWMUs) were identified in the RCRA Facility Assessment (RFA) prepared by California EPA as part of the RCRA Part B permit. Twenty four SWMUs were proposed for RCRA Corrective Action.

UST 1 - There were three tanks which were removed using Concord NWS funding.

FY93

Sites 8, 14, 19, 23A, 23B and 24B - An SI found no evidence of previously reported contaminants: No munitions-filled railcars reported to have been buried at Site 8. No volatile or semi-volatile organic compounds or petroleum hydrocarbons were found in the groundwater samples from Site 14. No evidence of culverts, outfalls, or contamination sources along the suspected 2,000 ft length of Site 19. No indication of explosive activities or explosive chemicals in the soil at Explosive Ordnance Disposal (EOD) Sites 23A and 23B. No evidence of firing range activities or elevated metals soil concentrations at Site 24B.

Sites 13, 17, 22, 24A and 27 - An SI recommended further investigation of soil and groundwater at Site 13, groundwater at Site 17 and soil at Sites 22, 27 and 24A.

Site 13 - The SI recommended removal of Napalm thickener.

Sites 1, 2, 9 and 11 - An SI addressed these sites and found volatile and semi-volatile organic compounds and metals in soil and groundwater and xylene, arsenic and mercury in sediment. Further investigation recommended.

UST 1 - An Initial Site Characterization (ISC) to define the extent of gasoline contamination in soil was completed.

FY94

Sites 6, 25, 26 and 28 (Litigation Area Sites) - An RA was completed at four (of seven) Litigation Area Sites and consisted of excavating and disposing of 22,700 cubic yards of soil contaminated with arsenic, cadmium, lead, selenium, copper and zinc and then grading and revegetating the sites. LTM is in effect to evaluate the success of the cleanup. Initiated RFA confirmation sampling at 24 SWMUs.

FY95

Sites 3-5 (Litigation Area Sites) - An RA was 95% completed for these three Litigation Area Sites. Cleanup consisted of excavating and disposing of 20,800 cubic yards of soil contaminated with arsenic, cadmium, lead, selenium, copper and zinc and then grading and revegetating the sites. Some regrading and planting remains, to complete the RA. LTM began and is scheduled to continue for a minimum of 30 years, as required by the

CONCORD NWS HISTORICAL PROGRESS

ROD to confirm that site contaminant levels continue to be below concentrations which require further remediation.
Site 14 - The three abandoned wells comprising this site were properly

closed and sealed to prevent them from serving as future contaminant pathways to the aquifers below. The Well Closure Report was completed.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 1, 2, 9 and 11 (Tidal Area Sites) - Interim Draft RI Report (Phase 1) was completed, including the draft qualitative ecological assessment and human health risk assessment.

Sites 13, 17, 22, 24A and 27 (Inland Area Sites) - Interim Draft RI Report (Phase 1) was completed.

Sites 3-5 (Litigation Area Sites) - The RA was completed.

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - The first-year LTM Report for these recently remediated sites was completed, and the second-year LTM event began.

Site 16 - Supplemental SI completed.

SWMUs 13, 16 and 40 - Corrective Actions (CA) were initiated for these three SWMUs.

Continued RFA confirmation sampling at 24 SWMUs.

Issued final Community Relations Plan.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Sites 1, 2, 9 and 11 (Tidal Area Sites) - The RI Report is expected to be completed. The Feasibility Study (FS) will begin.

Site 11 - Field sampling, EE/CA, and AM, to support planned removal action, will be completed.

Sites 13, 17, 22, 24A and 27 (Inland Area Sites) - The RI report is expected to be completed.

Site 22 - The Phase 2 RI will begin.

Sites 13, 17, 24A and 27 - The FS will begin and is expected to be completed in FY98.

Site 13 - A napalm removal is expected to begin and be completed.

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - A Qualitative Ecological Risk Assessment (QEA) is expected to be completed. The QEA will be used to determine if the remedial action has removed significant risks to ecological receptors. Results of the QEA will be used to further refine the LTM program and to evaluate the monitoring data. The second-year LTM Report is expected to be completed, and the third-year LTM event will begin.

SWMUs - An RFA Confirmation Report to confirm the presence of contamination at each SWMU will be completed and forwarded to the federal and state regulatory agencies in response to the state issued RFA.

SWMUs requiring further corrective action will be identified for placement in a regulatory program for continued investigation and remediation. Corrective action for SWMUs 13, 16 and 40 is expected to be completed.

FY98

Site 1 - The FS is expected to be completed for this landfill site. Proposed Plan and ROD process will begin.

Site 2, 11, 13 and 24A - Removal action will begin and is expected to be completed.

Sites 13, 17, 24A and 27 - The proposed plan and ROD are expected to be completed.

Site 22 - The Phase 2 RI report is expected to be completed, and the FS will begin.

Sites 3-6, 25, 26 and 28 (Litigation Area Sites) - The third-year LTM Report is expected to be completed, and the fourth-year LTM event will begin.

CONCORD NWS PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 28 | 1 | | | | | | |
| RI / FS | 7 | | | 5 | 3 | 1 | | |
| RD | 7 | | | 1 | 1 | 5 | | 2 |
| RAC | 4 | 3 | | | | 3 | 4 | 1 |
| RAO | | | | | | | | 1 |
| IRA | 1(1) | | | 4(4) | | | | |
| RC | 16 | 5 | | 1 | | 3 | 4 | 1 |
| Cumulative % RC | 53% | 70% | 70% | 73% | 73% | 83% | 97% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | | | 19 | | | | | |
| RFI / CMS | | | | | | 3 | 2 | |
| DES | | | | | | | 1 | 4 |
| CMI | | | | | | | | 5 |
| CMO | | | | | | | | 4 |
| IRA | | | 3(3) | | | | | |
| RC | | | 14 | | | | | 5 |
| Cumulative % RC | 0% | 0% | 74% | 74% | 74% | 74% | 74% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 1 | | | | | | | |
| CAP | | 2 | | | 1 | | | |
| DES | | | | | | 1 | | |
| IMP | | | | 2 | | | | 1 |
| IMO | | | | | | | | 3 |
| IRA | | | | | | | | |
| RC | | | | | | | | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

CORONA NAVAL ORDNANCE CENTER NAVAL WARFARE ASSESSMENT DIVISION CORONA, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: COMNAVSEASYSOM
 Size: 129 Acres
 Funding to Date: \$50,000
 Estimated Funding to Complete: \$0

Base Mission: Provides materials and services to support ordnance systems

Contaminants: POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 1 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 2 |
| RCRA UST: | 1 | Low: | 0 | | |
| Total Sites: | 2 | | | | |

Sites Response Complete: 2

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 1 | | | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 1 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | 1 | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 1 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

CORONADO NAVAL AMPHIBIOUS BASE

CORONADO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CINCPACFLT
 Size: 125 Acres
 Funding to Date: \$2,954,000
 Estimated Funding to Complete: \$12,334,000

Base Mission: Provides facilities and services for support of amphibious, unconventional, in-shore, riverine, and special warfare

Contaminants: Paint, solvents, unexploded ordnance, ash, blasting grit, POLs, heavy metals

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 6 | High: | 5 | Not Evaluated: | 2 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 1 | Low: | 0 | | |
| Total Sites: | 7 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 2 | | 4 | | | | | |
| RI / FS | | | | | 3 | | | 2 |
| RD | | | | | 2 | | | 2 |
| RAC | | | | | | | | 1 |
| RAO | | | | | | | | 5 |
| IRA | | | | 1(2) | 1(3) | | | 2(5) |
| RC | | | | | | | | 6 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 1 | | | | | |
| CAP | | | | | | | | 1 |
| DES | | | | | | | | 1 |
| IMP | | | | | | | | 1 |
| IMO | | | | | | | | 1 |
| IRA | | | | | | | | 1(3) |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

CROWS LANDING NAVAL AUXILIARY LANDING FIELD

CROWS LANDING, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: CINCPACFLT
Size: 1,225 Acres
Funding to Date: \$2,757,000
Estimated Funding to Complete: \$10,595,000

Base Mission: Provides practice field for Naval planes from Naval Air Station Moffett Field, Naval Air Station Lemoore, and Naval Air Station Alameda; provides maintenance support for aircraft

Contaminants: POLs, solvents, heavy metals, pesticides, scrap metal

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 8 | High: | 3 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 2 | Not Required: | 2 |
| RCRA UST: | 1 | Low: | 1 | | |
| Total Sites: | 9 | | | | |

BRAC II

Sites Response Complete: 2

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 8 | | | | | | | |
| RI / FS | | | 2 | 4 | | | | |
| RD | | | | 2 | | | | 3 |
| RAC | 1 | | | | | | | 5 |
| RAO | | | | | | | | 3 |
| IRA | 1(1) | | | | | | | |
| RC | 2 | | | 1 | | | | 5 |
| Cumulative % RC | 25% | 25% | 25% | 38% | 38% | 38% | 38% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | | 1 | | | | | | |
| DES | | | | 1 | | | | |
| IMP | | | | | | | | 1 |
| IMO | | | | | | | | 1 |
| IRA | | 1(1) | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

DIXON NAVAL RADIO TRANSMITTING FACILITY

DIXON, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVCOMTELCOM
Size: 1,285 Acres
Funding to Date: \$982,000
Estimated Funding to Complete: \$1,073,000

Base Mission: Provides transmitter support for Naval Communication Station, Stockton

Contaminants: Liquid waste, solvents, heavy metals, PCBs, POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 4 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 4 | | |
| Total Sites: | 4 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | 4 | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | 1(1) | 1(1) | | | | |
| RC | | | 3 | 1 | | | | |
| Cumulative % RC | 0% | 0% | 75% | 100% | 100% | 100% | 100% | 100% |

EL CENTRO NAVAL AIR FACILITY

EL CENTRO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 63,137 Acres
Funding to Date: \$10,457,000
Estimated Funding to Complete: \$16,825,000

Base Mission: Maintains and operates facilities; provides services and material to support operations of aviation activities, operation forces and other activities

Contaminants: Acid, asbestos, ash, plating waste, POLs, PCBs, solvents, heavy metals

| | | | | | |
|-------------------------|----|--|----|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 17 | High: | 12 | Not Evaluated: | 3 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 0 |
| RCRA UST: | 4 | Low: | 5 | | |
| Total Sites: | 21 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 15 | | | | | | | |
| RI / FS | | | | 3 | 1 | | 1 | 10 |
| RD | | 1 | | | 4 | | | 7 |
| RAC | | | 1 | | 3 | 1 | | 7 |
| RAO | | | | | | 2 | 1 | 2 |
| IRA | | | 1(2) | 2(2) | 1(1) | 2(4) | 1(1) | 9(10) |
| RC | | | 1 | | 1 | 2 | 1 | 12 |
| Cumulative % RC | 0% | 0% | 6% | 6% | 12% | 24% | 29% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | | | | | | | |
| CAP | | | | | | | | 4 |
| DES | 1 | | | | | | | 2 |
| IMP | | | | | | | | 4 |
| IMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 4 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

EL TORO MARINE CORPS AIR STATION

IRVINE, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 4,855 Acres
Funding to Date: \$37,903,000
Estimated Funding to Complete: \$117,864,000

Base Mission: Marine Corps primary jet fighter facility on the West Coast; provides materials and support for aviation activities of the Marine Corps; provides housing for Marine Corps personnel

Contaminants: POLs, PCBs, pesticides/herbicides, trichloroethylene, volatile organic compounds

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|---|
| CERCLA: | 24 | High: | 20 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 1 | Medium: | 5 | Not Required: | 0 |
| RCRA UST: | 18 | Low: | 17 | | |
| Total Sites: | 43 | | | | |

NPL

BRAC III

Sites Response Complete: 0

EXECUTIVE SUMMARY

Marine Corps Air Station (MCAS) El Toro is located in Orange County, California about eight miles southeast of the City of Santa Ana and 12 miles northeast of the City of Laguna Beach. MCAS El Toro served as the center for Marine aviation operations on the Pacific Coast. Past operations that contributed to contaminated sites on the facility include; aircraft maintenance, vehicle maintenance, degreasing processes, painting, fuel storage, wash racks, aircraft refurbishing, sewage treatment, solid waste incineration and disposal, and fire-fighting training. During routine water quality monitoring in 1985, the Orange County Water District (OCWD) discovered the organic solvent TCE in an irrigation well located about 3,000 feet west of the Station. Subsequent investigations by OCWD concluded that the organic solvent TCE and other volatile organic compounds (VOCs) detected in groundwater had originated at MCAS El Toro. Past operations and disposal practices are believed to have contaminated the groundwater in the vicinity of the Station. As a result of these findings the Station was placed on the National Priorities List (NPL) in February 1990. A Federal Facility Agreement (FFA) for MCAS El Toro was signed in October 1990.

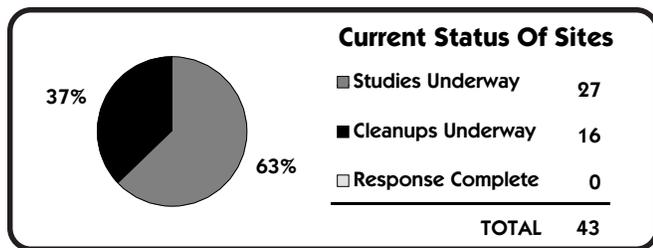
Most of the land northwest of MCAS El Toro is used to grow agricultural crops. Land to the south and northeast has been developed as commercial, light industrial, and residential. Surface runoff and infiltration go to storm drainage channels and naturally occurring washes, sometimes crossing agricultural land, and eventually draining to San Diego Creek which feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands. Contaminants can potentially migrate to agriculture and drinking water wells located downgradient from El Toro.

The Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in January 1994. The RAB consists of over 50 members who meet on a bi-monthly basis. A Community Relations Plan (CRP) was completed and two information repositories were established in FY91. A total of six fact sheets have been released.

Currently, 27 sites are in the study phase of which 24 are CERCLA sites. Twenty-two CERCLA sites were evaluated during the Phase I Remedial Investigation (RI), which was completed in May 1993. Site 23, the wastewater treatment plant sewer lines, was included in the RCRA Facility Assessment (RFA)/Confirmation Study completed in August 1993; the site was confirmed a no-action site and was dropped from the El Toro environment program. Two additional sites (Sites 24 and 25) were established for investigation in Phase II, bringing the total number of CERCLA sites to 24. The final work plan for the Phase II Remedial Investigation/Feasibility Study (RI/FS) was prepared in July 1995, and Phase II field work continued through June 1996. All RCRA Solid Waste Management Units (SWMUs) are consolidated into five groups; inactive SWMUs are in the RCRA Facility Investigation (RFI) phase. The 405 Underground Storage Tanks (USTs) are consolidated into 18 groups of sites. Draft RIs will be completed for 14 CERCLA sites in the first quarter of FY97. Draft Record of Decision (RODs) will be submitted for five sites in FY97 and nineteen sites in FY98. Not all 22 sites completed RI/FSs in FY96, as planned, due to the BRAC Cleanup Team (BCT) refocusing program priorities on groundwater, the VOC Source Area, and landfills.

In 1993, MCAS El Toro was included in the Base Realignment and Closure (BRAC III) program. Operational closure date is targeted for July 1999. Approximately 63% of the property has been classified as requiring no further remediation before transfer. However, due to the distribution of contaminants, very few if any property is available for transfer. MCAS El Toro has proposed a settlement agreement with the OCWD for a multi-purpose project which would include OCWD's planned Irvine Desalter project, as well as a remedial alternative which includes a natural attenuation component to mitigate the VOC contamination in groundwater. No agreement was reached with the OCWD during FY96. MCAS El Toro is also considering a Department of the Navy (DON) stand alone project which would involve control of groundwater contaminant migration and cleanup of contaminated groundwater by pump-and-treat and reinjection at the VOC Source Area. This issue is still to be resolved and has delayed the ROD and Remedial Design (RD) for Site 18 (Regional Groundwater).

A success story is the UST Tiger Team which was formed to address UST compliance and closure issues. The team consists of representatives from the El Toro Environmental and BRAC Offices, Engineering and Planning Departments, and the Naval Facilities Engineering Command, Southwest Division. The Tiger Team removed 41 inactive USTs in 1995 and 56 in 1996; the removal of the other 35 USTs anticipated to be removed in FY96 will be completed in FY97. More than 200 USTs have been removed at El Toro to date. The Station has received letters confirming regulatory closure on 160 USTs.



EL TORO MCAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Under MCAS El Toro are well-draining silty clay loams and fine sandy loams with moderate to high infiltration rates. Downgradient, in the Irvine Groundwater Subbasin, groundwater is used for irrigation. Contaminants can potentially migrate to drinking water wells in the middle aquifer several miles downstream from El Toro. Surface drainage near MCAS El Toro generally flows southwest. Off station drainage from the hills and upgradient irrigated farmlands combine with on-station runoff and flows into four main drainage channels. After passing through light industrial areas in the City of Irvine, all four drainages become confluent with San Diego Creek southwest of the station. San Diego Creek feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands.



NATURAL RESOURCES - Approximately 75% of the native habitats of MCAS El Toro have been cleared for agriculture, housing, and station operations. Native vegetation and animal species are primarily condensed in an approximately 1,200-acre area located in the northeast portion of the station. The natural habitat located in this portion of the station is used by many wildlife species. The area is heavily used by numerous wintering avian species, including neotropical birds and birds of prey. In addition to bird species, reptiles and mammals are also present in the natural area as well as a smaller number of amphibian species. Only one species, the California gnatcatcher, is listed as threatened under the Federal Endangered Species Act.

The Upper Newport Bay Ecological Reserve, into which the San Diego Creek flows, was established in 1975 to preserve and enhance the saltwater marsh ecosystem. Eight species classified by California as either rare or endangered are dependent on the Upper Newport Bay. A series of marshy wildlife refuges are located immediately adjacent to San Diego Creek. Many plant and animal species settle in this wildlife refuge. The reserve is more than 10 miles from MCAS El Toro's four main drainage channels.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted at each site as part of the Remedial Investigations (RIs). In the Department of Defense (DOD) Relative Risk Site Evaluation Model twenty sites were ranked as high relative risk.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - MCAS El Toro was included on the National Priorities List (NPL) on 21 February 1990 based on a Hazard Ranking System (HRS) score of 40.83. The NPL listing was due to the presence of volatile organic compound (VOC) contamination in the groundwater.



LEGAL AGREEMENTS - A Federal Facility Agreement (FFA) between the Department of the Navy (DON), the EPA, the California EPA (Cal-EPA) Department of Toxic Substances Control (DTSC), and the California Regional Water Quality Control Board (CRWQCB), Santa Ana Region, was signed in October 1990. The agreement established lead and support agency roles, general scopes of work, schedules, and regulatory review turnaround times for key project milestones and specified that investigations begin with RIs and proceed to Records of Decision (RODs). The Installation Restoration Program (IRP) sites were grouped into three Operable Units (OUs); OU1 includes VOC-contaminated regional groundwater, on- and off-Station (Site 18); OU2A includes sites believed to be contributing to the regional VOC plume emanating from the southwest portion of the station (Sites 24 and 25); OU2B is station landfills (Sites 2 and 17); OU2C is station landfills (Sites 3 and 5); OU3 includes all remaining CERCLA sites (Sites 1, 4, 6-16 and 19-22).

In 1985, the OCWD discovered the organic solvent TCE in two off-site wells and initiated an investigation to determine the source and extent of contamination. In July 1987, the CRWQCB, Santa Ana Region, issued a Cleanup and

Abatement Order that required MCAS El Toro to submit a Plan of Action (POA) to address off-site groundwater contamination, this became the Regional Groundwater Investigation - Site 18.



PARTNERING - The BRAC Cleanup Team (BCT) has established a partnering agreement and team charter that incorporates the latest and most efficient management techniques to coordinate installation restoration (IR) activities. Team building seminars were held in October 1994 and May 1996. Examples of efficient management techniques and team building include; setting some agency review times shorter than required under the FFA; concurrent document review among BCT members to improve formal draft FFA submittals; and withdrawal of portions of sites from CERCLA at any time in the process if the data supports a CERCLA petroleum exclusion.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in 1990 and converted to a Restoration Advisory Board (RAB) in January 1994. The RAB consists of over 50 members who meet on a monthly basis. All RAB meetings are open to the public. Technical presentations to assist RAB members in understanding complex environmental issues are provided on a bi-monthly basis.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in April 1991 and the first Fact Sheet was completed in November 1991. The CRP was revised in March 1996. A total of six fact sheets have been released, and Fact Sheets 7 and 8 were being planned during the last quarter of FY96. Twenty-four public meetings have been held (includes RAB meetings) through FY96.



INFORMATION REPOSITORY - In 1991, an Information Repository was established at the Heritage Park Regional Library in Irvine. The Administrative Record was also established in 1991. Administrative Record files are located at the El Toro BRAC Environmental Office and at Southwest Division (SWESTDIV), Naval Facilities Engineering Command (NAVFAC) in San Diego, California.

BASE REALIGNMENT AND CLOSURE



BRAC - In 1993, MCAS El Toro was included in the Base Realignment and Closure (BRAC III) program. The closure date is scheduled for July 1999.



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was established in October 1993. The BCT consists of representatives from Cal-EPA DTSC, EPA Region IX, and the United States Marine Corps/Navy (USMC/Navy).



DOCUMENTS - The latest BRAC Cleanup Plan (BCP) update was completed in March 1996. The BCP will be updated again in March 1997. The Environmental Baseline Survey (EBS) was completed in April 1995. In the EBS, the Environmental Condition of Property was assessed according to Department of Defense (DOD) and American Society for Testing and Materials (ASTM) guidelines and the results are shown in the chart below. The final EBS identified 63% of the property as Category 1. EPA and Cal-EPA DTSC have given 100% concurrence.

| Environmental Conditions of Property Classification | | | | | | |
|---|---------|---------|---------|---------|-------------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2,982 acres | 5 acres | 5 acres | 0 acres | 0 acres | 1,084 acres | 662 acres |



LEASE/TRANSFER - It is anticipated that the Finding of Suitability to Transfer (FOST) or Finding of Suitability to Lease (FOSL) activities will start in 1997.

EL TORO MCAS RELEVANT ISSUES



REUSE - The County of Orange and Cities of Irvine and Lake Forest formed the El Toro Reuse Planning Authority (ETRPA) in March 1994. In January 1995, the County withdrew from the ETRPA to pursue formation of a new reuse committee. In April 1995, the County of Orange was recognized as the new Local Redevelopment Authority (LRA). A draft reuse plan was completed during August 1996. The final reuse plan is scheduled to be completed during December 1996. In the absence of a reuse plan for the Station, reuse parcels have been identified according to the Station's existing land use presented in the MCAS El Toro Master Plan. Voters have passed two measures which proposed to convert the installation into a commercial airport.



FAST TRACK INITIATIVES - The MCAS El Toro team has implemented various fast track procedures such as using mobile laboratories for accelerated analytical turnaround times, and in-field decision making. Current removal actions are using industrial cleanup standards and the team will consider using industrial cleanup standards for final remedies. The team has used the latest immunoassay field screening kits to reduce analytical costs while maintaining Data Quality Objectives (DQOs). In addition, the team continues to evaluate other opportunities and methods to accelerate cleanup such as presumptive remedies, removal actions, and new technologies that may be applicable for MCAS El Toro site specific conditions.

HISTORICAL PROGRESS

FY82

Site 1 - An Interim Remedial Action (IRA) was completed in FY82 with the incineration of excess ordnance compounds at the Explosive Ordnance Disposal Range.

FY86

Sites 1-17 - An Initial Assessment Study (IAS) (equivalent to a Preliminary Assessment (PA)), completed in May 1986, identified 17 potentially contaminated sites at MCAS El Toro. Seven sites (Sites 6-8, 10, 12, 13 and 15) were found not to pose a threat to human health or the environment, and No Further Action (NFA) was recommended for these sites. Nine sites (Sites 1-3, 5, 9, 11, 14, 16 and 17) were recommended for further investigation. Remedial measures were recommended for Site 4.

Site 18 - A Regional Groundwater Investigation was added after an investigation by the Orange County Water District (OCWD) determined that the organic solvent (TCE) and other volatile organic compounds (VOCs) detected in groundwater outside the Station had originated at MCAS El Toro.

Sites 19-23 - The EPA's review of the IAS and further investigations by the Navy resulted in five additional sites being recommended for further action. JP-5 jet fuel spills and leaks occurred from fuel bladders at the Aircraft Expeditionary Refueling Site (Site 19); waste oils, solvents, and waste solvent sludge at the Hobby Shop Building 626 (Site 20); spills and leaks from stored drums of chemicals at the Material Management Group Building 320 (Site 21); JP-5 spills and leaks from fuel bladders at the Tactical Air Fuel Dispensing System (TAFDS) (Site 22); and industrial wastes containing heavy metals around abandoned-in-place sewer lines from the old Wastewater Treatment Plant (WWTP) (Site 23).

Sites 1-23 - Meetings between the state, the EPA and the Department of the Navy (DON) in September 1986 resulted in these sites being recommended for further investigation in the Installation Restoration Program (IRP) reopening Sites 6-8, 10, 12, 13 and 15 which were previously recommended for NFA.

FY88

UST Group 18 - As a result of a refueling system upgrade, Underground Storage Tank UST 398 was investigated in 1988. As part of the system upgrade, a Soil Characterization Study was conducted at the Tank 398 site and petroleum hydrocarbon contamination was identified in soil below the tank. The Orange County Health Care Agency was notified and a report of an unauthorized leak was submitted by the DON in September 1988. The County directed MCAS El Toro to conduct an investigation to determine the extent of contamination.

Site 1 - An IRA consisting of access control was installed in July 1988 at the Explosive Ordnance Disposal Range and is expected to be in place until FY01.

FY89

Site 18 - An IRA was implemented at the Regional Groundwater Investigation Site that involved retrofitting perimeter monitoring well

pumps, conducting a treatability study to determine the feasibility of using activated carbon to remove contaminants from groundwater, and constructing an activated carbon treatment plant. The plant began operation in June 1989 and was used to treat the organic solvent TCE-contaminated groundwater pumped from three existing wells to below detection limits. System operation stopped in 1993 on approval of the Santa Ana Region, California Regional Water Quality Control Board (CRWQCB) since the site was being handled in an ongoing Remedial Investigation/Feasibility Study (RI/FS).

UST Group 18 - A Preliminary Site Assessment was conducted to determine the lateral and vertical extent of soil contamination at the site.

FY90

Site 18 - A Site Inspection (SI) was completed at the Regional Groundwater Investigation Site and found significant levels of the organic solvent TCE in shallow groundwater at the base boundary and limited contaminant migration off site. In April 1989, the OCWD also completed an off-site groundwater investigation and documented the existence of a large dilute plume of the organic solvent TCE in groundwater that extended over three miles northwest from the base.

FY92

UST Group 18 - A Site Assessment was completed. Significant concentrations of petroleum hydrocarbons, benzene, toluene, ethylbenzene, and xylene (BTEX) were found in groundwater.

FY93

SWMU 1 - An RCRA Facility Assessment (RFA) was completed. A Visual Site Inspection, completed in August 1991, identified 289 potential solid waste management units (SWMUs) at MCAS El Toro, including approximately 30 sites that the CRWQCB, Santa Ana Region, had requested be further investigated. One hundred and fifty-seven SWMUs were recommended by the DON for further investigation. Field work was initiated in September 1992. The RFA was completed in March 1993. SWMUs of concern have been grouped into SWMU 1 for corrective measures.

Site 18 - Completed IRA consisting of activated carbon treatment plant.

FY94

Initial BRAC Cleanup Plan (BCP) developed.

Site 2 - Construction was completed at the Magazine Road Landfill involving the installation of slope stabilization.

UST Group 18 - Planning for free product recovery began.

FY95

Update of the BRAC Cleanup Plan (BCP).

USTs 1-17 - Planning began for remediation of various UST sites by ex-situ and in-situ methods.

UST Group 18 - Construction of free product recovery system began.

UST Groups 1-17 - Forty-one inactive USTs were removed.

EL TORO MCAS PROGRESS DURING FISCAL YEAR 1996

FY96

Community Relations Plan (CRP) and BRAC Cleanup Plan (BCP) updated.

OUs 2A, 2B and 2C - RI reports were completed and draft feasibility studies were submitted in accordance with the FFA.

OUI - Draft final interim action feasibility study (IAFS) was submitted for comment.

UST Group 18 - Operation of the free product recovery system continued (approximately 6,000 gallons recovered to date). 207 USTs were removed.

UST Groups 1 and 18 - Soil Vapor Extraction (SVE) systems installed and operated at UST group 18 (Tank 398) and UST group 1 (Tank Farm 2) sites.

Various UST Groups 1-17 - Treated approximately 1,000 tons of hydrocarbon impacted soil at the station bioremediation facility.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Site 4 - PA/SI will be completed.

Sites 11, 12 and 19 - RI/FS will be completed.

Site 11 - Complete RD.

Site 19 - Complete IRA.

OUI (Site 18) - A proposed plan will be completed.

OU2A (Site 24) - SVE pilot system. A proposed plan will be completed for the groundwater portion. An interim ROD for the vadose zone will be signed.

Various UST Groups 1-17 - Continue treatment of hydrocarbon impacted soil at the station bioremediation facility.

UST Groups 1, 8, 15 and 18 - Complete RDs.

UST Group 18 - Continue operation of the free product recovery system. Continue operation of the SVE systems installed at Tank Farm 2.

Various UST Groups 1-17 - Anticipate regulatory closure of 80 USTs.

FY98

OUs 1, 2A, 2B and 2C - RODs will be completed. RD will be started.

OU3 (Sites 2-10, 13-15, 17, 18, 20-22, 24 and 25) - An RI/FS will be completed.

OU3 (Sites 4, 6, 8-13, 15, 16, 20, 21 and 22) - Proposed Plans and RODs will be completed.

Sites 18, 19, 22 and 24 - Complete RD.

Sites 19 and 11 - Complete IRA.

Sites 4, 6, 7, 9, 10, 13-15 and 20 - Expect Response Complete.

SWMU 1 - Complete RFI/CMS and Design.

UST Group 1 - Complete UST inventory (equivalent to an SA).

UST Groups 3-5, 7, 9, 10, 13, 14, 16 and 17 - Complete Design.

UST Group 3 - Complete Corrective Action Implementation.

UST Group 18 - Complete interim removal.

Various UST Groups 1-17 - Anticipate regulatory closure of 80 UST sites.

Various UST Groups 1-17 - Continue treatment of hydrocarbon impacted soil at the station bioremediation facility.

UST Group 18 - Continue operation of the free product recovery system.

EL TORO MCAS PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 1 | | 1 | | | | | |
| RI / FS | | | 3 | 19 | 1 | 1 | | |
| RD | | | 1 | 4 | 3 | | | 5 |
| RAC | | | | | 2 | 1 | 3 | 7 |
| RAO | | | | | | | | 2 |
| IRA | 1(1) | | 1(1) | 2(2) | | 5(6) | 3(5) | 5(10) |
| RC | | | | 9 | | 4 | 1 | 10 |
| Cumulative % RC | 0% | 0% | 0% | 38% | 38% | 54% | 58% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 1 | | | | | | | |
| RFI / CMS | | | | 1 | | | | |
| DES | | | | 1 | | | | |
| CMI | | | | | | 1 | | |
| CMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | 1 | | |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 100% | 100% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | 1 | | | 1 | |
| CAP | | | | | | | | |
| DES | | | 4 | 10 | 3 | 1 | | |
| IMP | | | | 1 | 12 | 4 | 1 | |
| IMO | | | | | | 1 | | 13 |
| IRA | | | | 1(1) | 2(2) | 5(5) | 3(3) | 7(7) |
| RC | | | | | | 2 | | 16 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 11% | 11% | 100% |

FALLBROOK NAVAL ORDNANCE CENTER, PACIFIC DIVISION DETACHMENT FALLBROOK, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: COMNAVSEASYSOM
 Size: 8,853 Acres
 Funding to Date: \$83,000
 Estimated Funding to Complete: \$7,397,000

Base Mission: Stores fleet and marine Corps missiles and conventional ammunition; maintains facilities of air-launched missiles

Contaminants: POLs, heavy metals, unexploded ordnance, solvents, ash, electrolyte, acid, ordnance compounds, paint, PCBs, refuse, refuse with hazardous waste

| | | | | | |
|-------------------------|----|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 11 | High: | 0 | Not Evaluated: | 3 |
| RCRA Corrective Action: | 0 | Medium: | 5 | Not Required: | 2 |
| RCRA UST: | 2 | Low: | 3 | | |
| Total Sites: | 13 | | | | |

Sites Response Complete: 2

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 1 | | | | | | | |
| RI / FS | | | | | | | | 10 |
| RD | | | | | | | | 9 |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | 9(10) |
| RC | 1 | | | | | | | 10 |
| Cumulative % RC | 9% | 9% | 9% | 9% | 9% | 9% | 9% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | | | | | | | |
| CAP | 1 | | | | | 1 | | |
| DES | | | | | | | | 1 |
| IMP | 1 | | | | | | | 1 |
| IMO | | | | | | | | 1 |
| IRA | 1(2) | | | | | | | |
| RC | 1 | | | | | | | 1 |
| Cumulative % RC | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 100% |

IMPERIAL BEACH OUTLYING LANDING FIELD

IMPERIAL BEACH, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 450 Acres
Funding to Date: \$339,000
Estimated Funding to Complete: \$8,009,000

Base Mission: Supports helicopter training in conjunction with NAS North Island

Contaminants: POLs, PCBs, inert material, blasting grit, solvents

| | | | | |
|-------------------------|---|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 5 | High: | 0 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: |
| RCRA UST: | 0 | Low: | 0 | |
| Total Sites: | 5 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | | | | | 5 |
| RI / FS | | | | | | | | 2 |
| RD | | | | | | | | 4 |
| RAC | | | | | | | | 3 |
| RAO | | | | | | | | 1 |
| IRA | | | | 1(1) | | | | 1(1) |
| RC | | | | | | | | 5 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

LEMOORE NAVAL AIR STATION

LEMOORE, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: CINCPACFLT
Size: 39,173 Acres
Funding to Date: \$13,700,000
Estimated Funding to Complete: \$28,797,000

Base Mission: Maintains and operates facilities and provides services and materials to support operations of aviation activities

Contaminants: Heavy metals, vinyl chloride, volatile and semi-volatile organic compounds

| | | | | | |
|-------------------------|----|--|----|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 17 | High: | 10 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 3 |
| RCRA UST: | 2 | Low: | 5 | | |
| Total Sites: | 19 | | | | |

Sites Response Complete: 3

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 15 | | | | | | | |
| RI / FS | | 4 | 6 | 7 | | | | |
| RD | | | | 2 | 5 | | | |
| RAC | | | | | 1 | 1 | 2 | 3 |
| RAO | | | | | | | | 7 |
| IRA | 1(1) | | 2(2) | 2(3) | | | | |
| RC | | 3 | 5 | 2 | | | | 7 |
| Cumulative % RC | 0% | 18% | 47% | 59% | 59% | 59% | 59% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | | 1 | | | | | | |
| DES | | | | 1 | | | | |
| IMP | | 1 | | 1 | | | | |
| IMO | | | | | | | | 2 |
| IRA | | | | | | | | |
| RC | | | | | | | | 2 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

LONG BEACH NAVAL COMPLEX

LONG BEACH, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVFACENGCOM/COMNAVSEASYSCOM
Size: 1,329 Acres
Funding to Date: \$39,225,000
Estimated Funding to Complete: \$170,362,000

Base Mission: Provided support and supplies for assigned surface craft and ships; drydocking; research and test work; housing; and hospital and clinical services

Contaminants: Chlorinated solvents, solvents, acid, blasting grit, paint, heavy metals, industrial wastewater, industrial liquid waste, asbestos, POLs, pesticides

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|---|-----------------------|---|
| CERCLA: | 24 | High: | 5 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 9 | Not Required: | 6 |
| RCRA UST: | 2 | Low: | 5 | | |
| Total Sites: | 26 | | | | |

BRAC II, IV

Sites Response Complete: 1

EXECUTIVE SUMMARY

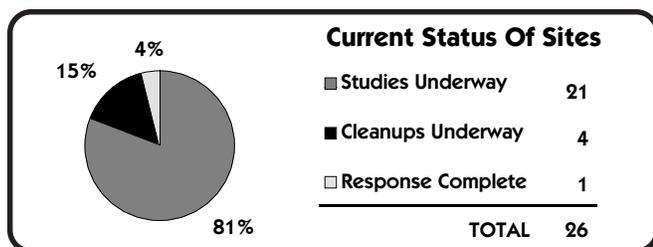
Long Beach Naval Complex (LBNC) includes Naval Shipyard (NSY) Long Beach and its four associated housing areas (Los Alamitos, Palos Verdes, San Pedro, and Whites Point), Naval Station (NS) Long Beach and its two associated housing areas (Savannah/Cabrillo and Taper Avenue), and Hospital (NAVHOSP) Long Beach.

NS and NSY are located on the south side of Terminal Island within the boundaries of the cities of Los Angeles and Long Beach. The NAVHOSP is located in the northeast corner of the City of Long Beach. Palos Verdes, San Pedro, and Taper Avenue housing areas are located in southwestern Los Angeles County within the community of San Pedro in the City of Los Angeles. Whites Point housing is located south of San Pedro and Taper Avenue housing within the community of San Pedro in the City of Los Angeles. Los Alamitos housing is located east of Orange County in the City of Los Alamitos, and Savannah/Cabrillo housing is located in the northeast corner of the City of Long Beach. LBNC has been an industrial facility for over fifty years. Typical operations that contributed to contaminated sites at NS include: laundry and dry cleaning, steam plant operations, air compressor operations, boat working, wet paper destruction and paint bucket cleaning. Typical operations that contributed to contaminated sites at NSY include: ship repair and maintenance, vehicle maintenance and repair, utility maintenance and operation, dip tanks, boiler repair and maintenance, vapor degreasing, machine shops, pipe-fitting, electrical shops, painting, abrasive blasting, weapons system shops, and petroleum product and hazardous material storage. Previous operations that contributed to contaminated sites at San Pedro and Palos Verdes housing areas include: disposal of ships wastes, drilling mud and construction debris, fuel storage, and fire fighter training. Primary sites of concern are disposal pits into which all types of wastes were disposed of. The only operations that contributed to contaminated sites at NAVHOSP are generation of medical wastes and gasoline underground tanks.

Currently, there are eight sites at NSY, seven sites at NS, and eight sites at the housing areas in the study phase. All of these are non- NPL sites; however, the CERCLA process is being followed. At the NSY, RI/FS is underway at six sites (Sites 8-13). SI has been completed at one site (Site 6B). One site (Site 7) is managed under the NS. At the NS , two RI/FSs are underway at seven sites (Sites 1-6A and Site 7). Corrective measures are underway at the NS NEX Gas Station. At the housing areas, EE/CA is underway for four sites (Site 2, 5, 11, and 12). One site (Site 7) is a newly identified AOC and a PA is underway. At the NAVHOSP, petroleum hydrocarbon contamination was found in groundwater at one UST site. The BRAC Cleanup Team agreed that natural attenuation was the best remedial action. Site closure was successfully obtained after three rounds of groundwater monitoring.

The NAVHOSP, and NS and its associated housing were identified for closure in BRAC II. The NSY and its Associated Housing were identified for closure in BRAC IV. The NS and its housing areas were closed 30 September 1994. NAVHOSP activities ceased 31 December 1993 and was officially closed 31 March 1994. Both NS and NAVHOSP are now in caretaker status. The NSY and its housing areas are scheduled to be closed in September 1997.

Site 7 (NS and NSY), Harbor Sediments, presents the biggest challenge for cleanup at LBNC. The initial estimate of \$1.2 billion to complete closure of the site has since been reduced to \$200 million. Another critical issue is the designation of groundwater underlying LBNC as Beneficial Use for drinking water. This designation requires that groundwater be cleaned up to Maximum Contaminant Levels (MCLs). The Regional Water Quality Control Board agreed with the Navy that the most appropriate beneficial use of groundwater would be for aquatic purposes and that Ocean Plan standards were more appropriate than MCL's.



LONG BEACH NAVAL COMPLEX RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Land use in the vicinity of LBNC is port-related, commercial, or industrial. Most of NS and NSY are built on manmade land constructed of hydraulic fill which is isolated hydrogeologically and varies in thickness, but is typically less than 200 feet. The Mole, upon which Sites 1-4 are located, is a large U-shaped breakwater constructed in 1944 which forms the West Basin of the Long Beach Harbor. Potential for contaminant migration off-base is low. Groundwater movement is influenced by tides, has low velocity, and is also brackish and unusable. Surface drainage is discharged through storm drains to the West Basin of the Long Beach Harbor. Land use in the vicinity of Los Alamitos is a mixture of residential, commercial, and agricultural. Land use in the vicinity of Whites Point housing is primarily residential and commercial.

The San Pedro, Palos Verdes, and Taper Avenue housing areas are bounded residential, commercial, and industrial areas. These three housing areas are adjacent to the Defense Fuel Support Point (DFSP), an operating facility whose primary mission is to receive, store, and distribute fuels for ships, aircraft, and other vehicles in support of military bases. The DFSP facility is surrounded by the housing areas. Regional surface drainage flows via ravines and large culverts into Los Angeles Harbor. Prior to 1971, surface drainage was to Harbor Lake. After 1971, Harbor Lake Dam was constructed. A small percentage of the potable water used within a 4-mile radius of the housing areas comes from groundwater.



NATURAL RESOURCES - The Terminal Island area is highly industrialized. There is little or no natural terrestrial habitat within the Naval Complex. The NSY is mostly paved; the NS does include some landscaped areas between the buildings. The harbor is an important nesting and feeding area for many coastal migratory birds. The black-crowned night-heron has established an extensive rookery in several trees on the NS. This bird is considered a sensitive migratory bird and is afforded protection under the Migratory Bird Treaty Act. The California brown pelican and least tern, both Federal endangered species, use the NS and surrounding waters as foraging and resting areas.

At the NAVHOSP, there are no rare, threatened, or endangered plant or animal species.

The San Pedro, Palos Verdes, and Taper Avenue housing areas consist almost entirely of graded and previously cleared land. The developed areas on and around the sites are landscaped with lawns and non-native shrubs and trees. At one site there is a small area which is inhabited by the California Gnatcatcher, a threatened species. The Defense Fuel Support Point facility is a habitat for the San Pedro Blue Butterfly which is endangered.



RISK - The DOD Relative Risk Site Evaluation Model ranked three sites at NS and two sites at NSY as high relative risk. The high ranking was due to contaminated soil and groundwater. A Baseline Risk Assessment was completed for Sites 1-6A in June 1995. A Risk Assessment was completed for Site 7 as a part of the draft RI report in February 1996. A Draft Baseline Risk Assessment was completed for Sites 8-13 in April 1996.

REGULATORY ISSUES



PARTNERING - A partnering agreement was developed at the BRAC Cleanup Plan (BCP) strategy camp on 16 November 1994.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - NS and NSY formed a joint Technical Review Committee (TRC) in July 1992. The TRC met quarterly. The TRC was converted to a RAB in April 1994. The RAB meets at least once every other month. Four workshops have been held to inform RAB members.

A RAB was formed for San Pedro/DFSP in FY95 and meets quarterly. The first RAB meeting was attended by several hundred people concerned about the reuse of Taper housing. After explaining the intent and purpose of the RAB to the community, the RAB has gained widespread community support. The RAB is composed of 13 community members.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in August 1993 for NS and NSY. Four Fact Sheets have been released. A public meeting was held in July 1993. The CRP will be updated by NSY in FY97. A CRP for the housing areas in San Pedro was published and two Information Repositories were established in May 1994. Three Fact Sheets have been released.



INFORMATION REPOSITORY - The Information Repository for NS and NSY was set up in FY93 at the Long Beach Public Library. An Administrative Record was also established in FY93 and is on file at SWDIV. Information Repositories for the housing areas in San Pedro are located at San Pedro Public Library and Miraleste Branch of the Palos Verdes Public Library.

BASE REALIGNMENT AND CLOSURE



BRAC - In March 1992, NS and NAVHOSP Long Beach were identified in the Base Realignment and Closure Act (BRAC) of 1990 (BRAC II). NSY Long Beach and Associated Housing were identified in BRAC of 1995 (BRAC IV).



BRAC CLEANUP TEAM - A BCT was formed in November 1993 for NS and NAVHOSP. The same BCT covers the NSY and Associated Housing. The BCT is composed of the BRAC Environmental Coordinator, Cal-EPA Department of Toxic Substances and Control (DTSC) representative, and an US EPA representative. The BRAC Cleanup Plan (BCP) Project Team consists of a variety of technical, operational, reuse, and administrative specialists. The BCT has been instrumental in accelerating the cleanup process through various partnering efforts such as discussion workshops and telephone conferences, and the development of a partnering agreement. The BCT has also been available during field operations to make real time decisions.



DOCUMENTS - The BCP was completed in March 1994 and updated in 1995 and 1996. A revised final Environmental Baseline Survey (EBS) was completed in April 1994 for NS and NAVHOSP. Cal-EPA DTSC did not concur with the Community Environmental Response Facilitation Act (CERFA) clean acreage identified in the final EBS for NS because they felt the groundwater was not fully characterized. The groundwater is currently being addressed in the RI/FS. A draft EBS for the NSY was issued in July 1996 and is currently under review by the regulatory agencies. A separate EBS was completed for NSY housing areas in August 1996.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------|---------|---------|----------|---------|-----------|-----------|
| 135 acres | 0 acres | 0 acres | 65 acres | 0 acres | 778 acres | 351 acres |

LONG BEACH NAVAL COMPLEX RELEVANT ISSUES



LEASE/TRANSFER - Three Findings of Suitability to Transfer (FOSTs) and two Finding of Suitability to Lease (FOSLs) have been completed. A portion of Savannah/Cabrillo housing was transferred in July 1994, the remaining housing will be transferred in FY97. The NAVHOSP Parcel B was reverted to the City of Long Beach in October 1995, and Parcel A is expected to transfer to the City in FY97. Two leases were executed with the City of Los Angeles and City of Long Beach in FY96 for the NS Site 6A parcels. Another lease will be executed with the City of Long Beach for the NS Mole in FY97. The Taper Avenue housing property is expected to be transferred in FY97. A FOSL for the entire NS will be prepared in FY97.



REUSE - The City of Long Beach Naval Properties Reuse (NPR) Committee developed a draft Reuse Plan and submitted it to the City Council for approval in July 1993. The draft final Reuse plan was submitted by City Council to the Navy in August 1993 and

included recommendations for all NS properties that are within the City of Long Beach. The Long Beach LRA submitted a final redevelopment plan to the Navy and HUD in August 1995. HUD approved the plan on 28 October 1995. The Los Angeles LRA plans to submit the redevelopment for Taper Avenue Housing and Site 6A parcel plan to the Navy and HUD in FY97. The City of Long Beach Economic Development Commission Shipyard Reuse Advisory Committee submitted recommendations for the surplus of NSY property to the City Council on July 2, 1996. The final Comprehensive Reuse Plan was submitted by the City Council to the Navy and HUD in July 1996. HUD approval is expected in FY97.



FAST TRACK INITIATIVES - The following five DOD initiatives are being implemented at the Naval Complex: (1) identification of clean parcels, (2) partnering, (3) overlapping phases of the cleanup process, (4) improved contract procedures, and (5) interfacing with the Reuse Plan.

HISTORICAL PROGRESS

FY83

Sites 1-7 (NS) and 8-12 (NSY) - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), identified 12 sites. Site 7 was originally split into NS Harbor Sediments (Site 7A) and NSY Harbor Sediments (Site 7A), but it is presently being addressed as one site under the NS IR Program.

FY89

Sites 1-7 (NS) and 8-13 (NSY) - A RCRA Facility Assessment (RFA) was completed as part of a Part B permit application. Thirteen potential solid waste management units (SWMUs) were identified. The first 12 SWMUs were the same as Sites 1-12 identified in the IAS. One additional site, Site 13 - the Tank Farm near Building 303, was identified on the NSY.

FY90

Sites 2, 5, 11, 12, 31 and 32 (San Pedro/DFSP) - A PA was completed in August 1990 for Sites 2, 5, 11, and 12 at San Pedro, and Sites 31 and 32 at DFSP. All six sites were recommended for SI.

FY92

NAVHOSP - A PA identified no potentially contaminated sites; therefore, no further action was recommended.

Site 6 (San Pedro/DFSP) - A Federal Facility Preliminary Assessment Report was completed by US EPA and identified one additional site at DFSP, Site 6. A SI was recommended for Site 6.

FY93

Sites 1-7 (NS) and 8-13 (NSY) - A Site Inspection (SI) identified potential contaminants in the soil. The report recommended further investigation at Sites 1-13.

FY94

Site 6B (NSY) - This site was not included in the 1983 IAS due to a real estate transaction which occurred at the time the IAS was conducted. A PA for Site 6B completed in October 1993 recommended a limited soil and groundwater investigation.

Site 6A (NS) - A Removal Site Evaluation (RSE) was completed to support an interim lease to the Port of Los Angeles. The RSE concluded that no action for the surface soil was needed and the site was suitable for industrial use.

Sites 8 and 13 (NSY) - The final RI/FS Work Plan was completed and approved. Implementation of field works was delayed due to lack of funding.

Site 11 (NSY) - An Interim Remedial Action (IRA) which involved a protective covering to prevent off-site migration and reduce potential long-term risks was completed. An IRA which involved relocation of sandblast grit, placement of a Gunite cap and revegetation of the hillside was completed.

UST 1 (NAVHOSP) - A removal action to remove tanks and contaminated soil was completed.

Sites 2, 5, 6, 11, 12, 31 and 32 (San Pedro/DFSP) - A SI completed in November 1993 recommended further investigation for all these sites.

FY95

Site 7 (NS) - A revised Risk Assessment Work Plan and Sampling and Analysis Plan were completed and approved. Field work began.

Sites 8 and 13 (NSY) - RI Field works began.

Site 12 (NSY) - An IRA which involved asphaltting of a dirt parking lot was completed.

Sites 2, 5, 11 and 12 (San Pedro) - A RSE completed in September 1995 recommended remedial action for these sites.

Site 7 (San Pedro) - A new Area of Concern (AOC) was identified in the September 1995 RSE. A PA will be prepared to address this AOC.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 1 - 6A (NS) - Final RI report was issued. It is anticipated that regulators approval of the final RI report in FY97.

Site 3 (NS) - Final EE/CA and Action Memorandum were issued. Removal of arsenic contaminated soils completed.

Site 6B (NSY) - A Final SI completed. The regulatory agencies concurred with the no-further-action recommendation for soils. However, since the underlying groundwater may have beneficial uses, a focused FS was recommended.

Site 7 (NS) - Draft RI report was issued. Extensive comments received. Regulators do not agree with the no action recommendation (leaving the sediments in place). Navy is working with regulators to resolve comments.

Sites 8 - 13 (NSY) - Draft RI report was issued. Regulators request the risk assessment include an unpaved scenario to account for NSY closing and building that may be torn down with open space left behind. This effort requires recalculating all the risk data.

Sites 4 (NS), 2 and 11 (San Pedro) - Complete RI/FS.

LONG BEACH NAVAL COMPLEX PROGRESS DURING FISCAL YEAR 1996

UST 1 (NAVHOSP) - An Initial Site Characterization to determine the extent of soil and groundwater contamination was completed. Three rounds of groundwater monitoring required by the Regional Water Quality Control Board were completed. Site closure was received.

Sites 2, 5, 11 and 12 (San Pedro) - A draft EE/CA was issued. Comments were received from the regulators requesting groundwater information.

Sites 6, 31 and 32 (DFSP) - A draft RSE Work Plan was completed. Comments received from regulators.

A draft EBS for the NSY issued in July and is currently under review by the regulatory agencies. A separate EBS was completed for NSY housing areas.

The NAVHOSP Parcel B was reverted to the City of Long Beach.

Two leases have been executed with the City of Los Angeles and City of Long Beach.

Completed investigation of UST 1 at Naval Hospital,

Transferred Parcel B to the city

Completed FOSL for NS

Completed FOST for Parcel A at Naval Hospital

FSs for six sites at NS was initially agreed to by regulators; decision later reversed and proceeded to Removal Action.

Completion of a RI/FS for harbor sediments, cleanup of NEX Gas Station at NS, and design and initiation of a corrective action was delayed due to longer time required for document review by regulators.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Sites 1 - 6A (NS) - Implement a 1 -year groundwater monitoring program.

Sites 1 - 6A (NS) - Complete ROD by.

Site 6A (NS) - Initiate off-site groundwater investigation.

UST 1 (NS) - Complete design.

Sites 1-3, 5, 6, (NS), 9, 12, 13 (NSY), 5 and 7 (San Pedro) - Complete RI/FSs.

Site 4 (NS) - Complete RD.

Sites 2, 5, 11 and 12 (San Pedro) - Finalize EE/CA. Complete remedial action.

Sites 6, 31 and 32 (DFSP) - Finalize EE/CA Work Plan. Implement field works.

Site 7 (San Pedro) - Complete a PA/SI for this new AOC.

FY98

Sites 1- 6A (NS) - Continue groundwater monitoring efforts until November 1998. Issue final report.

Site 6A (NS) - Complete RD and ROD.

Site 3 (NS) - Complete an IRA and the RA.

Site 1 (NS) - Complete long term operations.

Site 3 and UST 1 (NS) - Response complete.

Sites 6-8 and 10 (NSY) - Response complete.

Site 7 (NS) and Sites 6-8, 10 and 11 (NSY) - Finalize RI. Complete FS. Complete ROD.

Sites 8 -13 (NSY) - Continue groundwater monitoring program and complete. Issue final report. Complete RODs.

UST 1 (NS) - Complete soil vapor extraction remediation and product extraction.

Sites 2, 5, 11 and 12 (San Pedro) - Complete ROD.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 14 | 1 | 1 | | | | | 3 |
| RI / FS | | 3 | 10 | 7 | 1 | | | 3 |
| RD | | | 1 | 1 | 5 | | | 4 |
| RAC | | | | 1 | 2 | 1 | 2 | 4 |
| RAO | | | | 1 | 1 | | 1 | 4 |
| IRA | 1(2) | | 4(4) | 1(1) | | | 1(1) | 3(3) |
| RC | | | 4 | 5 | 2 | 1 | 3 | 9 |
| Cumulative % RC | 0% | 0% | 17% | 38% | 46% | 50% | 63% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | 1 | | | | | | |
| CAP | | | | | | | | |
| DES | | | 1 | | | | | |
| IMP | | | | 1 | | | | |
| IMO | | | | 1 | | | | |
| IRA | | | | | | | | |
| RC | | 1 | | 1 | | | | |
| Cumulative % RC | 0% | 50% | 50% | 100% | 100% | 100% | 100% | 100% |

MARE ISLAND NAVAL SHIPYARD

VALLEJO, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 5,646 Acres
Funding to Date: \$34,522,000
Estimated Funding to Complete: \$122,071,000

Base Mission: Maintains and repairs ships; provides logistical support for assigned ships and service craft

Contaminants: Heavy metals, volatile organic compounds, PCBs, pesticides, lead oxide, POLs

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|---|
| CERCLA: | 28 | High: | 19 | Not Evaluated: | 3 |
| RCRA Corrective Action: | 0 | Medium: | 5 | Not Required: | 0 |
| RCRA UST: | 8 | Low: | 9 | | |
| Total Sites: | 36 | | | | |

BRAC III

Sites Response Complete: 0

EXECUTIVE SUMMARY

The Mare Island Naval Shipyard (NSY) is located about 25 miles northeast of San Francisco and lies on a peninsula in San Francisco Bay. This Navy yard was established in 1854. The shipyard launched 513 vessels, ranging from landing crafts to battleships and more recently, nuclear submarines. Its activities have included repair and maintenance of sea vessels, logistics support, refueling operations, dry-docking and ordnance operations. These past activities resulted in spills and disposal of contaminants such as heavy metals, volatile organic compounds, the chemical additive PCB, pesticides, petroleum hydrocarbons and lead oxide into the environment. A Federal Facility Site Remediation Agreement (FFSRA) was signed in FY92. The Navy changed its operational processes to prevent further contamination. The shipyard operationally closed 1 April 1996 and is currently under the caretakership of Engineering Field Activity West.

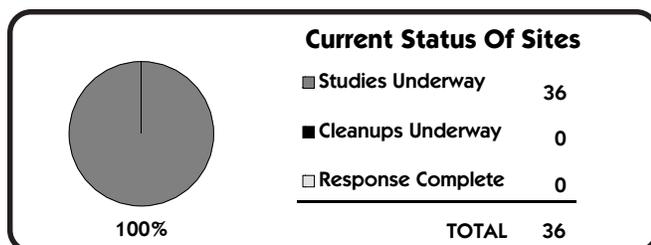
The base is surrounded on the west and south sides by the waters of San Francisco Bay, on the east side by Mare Island Strait and on the north side by marshlands. Adjacent to the northwest boundary are the marshlands of the San Pablo Bay Wildlife Refuge. The City of Vallejo is located across the Mare Island Strait. Groundwater is designated for beneficial use; however, neither the shipyard nor adjacent communities use groundwater and the impermeable Bay Mud protects most of the deeper aquifer, which is the only useable aquifer. Contaminants can enter the Bay waters or marshlands via surface runoff or the groundwater system. Contaminants pose a threat to humans via contact.

There are 35 existing Installation Restoration (IR) or Group 1 sites. In addition, there are 32 Group 2 and four Group 3 identified Areas of Concern (AOC) to investigate. Group 2 AOC are sites that warrant further investigation as recommended by the respective Preliminary Assessment (PA) and/or Site Investigation (SI) reports. Group 3 AOC were identified through the Environmental Baseline Survey (EBS), meetings with the BRAC Cleanup Team (BCT), and input from the Restoration Advisory

Board (RAB) members. Management of IR Sites 1 through 24 has been divided into three Operable Units (OUs) based on the type and/or location of the contaminant, and known information. OU 1 is IR Site 22, OU 2 consists of IR Sites 8, 10, 11, 13, 16, 18, and 23; OU 3 consists of IR Sites 1-7, 9, 12, 14, 15, 17, 19, 20, 21 and 24.

The Phase II Remedial Investigation (RI) Report for OU 1 was issued on 10 January 1996; the draft OU 2 RI report was issued 3 June 1996, with the final report scheduled to be issued 24 January 1997; the draft OU 3 RI report is scheduled to be issued 24 December 1996 and the final report to be issued 25 May 1997. The draft OU 3 Human Health Risk Assessment is scheduled to be issued 24 March 1997. IR Site 18 and IR Site 23 were transferred to the UST Removal Program. The Ecological Risk Assessment (ERA) for the 28 IR sites and offshore Unexploded Ordnance (UXO) removal actions requires additional site investigation which are scheduled to commence in September 1997 and continued through May 1998. The Field Sampling and Analysis Plan (FSAP) for the Group 2 and 3 combined SI and RI was awarded 29 March 1996 with a scheduled completion date of 14 May 1997, and field and lab activities completing by November 1997. Also in 1997, the CLEAN contractor will begin feasibility studies for Installation Restoration and preliminary design for the facility landfill.

Removal Actions are scheduled for IR Sites 8, 10, 11, 16 and 18 in FY97. Intrusive investigations are planned for the following UXO areas: Uplands Magazine, South Shore Area, and the Western Magazine Area. These actions are being prepared and will be executed by SSPORTS Detachment Vallejo (former Shipyard workers). SSPORTS will also provide community relations and RAB support.



MARE ISLAND NSY RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Mare Island NSY is enclosed by San Francisco Bay waters on the south (Carquinez Strait), east (Mare Island Strait) and west (San Pablo Bay) sides. Technically, it is not an island, but a peninsula attached to the mainland by diked wetlands and marshlands on the north end. The base is hydraulically isolated from the mainland. There are no flowing streams on base since watershed areas are small and rainfall is insufficient. The west side is mostly wetlands. Approximately 3,800 acres are wetlands, including dredge spoils, ponds and tidal marshlands. The average annual rainfall is 17.41 inches. Groundwater is not used as drinking water; water is purchased from the local municipality. Contaminant migration on the land surface ultimately moves to Mare Island Strait or San Pablo Bay via surface channels, storm drains, or non-channelized flow through the marshlands. Contaminant migration via groundwater flow discharges into Mare Island Strait or San Pablo Bay. The "Bay Mud," which is not readily permeable, overlies most of the only useable aquifer, thus minimizing the possibility of contaminating the aquifer. The Regional Water Quality Control Board (RWQCB) has concurred that all shallow aquifers are unsuitable for use as potable water.



NATURAL RESOURCES - The San Pablo Bay National Wildlife Refuge (11,790 acres of open water and tidal wetlands) lies immediately adjacent to the base at its northern boundary. Ducks, terns, loons, grebes and cormorants depend on this refuge. It is home to the endangered California clapper rail, salt marsh harvest mouse and depleted subspecies of Samuel's song sparrow. There are no known endangered, rare, or threatened plant species on the base. A juvenile dungeness crab nursery is located in San Pablo Bay. The waters south of Mare Island NSY are an important recreational fishing area and migration route for steelhead trout, striped bass, sturgeon, American Shad and Chinook and Coho salmon.



RISK - Twenty-six of the sites are ranked high relative risk in the DOD Relative Risk Ranking System. Over half of these sites are contaminated with metals and petroleum products. Slightly less than half are contaminated with the chemical additive PCB. Since the majority of these sites are slated for reuse, the potential exists for human contact. In general, there are no drinking water sources downgradient from these sites; however, the groundwater has been identified as "potentially useable for potential beneficial use." Because of the proximity of San Francisco Bay, contamination of the Bay is possible. The environmental baseline survey was completed in February 1995. Five hundred acres were designated to be uncontaminated according to the guidelines in the Community Environmental Response Facilitation Act (CERFA).

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - The shipyard is not listed on the NPL. The shipyard was evaluated and received a score high enough to be included on the NPL; however, the State of California determined the shipyard should remain under the regulatory oversight of the State of California.



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement (FFSRA) was signed in September 1992. A revised schedule for submitting required documents was approved in June 1995. The BRAC Cleanup Team (BCT) and project team members have met in the latter part of FY96 to review the cleanup schedules. As a result, a revised FFSRA is planned to be executed by the end of 1996.



PARTNERING - The BCT negotiated a Memorandum of Understanding (MOU) with the City of Vallejo, the Fish and Wildlife Service and the Navy. The MOU outlined the requirements for the cleanup program and drafted a Habitat Conservation Plan.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in FY90 and was converted to a RAB in FY94. The 25-member RAB includes representatives from the Navy, regulatory agencies and the community. The RAB meetings are held on the fourth Thursday of each month from 1900 to 2100. The meeting venue is the John F. Kennedy Library in Vallejo.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in FY92 and updated in FY94. Fact sheets are prepared and display poster boards are provided to keep the local residents informed of cleanup progress.



INFORMATION REPOSITORY - The administrative record and information repository were established in FY90. The repository is located at the JFK Library in downtown Vallejo. Public access to the information is during normal library business hours. A copy of the Administrative Record documents are contained in the Information Repository.

BASE REALIGNMENT AND CLOSURE



BRAC - The Base Realignment and Closure (BRAC) Commission recommended closure of the shipyard, relocating the Combat Systems Technical Command to Dam Neck, Virginia. The shipyard closed 1 April 1996 and is currently under EFA West caretakership.



BRAC CLEANUP TEAM - The BCT, formed in October 1993, has accelerated the cleanup process by designating investigation areas based on geologic and hydrogeologic conditions, physiographic features and environmental characteristics. This effort has reduced the number of RDs and RAs. The BCT also initiated removal actions to address lead contamination.



DOCUMENTS - The BRAC Cleanup Plan (BCP) was completed in FY94, with the second edition completed 21 August 1995. The most recent (third) edition was completed 16 July 1996.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------|---------|---------|---------|---------|-------------|-------------|
| 143 acres | 0 acres | 0 acres | 0 acres | 0 acres | 1,507 acres | 3,996 acres |



REUSE - The land reuse plan was prepared in FY94. Its implementation is occurring as lease and transfer documents are completed. Reuse includes open recreational area, office/light industry, residential, heavy industry, historic districts and neighborhood centers.



FAST TRACK INITIATIVES - The activity is utilizing a strategic accelerated cleanup model to expedite the cleanup process. Shipyard personnel are performing some of the removal actions. The BCT has accelerated the cleanup process based on physical and environmental characteristics. This reduced the amount of RDs and RAs.

MARE ISLAND NSY HISTORICAL PROGRESS

FY83

Sites 1-15 - Completed a Preliminary Assessment (PA).

FY88

Site 5 - Completed a Site Inspection (SI) phase. A Remedial Investigation/Feasibility Study (RI/FS) underway.

Site 22 - An RI/FS underway.

Sites 1, 2, 6-8, 10, 13, 16, 18, 20 and 24 - RI/FS underway.

Sites 4 and 11 - RI/FS underway.

Site 23 - RI/FS underway.

Sites 3, 9, 12, 14, 15, 19 and 21 - RI/FS underway.

FY90

UST-18 - Completed a PA.

FY91

Sites 1-3, 7, 9, 10-15 and 20 - Completed an SI.

Sites 17-19 and 21-23 - Completed a PA and an SI.

FY93

Site 8 - Completed an IRA (waste removal - soil with heavy metals).

USTs 1-6 - Completed an IRA (waste removal - drums, tanks, bulk containers with petroleum products).

FY94

Site 7 - Two removal actions were begun. One to remove soil containing acids, sludge and heavy metals which was to be completed in FY96. The

second was to remove drums, tanks and bulk containers containing acids, petroleum product sludge and heavy metals with completion expected in FY96.

Site 20 - Two removal actions were started. One was to remove soils contaminated with acid, petroleum products, the chemical additive PCB and heavy metals with completion expected in FY96. The second action removed drums, tanks and bulk containers containing acid, petroleum products, the chemical additive PCB and heavy metals with completion expected in FY95.

Site 22 - A removal action was completed.

Site 24 - A removal action was completed to remove soils contaminated with heavy metals.

USTs 1-7 - Completed a PA.

FY95

Site 3 - A removal action is underway to treat groundwater to remove petroleum floating free product. It is expected to be completed in FY00.

Site 7 - A removal action is underway to remove acids, petroleum products and heavy metals from the groundwater. It should be completed in FY99.

Site 13 - A removal action is underway to remove soils contaminated with the chemical additive PCB and will be done sometime in FY97.

Site 15 - A removal action is underway to remove soils with petroleum products, solvents and heavy metals with completion expected in FY96.

Site 20 - A removal action is underway to remove acids, petroleum products and heavy metals from the groundwater. This will be completed in FY99.

USTs 1-7 and 18 - A Corrective Action Plan is underway. Expected completion FY98.

PROGRESS DURING FISCAL YEAR 1996

FY96

Site 1 - Progressed with a presumptive remedy (landfill cap) for the old facility landfill.

Site 3 - Continued a time-critical removal action to remove petroleum floating free-product.

Site 5 - An ordnance removal action for this site was initiated.

Sites 7, 15, 19 and 20 - Completed IRA.

Site 10 - Started removal action to remove soils contaminated with the chemical additive PCB.

Site 22 - Progressing with a No Further Action ROD at this site.

Site 26 - Completed PA/SI.

Ordnance sites - An ordnance magnetometer search was completed for potential ordnance.

DRMO Scrapyard - Completed the radiological removal actions.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Site 3 - Begin non-time critical removal action to remove contaminated soil and install a groundwater collection trench system.

Site 4 - Begin non-time critical removal action to remove abrasive sandblast grit. Begin feasibility study for this site.

Sites 8, 9, 11 and 16 - Begin removal actions to remove soils contaminated with PCBs and/or lead.

Sites 22, 23 and 24 - Scheduled to completed RI/FS phase.

Sites 22 and 26 - Response Complete (RC) expected.

Conduct Basewide groundwater monitoring.

Intrusive investigations for UXO: Uplands Magazine (Area E), South Shore Area (Area G), Western Aboveground Magazine (Area I).

Conduct EE/CA for Mare Island and Carquinez Straits Offshore areas,

redge ponds, Fleet Reserve Pier, Ordnance Production Areas and Site 4.

Conduct field Sampling and Site Investigations field work for the Eco Risk Assessment at multiple sites on and offshore.

Area A - Begin the accelerated investigation for this area.

Begin Feasibility Study and Technology Memo for the facility landfill.

USTs 2, 3, 4, 6, 7 and 18 - Scheduled to complete Corrective Action Plan (CAP).

FY98

Sites 8, 10 and 13 - Scheduled to complete IRAs.

Continue field Sampling and Site Investigations field work for the Eco Risk Assessment at multiple sites on and offshore.

USTs 1 and 5 - Scheduled to complete CAP.

USTs 3-7 and 18 - Scheduled to complete Design (DES) phase.

MARE ISLAND NSY
PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 22 | 1 | | | | | | |
| RI / FS | | | 3 | | 11 | 9 | 4 | 1 |
| RD | | | | | | | 7 | 11 |
| RAC | | | | | | | | 18 |
| RAO | | | | | | | | 6 |
| IRA | 5(5) | 4(4) | | 3(3) | 7(9) | 5(5) | | 2(3) |
| RC | | | 2 | | 5 | 2 | | 19 |
| Cumulative % RC | 0% | 0% | 7% | 7% | 25% | 32% | 32% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 6 | | | | | | | |
| CAP | | | 6 | 2 | | | | |
| DES | | | | 6 | 2 | | | |
| IMP | | | | | 7 | | | 1 |
| IMO | | | | | | | | 8 |
| IRA | 6(6) | | | | | | | |
| RC | | | | | | | | 8 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

MIRAMAR NAVAL AIR STATION

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CINCPACFLT
 Size: 23,413 Acres
 Funding to Date: \$5,924,000
 Estimated Funding to Complete: \$6,033,000

Base Mission: Provides facilities, services and materials to support operations of aviation activities

Contaminants: Heavy metals, POLs, volatile organic compounds

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 14 | High: | 0 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 4 | Not Required: |
| RCRA UST: | 1 | Low: | 1 | |
| Total Sites: | 15 | | | |

Sites Response Complete: 9

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 9 | | 1 | | | | | 3 |
| RI / FS | 1 | | 1 | | | | | |
| RD | | | | | | | | 2 |
| RAC | | 4 | | | | | | 1 |
| RAO | | | | | | | | |
| IRA | | 5(5) | | 1(1) | | | | 1(1) |
| RC | 4 | 5 | 2 | | | | | 3 |
| Cumulative % RC | 29% | 64% | 79% | 79% | 79% | 79% | 79% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | 1 |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | 1(2) | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

MOFFETT FIELD NAVAL AIR STATION

MOFFETT FIELD, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 3,700 Acres
Funding to Date: \$58,269,000
Estimated Funding to Complete: \$70,950,000

Base Mission: Provided support for antisubmarine warfare training and patrol squads; served as headquarters for Commander Patrol Wings of Pacific Fleet

Contaminants: Volatile and semi-volatile organic compounds, POLs, heavy metals, PCBs, battery acid, benzene, toluene, ethylbenzene, xylene, polynuclear aromatic hydrocarbons

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|----|
| CERCLA: | 22 | High: | 21 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 12 |
| RCRA UST: | 12 | Low: | 0 | | |
| Total Sites: | 34 | | | | |

NPL

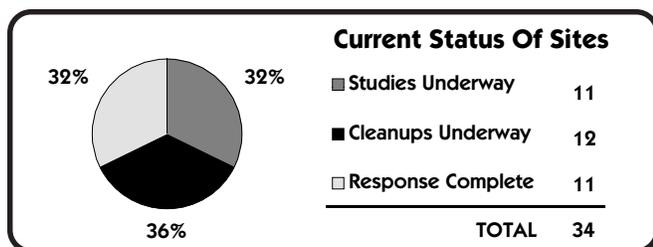
BRAC II

Sites Response Complete: 11

EXECUTIVE SUMMARY

Moffett Field Naval Air Station is located 35 miles south of San Francisco, California. Moffett Field was commissioned by the Navy in 1933 to support the West Coast dirigibles (blimps) of the lighter-than-air program. Since 1962, the Navy used the station to support anti-submarine warfare training and patrol squadrons. Moffett Field was closed as an active military base in July 1994 and was transferred to the National Aeronautics and Space Administration (NASA). Three squadrons were decommissioned and the remaining squadrons were transferred. Although NASA currently operates the Ames Research Center at Moffett Field, the Navy remains responsible for cleanup of Navy-related contamination. In April 1994, an Environmental Baseline Survey (EBS) was completed, that identified only 7 of the 2,200 acres as Community Environmental Response Facilitation Act (CERFA) clean. Regulatory agencies have concurred on the CERFA clean acreage. Wastes were generated at Moffett Field by aircraft maintenance activities, squadron operations, fuel management, fire fighter training, and other general facility operations. Wastes were disposed of in unlined ponds, landfills, and onto the ground. Leaks from Underground Storage Tanks (USTs) and fuel spills have contributed to environmental problems. Site types include landfills, USTs, a burn pit, ditches, holding ponds, French drains, maintenance areas, and spill sites. The most significant restoration activities involve the investigation and cleanup of four inactive landfills; a groundwater contamination plume under the eastern portion of the facility; UST and fuel handling facilities; and the Navy's contribution to a regional groundwater contamination plume under the western portion of the facility. The primary contaminants of concern are : chemical additive PCBs, petroleum products, the pesticide DDT, chlorinated cleaning solvents, and heavy metals. The base was listed on the National Priorities List (NPL) in 1987. A Federal Facility Agreement (FFA) was signed in September 1990.

Moffett Field is located next to the San Francisco Bay, a highly sensitive ecological area. State and local governments and the public have expressed strong interest and have provided significant comments on



cleanup activities at Moffett Field. Landfills located in sensitive ecological and recreation areas, contaminated potential drinking water sources, and the desire for a reuse plan that includes residential, recreational, and industrial areas have resulted in newspaper articles, news stories, public meetings and intensive regulatory agency involvement.

A Technical Review Committee (TRC) was converted to a Restoration Advisory Board (RAB) in October 1994. The RAB meets monthly. Fact sheets are distributed regularly and public meetings with community members are also held. A Community Relations Plan was completed in October 1988 and an Information Repository has been established at the local community library.

At the end of FY96, 11 of the 34 IR sites at Moffett Field were in the Study Phase, 12 were in the Cleanup Phase, and 11 were Response Complete (RC). The Remedial Investigation/Feasibility Study (RI/FS) phase will be completed for all CERCLA sites in FY98.

In FY97, Final Remedial Actions (FRAs) will be initiated for the Site 2 landfill, Site 28 (Westside Aquifers), and Site 26 (Eastside Aquifers). Site 1 landfill is awaiting FRA funding. The landfill caps will prevent leachate generation, and the pump and treat systems at Sites 26 and 28 will prevent migration of the plumes into the San Francisco Bay.

Moffett is currently re-evaluating petroleum sites under the new State "low risk (RBCA) evaluation" criteria to possibly close out Sites 5, 8, 9, 12, 14, 15, 16, 17, 19 and 20 without any further action. In addition, the "IRON CURTAIN" innovative technology is being tested. This technology has very low Operation and Maintenance (O&M) costs and detoxifies the ground water of chlorinated solvents. The BRAC Cleanup Team (BCT) has expedited many cleanup actions at Moffett Field. Tank and sump removals, groundwater treatment, and soil treatment are the primary areas of restoration at Moffett Field. To date, 106 tanks and sumps have been removed by the Navy. All remaining tanks were transferred with the base to NASA.

Remediation of the RCRA USTs is ongoing. The Site Assessments (SA) are complete and there are several projects scheduled for FY97-98, but the majority of the remediation will occur in FY02 or later. All the USTs are currently expected to achieve Response Complete (RC) in FY02 or later.

MOFFETT FIELD NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Moffett Field is located adjacent to the San Francisco Bay. The majority of groundwater under Moffett Field is considered a potential drinking water source. However, concentrations of naturally occurring metals in groundwater exceed acceptable state and federal risk levels. A plume of volatile organic compound (VOC) contamination in the groundwater from a site located near Moffett Field, known as the Middlefield-Ellis-Whisman (MEW) site, has migrated under the western portion of the facility. Contamination from Moffett Field has commingled with the regional MEW plume. There is also a VOC groundwater contamination plume under the eastern portion of the facility. Additionally, several small petroleum-contaminated groundwater plumes exist on both the eastern and western portions of the facility. Complex geology, including sand channels and silt and clay deposits, complicate cleanup activities.



NATURAL RESOURCES - Threatened or endangered species known or potentially occurring at Moffett Field include the California Brown Pelican, American Peregrine Falcon, Black-Shouldered Kite, California Clapper Rail, Western Snowy Plover, California Least Tern, Salt Harvest Mouse, and Marsh Gum Plant.



RISK - A phased Site-Wide Ecological Assessment (SWEA) is being conducted in accordance with EPA and state guidelines at Moffett Field. Phase I identified chemicals of potential concern, receptors, and habitats. It was determined that the current ecological receptors in Operable Unit (OU) 5 groundwater areas do not appear to be at risk from OU 5 contaminants. Phase II (being finalized) characterizes ecological effects and risks to receptors.

Under the Department of Defense (DOD) Relative Risk Ranking System, 21 sites at Moffett Field received a high relative risk ranking primarily due to VOCs in groundwater, soil, and sediments. Potential human receptors include current and future occupational and recreational users, and future residential occupants. The most significant risk reduction activities involve the investigation and cleanup of four inactive landfills; a groundwater contamination plume under the eastern portion of the facility; Underground Storage Tank (UST) and fuel handling facilities; and the Navy's contribution to a regional, multiple responsible party, groundwater contamination plume under the western portion of the facility. Risk reduction actions include construction of drainage controls and a groundwater collection trench, a monitoring well system, construction of multi-layered caps and gas vents, removal of USTs, a bioventing treatment system, a pilot scale Soil Vapor Extraction (SVE) system, construction of a Recirculating In-Situ Treatment (RIST) system, soil excavation and treatment, groundwater treatment, and Operation and Maintenance (O&M) of installed remedies.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - Moffett Field was listed on the National Priorities List (NPL) in July 1987 with a Hazard Ranking Score (HRS) of 32.90.



LEGAL AGREEMENTS - The Navy and regulatory agencies signed a Federal Facility Agreement (FFA) in September 1990. The FFA documents the Navy agreement to undertake, seek funding, implement, and report on investigations and cleanup actions for the following current OUs and sites at Moffett Field:
 OU 1 - Sites 1 and 2 (landfills)
 OU 2 - (East) Sites 3, 4, 6, 7, 11, 13 and the eastern portion of Site 10 (soils)
 OU 2 - (West) Sites 8, 16, 17, 18 and the western portion of Site 10 (soils)
 OU 5 - East Side Aquifers, Site 26
 OU 5 - West Side Aquifers, Site 28
 OU 6 - Wetlands, Sites 25 and 27
 Petroleum Sites - Sites 5, 9, 12, 14, 15 and 19
 Station-Wide Sites 20-24

The Navy was identified as a principle responsible party to the MEW regional groundwater plume, but was not a signatory to the MEW Record of Decision

(ROD), signed in May 1989. The Navy has agreed to follow provisions of the MEW ROD for the regional groundwater plume and at sites that overlie the plume (both on the western portion of the facility). No Further Action (NFA) was agreed to by the regulatory agencies for OU 2 - East, Sites 16 and 17 (OU 2-West), and all of Site 10. These sites fall under the MEW ROD.



PARTNERING: In addition to monthly RPM meetings, the BCT meets quarterly for "off-site" "long-term planning meetings" to frankly discuss overall program issues and air concerns. These meetings have built such a high trust between the BCT members that the cleanup decisions are made much faster and cheaper.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC), formed in FY89, was converted to a Restoration Advisory Board (RAB) in FY94. Many of the former TRC members are now in the RAB. The RAB has 45 members who meet monthly to discuss cleanup program documents and issues. The RAB has many subcommittees.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was prepared in FY89 to provide guidance for community relations activities during the Remedial Investigation/Feasibility Study (RI/FS) process at Moffett Field. Public meetings have been held. Fact sheets and proposed plans have also been distributed to the public.



INFORMATION REPOSITORY - An Information Repository has been established at the Mountain View City Library. A copy of the Administrative Record documents are contained in the Information Repository.

BASE REALIGNMENT AND CLOSURE



BRAC - The Base Realignment and Closure (BRAC) commission recommended NAS Moffett Field for closure in 1991. Ownership of Moffett Field was officially transferred in July 1994 to the National Aeronautics and Space Administration (NASA). Naval Air (NAVAIR) Manor, a former off base officer's housing complex, will be transferred in FY97. The cleanup of contamination, as a result of Navy's past practices, remains the Navy's responsibility.



BRAC CLEANUP TEAM - The Moffett Field BRAC Cleanup Team (BCT) has been established. The BCT includes representatives of the EPA and California EPA.



DOCUMENTS - The first edition of the BRAC Cleanup Plan (BCP) was issued on 29 April 1994. The second edition of the BCP was issued on 28 February 1995. In FY96, an environmental business plan, which is an abbreviated version of the BCP was issued. Revisions are expected annually.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------|----------|-----------|----------|----------|-----------|----------|
| 2,230 acres | 69 acres | 166 acres | 49 acres | 93 acres | 409 acres | 81 acres |



LEASE/TRANSFER - A Finding of Suitability for Transfer (FOST) was completed for NAVAIR Manor in FY96.



REUSE - Moffett Field was transferred to NASA in July 1994. NAVAIR Manor will be transferred in FY97.

Other fast-track initiatives include negotiating alternate petroleum cleanup levels that meet site beneficial uses and risk scenarios and coordinating cleanup designs during investigations. In addition, the BCT is working on incorporating the updated petroleum regulations toward a fast-track ROD for petroleum sites.

MOFFETT FIELD NAS HISTORICAL PROGRESS

FY84

Sites 1-13 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed for both the NAS Moffett Field and Naval Auxiliary Landing Field (NALF) Crows Landing. A total of 13 potentially contaminated sites were identified: Sites 1-9 at NAS Moffett Field and Sites 10-13 at NALF Crows Landing. Sites 1-9 were recommended for further investigation. NALF Crows Landing is not a contiguous part of NAS Moffett Field and is not addressed in this narrative.

FY86

Sites 1-10 - A Confirmation Study (CS) (equivalent to a Site Inspection (SI)) was completed for Sites 1-9 and for a new Site 10 (Chase Park Area).

FY90

Site 9 - An Interim Remedial Action (IRA) that involved the removal of tanks was completed.

Sites 5, 12 and 15 - These sites were identified in the IAS under CERCLA regulations. Since contamination consisted solely of petroleum products, these sites were switched to the Underground Storage Tank (UST) program. Site 5 had a PA and an SI completed.

Sites 11-19 - The Department of the Navy (DON) identified Sites 11-19 at NAS Moffett Field. These new sites are unrelated to the NALF Crows Landing Sites 11-13 identified in the IAS. No PA or SI was conducted for these new sites; however, based on sampling data from other sources, all sites were moved into the ongoing Remedial Investigation/Feasibility Study (RI/FS).

Site 20 (Wetland Areas) OU 6 - This new site was identified and placed into the ongoing RI/FS. This site has outfall areas of groundwater and surface water that lead to marshlands, wetlands, storm water retention ponds, and a slough. The contaminants of concern (solvents, fuels, and the chemical additive PCB) probably came from many sites on the installation. **UST 2** - Initial Site Characterization (ISC) was completed and all 14 tanks were removed.

UST 3 - This UST site consists of six tanks at various locations. An ISC was completed.

UST 6 - This UST site consists of two tanks at the Shenadoah Housing Unit. An ISC was completed.

FY91

Sites 16-18 - Three IRAs involving groundwater remediation was completed.

UST 5 - Four leaking tanks at the NEX Gas Station were removed. Soil

and groundwater sampling and contaminated soil and groundwater remediation is planned.

FY92

Site 19 - This site was originally identified during the RI/FS phase under CERCLA and was transferred to the UST program.

Sites 21-23 - These three sites were identified during Stage I of a Remedial Investigation (RI). An SI was completed. Potential contaminants include spilled solvents at Site 21, surface disposal of solvents at Site 22, and the chemical additive PCB and paint in the landfill at Site 23.

All Sites - A PA investigation was underway at all buildings at the installation that were likely to have generated or handled hazardous waste.

FY93

OUs 1 and 5 - The RI was completed.

OU 2 (Sites 8 and 14-18) - The RI was completed, following informal dispute resolution. The Remedial Design (RD) phase was started.

FY94

Site 12 - A removal action was completed that involved the excavation and treatment of petroleum-contaminated soil using catalytic oxidation.

Site 18 - An IRA to remove contaminated soil was completed. Recommendations for subsequent Remedial Actions (RAs) will be incorporated into the regular phases of the Installation Restoration Program (IRP).

Site 20 (Wetland Areas) OU 6 - The RI phase was completed.

FY95

Completed Phase I Ecological Assessment.

Sites 1 and 2 - Completed the Feasibility Study (FS) phase.

Sites 3, 4, 6, 7, 11, 13 and portion of 10 - Completed no action Record of Decision (ROD).

Site 5 - Designed and constructed bioventing pilot test. Remove inactive USTs.

Site 9 - Designed and constructed Soil Vapor Extraction (SVE) pilot test.

Site 14 - Designed and constructed Recirculating In-Situ Treatment (RIST) pilot test at two USTs.

Site 18 - Soil excavation and treatment RA was completed.

Sites 21-23 - An RI was completed.

Site 24 - An SI was completed.

OU 6 (Wetlands) - An RI was completed.

OU 5 (East Side Aquifers) - An FS was completed.

PROGRESS DURING FISCAL YEAR 1996

FY96

Continued Phase II Ecological Assessment, completion delayed to FY97 due to discussions between the Navy and regulators as to the level of Ecological Assessment necessary.

Site 2 - Completed RD for constructing multi-layered caps and gas vents.

Site 5 - Bioventing pilot test and full scale design was completed.

Negotiation for No Further Action (NFA) begun. Removal of inactive USTs was completed.

Site 9 - Negotiation for NFA began.

Site 14 - Closure report for two USTs completed and a RIST pilot test at remaining two USTs was installed. Negotiation for NFA is in progress. Completed RA.

Site 15 - Negotiation for NFA began.

Site 18 - Completed RA and reached RC.

Sites 21-23 - An FS is in progress, completion delayed to FY97 due to

request for extension from both the EPA and the RAB.

Investigation of fuel transfer pier was completed. Negotiation for NFA is in progress.

OU 6 (Wetlands) - An FS is in progress, completion delayed to FY97 due to additional ecological assessment issues which require resolution prior to finalizing remedy alternative section of FS.

OU 5 (East Side Aquifers) - A ROD was signed 6/28/1996 and the groundwater extraction and treatment is in the RD phase.

Sites 26 and 27 - Completed RI/FS

West Side Aquifers - Pilot scale permeable reaction cell was installed with successful preliminary results and the groundwater extraction and treatment system design was completed.

Site 28 - Completed RD.

USTs 2 and 3 - Completed Site Assessment (SA) and completed IRA.

Issued an Environmental Business Plan.

Completed FOST for NAVAIR manor.

**MOFFETT FIELD NAS
PLANS FOR FISCAL YEARS 1997 AND 1998**

FY97

Complete Phase II Ecological Assessment.
Sites 1 and 2 - A ROD will be completed.
Site 1 - Complete RD for landfill cap. Await FRA funding.
Site 2 - Initiate FRA construction.
Site 5 - Negotiation for NFA will continue.
Site 9 - Complete IRA. Negotiation for NFA will continue.
Site 14 - RIST system O&M will continue. Negotiation for NFA will continue.
Site 15 - Negotiation for NFA will continue.
Site 19 - Negotiation for NFA will continue.
Sites 20 and 21 - Negotiation for NFA will continue.
Sites 22, 23 and 25 - The RI/FS phase will be completed.
Site 24 - Complete soil treatment for high speed refueling hydrants or there will be NFA.
Site 25 - Achieve RC.
Site 27 - Complete RD.
OU 5 - Begin construction of groundwater extraction and treatment RD phase and begin O&M.
OU 6 - Completion of soil excavation RD phase is planned.
West Side Aquifers - Continue pilot scale permeable reaction cell testing. Construction for groundwater extraction and treatment system is expected and O&M will begin.
UST 6 - Complete Design (DES) phase.
UST 7 - Complete IRA.
 Transfer NAVAIR manor.

FY98

Station-wide - ROD planned for completion.
Sites 1 - RA to begin.
Site 5 - In situ treatment will continue or there will be NFA.
Site 9 - In situ treatment will continue or there will be NFA.
Sites 9 and 21 - Complete RD if necessary (NFA not issued).
Site 14 - RIST treatment will continue or there will be NFA.
Sites 15, 20 and 24 - Complete Corrective Action Plan (CAP).
Sites 12 and 19 - Complete DES phase.
Site 21 - Complete RI/FS if necessary (NFA not issued).
Sites 22 and 23 - Complete RD. RA phase will be begin.
Site 24 - In situ treatment will continue or there will be NFA.
Site 26 - Complete RA.
OU 5 - Groundwater extraction and treatment O&M will continue.
OU 6 - Completion of soil excavation RA phase is planned.
West Side Aquifers - Pilot scale permeable reaction cell testing and groundwater extraction and treatment system O&M are expected to continue.
UST 6 - Complete Implementation (IMP) phase.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 19 | | | | | | | |
| RI / FS | 16 | 2 | 3 | 1 | | | | |
| RD | 4 | 2 | 2 | 4 | | | | |
| RAC | 2 | 2 | | 1 | 2 | 1 | 1 | 4 |
| RAO | | | | | | | | 4 |
| IRA | 4(5) | | 1(1) | | | | | |
| RC | 10 | 1 | 1 | | 1 | | 1 | 8 |
| Cumulative % RC | 45% | 50% | 55% | 55% | 59% | 59% | 64% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 7 | 2 | | | | | | |
| CAP | 4 | | | 3 | | | | 4 |
| DES | | | 1 | 2 | 1 | | | 7 |
| IMP | | | | 1 | | 1 | | 10 |
| IMO | | | | | | | | 7 |
| IRA | 4(4) | 2(2) | 1(1) | | | | | |
| RC | | | | | | 1 | | 11 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 8% | 8% | 100% |

MONTEREY NAVAL POST GRADUATE SCHOOL MONTEREY, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: CNO
Size: 619 Acres
Funding to Date: \$1,365,000
Estimated Funding to Complete: \$559,000

Base Mission: Provides advanced technical education services

Contaminants: POLs, pesticides, solvents

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 2 | High: | 0 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 2 |
| RCRA UST: | 1 | Low: | 0 | | |
| Total Sites: | 3 | | | | |

Sites Response Complete: 2

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 2 | | | | | | | |
| RI / FS | 1 | | | | | | | |
| RD | 1 | | | | | | | |
| RAC | 1 | | | | | | | |
| RAO | | | | | | | | |
| IRA | 1(1) | | | | | | | |
| RC | 2 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 1 | | | | | | | |
| CAP | | | | 1 | | | | |
| DES | | | | | 1 | | | |
| IMP | | | | | | | 1 | |
| IMO | | | | | | | | 1 |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

NORTH ISLAND NAVAL AIR STATION

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 2,520 Acres
Funding to Date: \$48,191,000
Estimated Funding to Complete: \$101,872,000

Base Mission: Maintains and operates facilities and provides services and materials to support operations of aviation activities

Contaminants: Heavy metals (arsenic, chromium, copper, lead), PCBs, volatile and semi-volatile organic compounds

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|-------------------------|-----------|---------------------------------|----|----------------|---|
| CERCLA: | 1 | High: | 12 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 17 | Medium: | 3 | Not Required: | 2 |
| RCRA UST: | 3 | Low: | 3 | | |
| Total Sites: | 21 | | | | |

Sites Response Complete: 2

EXECUTIVE SUMMARY

Naval Air Station (NAS) North Island is located at the northern end of the peninsula that forms the San Diego Bay and borders the city of Coronado. NAS North Island was established in 1917 as a flight school on the north side of the island and co-existed on North Island with the U.S. Army's Rockwell Field (located on the south side of the island). The Navy took full control of the island in 1939. In the late 1930s and in the 1940s the island was expanded through a program of dredge and fill until it took the form it has today. NAS North Island is home to two major aircraft carriers, the USS Kitty Hawk and the USS Constellation, as well as the Third Fleet flagship USS Coronado. The base is home to the Navy's only deep submergence vehicles which are used in a variety of research projects, and rescue and recovery operations. Waste generation operations at NAS North Island that contributed to contaminated sites on the facility center around maintenance and repair of aircraft. In the past, liquid wastes were disposed of in the storm drain system which emptied into San Diego Bay and contributed to heavy metal contamination of near shore bay sediments. Other primary sites of concern include a storage site where transformers containing oils with the chemical additive PCB leaked, and a marsh, surface disposal areas, pits, and landfills where liquid and solid wastes were disposed. A Federal Facilities Compliance Agreement and a Cleanup and Abatement Order were issued in FY88 for the Industrial Waste Treatment Beds (Site 11). NAS North Island was issued a RCRA Hazardous Waste Facility Permit in FY89 and is expecting the permit to be reissued in FY96. As a result of the permit, all CERCLA sites must now comply with both RCRA and CERCLA requirements.

NAS North Island is bordered on the north and west by San Diego Bay and on the south by the Pacific Ocean. The east side of the base borders the City of Coronado which is predominantly residential. Presently, most of the surface drainage is controlled through storm drainage as the majority of the island is paved. The local community is concerned with the potential for contaminated groundwater to migrate toward the community and expressed a desire to see a groundwater monitoring program

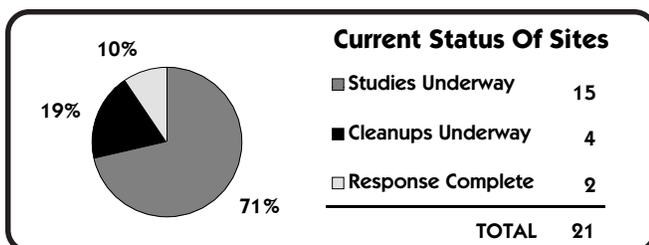
established along the common boundary. There is minimal potential for contamination in the groundwater to migrate off-base toward the city; however, contaminated groundwater is flowing into San Diego Bay.

A Restoration Advisory Board (RAB) was established in FY94. The RAB consists of approximately 15 community members and a like number of Navy personnel. The RAB meets on a monthly basis. A Community Relations Plan (CRP) was issued in November 1991 and a second CRP was completed in June 95. Two information repositories, one at the base library and the other at the Coronado Public Library were established in FY92.

Currently, the majority of the sites are in the RCRA Facility Investigation (RFI) or Corrective Measures Study (CMS) phase.

RFIs will have been completed at 15 sites and CMSs at 10 sites by the end of FY99. A final cleanup action is expected for approximately two-thirds of the sites.

NAS North Island is one of two installations in the Navy Environmental Leadership Program (NELP). The objective of NELP is to demonstrate innovative cleanup technologies and to help export successful technologies to other naval facilities. In addition, the EPA Superfund Innovative Technology Evaluation (SITE) Program is being used to do treatability studies at NAS North Island. The NELP and the SITE program have similar goals in terms of generating reliable performance and cost information on the technologies for use in evaluating cleanup alternatives for similarly contaminated sites.



NORTH ISLAND NAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - NAS North Island is bordered on the north and west by San Diego Bay and on the south by the Pacific Ocean. Due to the general lack of relief, and the relative small size of the island, there is no pronounced surface drainage pattern. Two sloughs along the south coastline are the only identifiable natural surface drainages on the island. Presently, most of the surface drainage is controlled through storm drainage as the majority of the island is paved. Due to a slight gradient and minimal groundwater movement, minor measurable migration of contaminants from waste disposal sites has been detected. Almost all of North Island is covered with soils with a relatively low permeability. In the past, fresh groundwater was reported to emanate from springs near the southern shore of North Island. Past data indicates the existence of a 60-foot thick aquifer. When the majority of North Island was paved, and the runoff directed to the sea through storm sewers, recharge to the water table was reduced. Since that time, the fresh water has been displaced by intruding sea water. Potable water supply for North Island has been piped in from San Diego since the early 1900s.



NATURAL RESOURCES - The San Diego Bay is a major spawning area for ocean fishes and an integral element in the interconnected food web of the adjacent ocean waters. The bay is also used for numerous recreational activities such as power boating, sailing, water skiing, fishing, swimming, clamming, and wading. Numerous species of marine and shore birds frequent the shoreline and some inland areas of North Island. Most of the nesting birds and a large population of black-tailed jackrabbits inhabit the unpaved and relatively undisturbed areas near runways and along the shoreline. Over 15 bird species reportedly nest at NAS North Island including significant populations of black crown night heron, burrowing owl, western gull, and the endangered California least tern. The snowy plover, listed as rare, also inhabits the station.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted on a site by site basis as part of the Remedial Investigation/Feasibility Study. Under the DOD Relative Risk Site Evaluation Model twelve sites were ranked as high relative risk. The high ranking was due to contaminated soil or sediments for seven of the sites and contaminated groundwater for four of the sites.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - NAS North Island is currently not listed or proposed for listing on the National Priorities List (NPL).



LEGAL AGREEMENTS - In December 1989, a RCRA Hazardous Waste Facility permit was issued to NAS North Island. To expedite the cleanup process, the Department of the Navy and EPA negotiated language into the installation's RCRA permit to allow the Department of the Navy latitude in choosing CERCLA or RCRA to address the contaminated sites. The permit specifies that the Department of the Navy must meet RCRA Corrective Action requirements; however, the Navy may submit information developed under the Installation Restoration Program (IRP) provided the IRP information clearly indicates how the RCRA requirements are met. As a result of the RCRA permit,

eleven of the 12 CERCLA sites have been transferred and will be tracked as RCRA Corrective Actions. However, the Defense Environmental Restoration Program (DERP) requires all DOD facilities to comply with CERCLA. In order to meet both regulatory requirements, one document is being prepared for each phase of work that meets the requirements of both programs.



PARTNERING - Two team-building sessions have been held with regulators: a two day session in 1991 and a two day session in 1993.

NAS North Island is one of two installations in the Navy Environmental Leadership Program (NELP) that was initiated in May 1993. The other NELP installation is Mayport NS. This program is designed to "showcase" an activity for total environmental management through the demonstration of new and innovative technologies and management techniques to achieve and maintain environmental compliance and facilitate restoration. A NAS North Island NELP Team was formed in June 1993 and consists of personnel from the activity, Naval Facilities Engineering Field Division Southwest, regulators, and a NELP contractor. The Team is in the process of developing a Management Action Plan (MAP) that will be used as an active tool to document the status of all environmental programs at the installation and to provide direction for future actions required to maintain regulatory compliance. The draft MAP was completed in February 1994. In addition, the Team is pursuing innovative cleanup technologies for the existing sites. The NELP contractor has provided an initial screening of new technologies specific to NAS North Island's sites. In addition, the EPA Superfund Innovative Technology Evaluation (SITE) program is being used to do treatability studies on removing the chemical additive PCB and groundwater remediation technologies. The NELP has brought two EPA SITE Technologies to North Island and is working on six others (some pilot studies and demonstrations have been conducted).

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC) was formed in November 1990. The TRC was converted to a Restoration Advisory Board (RAB) in 1994. The RAB consists of approximately 15 community members and a like number of military-related personnel. The RAB functions well and participation is active. The RAB has been active in selection of technologies. In one instance the RAB objected to the selected technology and was instrumental in selecting an alternate technology which is now being implemented. NAS North Island has also been designated by the Chief of Naval Operations to be a pilot facility for RABs and to prototype a facility specific Pollution Prevention Plan.



COMMUNITY RELATIONS PLAN - The Community Relations Plan (CRP) was completed in November 1991 and rewritten in June 1995. Several Fact Sheets have been released each year.



INFORMATION REPOSITORY - Two Information Repositories, one at the base library and the other at the Coronado Public Library, were established and two public meetings were held in February 1992. Information from the Administrative Record was placed in the information repositories for public access.

NORTH ISLAND NAS HISTORICAL PROGRESS

FY83

Sites 1-12 - Twelve potentially contaminated sites were identified during the Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in September 1983.

FY85

Sites 1, 6, 9 and 10 - A Verification Study, equivalent to a Site Inspection (SI), was completed in March 1985. The SI found elevated levels of cadmium, copper, and lead at the Shoreside Sediments (Site 1); the chemical additive PCB in soil at the Heritage Park Public Works Salvage Yard (Site 6); organic halide contamination in soil at the Chemical Works Disposal Area (Site 9); and heavy metals in soil at the Defense Property Disposal Area (Site 10).

FY88

Site 11 - A Federal Facilities Compliance Agreement (FFCA) was issued in 1988, and a Cleanup and Abatement Order was issued in June 1988, for the Industrial Waste Treatment Beds (Site 11). The Site Characterization Study (SCS) for Site 11 began in December 1988 and was completed in January 1995. A Hydrogeologic Assessment Report, required under the California Toxic Pits Cleanup Act was completed in June 1988 and reported volatile organic compounds, cyanide, and metals contamination in soil.

FY89

SWMU 1002 - A RCRA Facility Assessment (RFA), completed in April 1989 by the California Department of Health Services, identified 81 potential solid waste management units (SWMUs) and three areas of concern (AOC) at NAS North Island. Of the three AOCs, only AOC 2, the Hazardous Waste Collection, Storage and Transfer Facility, was recommended for further action due to concerns about soil contamination. This is now identified as SWMU 1002.

SWMUs 1-12 - This sites are the same as CERCLA Sites 1-12.

SWMUs 8 and 13-81 - Recommended for no further action. SWMUs 13-81 are locations of suspected periodic waste disposal as identified by California DHS in the 1989 RFA.

Site 5 - Under California requirements, a Solid Waste Assessment Test (SWAT) and a Solid Waste Air Quality Assessment Test (SWAQAT) were completed in December 1988 for the Golf Course Garbage Disposal Area (Site 5). The SWAT found volatile organic compound contamination in the groundwater.

Site 6 - An interim measure which consisted of covering the site with plastic weighted down with sand was completed at the Seaview Heritage Park Salvage Yard.

FY90

UST 4 - Site Assessment performed.

FY91

SWMUs 82 and 83 - After completion of the RFA, two additional SWMUs, SWMU 82 and 83, were identified in FY91. SWMU 82, Bldg.

472 Sump, is now identified as part of the Industrial Waste Treatment System and will be handled under RCRA closure. SWMU 83, the Old Circular Runway, required further investigation.

UST 5 - Site Assessment performed

FY92

SWMU 83 - RCRA Facility Investigation (RFI) was completed at SWMU 83. No further action was recommended. This site is expected to be closed upon approval of the new RCRA permit in FY96.

Sites 4 and 6 - Two separate removal actions involving the installation of fencing to restrict access to the sites were completed at Site 4 in August 1992 and at Site 6 in September 1992.

FY93

SWMU 1002 - RFI was completed at SWMU 1002. No further action was recommended. This site is expected to be closed after approval of the new RCRA permit in FY96.

FY94

Sites 2-4, 7 and 12 - An SI was begun in September 1991 for Sites 2, 3, and 12 and another SI was begun in December 1991 for Sites 4 and 7. Both SIs were completed in December 1993 and the five sites were recommended for further action.

UST 1 - Underground Storage Tank (UST) 1 includes nine leaking USTs which are being addressed under the RCRA Corrective Action Program. These USTs were identified as potential SWMUs 112-114 and 126-131 - and the investigation was conducted as a Phase I RFI to meet state requirements. The Phase I RFI involved sampling to characterize the nature and extent of contamination and was completed in FY94.

UST 2 - UST 2 involved 15 abandoned USTs that were leaking petroleum. The investigation of UST 2 was completed in FY94. All tanks were either removed or closed in place by April 1994. Contaminated sites identified at the time the USTs were pulled are being cleaned up in conjunction with the work for UST 1.

UST 3 - Site Assessment performed

FY95

Site 1 - A bioassay, and sampling and analysis work plan for the Shoreside Sediment outfalls was completed.

Sites 2, 3, 5, 6, 7, 9, 10 and 12 - RFIs were underway.

Sites 9 and 11 - Corrective Measures Studies (CMSs) were underway.

Site 11 - Completed SCS

Sites 4, 6 and 10 - Time-critical removal actions were underway for washing the soil containing the chemical additive PCB under a Remedial Action Contract (RAC).

Site 10 - An emergency removal action was taken for radiation contaminated slag located on the bay shoreline.

Sites 4, 6 and 10 - Completed the removal action to excavate and treat soil contaminated with the chemical additive PCB on-site.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 2, 3, 7, 8 and 12 - Completed RFAs

Site 1 - Started work on RFI for outfalls 1-8 and 16. A draft RFI report is expected in December 1996 for regulatory review and comment.

Site 2 - An IRA was conducted to remove contaminated material. A second IRA was conducted to eliminate exposure to incinerator ash by capping a portion of the Old Spanish Bight Landfill. The removals were completed in March 1996.

Sites 9 and 11 - Began field operations for non-time critical removal actions using soil vapor extraction for chlorinated hydrocarbons.

UST 6 - Identified Sept. 1996, removal in progress, estimate finish in 2006. This UST group includes about 10 miles of abandoned pipeline which was never identified by the base, and possible as many as 50 abandoned tanks. UST 06 will get new work in 1997 in a records search.

Site 10 - RFI/CMS completed.

Sites 8 and 12 - Response Complete. No further action proposed by Navy.

**NORTH ISLAND NAS
PLANS FOR FISCAL YEARS 1997 AND 1998**

FY97

Sites 1, 5 and 10 - Scheduled to complete Corrective Measures Studies (CMSs).

Site 11 - As part of the industrial waste treatment plant, Site 11 will undergo RCRA closure and post-closure monitoring will be required through FY02. Based on preliminary results from the Site Characterization Study, the site is expected to require corrective action as part of the closure.

Site 10 and UST 1 - Will complete Corrective Measures Implementation.

UST 6 - Will conduct records search.

UST 4 - Will complete Remedial Action Operations.

Site 1 - Complete time-critical removal action (IRA) for outfalls 9 through 15. Potential removal action for contaminated slag.

Sites 4 and 6 - Scheduled to complete two IRAs at Site 4 and one at Site 6.

Sites 2, 3, 4, 6, 7 and 12 - RODs expected.

Sites 3 and 10 - Response Complete.

FY98

Site 11 - Will complete RFA.

Sites 1, 5, 9, 10 and 11 - Will complete and sign RODs.

Sites 4, 6, 9, 11 and SWMU 78 - Will complete RFI/CMS.

UST 01 - Will complete LTO.

Sites 7, 9, 11 and UST 1 - Will complete IRAs; 3 at Site 7.

UST 4 - Will complete IRA. Response complete.

UST 2 - Will complete IRA and corrective action (IMP). Response will be complete

Sites 4, 6 and UST 1 - Response will be complete.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 1 | | | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | 1 | | | | | |
| IRA | | | | 1(1) | | | | |
| RC | | | | 1 | | | | |
| Cumulative % RC | 0% | 0% | 0% | 100% | 100% | 100% | 100% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 9 | 5 | | 1 | | | | |
| RFI / CMS | | 1 | 3 | 5 | 2 | | 2 | 2 |
| DES | | | | | 3 | | 1 | 2 |
| CMI | | | 2 | | | | | 3 |
| CMO | | | | 1 | | | | 2 |
| IRA | 4(7) | 1(2) | 3(4) | 4(6) | 1(1) | | | 1(1) |
| RC | | 2 | 2 | 3 | 1 | | 1 | 8 |
| Cumulative % RC | 0% | 12% | 24% | 41% | 47% | 47% | 53% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 1 | | | | | | | 1 |
| CAP | | | | | | | | |
| DES | | | | | | | 1 | 1 |
| IMP | | | | 1 | | | | 1 |
| IMO | | | | | | | | |
| IRA | 1(1) | | | 1(1) | | | | 2(2) |
| RC | | | | 1 | | | | 2 |
| Cumulative % RC | 0% | 0% | 0% | 33% | 33% | 33% | 33% | 100% |

NORTH ISLAND NAVAL DEPOT SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVAIRSYSCOM
Size: (Combined with North Island NAS, California)
Funding to Date: (Combined with North Island NAS, California)
Estimated Funding to Complete: (Combined with North Island NAS, California)

Base Mission: Provides supply and support services to fleet units and shore activities
Contaminants: POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 0 | High: | 0 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 1 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 1 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| RFA | | | 1 | | | | | |
| RFI / CMS | | | | | | | | |
| DES | | | | | | | | |
| CMI | | | 1 | | | | | |
| CMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | 1 | | | | | |
| Cumulative % RC | 0% | 0% | 100% | 100% | 100% | 100% | 100% | 100% |

NOVATO DEPARTMENT OF DEFENSE HOUSING FACILITY

NOVATO, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 829 Acres
Funding to Date: \$506,000
Estimated Funding to Complete: \$2,079,000

Base Mission: Houses military and Coast Guard personnel
Contaminants: Waste oils, waste paints, thinners, hydrocarbons

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 0 | High: | 1 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 1 | Low: | 0 | | |
| Total Sites: | 1 | | | | |

BRAC III

Sites Response Complete: 0

PROGRESS AND PLANS

| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| SA | | 1 | | | | | | |
| CAP | | | 1 | | | | | |
| DES | | | 1 | | | | | |
| IMP | | | | 1 | | | | |
| IMO | | | | | | | 1 | |
| IRA | | | 1(1) | | | | | |
| RC | | | | | | | 1 | |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 100% |

OAKLAND FLEET AND INDUSTRIAL SUPPLY CENTER

OAKLAND, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVSUPSYSCOM
Size: 698 Acres
Funding to Date: \$7,956,000
Estimated Funding to Complete: \$33,812,000

Base Mission: Receives, stores, and issues military supplies and materials to fleet units and shore activities in the Pacific Basin

Contaminants: Paint, PCBs, acid, solvents, thinners, pesticides, asbestos, POLs

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|----|
| CERCLA: | 25 | High: | 12 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 3 | Not Required: | 12 |
| RCRA UST: | 3 | Low: | 0 | | |
| Total Sites: | 28 | | | | |

BRAC IV

Sites Response Complete: 12

EXECUTIVE SUMMARY

The Oakland Fleet and Industrial Supply Center (FISC) is located on the eastern shore of the San Francisco Bay, within the Port of Oakland. The facility opened in 1941 and began support operations for World War II. Typical supply center operations that contributed to the contaminated sites on the facility include a hazardous waste storage yard, transformer storage area and other storage and maintenance areas. Primarily groundwater is affected, but there is also some soil contamination. Current operations at the facility include pollution prevention technologies to prevent further contamination. A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29, 1992. In September 1995, the Base Realignment and Closure (BRAC) Commission recommended closure of FISC. Closure plans are under development.

The area at FISC was originally created by placing dredged sand fill over the existing marshlands and bay mud. The groundwater from the facility is assumed to discharge into San Francisco Bay. The likely receptors for contaminants at Oakland FISC are the aquatic organisms in San Francisco Bay. The closing base is anticipated to remain an industrial area, not to be converted to housing, so the chance of human exposure to contaminants should remain low.

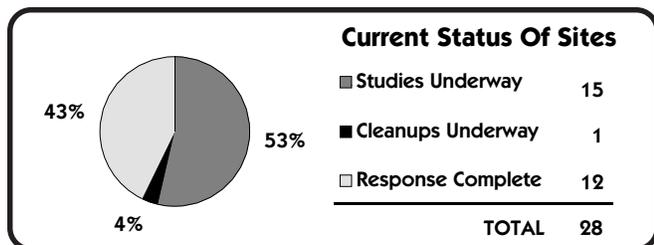
The Restoration Advisory Board (RAB) was formed April 5, 1995 and has 18 members. The two Information Repositories were established in March 1994 at FISC and the Oakland Main Public Library.

According to the 1988 Preliminary Assessment (PA), hazardous wastes have never been disposed at the facility, they have always been removed from the facility for disposal. There were no active or inactive landfills. No major hazardous waste spills had been reported and no industrial waste treatment was performed on-site. The PA, which was completed in FY 88 identified four potential sites, recommended that three sites be scheduled for a Site Inspection (SI) but all four of the original sites continued with an

SI. Between FY 89 and 91, following the original PA, 17 new sites were identified and added to the program during additional PAs. In FY 93, four more sites were identified during an SI, but they were listed as Response Complete (RC), along with eight other sites, at the conclusion of the SI. In addition to the 12 sites listed as complete, 11 other sites have completed an SI. Two final sites will complete an SI in FY 97. Ten sites have been scheduled for a Remedial Investigation and Feasibility Study (RI/FS), all are scheduled for completion by FY99. Ten sites are scheduled to complete a Remedial Design (RD) in FY00, followed by a Remedial Action (RA) phase, to be completed in FY01. There are no RCRA Corrective Action sites at the installation. Three RCRA Underground Storage Tank (UST) sites were identified during an Initial Site Characterization (ISC) (equivalent to a PA) in FY89. A Site Assessment (SA) was completed for one UST site in FY96. All three sites are scheduled to undergo a Corrective Action Plan (CAP) phase in FY98, a Design (DES) phase in FY00 and an Implementation (IMP) phase in FY01. Completion of cleanup for the UST sites is concurrent with Long Term Monitoring (LTM), which continues through FY03.

Emergency removal actions were completed at numerous sites for the cleanup and removal of contaminated sludge and sediment inside storm drains and catch basins in FY95. The contaminated media was put into containers and disposed of at an appropriate off-site facility. Contaminants of concern were SVOCs and metals. A Time Critical Removal Action (TCRA) was completed for removal of contaminated soil and sandblasting grit on one site. A Remedial Action Plan (RAP) an equivalent of a CERCLA Record of Decision (ROD) for the state of California was completed for 11 "no further action sites. Community relations efforts were also conducted for the RAP. The Phase 1, Remedial Investigation (RI) on 5 sites and Expanded Site Investigation on 7 sites were also completed.

Additionally, documentation for a TCRA for removal of contaminated soil, started in FY95 on 6 sites. Contaminants of concern are petroleum products, volatile and semi-volatile organic compounds, the chemical additive PCB and chemical solvents.



OAKLAND FISC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - The area at FISC was originally created by placing dredged sand fill over the existing marshlands and bay mud on the eastern shore of the San Francisco Bay. The entire site is flat except where slopes have been accentuated by differences in the settling fill. The groundwater under the FISC is at a depth of 4 to 20 feet, and is assumed to flow to the Oakland harbor and to San Francisco Bay.



NATURAL RESOURCES - The likely receptors for contaminants at Oakland FISC are the aquatic organisms in Oakland harbor. Since the base property is mostly paved, there is little chance for terrestrial animals or humans coming in contact with contaminants in water or soil. The base is anticipated to stay an industrial area, not to be converted to housing when it closed, so the chance of human exposure to contaminants should remain low.



RISK - A base-wide Ecological Risk Assessment (ERA) and Human Health Risk Assessment (HHRA) were partially completed in FY95. Final ERA and HHRA are planned in FY97, under Phase II of the RI/FS.

DOD's Relative Risk Ranking system was used to rank the risk factors for all the sites on the installation in FY95. Of the 28 sites (CERCLA and UST sites), 12 received a high risk ranking. All the sites were ranked high for groundwater contamination. There is a potential pathway for migration of petroleum products, volatile and semi-volatile organic compounds and the chemical additive PCB through the groundwater pathway into San Francisco Bay. Aquatic receptors are the concern, if the groundwater is proven to migrate off-base. Since the base is likely to remain an industrial setting, and is mostly paved, the likelihood of terrestrial animal or human receptors is low.

REGULATORY ISSUES



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29, 1992. The FFSRA required the Navy to prepare a Scoping Document. The Scoping Document was completed on December 30, 1992 and recommended an Extended Site Inspection (ESI) for Sites 1, 4, 5 and 18-21 and an RI for Sites 2, 3 and 13-15. Thirteen sites (Sites 6-12, 16, 17 and 22-25) were recommended for no further action.



PARTNERING - A partnering arrangement has been in place since FY92 between Navy representatives, Department of Toxic Substances Control (DTSC) representatives and Regional Water Quality Control Board (RWQCB) representatives. The partnering arrangement has accelerated the progress of the Installation Restoration Program (IRP) at Oakland FISC.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Restoration Advisory Board (RAB) was formed April 5, 1995 and has 18 members. Meetings are held once every two months. The RAB has allowed a greater sharing of information about the IRP with the community.

TECHNICAL REVIEW COMMITTEE - The Technical Review Committee (TRC) was the first community involvement in the review of the activities in the IRP. TRC meetings were held every 3 months until the TRC was converted to the Restoration Advisory Board.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was finalized in November 1993.



INFORMATION REPOSITORY - An Administrative Record for Oakland FISC was established in FY92. A copy of the Administrative Record is housed in the installation's Information Repository, established in March 1994, and is also available for public viewing at the Oakland Public Library on 14th Street in Oakland, California.

BASE REALIGNMENT AND CLOSURE



BRAC - In September 1995, the Base Realignment and Closure (BRAC) Commission recommended closure of the Fleet and Industrial Supply Center (FISC), Oakland. The proposed closure date is September 1998. Closure plans are under development.



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was established in February 1996. The BCT's 3 members include the BRAC Environmental Coordinator (BEC), a member from the State's Department of Toxic Substances Control (DTSC), and a member from the United States Environmental Agency (USEPA).

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|----------|----------|-----------|----------|----------|----------|-----------|
| 26 acres | 52 acres | 234 acres | 78 acres | 26 acres | 52 acres | 230 acres |



REUSE - The City of Oakland Land Reuse Authority (LRA) has adapted the Port of Oakland Vision 2000. It is a plan to convert FISCO into a commercial land and water shipping facility.



LEASE/TRANSFER - The Navy has started leasing parcels to the Port of Oakland, under a special legislation, Public Law (P.L.) 102-484. Through FY96, 138 acres in three parcels have been leased to the Port of Oakland.

HISTORICAL PROGRESS

FY88

Sites 1-4 - A Preliminary Assessment (PA), completed in March 1988, identified four sites with groundwater contaminated with petroleum products and soils contaminated with volatile organic compounds, the chemical additive PCB, pesticides, and fuels. The PA recommended three sites (Sites 1-3) for further study, but all four sites have gone on for further study.

FY89

USTs 1, 5 and 8 - Three RCRA Underground Storage Tank (UST) sites were identified during Initial Site Characterization (ISC) (equivalent to PA).

FY90

Sites 5-8 and 18-21 - Eight additional sites added to program and a PA was completed.

FY91

Sites 9-17 - Nine additional sites added to program and a PA was completed.

FY93

A Federal Facility Site Remediation Agreement (FFSRA) was signed by the Department of the Navy and the State of California on September 29,

OAKLAND FISC HISTORICAL PROGRESS

1992. The purpose of the FFSRA is to ensure State and Federal cooperation in accelerating and streamlining the remediation process and to set deadlines for the execution of the IR work. California Department of Toxic Substances Control (DTSC) agreed on the final Scoping Report on December 1993. The report classified the 25 total remaining sites into 13 NFA sites, 7 ESI sites and 5 RI sites.

USTs 1 and 5 - Interim Remedial Actions (IRAs) for tank removal were complete.

FY94

An RI started on the 5 Sites 2, 3 and 13-15.

An ESI started on the 7 Sites 1, 4, 5 and 18-21.

USTs 1, 5 and 8 - Investigation (INV) phase started for UST 8. Corrective Action Plan (CAP) was started at USTs 1 and 5. UST 8 - IRA for tank removals was started. It will continue through FY03.

FY95

Completed an Emergency Removal Action for the cleanup and removal of contaminated sludge and sediment inside storm drains and catch basins at 10 Sites 1-4, 12, 13, 15, 18, 20 and 21.

Completed the ESI on 7 sites that started in FY 94. It recommended Site 5 for "no further action", Sites 4, 21 and 19 for removal action, and Sites 1, 18, 20 and 21 for inclusion in the Phase 2, RI/FS.

Completed the Phase 1 RI on 5 sites that started in 1994. It characterized the sites conditions and contaminant chemistry; recommended that all the 5 sites for Phase 2, RI/FS. It also completed a baseline HHRA, ERA, and a partial storm drain and sediment investigation.

Started documentation for a TCRA of contaminated soil on 6 Sites 1 - 4, 15 and 19. The Action Memorandum (AM), plans and specifications were completed.

Completed a RAP for 11 Sites 6-11, 16 and 22 - 25. As requested by the State, Site 12 was dropped out of the RAP due to possible contaminated groundwater migration from adjacent Site 13. It will be included in the Phase 2, RI/FS. Site 17 was also dropped out of the RAP due to an unexpected radiological survey issue the needs to be resolved. After the survey, this site will be a NFA in future RAP.

Completed TCRA for removal of soil contaminated with sand blasting grit on Site 15. The site will be included in the Phase 2, due to groundwater concerns.

UST 8 - As part of an on-going IRA, three known abandoned USTs and contaminated soil were removed.

Leased 104 acres to the Port of Oakland.

PROGRESS DURING FISCAL YEAR 1996

FY96

Completed construction of the TCRA project on Sites 1-4, 15 and 19; removed the following:

Site 1 - 30 cubic yards (cys) of soil contaminated with SVOCs, mercury and lead

Site 2 - 300 cys of soil contaminated with petroleum products and 75 cys with hazardous solvents

Site 3 - 450 cys of soil contaminated with lead and PCB

Site 4 - 540 cys of soil contaminated with PCB and pesticides

Site 15 - 25 cys of soil contaminated with petroleum products

Site 19 - 250 cys of soil contaminated with PCB.

Site 20 - completed IRA.

Completed SI on Sites 6-11, 16 and 22-25.

Sites 6-11, 16 and 23-25 - Achieved Response Complete (RC).

Completed SA on UST 8.

Leased 34 acres to the Port of Oakland in parcels 2 and 3.

The Phase II RI/FS is anticipated to start January 1997 and to be completed by December 1998. The RI/FS will group the 10 sites into 3 areas of investigation. It will provide the data gaps needed to complete the RI and FS reports and the basewide RAP/ROD for groundwater, soils and sediments onshore.

As a separate Operable Unit (OU), an RI for the off shore sediments along the harbor is scheduled to start by April 1997. The RI will be coordinated with the policies formulated by Biological Technical Advisory Group (BTAG) on sediments cleanup approach.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Sites 1-4, 15 and 19 - Complete IRA.

Sites 4 and 19 - Complete PA/SI and achieve RC.

FY98

Sites 12, 14 and 18 - Complete RI/FS.

USTs 1, 5 and 8 - CAP phase will be complete.

OAKLAND FISC PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 12 | 11 | 2 | | | | | |
| RI / FS | | | | 3 | 7 | | | |
| RD | | | | | | 10 | | |
| RAC | | | | | | | 10 | |
| RAO | | | | | | | | 10 |
| IRA | 8(9) | 1(1) | 6(6) | | | 1(1) | | |
| RC | 2 | 10 | 2 | | | 1 | | 10 |
| Cumulative % RC | 8% | 48% | 56% | 56% | 56% | 60% | 60% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | 1 | | | | | | |
| CAP | | | | 3 | | | | |
| DES | | | | | | 3 | | |
| IMP | | | | | | | 3 | |
| IMO | | | | | | | | 3 |
| IRA | 2(2) | | | | | | | 1(1) |
| RC | | | | | | | | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

OAKLAND FLEET AND INDUSTRIAL SUPPLY CENTER ALAMEDA ANNEX

ALAMEDA, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVSUPSYSCOM
Size: 81 Acres
Funding to Date: \$6,811,000
Estimated Funding to Complete: \$24,892,000

Base Mission: Receives, stores, and issues both not-ready-for-issue and ready-for-issue aviation materials

Contaminants: Acid, asbestos, heavy metals, PCBs, volatile organic compounds

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 8 | High: | 4 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 3 | Not Required: | 1 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 8 | | | | |

BRAC IV

Sites Response Complete: 1

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 2 | 6 | | | | | | |
| RI / FS | | | | 7 | | | | |
| RD | | | | | 2 | 1 | | 1 |
| RAC | | | | | | | | 4 |
| RAO | | | | | | | | 3 |
| IRA | 1(1) | 1(1) | | 1(1) | | | | |
| RC | 1 | | | 3 | | | | 4 |
| Cumulative % RC | 13% | 13% | 13% | 50% | 50% | 50% | 50% | 100% |

OAKLAND NAVAL MEDICAL COMMAND, NORTHWEST REGION

OAKLAND, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
 Major Claimant: BUMED
 Size: 183 Acres
 Funding to Date: \$432,000
 Estimated Funding to Complete: \$1,493,000

Base Mission: Directs comprehensive health care services for the Navy

Contaminants: POLs

| | | | | | |
|-------------------------|---|---------------------------------|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 0 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 1 | Low: | 1 | | |
| Total Sites: | 1 | | | | |

BRAC III

Sites Response Complete: 0

PROGRESS AND PLANS

| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| SA | 1 | | | | | | | |
| CAP | | 1 | | | | | | |
| DES | | | | 1 | | | | |
| IMP | | | | | | 1 | | |
| IMO | | | | | | | | |
| IRA | | | | 1(1) | | | | |
| RC | | | | | | 1 | | |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 100% | 100% | 100% |

PICO RIVERA MARINE CORPS RESERVE TRAINING CENTER

PICO RIVERA, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV

Major Claimant: CMC

Size: 1 Acre

Funding to Date: \$20,000

Estimated Funding to Complete: \$0

Base Mission: Provides training for Marine Corps Reserve Personnel

Contaminants: POLs

Number of Sites:

CERCLA: 0
 RCRA Corrective Action: 0
 RCRA UST: 1
 Total Sites: 1

Relative Risk Ranking of Sites:

High: 0 Not Evaluated: 1
 Medium: 0 Not Required: 0
 Low: 0

Sites Response Complete: 0

PROGRESS AND PLANS

| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| SA | | | | | | | | 1 |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | 1 |
| IMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

POINT MOLATE NAVY FUEL DEPOT

RICHMOND, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVSUPSYSCOM
Size: 1,133 Acres
Funding to Date: \$7,037,000
Estimated Funding to Complete: \$15,101,000

Base Mission: Provides supply and support services to fleet units and shore activities

Contaminants: PCBs, polynuclear aromatic hydrocarbons, toluene, volatile and semi-volatile organic compounds

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 4 | High: | 3 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 4 | | | | |

BRAC IV

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 4 | | | | | | | |
| RI / FS | | | | 1 | 3 | | | |
| RD | | | 1 | | | | 2 | 1 |
| RAC | | | | | | | | 3 |
| RAO | | | | | | | | 3 |
| IRA | 1(1) | | 1(2) | 2(2) | 1(1) | | | |
| RC | | | | | 1 | | | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 25% | 25% | 25% | 100% |

POINT MUGU NAVAL AIR WEAPONS STATION

POINT MUGU, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVAIRSYSCOM
Size: 4,500 Acres
Funding to Date: \$19,976,000
Estimated Funding to Complete: \$36,877,000

Base Mission: Performs development, test and evaluation, and follow-on engineering, logistic and training support for Naval weapons systems; provides major range and technical support for fleet users

Contaminants: Acid, ash, dredge spoils, hypochlorite, sludge, wastewater, low-level radiation, paint, POLs, pesticides, plating waste, PCBs, refuse with hazardous waste, chemical agents, heavy metals, solvents

| | | | |
|-------------------------|--|-----------------------|----|
| Number of Sites: | Relative Risk Ranking of Sites: | | |
| CERCLA: | 18 | High: | 8 |
| RCRA Corrective Action: | 0 | Not Evaluated: | 8 |
| RCRA UST: | 9 | Medium: | 0 |
| Total Sites: | 27 | Not Required: | 10 |
| | | Low: | 1 |

Sites Response Complete: 10

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 8 | 2 | | | 1 | | | 7 |
| RI / FS | | | 2 | 1 | 1 | | | 4 |
| RD | | | | | 2 | | | 8 |
| RAC | | | | | | | | 7 |
| RAO | | | | | | | | 7 |
| IRA | | | 5(8) | 2(5) | | 1(1) | | 1(1) |
| RC | 1 | 1 | 1 | | | | | 15 |
| Cumulative % RC | 6% | 11% | 17% | 17% | 17% | 17% | 17% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 9 | | | | | | | |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | | 1(1) | | | | |
| RC | 8 | | | 1 | | | | |
| Cumulative % RC | 89% | 89% | 89% | 100% | 100% | 100% | 100% | 100% |

POINT SUR NAVAL FACILITY

POINT SUR, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 34 Acres
Funding to Date: \$2,034,000
Estimated Funding to Complete: \$681,000

Base Mission: Operates automated data gathering equipment

Contaminants: POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 0 | High: | 0 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 1 | Low: | 0 | | |
| Total Sites: | 1 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| SA | | | | | | | | |
| CAP | | | | 1 | | | | |
| DES | | | | | 1 | | | |
| IMP | | | | | | | 1 | |
| IMO | | | | | | | | 1 |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

POMONA NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT

POMONA, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVSEASYSOM
Size: 160 Acres
Funding to Date: \$33,000
Estimated Funding to Complete: \$0

Base Mission: Provides development, design, engineering, test, production and depot-level support of tactical, non-nuclear, surface and air launched weapons for the Naval Sea Systems Command

Contaminants: POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 3 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 3 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 3 | | | | |

Sites Response Complete: 3

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 3 | | | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 3 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

PORT HUENEME NAVAL CONSTRUCTION BATTALION CENTER

PORT HUENEME, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVFACENGCOM
Size: 33 Acres
Funding to Date: \$23,738,000
Estimated Funding to Complete: \$15,229,000

Base Mission: Provides support to Naval Construction Force, fleet units, and assigned organizational elements Navy Civil Engineering Laboratory sites closed under BRAC III

Contaminants: Heavy metals (copper, lead), PCBs, pesticides, volatile and semi-volatile organic compounds

| | | | | | |
|-------------------------|----|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 23 | High: | 6 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 9 | Not Required: | 5 |
| RCRA UST: | 4 | Low: | 6 | | |
| Total Sites: | 27 | | | | |

Sites Response Complete: 5

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 6 | 2 | 1 | 1 | | | | 13 |
| RI / FS | | | 2 | 3 | 1 | | | 13 |
| RD | | | | 2 | 1 | | 1 | 13 |
| RAC | | | | | | | | 1 |
| RAO | | | | | | | | |
| IRA | | | | | 2(3) | 1(1) | | 12(13) |
| RC | 3 | | 1 | | 2 | 1 | | 16 |
| Cumulative % RC | 13% | 13% | 17% | 17% | 26% | 30% | 30% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | | 1 | | | | | |
| CAP | | | | 1 | | | | 1 |
| DES | | | | 1 | | | | 1 |
| IMP | | | | | 1 | | | 1 |
| IMO | | | | | | | | |
| IRA | 1(1) | | | | | | | |
| RC | 2 | | | | 1 | | | 1 |
| Cumulative % RC | 50% | 50% | 50% | 50% | 75% | 75% | 75% | 100% |

SALTON SEA TEST RANGE

IMPERIAL COUNTY, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVFACENGCOM
Size: 19,451 Acres
Funding to Date: \$6,732,000
Estimated Funding to Complete: \$12,990,000

Base Mission: Served as training facility for U.S. Navy, Army, and Marine Corps; formerly used by the Atomic Energy Commission for the Fat Man/Little Boy Project

Contaminants: Asbestos, depleted uranium, POs, solvents

| | | | | | |
|-------------------------|----|--|---|----------------|----|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 24 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 2 | Not Required: | 15 |
| RCRA UST: | 0 | Low: | 7 | | |
| Total Sites: | 24 | | | | |

BRAC I

Sites Response Complete: 15

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 4 | 15 | 5 | | | | | |
| RI / FS | 1 | 6 | 2 | | | | 1 | |
| RD | | | | | | | | |
| RAC | | 1 | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | 1(1) | | | | 1(1) |
| RC | 1 | 14 | 6 | 1 | | | | 2 |
| Cumulative % RC | 4% | 63% | 88% | 92% | 92% | 92% | 92% | 100% |

SAN CLEMENTE ISLAND NAVAL AUXILIARY LANDING FIELD

SAN CLEMENTE ISLAND, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 36,200 Acres
Funding to Date: \$9,461,000
Estimated Funding to Complete: \$12,447,000

Base Mission: Shore bombardment area for Pacific Fleet operations and training; research, development, testing and evaluation of missiles and missile systems; Navy and Marine training

Contaminants: Ordnance compounds, paint, asbestos, heavy metals, POLs, solvents, chemical agents, explosive chemicals, refuse with hazardous waste, scrap metal

| | | | | | |
|-------------------------|----|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 14 | High: | 2 | Not Evaluated: | 2 |
| RCRA Corrective Action: | 0 | Medium: | 9 | Not Required: | 0 |
| RCRA UST: | 4 | Low: | 5 | | |
| Total Sites: | 18 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | | | 1 | | 13 |
| RI / FS | | | | | | | | 6 |
| RD | | | | | | | | 11 |
| RAC | | | | | | | | 3 |
| RAO | | | | | | | | |
| IRA | | | | | | | | 7(7) |
| RC | | | | | | | | 14 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | 4 |
| CAP | | | | | | | | 3 |
| DES | | | | | | | | 3 |
| IMP | | | | | | | | 1 |
| IMO | | | | | | | | |
| IRA | 1(1) | | 1(1) | | | | | |
| RC | | | | | | | | 4 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO FLEET AND INDUSTRIAL SUPPLY CENTER

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVSUPSYSCOM
Size: 219 Acres
Funding to Date: \$1,474,000
Estimated Funding to Complete: \$39,246,000

Base Mission: Provides petroleum products to support military activities in Southern California

Contaminants: Inert material, heavy metals, POLs, sludge

| | | | | |
|-------------------------|---|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 3 | High: | 2 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: |
| RCRA UST: | 1 | Low: | 0 | |
| Total Sites: | 4 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 1 | | | | | | 2 |
| RI / FS | | | | | | | | 3 |
| RD | | | | | | | 1 | 2 |
| RAC | | | | | | | | 3 |
| RAO | | | | | | | | |
| IRA | | | | | | | | 1(2) |
| RC | | | | | | | | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 1 | | | | | |
| CAP | | | | | | | | 1 |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | 1(1) | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO FLEET ANTISUBMARINE WARFARE TRAINING CENTER PACIFIC SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CNET
 Size: 27 Acres
 Funding to Date: \$157,000
 Estimated Funding to Complete: \$1,421,000

Base Mission: Provides O&M training for antisubmarine warfare

Contaminants: POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 1 | High: | 1 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 2 | Low: | 2 | | |
| Total Sites: | 3 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | 1 | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | 1 |
| RAC | | | | | | | | 1 |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 2 | | | | | |
| CAP | | | | | | | | |
| DES | | | | | | | | 2 |
| IMP | | | | | | 1 | | 1 |
| IMO | | | | | | | | |
| IRA | 1(1) | | | | 1(1) | 1(2) | | |
| RC | | | | | | 1 | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 50% | 50% | 100% |

SAN DIEGO FLEET COMBAT TRAINING CENTER PACIFIC

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CNET
 Size: 94 Acres
 Funding to Date: \$95,000
 Estimated Funding to Complete: \$279,000

Base Mission: Provides specified tactical combat training

Contaminants: Inert material

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 1 | High: | 0 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 1 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | | | | | 1 |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO MARINE CORPS RECRUIT DEPOT

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: CMC
 Size: 400 Acres
 Funding to Date: \$970,000
 Estimated Funding to Complete: \$2,216,000

Base Mission: Provides basic training for Marine Corps recruits

Contaminants: Solvents, POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 2 | High: | 1 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 5 |
| RCRA UST: | 5 | Low: | 0 | | |
| Total Sites: | 7 | | | | |

Sites Response Complete: 5

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 2 | | | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 2 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | | 2 | | | | | |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | 1 | | 1 | 1 | | | | |
| IMO | | | | | | | | 2 |
| IRA | 1(2) | 1(1) | | | | | | |
| RC | 3 | | | | | | | 2 |
| Cumulative % RC | 60% | 60% | 60% | 60% | 60% | 60% | 60% | 100% |

SAN DIEGO NAVAL COMMAND CONTROL AND OCEAN SURVEILLANCE CENTER SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: COMSPAWARSSYSCOM
 Size: 600 Acres
 Funding to Date: \$11,456,000
 Estimated Funding to Complete: \$23,983,000

Base Mission: Principal Navy Research, Development, Test and Evaluation (RDT&E) center for command control, communications, ocean surveillance, surface and air launched undersea weapons systems

Contaminants: Non-chlorinated solvents, POLs, acid

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 10 | High: | 7 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: |
| RCRA UST: | 2 | Low: | 0 | |
| Total Sites: | 12 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 1 | | 3 | 1 | | | 5 |
| RI / FS | | | | | 2 | | | 8 |
| RD | | | | | 2 | | | 5 |
| RAC | | | | | | 2 | | 5 |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | 2 | | 8 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 20% | 20% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | 1 | | | 1 |
| CAP | | | | | | | | 2 |
| DES | | | | | | | | 2 |
| IMP | | | | | | | | 2 |
| IMO | | | | | | | | 1 |
| IRA | | | | | | 1(1) | | 1(1) |
| RC | | | | | | | | 2 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO NAVAL COMPUTER AND TELECOMMUNICATIONS STATION SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: COMNAVCOMTELCOM
 Size: 550 Acres
 Funding to Date: \$5,000
 Estimated Funding to Complete: \$66,000

Base Mission: Manages, operates and maintains facilities of the Defense Communication System

Contaminants: Heating oil, fuel, gasoline, diesel (petroleum constituents)

| | | | |
|-------------------------|---|--|--------------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | |
| CERCLA: | 1 | High: | 0 Not Evaluated: 1 |
| RCRA Corrective Action: | 0 | Medium: | 0 Not Required: 0 |
| RCRA UST: | 1 | Low: | 1 |
| Total Sites: | 2 | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | | | | | 1 |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | 1 |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | | | | | | 1(2) |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO NAVAL IN-SERVICE ENGINEERING WEST

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMSPAWARSSYSCOM
Size: 82 Acres
Funding to Date: \$1,424,000
Estimated Funding to Complete: \$12,140,000

Base Mission: Communication and electronic systems support to Fleet

Contaminants: Volatile and semi-volatile organic compounds, heavy metals (lead, thallium carbonate), PCBs, POLs

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 9 | High: | 7 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 9 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | | | | | | | 2 |
| RI / FS | | | | | 2 | 1 | | 6 |
| RD | | | | 1 | 1 | 1 | 1 | 5 |
| RAC | | | | | | 1 | 2 | 6 |
| RAO | | | | | | | 2 | 3 |
| IRA | | | | | | 1(2) | | 1(2) |
| RC | | | | | | | 2 | 7 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 22% | 100% |

SAN DIEGO NAVAL MEDICAL CENTER

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
 Major Claimant: BUMED
 Size: 86 Acres
 Funding to Date: \$50,000
 Estimated Funding to Complete: \$0

Base Mission: Provides general and specialized hospital and cleanup services

Contaminants: POLs

| | | | | | |
|-------------------------|---|---------------------------------|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 1 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 1 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 1 | | | | |

Sites Response Complete: 1

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 1 | | | | | | | |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 1 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

SAN DIEGO NAVAL STATION

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 1,127 Acres
Funding to Date: \$22,283,000
Estimated Funding to Complete: \$74,327,000

Base Mission: Provides logistical and personnel support to 25 major tenant commands, provides berthing and port services for ships, provides shore based training and shore activities for all ship crews

Contaminants: PCBs, POLs, heavy metals, unexposed ordnance, solvents, plating waste, blasting grit, electrolyte, asbestos, POL sludge, paint, pesticides

| | | | | |
|-------------------------|----|--|----|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 14 | High: | 10 | Not Evaluated: |
| RCRA Corrective Action: | 7 | Medium: | 4 | Not Required: |
| RCRA UST: | 1 | Low: | 3 | |
| Total Sites: | 22 | | | |

Sites Response Complete: 4

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 5 | | 1 | 2 | | | 2 | 4 |
| RI / FS | | | | | 1 | | | 2 |
| RD | | | | | 1 | | 2 | 4 |
| RAC | 1 | | | | | | | |
| RAO | | | | | | | 1 | 5 |
| IRA | 1(1) | 2(2) | 2(3) | 1(1) | 2(3) | 1(1) | 1(1) | 7(8) |
| RC | 3 | | 1 | | 2 | | 1 | 7 |
| Cumulative % RC | 21% | 21% | 29% | 29% | 43% | 43% | 50% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 5 | | | | | | | 2 |
| RFI / CMS | | 1 | 3 | | | | | 3 |
| DES | | | | | | | 1 | 3 |
| CMI | | | | | | | | |
| CMO | | | | | | | | 3 |
| IRA | | | | 1(2) | | | 1(1) | 3(5) |
| RC | | 1 | 2 | 1 | | | | 3 |
| Cumulative % RC | 0% | 14% | 43% | 57% | 57% | 57% | 57% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | 1 | | | | | |
| IMO | | | | | | | | |
| IRA | | 1(2) | | | | | | |
| RC | | | 1 | | | | | |
| Cumulative % RC | 0% | 0% | 100% | 100% | 100% | 100% | 100% | 100% |

SAN DIEGO NAVAL SUBMARINE BASE

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 300 Acres
Funding to Date: \$682,000
Estimated Funding to Complete: \$8,830,000

Base Mission: Operates shore facilities in support of the submarine force, U.S. Pacific Fleet and is home port for two submarine squadrons

Contaminants: Propellant, inert material, POLs, PCBs, non-chlorinated solvents, refuse

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 5 | High: | 1 | Not Evaluated: | 7 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 4 | Low: | 1 | | |
| Total Sites: | 9 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 1 | 1 | | | | 1 | 2 |
| RI / FS | | | | | 1 | | | 4 |
| RD | | | | | | | | 2 |
| RAC | | | | | | 1 | | 2 |
| RAO | | | | | | | | 1 |
| IRA | | | 1(1) | | | | | |
| RC | | | | | | 1 | | 4 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 20% | 20% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 1 | 3 | | | | |
| CAP | | | | | | | | 4 |
| DES | | | | | | | | 1 |
| IMP | | | | | | | | 1 |
| IMO | | | | | | | | 1 |
| IRA | | | | | | | | 1(3) |
| RC | | | | | | | | 4 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SAN DIEGO NAVAL TRAINING CENTER

SAN DIEGO, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CNET
Size: 552 Acres
Funding to Date: \$7,060,000
Estimated Funding to Complete: \$40,533,000

Base Mission: Provides recruit training for enlisted personnel and primary, advanced, and specialized training for officers and enlisted personnel

Contaminants: Paint, pesticides, solvents, unexploded ordnance, POLs

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|---|-----------------------|---|
| CERCLA: | 6 | High: | 1 | Not Evaluated: | 7 |
| RCRA Corrective Action: | 0 | Medium: | 2 | Not Required: | 3 |
| RCRA UST: | 8 | Low: | 1 | | |
| Total Sites: | 14 | | | | |

BRAC III

Sites Response Complete: 3

EXECUTIVE SUMMARY

The San Diego Naval Training Center (NTC) lies on the northern arc of San Diego Bay. NTC is bordered by residential areas to the north, a boat channel and Lindbergh Field (San Diego International Airport) to the east, San Diego Bay and a commercial boat basin to the south, and residential areas to the west. Two man-made islands, Shelter Island and Harbor Island, also lie to the south of the complex. There are military, commercial, industrial, and recreational areas surrounding NTC. Past activities that contributed to contaminated sites at NTC are machine shop operations, plating shop operations, electronics training, dry cleaning training, fire fighting training, public works operations, pest control, painting, vehicle maintenance, medical and dental clinic operations, gas station operations, and photo lab operations. Contaminants include solvents, petroleum products, paint and pesticides. An inactive landfill and various areas with petroleum product contamination are the major areas of concern at NTC. Groundwater movement to the boat channel, bayfront areas near Harbor Island and the commercial boat basin may potentially contact humans through recreational activities or allow the pollutants to enter the wildlife food chain. The estuary and San Diego Bay are potential contaminant receptors. The 113 acre estuary, commonly referred to as The Boat Channel, bisects NTC. Since FY86, when an Initial Assessment Study was conducted, twelve sites have been identified with possible environmental concerns; five sites are being studied under CERCLA and seven sites are being studied under the Underground Storage Tank (UST) program.

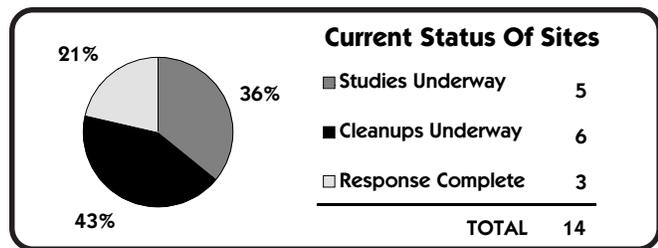
A twenty-five member Restoration Advisory Board (RAB), established in FY94, now meets bi-monthly. NTC has an extensive community relations program to establish and promote communication between the Navy and the community. Fact sheets that describe the sites that require cleanup were distributed. An Information Repository available to the public containing the Administrative Record was established in FY94 and is located at San Diego Central Library.

Fieldwork such as groundwater sampling and analysis, landfill gas sampling, and surface magnetic geophysical surveying for the Extended Site Inspection (ESI) began at Site 1, an inactive landfill, in FY95. Also in FY95, contaminated soil was removed and replaced with clean soil at Site 2, Site 8, and Site 9, all Underground Storage Tank (UST) sites. Contaminated soil was excavated during FY96 at Site 7, another UST site.

The Base Realignment and Closure (BRAC) Commission recommended closure of the NTC, and relocation of personnel, equipment, and mission support to other Naval training centers. The center will close June 30, 1997. Certain facilities and activities located on the installation will be retained to support other Naval activities in the area. The BRAC Cleanup Team (BCT) was established in FY94. Some NTC property is currently being leased. The Mayor of San Diego appointed a 26-member Reuse Planning Committee to guide the reuse planning process. Fast track cleanup initiatives such as concurrent phasing to accelerate the cleanup schedule are in use at NTC.

The Environmental Baseline Survey (EBS), completed in FY94, identified 85 Points of Interest (POIs) where hazardous substances or petroleum products have been stored. A revised Environmental Baseline Survey was completed in FY95. The BRAC Cleanup Plan (BCP) for the installation was also completed in mid-FY94. An updated BRAC Cleanup Plan was released in March 1995.

During FY95 the NTC Team categorized and evaluated POIs and identified an additional 7. POIs were broken up into four groups to facilitate action and early identification of potential problems. To date, 92 POIs have been identified. A POI Comprehensive report was completed in July 1996. Twenty three POIs were designated for further action. Through partnering with regulatory agencies, the Navy received concurrence letter from DTSC and U.S. EPA.



SAN DIEGO NTC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - The majority of NTC is built on hydraulic fill material with moderate to high permeability. This may allow for contaminant migration to the boat channel.

Overland surface runoff is collected by storm sewers that discharge into the boat channel. Groundwater is saline (salt water), not suitable for any potable, agricultural, or industrial use and occurs between 7 and 30 feet below ground surface (0 to 3 feet above mean sea level). Groundwater flow directions are assumed to be towards the estuary, the bayfront areas at Harbor Island, and the commercial boat basin. The discharge of polluted groundwater to the boat channel, bayfront areas near Harbor Island, and the commercial boat basin may potentially contact humans through recreational activities or allow the pollutants to enter the wildlife food chain. Drinking water is purchased from the San Diego County Water Authority.



NATURAL RESOURCES - NTC is adjacent to San Diego Bay, an important marine habitat. Sensitive wildlife habitats exist throughout San Diego Bay. No sensitive plant or animal habitats exist in the estuary at NTC. Numerous marine and shorebird species frequent the area. Large populations of rabbits and squirrels inhabit nearby undeveloped areas. The only endangered species found at NTC is the California least tern. The waterfront areas are used for commercial boating, recreational purposes such as sailing, water skiing, and recreational fishing, and wildlife habitat.



RISK - Human health and ecological risks were addressed in the Extended Site Inspection for Site 1, an inactive landfill, by September 1995. No other sites at NTC have had risk assessments performed yet. Using the DOD Relative Risk Ranking Site Evaluation Model, Site 12, Harbor Sediments, received a high risk ranking due to potential contamination of sensitive marine species. The remaining sites at NTC rank low (1 site), medium (2 sites), and not ranked (not ranked applies to the petroleum only sites) (7 sites).



RESTORATION PROJECTS - A portion of Site 1 encompasses a protected area for the California least tern, an endangered species. Sand was brought in to cover the area and enhance the habitat for the birds.

REGULATORY ISSUES



LEGAL AGREEMENTS - NTC is not listed on the NPL and there are currently no regulatory agreements in place.



PARTNERING - The NTC BRAC Cleanup Team and its core member team meet monthly during most of the year in round table type atmosphere. The purpose is to keep the team together and well informed in all aspects of all environmental sites, as well as up to date on reuse issues. In addition to the round table meetings, the 3 member BCT holds monthly teleconferences mainly to enhance timeliness of decision making and document reviews. A secondary benefit of these meetings is to identify potential upcoming challenges and to identify important agenda items for the round table meetings.

The Local Reuse Authority (LRA) is also involved in partnering sessions on a periodic basis. The frequency of these sessions is expected to increase as property transfer approaches.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) was created in January of 1994. The 25-member RAB meets monthly. The RAB facilitates the flow of information between the community and the BRAC Cleanup Team (BCT).



COMMUNITY RELATIONS PLAN - In FY92, the installation developed a Community Relations Plan (CRP). The CRP is used as a guide to better understand local concerns and identify the most effective ways to establish communication between the Navy and the community. An updated CRP was released in January 1995, and two fact sheets which describe the base conversion process and the Underground Storage Tank (UST) program were issued. Thirty-four community interviews were conducted to update the CRP and address community concerns.



INFORMATION REPOSITORY - An Information Repository was established in January 1994 to provide public access to the Administrative Record. The Administrative Record is the collection of official documents pertaining to the study and cleanup of sites. The Information Repository is located at the San Diego Central Library and an abbreviated repository is located at the San Diego City Library Point Loma Branch.

BASE REALIGNMENT AND CLOSURE



BRAC - NTC is slated for operational closure on June 30, 1997 as recommended by the Base Realignment and Closure (BRAC) Commission in 1993. Final property disposal is expected to take place in 1999. The BRAC Commission recommended closure of the NTC, and relocation of personnel, equipment, and mission support to other Naval training centers. Certain facilities and activities located on the installation will be retained to support other Naval activities in the San Diego area. Of the 552 total acres, 420 acres will be available for transfer.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was established in FY94. Members include the Navy, California EPA (Cal EPA), and EPA Region IX.



DOCUMENTS - The Environmental Baseline Survey (EBS), completed in FY94, identified 85 Points of Interest (POIs) where hazardous substances or petroleum products have been stored. A Site Specific EBS was completed in FY96. The BRAC Cleanup Plan (BCP) was also completed in FY94. The BCP is a dynamic planning document that reflects the current status of remedial actions, and the changes that affect the ultimate restoration and disposal of NTC. Updates of the BCP were released in March 1995 and March 1996.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-----------|----------|---------|---------|----------|---------|-----------|
| 276 acres | 11 acres | 0 acres | 5 acres | 83 acres | 5 acres | 171 acres |

53% of the property is classified as suitable for transfer, and 47% is either undergoing remedial action or requires further evaluation.



LEASE/TRANSFER - The San Diego City Council is the Local Redevelopment Authority (LRA), the City and the Navy negotiated a master lease which serves as the principle lease instrument for the entire base; it was signed in March 1996. The property included in the original negotiation was a portion of NTC called Camp Nimitz (approximately 70 acres). Additional property has been added to the master lease by negotiating modifications to the original master lease. More property can be added as the LRA identifies interim uses. Property transfer is expected to begin in January 1998.



REUSE - The LRA is expected to complete the draft reuse plan on November 30, 1996. Development of the Reuse Plan, National Environmental Policy Act Environmental Impact Statement (EIS), and the California Environmental Quality Act Environmental Impact Report (EIR) are being worked on concurrently. Expected completion date for the EIS/EIR Record of Decision (ROD) is October 1997.

SAN DIEGO NTC RELEVANT ISSUES



FAST TRACK INITIATIVES - Fast track cleanup initiatives at NTC include concurrent phasing to accelerate the cleanup schedule, contractor “over the shoulder” reviews to shorten document review time, team-building to enhance communication,

weighing reuse options in appropriate restoration decisions, and active communication with other installations to achieve consistency and share information.

HISTORICAL PROGRESS

FY86

An Initial Assessment Study (IAS) was conducted; twelve sites were identified with possible environmental concerns; five sites are being studied under the CERCLA program and seven sites are being studied under the Underground Storage Tank (UST) program.

FY89

Basewide - Completed Historic Resources Inventory.

FY90

Basewide - Completed Natural Resource Management Plan.

FY91

Site 2 - Completed Site Assessment.
UST 3 - Completed Site Inspection Report.

FY92

Site 1 - Completed Solid Waste Water Quality Assessment Test.
UST 3 - Completed Phase I Investigation, Initiated Free product removal.
UST 7 - Completed Building 49 UST Studies and UST removal.
Basewide - Completed Community Relations Plan.

FY93

Site 1 - Completed Action Memo and Initiated Interim Removal Action.

FY94

Site 1 - Completed Air Solid Waste Assessment Test (SWAT).
UST 2 - Initiated Petroleum contaminated soil removal.
UST 3 - Completed Workplan for Extended Site Assessment.
Sites 4-6 - Initiated Preliminary Assessment (PA).
UST 7 - Initiated Extended Site Assessment (ESA).
UST 8 - Initiated UST removal.
UST 9 - Initiated Petroleum contaminated soil removal.
Basewide - Completed Comprehensive and CERFA Environmental Baseline Survey.

FY95

Site 1 - Initiated Fieldwork for the ESI.
Site 4 - The California Department of Toxic Substances Control (DTSC) reviewed the PA and determined no further action is required.
Sites 5 and 6 - Completed PA; DTSC recommended further study; SI initiated.
Site 14 - Initiated Preliminary Assessment/Site Assessment (PA/SA).
Basewide - Completed a Revised Community Relations Plan.
UST 7 - Completed Extended Site Assessment.
USTs 2, 8 and 9 - Completed petroleum contaminated soil removal; however, Site 8 requires additional action due to remaining benzene in the saturated and unsaturated zones.
BCP - Updated.

PROGRESS DURING FISCAL YEAR 1996

FY96

Site 1 - Completed ESI; Initiated EE/CA. The RI/FS, scheduled for completion in FY96, was delayed to FY97 in order to address regulatory comments.
UST 2 - Completed soil removal action. Confirmation groundwater sampling occurred and No Further Action (NFA) concurrence was given by regulatory agencies, therefore, no groundwater treatment needed.
USTs 2, 3, 8, 10 and 11 - Completed investigation phase (SA).
Sites 5 and 6 - Completed the SI. DTSC concurrence on No Further Removal Action Planned (NFRAP) (RC).
Initiated SA for the sediments within the Steam Tunnels (POI 38).
UST 7 - Completed IRA.

USTs 10 and 11 - Completed Corrective Action Plan and initiated cleanup.
Sites 12 and 14 - The Environmental Baseline Survey (EBS) identified these new sites. Site 12 is an area of contaminated sediments in the boat channel. Site 14 encompasses various Points of Interest (POIs) where storage of hazardous substances or petroleum products has or may have occurred. Each POI either has or will undergo study.
Site 14 - Completed PA/SA on a large list of the POIs. Many POIs received ‘No Further Action’ from the regulatory participants as a result of this important effort.
BCP - Updated
Master Lease - Negotiated and signed.
UST 9 - Response Complete.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Site 1 - Complete Remedial Design and initiate RA.
UST 8 - Complete Design and initiate RA, initiate ground water monitoring.
USTs 10 and 11 - Complete RA, Continue ground water monitoring.
Site 12 - Initiate RI/FS and RD.

FY98

Sites 12 and 14 - Proceed with IRA where necessary.
Sites 8 and 11 - Proceed with UST site operation and maintenance if necessary.

SAN DIEGO NTC
PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 1 | 2 | 1 | | | | | |
| RI / FS | | | 2 | 1 | | | | 1 |
| RD | | | 1 | 2 | | | | 1 |
| RAC | | | | | | | | 1 |
| RAO | | | | | 2 | | | |
| IRA | | | 1(1) | | | | 1(1) | 1(1) |
| RC | | 2 | | | 1 | | 1 | 2 |
| Cumulative % RC | 0% | 33% | 33% | 33% | 50% | 50% | 67% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 1 | 5 | | | | | | |
| CAP | | 2 | 1 | | | | | |
| DES | | | 1 | 2 | | | | 1 |
| IMP | | | 2 | 1 | 1 | | | 1 |
| IMO | | | | 3 | | 1 | | 1 |
| IRA | 3(3) | 2(2) | | 1(2) | 1(2) | | | |
| RC | | 1 | | 4 | | 1 | | 2 |
| Cumulative % RC | 0% | 13% | 13% | 63% | 63% | 75% | 75% | 100% |

SAN NICOLAS ISLAND OUTLYING LANDING FIELD

SAN NICOLAS ISLAND, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVAIRSYSCOM
Size: 13,370 Acres
Funding to Date: \$5,419,000
Estimated Funding to Complete: \$488,000

Base Mission: Serves as launch platform for short and medium range missile testing, and observation for missile testing and diverse test and research functions

Contaminants: Unexploded ordnance, solvents, POLs, PCBs, paint, pesticides, scrap metal

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 7 | High: | 0 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: |
| RCRA UST: | 13 | Low: | 0 | |
| Total Sites: | 20 | | | |

Sites Response Complete: 6

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 5 | | | | | | 2 |
| RI / FS | | | | | | | | |
| RD | | | | | | | | |
| RAC | | | 5 | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | | | 5 | | | | | 2 |
| Cumulative % RC | 0% | 0% | 71% | 71% | 71% | 71% | 71% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 6 | | | | | | | 7 |
| CAP | | | | | | | | |
| DES | | | | | | | | |
| IMP | | | | | | | | |
| IMO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 6 | | | | | | | 7 |
| Cumulative % RC | 46% | 46% | 46% | 46% | 46% | 46% | 46% | 100% |

SEAL BEACH NAVAL WEAPONS STATION

SEAL BEACH, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: COMNAVSEASYSOM
Size: 5,000 Acres
Funding to Date: \$19,598,000
Estimated Funding to Complete: \$57,845,000

Base Mission: Receives, stores, maintains and issues conventional ammunition and surface and air launched guided missiles; maintains and operates ordnance systems component rework facility; distributes, maintains, stores and issues materials

Contaminants: Ammonium, picrate, heavy metals (chromium, lead), POLs

| | | | | |
|-------------------------|----|--|----|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 47 | High: | 14 | Not Evaluated: |
| RCRA Corrective Action: | 21 | Medium: | 10 | Not Required: |
| RCRA UST: | 9 | Low: | 10 | |
| Total Sites: | 77 | | | |

Sites Response Complete: 35

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 17 | | 2 | 22 | 3 | 1 | | 2 |
| RI / FS | | 1 | | 8 | 5 | 3 | | 9 |
| RD | | | | | | 1 | 2 | 6 |
| RAC | | | 2 | | | | | 4 |
| RAO | | | | | | | | 2 |
| IRA | 1(1) | | 3(3) | 1(1) | 3(3) | | 4(4) | 4(5) |
| RC | 11 | 1 | 2 | 15 | 1 | 2 | 4 | 11 |
| Cumulative % RC | 23% | 26% | 30% | 62% | 64% | 68% | 77% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 19 | | | | 2 | | | |
| RFI / CMS | | | | | | | | 1 |
| DES | | | | | | | | 1 |
| CMI | | | | | | | | |
| CMO | | | | | | | | |
| IRA | | 1(1) | | | | | 1(1) | |
| RC | 19 | | | | 1 | | | 1 |
| Cumulative % RC | 90% | 90% | 90% | 90% | 95% | 95% | 95% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 2 | 1 | 1 | | | | | |
| CAP | 1 | 1 | 1 | 1 | | | | |
| DES | | | | | | | | |
| IMP | 1 | | 1 | | | | | |
| IMO | | | | | | | | |
| IRA | 4(4) | 1(1) | | 2(3) | 3(3) | 1(1) | | 5(5) |
| RC | 3 | 1 | | | | | | 5 |
| Cumulative % RC | 33% | 44% | 44% | 44% | 44% | 44% | 44% | 100% |

SKAGGS ISLAND NAVAL SECURITY GROUP ACTIVITY

SKAGGS ISLAND, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVSECGRU
Size: 3,340 Acres
Funding to Date: \$1,421,000
Estimated Funding to Complete: \$8,543,000

Base Mission: Provides receiving facilities for point-to-point, ship to shore, local harbor and inter/intra-district communicators; provides high frequency direction finding for use in search and rescue operations and provides communications support

Contaminants: Dredge spoils, POLs, paint, heavy metals

| | | | | |
|-------------------------|----|--|---|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 6 | High: | 0 | Not Evaluated: |
| RCRA Corrective Action: | 1 | Medium: | 0 | Not Required: |
| RCRA UST: | 4 | Low: | 0 | |
| Total Sites: | 11 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 3 | 3 | | | | | | |
| RI / FS | | | | | 4 | 1 | | 1 |
| RD | | | | | | 3 | | 2 |
| RAC | | | | | | | 3 | 1 |
| RAO | | | | | | | | |
| IRA | | 2(2) | 3(3) | 2(2) | | | | |
| RC | | | | | 1 | | 2 | 3 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 17% | 17% | 50% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | 1 | | | | | | | |
| RFI / CMS | | | | | 1 | | | |
| DES | | | | | | 1 | | |
| CMI | | | | | | | 1 | |
| CMO | | | | | | | | |
| IRA | | 1(1) | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | 1 | | | | | |
| CAP | 1 | 2 | 1 | | | | | |
| DES | | 2 | | | | | | |
| IMP | | | 2 | 2 | | | | |
| IMO | | | | | | | | 4 |
| IRA | 2(2) | | 2(2) | 1(1) | | | | |
| RC | | | | | | | | 4 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

STOCKTON NAVAL COMMUNICATION STATION

STOCKTON, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVCOMTELCOM
Size: 2,788 Acres
Funding to Date: \$14,947,000
Estimated Funding to Complete: \$93,431,000

Base Mission: Manages, operates and maintains facilities, equipment and devices necessary to provide communications for the Command

Contaminants: Acid, blasting grit, industrial wastewater, pesticides, POs, PCBs

| | | | | |
|-------------------------|----|--|----|----------------|
| Number of Sites: | | Relative Risk Ranking of Sites: | | |
| CERCLA: | 71 | High: | 53 | Not Evaluated: |
| RCRA Corrective Action: | 0 | Medium: | 7 | Not Required: |
| RCRA UST: | 1 | Low: | 11 | |
| Total Sites: | 72 | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|--------|------|------|------|------|----------------|
| PA / SI | | 56 | 15 | | | | | |
| RI / FS | | | 1 | 7 | 16 | 16 | 10 | 7 |
| RD | | | | | 5 | 14 | 10 | 21 |
| RAC | | | | | 1 | 4 | 7 | 35 |
| RAO | | | | | | | | 19 |
| IRA | 7(14) | 1(1) | 12(15) | 4(4) | 3(4) | 3(3) | | 5(6) |
| RC | | | 14 | 1 | | 3 | 9 | 44 |
| Cumulative % RC | 0% | 0% | 20% | 21% | 21% | 25% | 38% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | | | | | | | | |
| CAP | | 1 | | | | | | |
| DES | | | 1 | | | | | |
| IMP | | | | 1 | | | | |
| IMO | | | | | | | | 1 |
| IRA | | | | | | | | |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |

SUNNYVALE NAVAL INDUSTRIAL RESERVE ORDNANCE PLANT

SUNNYVALE, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: SSP
Size: 160 Acres
Funding to Date: \$147,000
Estimated Funding to Complete: \$0

Base Mission: Government Owned-Contractor Operated (GOCO) facility operated by Lockheed Missiles and Space Company, Inc.; manufactures Naval Fleet Ballistic Missiles and provides assembly and testing of components

Contaminants: Heavy metals (chromium, silver), volatile organic compounds, POLs, PCBs

| | | | | | |
|-------------------------|----|--|---|----------------|----|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 16 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 16 |
| RCRA UST: | 0 | Low: | 0 | | |
| Total Sites: | 16 | | | | |

Sites Response Complete: 16

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 16 | | | | | | | |
| RI / FS | 5 | | | | | | | |
| RD | | | | | | | | |
| RAC | | | | | | | | |
| RAO | | | | | | | | |
| IRA | | | | | | | | |
| RC | 16 | | | | | | | |
| Cumulative % RC | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |

TREASURE ISLAND NAVAL STATION

TREASURE ISLAND, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: CINCPACFLT
Size: 717 Acres
Funding to Date: \$8,979,000
Estimated Funding to Complete: \$70,875,000

Base Mission: Provides services and materials in support of operating forces and designated shore activities

Contaminants: Acetone, acids, benzene, heavy metals, pesticides, PCBs

| | | | | | |
|--------------------------------|--|----------------|----|-----------------------|---|
| Number of Sites: | Relative Risk Ranking of Sites: | | | | |
| CERCLA: | 28 | High: | 18 | Not Evaluated: | 1 |
| RCRA Corrective Action: | 0 | Medium: | 6 | Not Required: | 4 |
| RCRA UST: | 3 | Low: | 2 | | |
| Total Sites: | 31 | | | | |

BRAC III

Sites Response Complete: 4

EXECUTIVE SUMMARY

The Naval Station Treasure Island (NAVSTA TI) is an island in the middle of the San Francisco Bay, midway between San Francisco and Oakland, California. The facility consists of two contiguous islands: the north island is named Treasure Island (TI) and the south island is named Yerba Buena Island (YBI). The sites of major concern at NAVSTA TI are Sites 6, 11, 14 and 22 which have soil and groundwater that are contaminated with petroleum products due to fuel storage and fire training activities. IR Site 11 is a former small landfill with multiple contaminants including petroleum products, volatile organic compounds, and metals. With few exceptions, contamination at most of the IR sites is the result of petroleum products originating from fueling operations. Two sites have chlorinated solvent contaminated groundwater. Numerous storage tanks and underground fuel lines exist, many of which have been gradually abandoned since the 1950s. The Navy has since changed its operational processes to prevent further contamination. NAVSTA TI is under a Federal Facilities Site Remediation Agreement (FFSRA) with the California Environmental Protection Agency, Department of Toxic Substances (DTSC) and the Regional Water Quality Control Board (RWQCB) which was signed on September 29, 1992.

NAVSTA TI is surrounded by the waters of San Francisco Bay. Potential receptors of soluble contamination would include flora and fauna using or inhabiting the surrounding waters. Currently, habitat for endangered or sensitive species on NAVSTA TI is very limited, although some have been observed at or near NAVSTA TI. There is limited potential for human contact with or consumption of groundwater since drinking water wells are not used on NAVSTA TI.

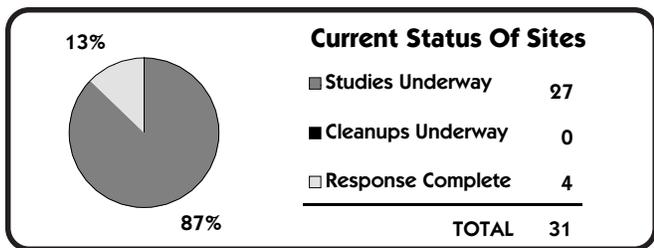
A Restoration Advisory Board (RAB) was formed in December 1993 and currently has 26 community members including environmental groups and individual community members, excluding regulators and Navy personnel. The RAB provides community advice on issues related to base closure and environmental restoration. A Community Relations Plan (CRP) has been written and two public information repositories have been established.

Since the beginning of the Installation Restoration Program (IRP) at NAVSTA TI, a total of twenty-eight CERCLA and three UST sites have been identified for further investigation. Field work for a Phase II Remedial Investigation (RI) study will continue through FY 97 to further characterize the extent of contamination and to collect data necessary for evaluation of remedial alternatives. The Phase II RI is being conducted in two steps. The Phase IIA RI is focusing on existing groundwater monitoring and tidal influence study, while the Phase IIB RI is focusing on further characterization and contaminant delineation. A no action decision document (Remedial Action Plan (RAP)) for IR Site 1 (Medical Clinic) and Site 3 (PCB Equipment Storage Area) was initiated in FY 96. Also, in FY 96, a bench scale soil bioremediation treatability study was initiated.

Phase II RI field work was completed in FY96 except for the Phase II Ecological Risk Assessment (EA) work for Site 13 (Stormwater Outfalls YBI/TI) which will be initiated in FY97. The Remedial Investigation (RI) and the Feasibility Study (FS) reports will be completed for all sites by FY99. A basewide interim groundwater monitoring plan for existing and new monitoring wells will be implemented in FY97 and FY98. Nine IR sites which were determined by the Base Realignment and Closure (BRAC) Cleanup Team (BCT) to be impacted only by petroleum are in the process of being transferred from the Navy's Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) program to the petroleum underground storage tank (UST) program. A Corrective Action Plan (CAP) for petroleum sites was initiated and will incorporate a treatability study and design of a bioremediation system.

Immunoassay field tests, a rapid field screening technique, were used extensively at NAVSTA TI to guide the Phase IIB RI. Immunoassays allow more data to be reported faster and for less money than does the use of an analytical laboratory for analyses. Since results were immediately available, additional sampling locations were quickly identified and the field investigation accelerated. By field screening 80 percent of all samples, approximately \$1 million in analytical costs was avoided.

The BRAC Commission recommended NAVSTA TI for closure. Operational closure of NAVSTA TI is scheduled for September 1997. The Navy plans to transfer property throughout the closure process as it becomes suitable for lease or transfer. At this time, no leases or transfers of property have occurred. However, two buildings have been licensed to the city of San Francisco for use as film studios. In addition, the Department of Labor (DOL) will be operating a Jobs Corps Training Center at NAVSTA TI.



TREASURE ISLAND NS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - TI and YBI are surrounded by the waters of San Francisco Bay. TI is a man-made island composed of dredged materials consisting of poorly graded fine sand placed over Yerba Buena Shoals. Groundwater at TI is generally encountered at 30-72 inches below ground surface. Because of the presence of relatively impermeable silt and clay lenses, there may be some perched conditions above the shallow water table. The direction of flow for both groundwater and surface runoff at TI is towards the Bay. Soluble contaminants would tend to migrate vertically through the sand to the water table or migrate overland in surface runoff. Less soluble contaminants may tend to bind with the soils and become relatively immobile.

YBI is a natural rock island with minimal soil cover. Surface soils are sandy loam to gravelly loam and subsoils are gravelly loam to sandy clay loam. Bedrock on YBI consists of sandstone and shale. Although there is limited information concerning groundwater at YBI, the groundwater in similar sites in the San Francisco Bay area is commonly present in sandstone or fractured shale due to infiltration. In the filled areas at YBI on the eastern side, soluble contaminants would potentially migrate to the Bay waters. At other areas on the Island, the surface runoff would either transport potential contaminants to the Bay or runoff would infiltrate into the Franciscan sandstone and shale. Less soluble contaminants would tend to bind with the soils and bedrock becoming relatively immobile or leaching small quantities to the surface runoff and ground water.

Drinking water wells are not used on TI or YBI. Subsurface water at TI and YBI proves im potable due to contact with the saline to brackish Bay waters. Water used by the facilities is conveyed by pipeline from San Francisco or Emeryville via the Bay Bridge.



NATURAL RESOURCES - TI consists of approximately 403 acres of developed flat terrain, covered mainly by buildings, roads, and parking lots. Most of the vegetation has been cultivated in landscaped areas. Any undeveloped habitat on NAVSTA TI is found on YBI (119 acres), where eucalyptus woodlands represent the largest habitat. Brushland, mixed woodland, and grassland are also present on YBI.

The Bay Area supports a variety of fish, birds and mammals. The fishery resource includes anadromous fish which migrate through the Bay to spawn; native fish that remain in the area for life and shellfish such as crab and shrimp. The Bay is a seasonal home for many migrating birds since the San Francisco Estuary is a stopping point along the Pacific Flyway. Migratory birds observed at or near NAVSTA TI include several species of harvested waterfowl and passerine birds. The California sea lion and harbor seal are routinely seen in the San Francisco Bay waters at NAVSTA TI. A small group of harbor seals has been reported to frequent the southwestern and western shorelines of YBI during the winter. A survey of both Federal and California endangered or threatened species observed at or near NAVSTA TI included 7 animals and 17 plant species.

The only rare or sensitive habitat that may be present at NAVSTA TI are the mudflats, which may be located on the western side of the cove between TI and YBI; and threatened and endangered species habitats.



RISK - Both a draft Baseline Human Health Risk Assessment (BHHRA) and a draft EA were prepared in conjunction with the draft Phase I RI Report. Based on the results of the risk assessments, site characterization, and discussions with the regulatory agencies, the Navy is proceeding with no action at Site 3 and no further action after minimal soil removal at Site 1. Several sites, including additional Sites 27, 28 and 29 were recommended for further investigation during the Phase II RI and EA field work. The Phase II EA for onshore sites was completed. The Phase II EA for offshore operable unit (OU) Site 13 will be conducted in FY97.

For the Department of Defense (DOD) Relative Risk Ranking System, 18 IR sites were ranked as high relative risk. The high rankings are primarily due to known contamination on the site and the migration potential to ecological receptors present in the Bay or YBI, or exposure of on-site personnel through direct contact with both the soil and the near surface ground water. The groundwater is likely to be connected to the San Francisco Bay. A tidal influence study was completed for NAVSTA TI.

REGULATORY ISSUES



LEGAL AGREEMENTS - A Federal Facility Site Remediation Agreement (FFSRA) between the Navy, the Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board (RWQCB) was signed on September 29, 1992. Under this agreement, the Navy agreed to undertake, seek adequate funding for, implement, and report on specified tasks associated with environmental assessment and response actions for 22 sites under the IRP in accordance with CERCLA. In May 1996, the FFSRA was amended to include the three newly identified installation restoration sites (Sites 27, 28 and 29) and offshore operable unit (Sites 13 and 27). Also, the FFSRA Appendix D schedule was revised to be consistent with the comprehensive strategy in the BRAC Cleanup Plan (BCPNAVSTA TI is not on the National Priorities List).



PARTNERING - The BRAC Cleanup Team (BCT) includes a member from each of the Navy, the U. S. EPA Region IX, and the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) with the support of the RWQCB. The BCT has worked closely with the Remedial Project Manager (RPM) to expedite the RI process at NAVSTA TI.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - The Technical Review Committee (TRC) was formed to provide public involvement in the Installation Restoration Program (IRP) decision-making process. At the December 1993 meeting, the TRC was expanded into a Restoration Advisory Board (RAB) which represents the interests of a broader and more diverse cross-section of the community. The RAB has 26 community members including environmental groups and individual community members. The RAB meetings serve as a forum for the Navy, regulatory agencies, and the community to discuss issues related to base closure, environmental restoration programs, real estate transfer, and decision-making. Meetings are held monthly, with special meetings scheduled to facilitate comments on documents that RAB members are reviewing. Community RAB members also meet monthly, without the regulatory agencies and the Navy, to discuss topics and agenda for the next full RAB meeting.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) for the NAVSTA TI IRP was finalized April 23, 1992. The CRP is being revised to reflect the community relations requirement under BRAC. A mailing list of all interested parties in the community is maintained by the Navy and updated periodically. Fact sheets describing the status of the IRP activities are distributed to the mailing list and informal meetings are held frequently for the general public. The BCT with the support of the RWQCB has conducted site tours and workshops for the community and RAB members regarding the environmental activities at NAVSTA TI.



INFORMATION REPOSITORY - Public information repositories have been established at NAVSTA TI and San Francisco Public Library Main Branch. These repositories contain information relative to environmental activities at NAVSTA TI. An Administrative Record file has also been established at EFA WEST in accordance with CERCLA requirements. A copy of the Administrative Record (AR) documents are contained in the Information Repositories.

TREASURE ISLAND NS RELEVANT ISSUES

BASE REALIGNMENT AND CLOSURE



BRAC - In July 1993, the BRAC Commission recommended closure of NAVSTA TI and relocation of the Naval Reserve Center to Alameda, California, and the Naval Technical Training Center to Great Lakes, Illinois, and Little Creek, Virginia. Closure is scheduled for September 1997. The Navy plans a gradual drawdown of personnel and activities prior to the actual closure date. The Navy plans to transfer property throughout the closure process as it becomes suitable for lease or transfer. The community reuse plan and Environmental Baseline Survey will be necessary for the efficient transfer of property.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was established in December 1993 and has presented community workshops on CERCLA and the cleanup process. The BCT works closely with the project team to expedite cleanup and to implement cost saving measures. The BCT includes the BRAC Environmental Coordinator (BEC), representatives of the U.S. EPA Region IX, and the California Environmental Protection Agency's Department of Toxic Substances Control.



DOCUMENTS - The BRAC Cleanup Plan (BCP) was finalized in March 1994 and updated in March 1995 and 1996. The draft Environmental Baseline Survey (EBS) was completed in FY94, and then finalized in FY95. The EBS placed all parcels in environmental condition of property categories 1, 2, 6 and 7. Nine parcels will be designated as Community Environmental Response Facilitation Act (CERFA) clean. The Phase II EA Work Plan and the companion Quality Assurance Project Plan (QAPP) were completed in FY 96. Also, the Bench Scale Soil Bioremediation Treatability Study Work Plan was completed in FY96. The Interim Groundwater Monitoring Work Plan was initiated and will be finalized in early FY97.

Environmental Conditions of Property Classification

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------|------------|------------|------------|------------|--------------|--------------|
| 38 acres | 9 acres | 0 acres | 0 acres | 0 acres | 189 acres | 286 acres |



LEASE/TRANSFER - The Navy intends to make NAVSTA TI property available for interim use and to transfer NAVSTA TI property as it becomes available and when requested by the city of San Francisco. Parcels may be identified for transfer based upon a Finding of Suitability to Lease (FOSL) or a Finding of Suitability to Transfer (FOST). These mechanisms will be developed and incorporated as the NAVSTA TI closure continues. FOSLs have been completed for building 2, and building 180 which are leased to the city of San Francisco. The city of San Francisco has subleased the buildings to film companies. FOSLs for the elementary school, building 3, the brig, and the firefighting school have been completed and are ready for signature. These buildings will be leased to the city of San Francisco. A Summary Document for Federal to Federal Transfer to the Department of Labor of 35.5 acres of property at Treasure Island was completed and is ready for final approval.



REUSE - A Naval Station Treasure Island Reuse Plan prepared for the Office of Military Base Conversion was endorsed by the Treasure Island Citizens Reuse Committee, Planning Department, City and County of San Francisco, and the San Francisco Redevelopment Agency. The endorsement was made by the City and County of San Francisco Board of Supervisors at their July 22, 1996 meeting. At this time, no leases or transfers of property have occurred. However, two buildings have been licensed to the city of San Francisco for use as film studios. In addition, the Department of Labor will be operating a Jobs Corps Training Center at NAVSTA TI (FOST is currently being prepared).



FAST TRACK INITIATIVES - Early actions are an important component of the IRP at NAVSTA TI. Based on the results of the draft Phase I RI and discussions with the regulatory agency representatives, three IR sites are currently targeted for removal actions, and no further action decision documents are being prepared for two IR sites. There are nine IR sites considered as petroleum impacted sites and will be remediated under the Navy's petroleum /UST program.

HISTORICAL PROGRESS

FY86

Site 14 - Test Underground Gasoline Spill, Report #1, completed in April as part of the Site Inspection (SI).

FY87

Site 6 - Initial Hazardous Material Investigation, Report #2, completed in August and Investigation of Potential Soil and Groundwater Contamination of Tank 2, Report #3 completed in July as part of SI.
Site 20 - Geotechnical Engineering Study, Proposed Family Housing Project, Report #4, was completed as part of SI.

FY88

Sites 1-26 - Preliminary Assessment/Site Inspection (PA/SI), Report #5, completed in April.
Sites 1, 3-7, 9-17, 19-22 and 24-26 - PA/SI recommended further action.
Sites 2, 8, 18 and 23 - No further action recommended in PA/SI.
Sites 8, 19 and 25 - The State of California reviewed PA/SI and recommended further investigation for these sites. The additional SI was completed in April and an Remedial Investigation/Feasibility Study (RI/FS) was recommended for all three sites.

FY89

Site 20 - SI Report, Former Tank 225A, Report #6, completed in November.
USTs - Five Underground Storage Tanks (USTs) removed.

FY90

Site 11 - UST Removal, Tank 270, Report #7, completed July as part of SI.
USTs - Two USTs removed.

FY91

Sites 8, 19 and 25 - SI Report, Report #8, was completed April and recommended an RI/FS for all three.
Site 20 - Soil Aeration Field Work Plan, Status on Aeration Project, and Bioremediation Treatment Letter Report, Report #9, completed February and October 1991, and February 1992, respectively, as part of Interim Remedial Action (IRA).

FY92

Federal Facility Site Remediation Agreement (FFSRA) signed by Department of the Navy and the State of California in September.
Site 12 - Preliminary Risk Assessment Report, Report #10, completed September as part of SI.
Sites 6 and 14 - Suitability Study for Floating Product Removal, Report #11, completed February as part of IRA.
Site 6 - Hazardous Waste Testing Old Fire Fighting Training School, Report #12, completed April as part of SI.
USTs - Twenty-three USTs removed.

TREASURE ISLAND NS HISTORICAL PROGRESS

FY93

Sites 13 and 13A - Stormwater Pollution Prevention Plan, Report #13, completed in June 1993 as part of PA.
Site 29 - Soil and Air Testing, Report #17, completed June and September as part of PA.

FY94

Sites 1, 3, 4-17, 19-22, 24 and 25 - Draft Phase I RI Report, Report #14, completed in November.
Sites 1, 3, 4-12, 14-17, 19-22, 24 and 25 - Draft Baseline Human Health Risk Assessment, Report #15, completed November.
Sites 1, 3, 4-17, 19-22, 24 and 25 - Draft Ecological Risk Assessment, Report #16, completed November.
Sites 1, 3, 4-12, 14-17, 19-22, 24 and 25 - Draft Initial Screening of Technologies, Report #18, as part of FS.
Site 14 - Characterization Wells Letter, Report #19, completed January as part of IRA.
Sites 6, 22 and 25 - Draft Summary Report of UST Removals, Report #20, completed January 1994 as part of IRA.

FY95

Limited Basewide Environmental Baseline Survey (EBS)/Community Environmental Response Facilitation Act (CERFA) Report was completed in December 1994.
Quarterly Groundwater Sampling Report - November 1994 was completed in February 1995.
 Base Realignment and Closure Cleanup Plan (BCP) Second Edition was completed in March 1995.
 Phase IIB Remedial Investigation (RI) Work Plan Addendum was completed in April 1995.
Quarterly Groundwater Sampling Report - February 1995 was completed in May 1995.
Quarterly Groundwater Sampling Report - May 1994 was completed in August 1995. Initiated the removal of floating product at Site 6 by bailer and skimmer pump.
USTs - Five USTs removed.

PROGRESS DURING FISCAL YEAR 1996

FY96

Federal Facility Site Remediation Agreement (FFSRA) was amended and a revised Appendix D schedule was submitted.
 Continued the removal of floating product at Site 6 by bailer and skimmer pump.
 Completed the RI field investigation except the offshore operable unit Site 13-Stormwater Outfalls (YBI/TI).
 Source Control and Additional Characterization Summary Report, Site 01-Medical Clinic was completed in November 1995.
 The NAVSTA TI Tidal Influence Study Summary of Results was completed in December 1995.
 Phase IIA RI Aquifer Testing Revised Summary of Results was completed in February 1996.
 Base Realignment and Closure Cleanup Plan (BCP) Revision 02 was completed in March 1996.
 Phase II Ecological Risk Assessment (EA) Work Plan and Field Sampling Plan was completed in April 1996.
 Phase IIB RI Summary of Validated data Report, Volumes I and II was completed in May 1996.
 Groundwater Status Report: Summary of Groundwater Monitoring from November 1994 to November 1995 was completed in May 1996.

Quarterly Groundwater Sampling Report - February 1996 was completed in July 1996.
 Bench Scale Soil Bioremediation Treatability Study (TS) Work Plan was completed in July 1996, the TS itself will not be complete until FY97 due to funding limitations.
 Air Sampling Work Plan was completed in July 1996.
 Ecotoxicological Testing Sampling and Analysis Plan for Development of Petroleum Cleanup Goals was completed in August 1996.
Quarterly Groundwater Sampling Report - June 1996 was completed in September 1996.
 Closed-in-place 11 USTs at YBI.
 Removed two USTs from government vehicle service station.
 Completed IRA at Site 1.
 Initiated a NFA ROD at IR Sites 1 and 3.
 Continued preparation of the draft RI and draft Baseline Human Health Risk Assessment; this was expected to be completed in FY96 but has been moved to early FY97 due to data collection problems.
 Sites scheduled for EE/CA in FY96 are being transferred into the Petroleum Program, therefore the EE/CA requirement has been replaced by a Corrective Action Plan (CAP).

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Sites 1 and 3 - Complete the RI/FS and achieve Response Complete (RC).
 Complete the bench scale soil bioremediation treatability study.
 Complete the Interim Basewide Groundwater Monitoring Work Plan.
 Continue the preparation of the draft and final RI and FS reports excluding offshore OU 13.
 Initiate the basewide interim groundwater monitoring program.
 Initiate the Phase II Ecological Risk Assessment(EA) field work and draft report for offshore OU 13.
 Initiate the preparation of decision documents (RAP/ROD) for twelve IR sites.
 Initiate interim actions at YBI IR sites to support reuse.
 Initiate removal actions at petroleum sites (IR Sites 6, 14 and 22) under the Navy's petroleum/UST program. Complete IRA at Site 6.
 Remove tanks at UST 234 from NSTI.
 Conduct remedial investigation as required at UST 234.

Remove fuel lines from NSTI.
 Conduct remedial investigation as required at fuel lines.
 Conduct semi-annual groundwater sampling/monitoring at UST sites.
 Conduct remedial investigation at two USTs.
 Design remediation systems for UST sites as required.
 Remove AST's from NSTI as required.
UST 1 - Complete CAP.

FY98

Continue removal actions at petroleum sites under the Navy's petroleum/UST program.
 Continue the basewide interim groundwater monitoring program.
 Complete the FS Report for offshore OU.
 Initiate the remedial design for most of the IR sites.
 Initiate the remedial actions for some sites.
 Conduct remediation systems for UST sites.
 Design remediation systems for fuel lines as required.
 Conduct semi-annual groundwater sampling/monitoring at UST sites.

**TREASURE ISLAND NS
PLANS FOR FISCAL YEARS 1997 AND 1998**

Sites 4-12, 14-17, 19-22, 24, 25, 28 and 29 - Complete RI/FS.
 Site 6 - Complete RD.
 Site 7 - Achieve RC.

Sites 6, 8, 11, 14, 22, 28 and 29 - Complete IRA.
 UST 1 - Complete Design phase.
 UST 23 - Complete CAP.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 25 | | | | | | | |
| RI / FS | | | 2 | 21 | 2 | | | |
| RD | | | | 1 | 19 | 2 | | |
| RAC | | | | | | 8 | 9 | 5 |
| RAO | | | | | | | | 11 |
| IRA | | 1(1) | 1(1) | 7(7) | | | | |
| RC | 3 | | 2 | 1 | | 4 | 3 | 15 |
| Cumulative % RC | 11% | 11% | 18% | 21% | 21% | 36% | 46% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 1 | | | | | | | |
| CAP | | | 1 | 1 | | | | |
| DES | | | | 1 | 1 | | | |
| IMP | | | | | | 1 | 1 | |
| IMO | | | | | | | | 2 |
| IRA | 2(2) | | | | | | | |
| RC | 1 | | | | | | | 2 |
| Cumulative % RC | 33% | 33% | 33% | 33% | 33% | 33% | 33% | 100% |

TREASURE ISLAND NAVAL STATION HUNTERS POINT ANNEX

SAN FRANCISCO, CALIFORNIA



Engineering Field Division/Activity: EFAWEST
Major Claimant: COMNAVFACENGCOM
Size: 936 Acres (493 Acres on Land/443 Submerged)
Funding to Date: \$114,745,000
Estimated Funding to Complete: \$499,408,000

Base Mission: Originally modified, maintained and repaired ships until 1974; was leased to Triple A Machine Shop, Inc. from 1976 to 1986 for commercial ship repair; Department of the Navy regained possession of property in 1987; currently inactive

Contaminants: Heavy metals, PCBs, POLs, volatile and semi-volatile organic compounds

| | | | |
|--------------------------------|--|-----------------------|----|
| Number of Sites: | Relative Risk Ranking of Sites: | | |
| CERCLA: | 74 | High: | 24 |
| RCRA Corrective Action: | 0 | Medium: | 20 |
| RCRA UST: | 0 | Low: | 5 |
| Total Sites: | 74 | Not Evaluated: | 17 |
| | | Not Required: | 8 |

NPL

BRAC II

Sites Response Complete: 8

EXECUTIVE SUMMARY

Treasure Island Naval Station Hunters Point Annex (NSTI Hunters Point) is in the southeast portion of San Francisco County, California. It is a deactivated Navy shipyard that was selected and approved for closure and disposition by the Base Realignment and Closure (BRAC) Commission in 1991. It is currently under caretaker status by the Naval Facilities Engineering Command's Engineering Field Activity West located in San Bruno, California. Portions of NSTI Hunters Point have already been leased to private parties. Because of the presence of hazardous materials resulting from past shipyard operations and the operations of a commercial machine shop that had leased NSTI Hunters Point from 1976 to 1986, the EPA placed the installation on the NPL in 1989. Site types include landfills and land disposal areas. The Navy Radiological Defense Laboratory (NRDL) used multiple buildings at Hunters Point Annex. The Atomic Energy Commission determined the buildings were clean although the State of California requested additional sampling. Low level radiation was found outside some of the NRDL buildings and continues to be investigated.

NSTI Hunters Point is currently under a Federal Facility Agreement (FFA) that was signed by the Navy, the EPA, and the California Environmental Protection Agency (Cal/EPA) in 1992.

NSTI Hunters Point is on a long promontory in the southeastern portion of San Francisco, extending eastward into San Francisco Bay. The facility is bounded on the north and east by the bay, and on the south and west by the Bayview/Hunters Point district of San Francisco. Between 70 and 80 percent of NSTI Hunters Point is relatively flat lowlands constructed by placing fill materials along the bay margin. The remaining land is on a moderately to steeply sloping ridge. Most of the lowlands are covered by asphalt paving and structures. The open areas are either sparsely vegetated or bare soil. Potential contaminant migration pathways exist via both surface runoff and infiltration of the rain water. Stormwater runoff is channeled to discharge in San Francisco Bay. Stormwater percolating into

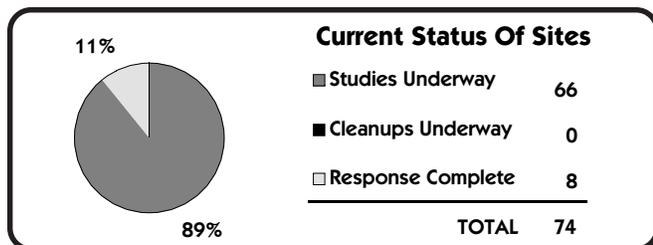
the soils has the potential to migrate via the groundwater to the San Francisco Bay where both human and ecological receptors are present.

The Technical Review Committee was converted to a Restoration Advisory Board (RAB) in FY94 and has 32 members from the community, local business, and regulatory agencies. An Information Repository was established at two local libraries.

At the end of FY95, preliminary study phases have been completed for all sites, and the Remedial Investigation (RI) phase is underway at 66 sites. Eight sites are currently Response Complete.

In FY92, the installation successfully demonstrated an innovative technology for recycling sand blasting grit containing low levels of copper and lead from ship cleaning operations. A full scale demonstration using the grit was completed in FY93. The Navy can use this technology at other installations.

In 1991, NSTI Hunters Point was included in the Base Realignment and Closure (BRAC) Program. A revised approach to investigation and remediating sites was implemented at this time. Sites were divided into geographic areas, Parcels A-F, to facilitate investigation and remediation. The intent is to sell the land, parcel by parcel, as various parcels are remediated. The concerns of the local community are primarily economic reuse of the facility, and increasing the economic potential of the community. The community has experienced 20 to 30% unemployment since the base was placed in industrial reserve in 1974. Operational base closure was 1 April 1994. The Navy is making local small and disadvantaged businesses aware of subcontracting opportunities, encouraging mentor and protégé arrangements under large business contracts, and conducting aggressive outreach programs.



TREASURE ISLAND NS HUNTERS POINT ANNEX RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - There are three aquifers under NSTI Hunters Point. The groundwater is not used for any purpose, and no irrigation or water supply wells are located at NSTI Hunters Point. The nearest public water supply well is about 2.5 miles inland from the base. A commercial bottled-water company, Albion Mountain Spring, is located within 2,300 feet of the facility. Albion Mountain Spring extracts groundwater for commercial sale to the public. However, the groundwater extracted and used by Albion appears to be separate and distinct from the groundwater beneath NSTI Hunters Point. It is unlikely that any contamination found in NSTI Hunters Point groundwater would impact Albion's bottled water supply. Surface water drainage is primarily through sheet-flow runoff. The runoff is collected by an on-site storm drain system that is discharged through several outfalls into San Francisco Bay. No naturally occurring channeled drainage exists; any pre-existing drainage channels have been filled or modified by construction over the years.



NATURAL RESOURCES - Terrestrial and aquatic ecosystems are present at NSTI Hunters Point. Although most of NSTI Hunters Point is covered with asphalt, buildings, or other structures, vegetated areas supporting the terrestrial fauna exist. These are areas of disturbed landscape, non-native grassland, and salt marsh. All four habitats are somewhat disturbed as a result of past or current activities. The aquatic system consists of wetland, pelagic intertidal, and subtidal habitats that are contiguous with San Francisco Bay. Threatened or endangered species that have been observed at NSTI Hunters Point include chinook salmon, longfin smelt, peregrine falcon, loggerhead shrike, and California brown pelican.



RISK - A three-phased Ecological Risk Assessment (ERA) to determine any potential adverse effects on the biota in the area was initiated in August 1994. The first phase involved the review of existing documentation, performing bioassays and field surveys, and identifying biota. The Ecological Sampling and Analysis Plan is complete and field work began in late FY95. A separate schedule has been established for the investigation of potential impacts from radiation generated from radium dials disposed at Site 1 (Industrial Landfill). Using the DOD Relative Risk Ranking System, 24 sites were ranked high, 20 were ranked medium, and 5 were ranked as low relative risk. Seventeen other sites were not evaluated. The high relative risk sites were so ranked primarily because of the potential for contaminants to migrate through the groundwater pathway to the San Francisco Bay where both human and ecological receptors are present. Some sites were ranked high based on contamination present in the soil and the potential for workers on site or recreational users to be exposed to the contaminants. Seven removal actions have either been completed or are underway at the high ranked sites. The Agency for Toxic Substances and Disease Registry (ATSDR) performed a Public Health Assessment in FY94. Concerns were raised about restricting access to sites and subsistence fishing offshore of NSTI Hunters Point.

REGULATORY ISSUES



NATIONAL PRIORITIES LIST - NSTI Hunters Point was included on the National Priorities List in November 1989 based on a Hazard Ranking System Score of 48.77. The presence of hazardous materials resulting from past shipyard operations and the operations of a private company who had leased NSTI Hunters Point from 1976 to 1986, contributed to the NPL classification.



LEGAL AGREEMENTS - A Federal Facility Agreement was signed in 1990. A revised agreement was signed by the California Department of Toxic Substances Control, the California Regional Water Quality Control Board (San Francisco Bay Region), and by the Department of the Navy in 1991. It was also signed by the EPA Region IX in 1992. The agreement defines work schedules and

required deliverables for each operable unit. The FFA schedule was renegotiated in June 1995.



PARTNERING - While there are no formal partnering agreements, the BRAC Cleanup Team (BCT) was formed in FY94 and has helped improve communications and partnering among the installation, EPA, and the state.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was established in 1988. The TRC was converted to a Restoration Advisory Board (RAB) in FY94 and has 32 members from the community, local business, and regulatory agencies. The RAB meets monthly and is currently being reorganized. The RAB provides a forum for diverse opinions to be directed to the BCT and to resolve issues.



COMMUNITY RELATIONS PLAN - In 1989, a Community Relations Plan (CRP) was completed. It was updated in 1995. Other community relations activities include public meetings, open houses, workshops, and distribution of fact sheets and newsletters. The CRP is presently being updated again.



INFORMATION REPOSITORY - An Administrative Record was established and information repositories were set up in 1989. The Information Repositories, containing copies of the Administrative Record documents, are located at the following two local public libraries:

San Francisco Public Library
Anna E. Waden Branch
5075 Third Street

San Francisco Public Library
Main Library
corner of McAllister and Larkin

Both repositories were updated in 1993 and are now updated quarterly.

BASE REALIGNMENT AND CLOSURE



BRAC - In 1991, NSTI Hunters Point was included in the Base Realignment and Closure (BRAC) Program. A BRAC Cleanup Plan was completed in FY94 and updated in FY95. In addition, a Baseline Environmental Report was completed in July 1994. A revised approach to investigation and remediating sites was implemented at this time. Sites were divided into geographic areas, Parcels A-F, to facilitate investigation and remediation. The intent is to sell the land, parcel by parcel, as various parcels are remediated.

Parcel A: Sites 19, 41, 43, 59 and 77.

Parcel B: Sites 6, 7, 10, 18, 20, 23-26, 31, 42, 45, 46, 50 and AOCs 60-62.

Parcel C: Sites 27-30, 45, 49, 50, 57, 58 and AOCs 63 and 64.

Parcel D: Sites 8, 9, 16, 17, 22, 32-39, 44, 45, 47, 48, 50, 53, 55 and AOCs 65-71.

Parcel E: Sites 1-5, 11-15, 21, 38-40, 45, 47, 48, 50-52, 54, 56 and AOCs 72-76.

Parcels D and E both include Sites 38, 39, 47 and 48.

All the parcels include Site 45 (Steam Lines) and Site 50 (Storm Drains/Sewers).



BRAC CLEANUP TEAM - A BRAC Cleanup Team (BCT) was formed in January 1994. The BCT meets every two weeks. The BCT has helped improve communication and partnering among the installation, EPA, and the state. The BCT also has helped expedite cleanup. Small areas of contamination can now be excavated during the investigation process, eliminating the need to revisit the site. The BCT will use Records of Decision (RODs) to streamline the decision-making process. The BRAC Cleanup Plan was prepared in FY94 and is updated regularly.

TREASURE ISLAND NS HUNTERS POINT ANNEX RELEVANT ISSUES



DOCUMENTS - A basewide Environmental Baseline Survey (EBS) was delayed because the many studies conducted at NSTI Hunters Point showed that there were no Community Environmental Response Facilitation Act (CERFA) clean parcels. In order to speed reuse and transfer, a basewide EBS was completed in May 1996. Site specific EBSs will be conducted in conjunction with a Finding of Suitability to Lease (FOSL) as properties are prepared for leasing. The following property classifications were developed from an evaluation of historical documentation (baseline environmental reports) written during RI/FS activities.

| Environmental Conditions of Property Classification | | | | | | |
|---|----------|---------|----------|---------|-----------|-----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 acres | 34 acres | 0 acres | 53 acres | 0 acres | 405 acres | 443 acres |



LEASE/TRANSFER - The final property transfer date has not been determined. Site specific EBSs will be conducted in conjunction with the FOSL/FOST processes as properties are prepared for leasing or transfer.



REUSE - The Reuse Plan was completed in March 1995. A preferred alternative has been approved by the Mayor's Hunters Point Shipyard Citizens' Advisory Committee next and by the City's Board of Supervisors. General reuse expectations are for education, arts, industrial, and maritime use.



FAST TRACK INITIATIVES - Hunters Point Annex has been divided into six parcels. This has allowed the accelerated remediation of one parcel. Parcel A may be transferred in FY97. This parcel was originally scheduled for transfer in FY96, but was delayed due to the National Environmental Policy Act (NEPA) documentation. Other remediation techniques that have accelerated the cleanup include investigation by excavation, early removal actions, and shorter document review periods. Funding appropriations have, and will continue to fall short of the levels needed to maintain an accelerated response action program. The strategy so far has been to use available funds to maximize compliance with the enforceable Federal Facility Agreement (FFA) schedule.

HISTORICAL PROGRESS

FY84

Sites 1-12 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), was completed and identified 12 potentially contaminated sites. Sites 2 and 10 were found not to pose a threat to human health or the environment and no further action was recommended. Site 12 (Bay Sediments), was found to have sediment contaminated with copper, lead, and zinc. No further action was recommended for Site 12 in the IAS based on the determination that the sediment was "best left undisturbed." Removal actions, with no further investigation, were recommended at Sites 4, 7 and 8. Sites 1-3, 5, 6, 9, 10 and 11 were recommended for further investigation.

FY87 - FY90

Sites 1, 4 and 8 - Contaminated soil removals were completed.
Site 11 - Soil removal was complete and the site was capped.
Sites 12-18 - Concurrent with the IAS, the San Francisco District Attorney's Office investigated allegations that a machine shop illegally disposed of hazardous waste at approximately 20 locations during its lease of portions of NSTI Hunters Point. A second PA was completed and Sites 12-18 were identified. The number 12 was re-used at this time and is not the same Site 12 identified in the 1984 IAS. Sites 12, 15 and 17 were recommended for an Remedial Investigation (RI). Sites 16 and 18 were recommended for an SI. The machine shop was indicted for illegal disposal of hazardous waste.
Sites 19-58 - A third PA was completed. Of the forty sites identified (Sites 19-58), Sites 19 and 23-58 went on to an SI and Sites 20, 21 and 22 went directly to an Remedial Investigation/Feasibility Study (RI/FS).
Site 8 - Soil contaminated with the chemical additive PCB was discovered during the repair of an underground utility line in the vicinity of Building 503. A removal action was completed to remove soil containing PCB. Soil was excavated and transported to an off-site disposal facility. The site was included in the RI.

FY91

Site 1 - Began investigation of potential impacts from radiation generated from radium dials disposed of in the landfill.
USTs 1-5 - Underground Storage Tanks (USTs) were removed and some were closed in place. Removal Action Plans and Tank Abandonment Plans were completed for 23 tanks within all 5 sites. The tanks were removed or closed in place.

FY92

Site 2 - A removal action to remove soil contaminated with heavy metals was completed.
Site 6 - Removal action of immediately adjacent soil was completed.
Sites 16 and 18 - An SI was completed. Both sites were recommended for further action.
Sites 6 and 8-10 - Draft RI was completed and found PCBs, lead, zinc and Volatile Organic Compounds (VOCs) in soil and groundwater. A Public Health and Environmental Evaluation was completed. A draft FS was completed and Interim Remedial Actions (IRAs) were proposed for Sites 6, 9 and 10.
Sites 1-3, 6 and 10 - Site Soil Treatment Feasibility Study was completed. The study found that large quantities of contaminated soil will require remediation during the course of RI/FS activities. On-site soil remediation will not be effective for Sites 1 and 2 due to disseminated metals and other contamination dispersed throughout the ground mass.
USTs 1-5 - USTs are being tracked by parcel. Seven additional tanks were identified in Parcel C. Further investigation with no further excavation due to the close proximity of buildings or other structures to the tanks was recommended for 6 tanks. Additional excavation with no further investigation was recommended for one tank.

FY93

Ecological Sampling and Analysis Plan is completed. Field work began. First phase of a three-phased Ecological Risk Assessment (ERA) was completed. The ERA was necessary to determine any potential adverse effects on the biota in the area. The first phase involved the review of existing documentation, performing bioassays and field surveys, and identifying biota.
Site 2 - Removal of PCB-contaminated sludge and a 150,000 gallon tank was completed.
Site 6 - Removal of nine 12,000 gallon tanks and their foundations, one 210,000 gallon tank, and underground piping was completed. In addition, a clay and gravel cap was placed over the site and rainwater runoff was collected and drained to the existing storm drain.

FY95

The Reuse Plan was finalized in March 1995. A basewide Environmental Baseline Survey was underway. Site specific EBSs will be conducted in conjunction with a Finding of Suitability to Lease (FOSL) as properties are prepared for leasing.

TREASURE ISLAND NS HUNTERS POINT ANNEX HISTORICAL PROGRESS

Federal Facility Agreement (FFA) schedules were renegotiated in June 1995 and now include schedules for Parcels A and F. Parcel F is the off-shore portion of NSTI Hunters Point.

Completed draft RI/FS at Parcel A.

Site 9 - Removal of equipment, sunken baths, above ground structures, foundations, and soil contaminated with zinc and chromate began at the Pickling and Plate Yard. The project team included local residents who

were specifically hired and trained to perform this work.

Site 3 - An Engineering Evaluation/Cost Analysis (EE/CA) is underway. A treatability study for chemical/thermal bioremediation in-situ is also underway. The treatability study is part of the removal action and may be used for the final remedy.

Sites 1, 2, 6, 50, 57 and basewide - Removal action activities continued.
UST 1 - This site was determined to be RC.

PROGRESS DURING FISCAL YEAR 1996

FY96

A basewide EBS was completed in May 1996.

The CRP was revised and will be released in early FY97. The release of CRP was delayed due to the establishment of a new RAB in August 1996.

Sites 19, 41, 43, and 59 - RI/FS was completed and these sites were determined to be RC.

Parcel A - A draft and final No Action Record of Decision (ROD) was completed. Parcel A will be transferred in FY97.

Parcel B - A draft RI/FS was completed.

Parcel D - A draft RI/FS was completed.

Parcels B, C, D and E - Removal actions initiated include groundwater plume, storm drains, and exploratory excavation. Remedies considered include groundwater pump and treat, iron curtain, and excavation and disposal.

PLANS FOR FISCAL YEARS 1997 AND 1998

Parcel B - A draft and final ROD will be completed and an RD will be started in FY97.

Parcel C - A draft RI/FS and a draft ROD will be completed in FY97, with final ROD in FY98.

Parcel D - A draft and final ROD will be completed and an RD will be started in FY97.

Parcel E - A draft and final RI/FS will be completed in FY97 and a draft and final ROD in FY98.

Parcels B, C, D and E - All removal actions started in FY96 will be completed in FY97.

Parcels B and D - RDs will be completed in FY98.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|--------|------|------|------|------|----------------|
| PA / SI | 72 | | | | | | | |
| RI / FS | | 4 | 37 | 29 | | | | |
| RD | | | | 29 | 34 | 1 | | |
| RAC | | | | | 14 | 21 | 5 | 24 |
| RAO | | | | | | | | 46 |
| IRA | | | 11(11) | | | 1(1) | 1(1) | |
| RC | 4 | 4 | 1 | 1 | 5 | 4 | 4 | 51 |
| Cumulative % RC | 5% | 11% | 12% | 14% | 20% | 26% | 31% | 100% |

TUSTIN MARINE CORPS AIR STATION

TUSTIN, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 1,383 Acres
Funding to Date: \$37,725,000
Estimated Funding to Complete: \$15,686,000

Base Mission: Provided services and materials to support the operations of the Third Marine Aircraft Wing; provided operations training and weather support; operated helicopter outlying fields and air traffic control facility

Contaminants: Benzene, dichloroethane, ethylbenzene, naphthalene, pentachlorophenol, POLs, toluene, xylene trichloroethylene

| | | | |
|--------------------------------|--|-----------------------|----|
| Number of Sites: | Relative Risk Ranking of Sites: | | |
| CERCLA: | 12 | High: | 3 |
| RCRA Corrective Action: | 16 | Medium: | 10 |
| RCRA UST: | 0 | Not Evaluated: | 1 |
| Total Sites: | 28 | Low: | 14 |
| | | Not Required: | 0 |

BRAC II

Sites Response Complete: 0

EXECUTIVE SUMMARY

Tustin Marine Corps Air Station (MCAS) is located in southern California near the center of Orange County. The installation is approximately 40 miles south of downtown Los Angeles and approximately 100 miles north of the California/Mexico border. Operations such as aircraft maintenance and servicing, firefighting training, and storage of petroleum products have been the biggest contributors to sources of contamination. Contaminants consist of volatile organic compounds and petroleum products primarily affecting groundwater and soil.

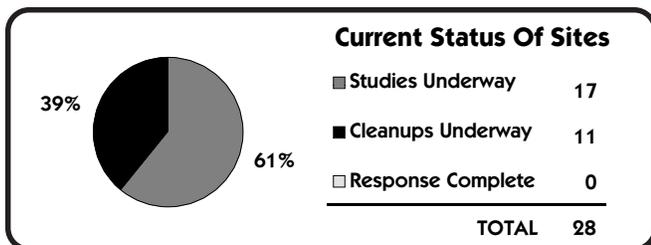
The installation occupies approximately 1,383 acres of land, of which approximately 30 percent is currently used for agriculture. Within the last 20 years, the area surrounding Tustin MCAS has transformed from primarily agricultural land to a residential and light manufacturing neighborhood. Both surface water and groundwater are of concern in the Tustin MCAS area. Five miles downstream from the station, the Upper Newport Bay Ecological Reserve encompasses 752 acres of coastal wetlands set aside for wildlife. In addition, a 300 acre duck pond is located between Tustin MCAS and the Upper Newport Bay. Groundwater quality is of concern as Tustin MCAS and various nearby communities obtain their potable and agricultural water supplies from wells in the middle aquifer.

A Restoration Advisory Board (RAB) was formed in FY94 and has 30 members which meet on a monthly basis. The Community Relations Plan (CRP) was revised in August 1995. An information repository has been established at the University of Irvine at California (UC Irvine) and four fact sheets have been issued.

Currently, 17 sites are in the study phase. All 12 CERCLA sites are in the Extended Site Inspection (ESI) or Remedial Investigation/Feasibility Study (RI/FS) phases. Two operational RCRA sites, Sites 23 and 24, are covered under a part B permit, and were not investigated under the RFA. All USTs are covered in the compliance program.

To accelerate cleanup, a thermal desorption process was selected for on-site treatment of contaminated soils. An on-site remediation project using the process was initiated in July 1995 at the Fuel Farm to accelerate the cleanup schedule for the Fuel Farm to meet the reuse priority. The fuel farm, a portion of Site 30, has been successfully remediated. The process will also be used on petroleum contaminated soils at similar site areas identified during on-going site characterization.

Tustin MCAS was recommended for closure by the BRAC II commission in 1991. Operations and activities at Tustin MCAS are expected to cease by June 1999. Due to the lack of definition of the Tustin groundwater characteristics, the California Environmental Protection Agency (Cal-EPA) and EPA did not concur with the Community Environmental Response Facilitation Act (CERFA) determination. This resulted in classifying the entire base property as Type 7. Without consideration of the groundwater, the bulk of the property is Type 1, with a few acres that can be classified under Types 5 and 6. Steps have been taken to expedite the groundwater characterization. The BRAC Cleanup Team (BCT) is taking steps to negotiate with the Local Redevelopment Authority (LRA) to determine the priority for the reuse parcels without compromising the mission requirements nor the cleanup activities. Draft Findings of Suitability to Transfer (FOSTs) were prepared for eight parcels in FY96.



TUSTIN MCAS RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - When the installation was first developed in 1942, the area was found to be fairly marshy. The area was backfilled and regraded and an extensive surface and subsurface drainage network was installed. The drainage network is still in use today, providing runoff control at the installation. Storm drainage ditches discharge to Peter's Canyon Channel on the east side which also receives runoff from Barranca Channel on the southwest side of the base. Peter's Canyon Channel merges with San Diego Creek which feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands area. Wells within one mile of Tustin MCAS are primarily used for agricultural purposes, although the city has a drinking water well one and a half miles away and the Irvine Ranch Water District has two deep drinking water wells within one mile north of Tustin.

The installation lies in the Irvine groundwater basin, a subbasin of the Los Angeles groundwater basin. A shallow-deeper dual aquifer system has been identified beneath Tustin MCAS. The shallow groundwater flows generally in a southward direction in areas west of Peters Canyon Channel and to the west in the remainder of the base east of Peters Canyon Channel. The deeper or regional aquifer is believed to be 70-100 feet beneath Tustin MCAS. Groundwater levels in the deeper aquifer are generally lower than in the shallow aquifer due to extensive groundwater extraction from the deeper aquifer. The flow in the regional aquifer is to the west-southwest. Groundwater extraction beneath Tustin MCAS is currently from the regional aquifer through one well operated by the on-site farmer and is used for irrigation only. Shallow groundwater beneath the installation is currently not extracted for any beneficial use due to its high Total Dissolved Solids (TDS) content.



NATURAL RESOURCES - Two regional species listed as either federally threatened or potentially threatened are present in the vicinity of Tustin MCAS. The California gnatcatcher is a threatened species. In addition, the California least tern is an endangered species. The Upper Newport Bay Ecological Reserve, into which Peters Canyon Channel flows, was established in 1975 to preserve and enhance the saltwater marsh ecosystem. Eight species classified by California as either rare or endangered are dependent on the Upper Newport Bay. A series of marshy wildlife refuges are located immediately adjacent to San Diego Creek. Many plant and animal species settle in this wildlife refuge.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments are being conducted on a site by site basis as part of the RI/FS. Three sites were ranked as high relative risk in the DOD Relative Risk Ranking System. The high ranking was due to contaminated groundwater for six of the sites and contaminated soil for one of the sites.

REGULATORY ISSUES



LEGAL AGREEMENTS - There is a Federal Facility Site Remediation Agreement (FFSRA) currently under negotiation which is expected to be signed in early 1997. A master schedule for future CERCLA-related work has been developed to complete site remediation as expeditiously as possible. After the FFSRA negotiations are complete, the master schedule will become the basis for the enforceable project milestones schedule included as Appendix A to the FFSRA.



PARTNERING - The BRAC Cleanup Team (BCT) has agreed to use "team building" tools, which include frequent technical discussions, weekly telephone calls and an open door policy on communication among the various entities. Project team members are partners with the BCT in the development of the cleanup plan.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in August 1993. A Restoration Advisory Board (RAB) was formed in FY94 and divided into ten subcommittees to address various Areas of Concern (AOC) or interest. There are approximately 30 members on the RAB, which meets on a bi-monthly basis. All RAB meetings are open to the public. Technical presentations to assist members in understanding complex environmental issues are given as needed.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was originally prepared in November 1990 for Tustin MCAS. In August 1995, the CRP was revised to reflect the community's concerns following the announcement that Tustin MCAS would be closing. Four fact sheets have been issued.



INFORMATION REPOSITORY - An information repository was established at the Main Library of the University of California at Irvine. It contains documents related to the Installation Restoration Program (IRP) process including the Administrative Record, work plans, technical reports and community relations materials, including the CRP, fact sheets, news releases and RAB meeting materials.

BASE REALIGNMENT AND CLOSURE



BRAC - Tustin MCAS was identified for closure in the Defense Base Closure and Realignment Act of 1990 (PL101-510) Base Realignment and Closure (BRAC II). Operations and activities performed at the installation are currently being discontinued or transferred to other Marine Corps installations. Operations and activities are expected to cease sometime between June 1997 and June 1999. Investigation and remediation of hazardous waste sites at Tustin MCAS will continue. The communities surrounding Tustin MCAS are already considering potential uses for the land that will be available when the military leaves. They want the environmental restoration process to proceed as quickly as possible so that they will not be hampered in developing the land to suit community needs.



BRAC CLEANUP TEAM - The BRAC Cleanup Team (BCT) was formed in FY93 and is composed of members from Tustin MCAS, EPA, Cal-EPA/DTSC, El Toro MCAS, Naval Facilities Engineering Command (NAVFAC) Southwest Division (SWDIV), City of Tustin and Regional Water Quality Control Board Santa Ana. The BCT meets regularly to address issues regarding cleanup at the installation and to expedite the process.



DOCUMENTS - The BRAC Cleanup Plan (BCP) was last updated in March 1996. The Environmental Baseline Survey (EBS) was published in April 1994. Environmental Condition of Property (ECP) was completed and the findings are summarized in the following table.

| Environmental Conditions of Property Classification | | | | | | |
|---|---------|----------|---------|----------|----------|---------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1,285 acres | 4 acres | 11 acres | 1 acres | 14 acres | 67 acres | 0 acres |

Due to the lack of definition of the Tustin groundwater characteristics, the Cal-EPA and EPA did not concur with the CERFA determination. This resulted in classifying the entire base property as ECP Category 7. Steps have been taken to characterize the groundwater. The BRAC Cleanup Team is taking steps to negotiate with the LRA to determine the priority for the reuse parcels without compromising the mission requirements nor the cleanup efforts.

TUSTIN MCAS RELEVANT ISSUES



LEASE/TRANSFER - Since identification of uncontaminated or clean parcels has not yet been finalized, activities for Findings of Suitability to Transfer (FOST) or Findings of Suitability to Lease (FOSL) have not been initiated. Draft FOSTs were prepared for eight parcels in FY96, with additional transfers planned for 1997, 1998 and 1999.



REUSE - A land reuse plan has been developed and is expected to be final in October 1996. A draft document was issued in July 1996. The document will undergo a public comment period during the fall of 1996.



FAST TRACK INITIATIVES - Major steps taken to expedite cleanup include: Initiation of cleanup of Former Fuel Farm Area; implementation of a single phase RI at seven IRP sites; implementation of a base wide groundwater RI; using Expedited Site Characterization as developed by Argonne National Lab; Mobilization of an on-site Thermal Desorption Unit and identification of early removal actions at three IRP sites and multiple AOCs.

HISTORICAL PROGRESS

FY84

Site 1 - An Interim Remedial Action (IRA) was completed at Moffett Trenches and Crash Crew Pits in 1984 that involved sandbagging the Peters Canyon Channel to prevent contaminated groundwater from seeping into the channel, installing an extraction well and an oil/water separator, and excavating and backfilling the crash crew burn pits with clean sand.

FY85

Sites 1-14 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA) was completed in September 1985 and identified 14 potentially contaminated sites at Tustin MCAS.

Site 1 - In May 1985, the Southern Area Regional Water Quality Control Board (SARWQCB) issued a Cleanup and Abatement Order to stop seepage and cleanup contaminated soil at Moffett Trenches and Crash Crew Pits. A Confirmation Study, Verification Phase Report (equivalent to a Site Inspection (SI)) was completed in July 1985 and was revised in September 1986. The study consisted of interpretation of new and existing data that indicated that groundwater and soil were contaminated with petroleum products and benzene, and the organic solvents trichloroethylene (TCE) and dichloroethane (DCA).

HISTORICAL PROGRESS

FY86

Site 1 - A removal action involving the excavation and disposal of contaminated soil at Moffett Trenches and Crash Crew Pits was completed in April 1986.

FY87

Site 16 - In May 1987, fuel was discovered in two holes excavated adjacent to two aboveground storage tanks at the Fuel Farm Area (Site 16). The tanks were removed and the soil was confirmed to be contaminated with petroleum hydrocarbons.

FY96

OU1, OU2 and OU3 - Completed RI/FS field work, issued draft RI/FS. OU1 covers basewide groundwater and is designated Site 35. OU2 covers soil at Sites 3, 5, 12, 13 and 16. OU3 covers Site 1 soil and groundwater.

Sites 17-26 and 36-40 - Completed RFA field work, issued draft RFA, complete phase III of RFA.

Site 1 - Water Board Cleanup and Abatement Order (Issued 1985) rescinded in May 1996.

FY88

Site 1 - An IRA involving the installation of a gunite concrete slurry wall and the construction of a french drain was completed in July 1988 at Moffett Trenches and Crash Crew Pits.

Site 16 - A PA was completed in July 1988 for the Fuel Farm Area. The investigation found the following petroleum products: benzene, ethyl benzene, toluene and xylene in the groundwater.

FY91

RCRA Sites - An Addendum to the PA (the IAS), completed in February 1991, identified 14 additional potential sites (all 14 of these sites are being studied under RCRA).

Site 1 - An extended SI was completed in February 1991 for Moffett Trenches and Crash Crew Pits.

FY92

Site 16 - A removal action was completed in November 1991 for the Fuel Farm Area which consisted of removing 39 tanks.

RCRA Sites - Phase I of RCRA Facility Assessment (RFA) which consisted of a Preliminary Review was completed in March 1992.

FY93

Site 16 - An ESI was completed in September 1993 for the Fuel Farm Area.

RCRA Sites - Phase II of an RFA, which consisted of a visual SI, was completed in November 1992. Of the 246 Solid Waste Management Units (SWMUs) visited, 58 SWMUs were recommended for Phase III, a RCRA sampling visit. An aerial photography review was completed in December 1992, 11 Areas of Concern (AOCs) were identified and recommended for further investigation.

FY95

Sites 1, 3, 5, 7, 12, 13 and 35 - An RI/FS was initiated.

Sites 17-26 and 36-40 (RCRA sites) - Phase III RFA was initiated.

Sites 2, 6, 8, 9 and 11 - An ESI was initiated.

PROGRESS DURING FISCAL YEAR 1996

Sites 7 and 16 - Transferred to the Leaking Underground Fuel Tank (LUFT) program

BRAC - Environmental work to clear 6 parcels for FY96 transfer has been completed. Parcel specific EBS, FOSTs and other supporting documentation are being developed.

Draft FOSTs were prepared for eight parcels

Eight parcels were made environmentally ready for disposal.

Land reuse plan submitted by City of Tustin to Department of Housing and Urban Development (HUD).

**TUSTIN MCAS
PLANS FOR FISCAL YEARS 1997 AND 1998**

FY97

Sites 2, 7, 8, 9 and 11 - ESI final.
 Sites 1, 3, 5, 12, 13, 16 and 35 - Complete RI/FS.
 Sites 2, 5, 6, 8, 9, 12 and 13 - Complete RD.
 Sites 7 and 17 - Complete RFA.
 Site 35 - Complete RD.
 Site 39 - Complete RFI, and RD.
 Sites 2, 6 and 8 - Complete IRAs.
 Site 1 - Complete RA.
 Sites 2, 6, 8 and 15 - Response Complete.
 Sites 1, 3, 5, 12, 13 and 35 - Carry 3 RODs through to signature and begin installation of remedial actions per RODs.
 Sites 7 and 27-34 - Continue LUFT program cleanup projects.
 Sites 17-26 and 36-40 - Continue RCRA cleanup and closure.

FY98

Site 3 - Complete RD.
 Sites 1, 3 and 5 - Complete IRA.
 Site 12 - Complete RA and Response Complete.
 Site 6 - Response Complete.
 Sites 17 and 18 - Complete Design.
 Sites 18 and 35 - Complete Construction Measures Implementation.
 Site 39 - Response Complete.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PA / SI | 7 | | 5 | | | | | |
| RI / FS | | | 7 | | | | | |
| RD | | | 7 | 1 | | | | 2 |
| RAC | | | 1 | 1 | 1 | 1 | | 1 |
| RAO | | | | | | | | 2 |
| IRA | 2(2) | | 3(3) | 3(4) | 1(1) | 2(2) | | |
| RC | | | 3 | 2 | 1 | 3 | | 3 |
| Cumulative % RC | 0% | 0% | 25% | 42% | 50% | 75% | 75% | 100% |
| RCRA CA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| RFA | | | 2 | | | | | |
| RFI / CMS | | | 1 | | | | | 2 |
| DES | | | 2 | 2 | | | | 10 |
| CMI | | | | 2 | 1 | | | 9 |
| CMO | | | | | | | | 1 |
| IRA | | | | | 2(2) | | | |
| RC | | | 1 | 1 | 2 | | | 12 |
| Cumulative % RC | 0% | 0% | 6% | 13% | 25% | 25% | 25% | 100% |

TWENTYNINE PALMS MARINE CORPS AIR TO GROUND COMBAT CENTER

TWENTYNINE PALMS, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CMC
Size: 595,367 Acres
Funding to Date: \$28,828,000
Estimated Funding to Complete: \$5,274,000

Base Mission: Provides support to Marine Corps Air Ground Task Forces and Marine Corps tenant activities; administers the Marine Corps Air Ground Combined Arms Training Program; provides training in communications and electronics

Contaminants: Heavy metals, POLs, volatile and semi-volatile organic compounds

| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
|--------------------------------|----|---------------------------------|----|-----------------------|----|
| CERCLA: | 54 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 1 | Not Required: | 45 |
| RCRA UST: | 9 | Low: | 17 | | |
| Total Sites: | 63 | | | | |

Sites Response Complete: 34

EXECUTIVE SUMMARY

Marine Corps Air to Ground Combat Center (MCAGCC) Twentynine Palms is located five miles north of Twentynine Palms, in San Bernardino County, California. The MCAGCC provides logistic and administrative support as well as training to Fleet Marine Air and Ground Task Forces. Primary operations that contributed to contaminated sites at the facility were vehicle, aircraft, and communications and electronics equipment maintenance. Current operations include pollution prevention technologies to prevent further contamination. Petroleum products have been disposed of at various sites around the activity. This is of concern as contaminants can migrate to usable water supplies. A Cease and Desist Order was issued by the California Regional Water Quality Control Board (CRWQCB) for Site 18 (Crash Training Pit No. 4) in August 1987 and January 1990.

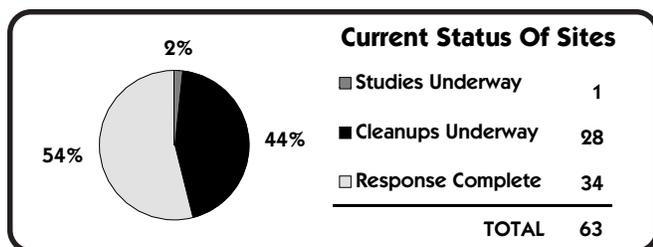
The lands surrounding MCAGCC Twentynine Palms are mostly agricultural and rural residential areas interspersed with some recreational reserves. Contaminants can migrate to usable groundwater supplies at MCAGCC Twentynine Palms through vertical subsurface percolation. Groundwater is the only source of water for public water supply systems at the station and the nearby city.

Currently there are 63 Installation Restoration Sites at MCAGCC Twentynine Palms. 54 sites are designated as CERCLA sites. SI Reports for forty-seven sites were finalized in FY96. The SI Report recommended No Further Action determinations at 30 of these sites, nine of which have received regulatory concurrence. Three sites have completed the cleanup phase and two sites are undergoing cleanup with closeout scheduled for FY97. Bioremediation is ongoing at 15 sites with cleanup completion expected within five years.

A Technical Review Committee (TRC) was formed and information repositories were established in two locations in November 1991. A Community Relations Plan (CRP) was completed in January 1994.

MCAGCC Twentynine Palms was initially designated as a Base Realignment and Closure (BRAC) receiving facility. However, the Department of the Navy (DON) later decided to move the activities it was to receive to another facility. MCAGCC Twentynine Palms is one of five Department of the Navy installations participating in a Pilot Expedited Environmental Cleanup Program (PEECP). In implementation of this program, the station has been emphasizing removal actions to accomplish cleanups concurrently with investigations or a "remediate as you investigate" strategy. In the investigation of large volume fuel spills, the Marine Corps has been able to coordinate the use of borings installed for investigative purposes, which otherwise would have been backfilled at the study's completion, for installation of vent wells and soil gas monitoring points for pilot studies and full scale treatment. This has resulted in a savings in excess of \$1 million and at least one year reduction in the cleanup schedule. This approach is also being utilized on tank and other fuel spill investigations. A full scale bioremediation facility was completed for treatment of non-hazardous petroleum-contaminated soil generated as a result of cleanup activities at sites. Regulatory agencies have approved remediated soil for use as landfill cover or roadbed fill.

MCAGCC Twentynine Palms was selected by the Department of the Navy as one of five installations to participate in a Pilot Expedited Environmental Cleanup Program (PEECP). The program was established by Senate Appropriations Bill 102-154 and was initiated in May 1992. The DON's plans for expediting cleanup projects include creative uses of the CERCLA process, such as an emphasis on removal actions to accomplish cleanups concurrently with investigations; variations of the CERCLA process, such as the use of "Observational" and "Data Quality Objective" (DQO) approaches; expedited document reviews; and greater interaction with regulatory agencies. The program encourages the use of expedited contracts, innovative technologies, and innovative approaches to solving problems. Procedures and technologies successfully implemented as a result of this program will be applied to future investigations and remediations.



TWENTYNINE PALMS MCAGCC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - Both surface water and groundwater contamination are of concern in the MCAGCC Twentynine Palms area. There are two groundwater aquifers within MCAGCC Twentynine Palms. They are separated by a fault which impedes movement of groundwater between the aquifers. Water supplies for the activity are extracted from wells in the Surprise Springs area aquifer. Surface water drainages in the area of Twentynine Palms, while normally dry, can become a pathway for surface migration of contaminants during the infrequent but intense thunderstorms which occur several times a year. Subsurface percolation of these surface waters and direct precipitation, containing potential contaminants, can migrate into the water table (which is more than 200 feet below the surface in most areas, but as shallow as five feet beneath dry lake beds). Contaminants reaching the water table can flow horizontally downgradient (south) to various wells using the aquifer as a domestic water-supply source (0-5 miles south of MCAGCC Twentynine Palms). Groundwater is the only source of water for public water supply systems at the activity and the nearby city. Therefore, groundwater contamination would be a potential threat to human health.



NATURAL RESOURCES - The native flora and fauna at the activity are typical of a North American desert community. The predominant plant species are the creosote bush and desert annuals. Areas most affected by a negative impact on the plant communities are the Surprise Springs and Wood Canyon areas. The vegetation has diminished somewhat due to soil compaction caused by vehicular movement. The primary types of wildlife are rodents, reptiles, and birds. Larger mammals are only found on station occasionally due to the lack of water sites. Rare, endangered, or threatened species in this area include four species of animals. Indirect contact with contaminants through the food chain is a potential threat to these species.



RISK - Baseline Human Health Risk Assessments and Ecological Risk Assessments were conducted as part of the Site Inspections (SIs). In the Department of Defense (DOD) Relative Risk Ranking System one site was ranked as a medium relative risk, 17 sites received a low relative risk ranking and no sites were given a high ranking. The main concern for the ranked sites is contaminated groundwater. Analytical data indicates off-site migration of contaminated groundwater in the MCAGCC Twentynine Palms mainside area aquifer. This groundwater is rated as available for potential beneficial use by the State Water Board. However, the mainside area groundwater aquifer is not currently used for human consumption. Since there is no groundwater migration between the unused mainside aquifer and the domestic water supply source of the Surprise Springs aquifer, there is no risk to human health.

REGULATORY ISSUES



LEGAL AGREEMENTS - A RCRA Facility Assessment (RFA) was initiated in April 1991 and terminated in July 1992 when the facility decided not to apply for a RCRA Part B Permit.

The California Regional Water Quality Control Board (CRWQCB), Colorado River Basin Region, issued a Cease and Desist Order for Crash Training Pit No. 4 (Site 18) in August 1987 and January 1990. Bioventing was initiated at the site in December 1993 and is expected to be completed in FY00. No further action is expected at the site.



PARTNERING - To facilitate Environmental Program efforts at MCAGCC Twentynine Palms, Quarterly meetings were held which are attended by all involved parties. Due to the reduction of work remaining at the activity, meetings are now held on an as needed basis. There is no Memorandum of Understanding or FFSRA between the Marine Corps, Department of the Navy (DON), Cal-EPA Department of Toxic Substances Control (DTSC), and the CRWQCB.

COMMUNITY INVOLVEMENT



RESTORATION ADVISORY BOARD - A Restoration Advisory Board (RAB) has not been established for this base. Marine Corps base will establish a RAB if the public indicates an interest in establishing one. However, a Technical Review Committee (TRC) was formed in November 1991 and meets once a year.



COMMUNITY RELATIONS PLAN - A Community Relations Plan (CRP) was completed in January 1994.



INFORMATION REPOSITORY - An Information Repository and an Administrative Record were established in November 1991. Information Repositories were established at two locations: the Twentynine Palms Public Library and the Base Library. Information from the Administrative Record is contained in the information repositories.

BASE REALIGNMENT AND CLOSURE

At one time, the DON had plans to move some activities from Marine Corps Air Station (MCAS) Tustin, which was being closed under the Base Realignment and Closure (BRAC) program, to MCAGCC Twentynine Palms. The SIs for Sites 3-5, 8, 10, 17-20, 22 and 25-27 at Twentynine Palms were funded with BRAC II funds as these sites needed to be investigated and remediated before MCAS Tustin activities could be incorporated. Since the SIs were funded, however, DON decided to move the MCAS Tustin activities to Naval Air Station (NAS) Miramar instead. Therefore, Navy environmental restoration (ER,N) funds will be used for any future work at these sites.

HISTORICAL PROGRESS

FY86

Sites 1-20 - An Initial Assessment Study (IAS), equivalent to a Preliminary Assessment (PA), completed in October 1985, identified 20 potentially contaminated sites at MCAGCC Twentynine Palms. Thirteen sites (Sites 1-6, 9, 12, 13 and 17-20) were found not to pose a threat to human health or the environment, and no further action was recommended. Site 7 was recommended for a removal action. Six sites (Sites 8, 10, 11 and 14-16) were recommended for further investigation. Based on EPA review comments of the IAS, four sites (Sites 1, 7, 18 and 19) were later added to the Site Investigation (SI).

Sites 21-54 - Thirty-four potentially contaminated sites at MCAGCC Twentynine Palms were identified after the IAS. Based on discussions with regulatory agencies and on the Department of the Navy's (DON's) internal review, all 34 sites were recommended for further investigation.

FY88

Sites 1-22, 25-27, 29, 30, 33-36 and 39-54 - A Confirmation Study (CS), Verification Step Report (equivalent to an SI), was completed in FY88. The study recommended further investigation for all sites. Further investigation was scheduled for FY93.

FY91

USTs 1-9 - A Site Assessment Report Phase I, for 15 tank locations at MCAGCC Twentynine Palms was completed in September 1991. Nine of the fifteen locations (Underground Storage Tanks 1-9) were recommended for additional investigation and remediation before a request for closure. The nine UST locations were identified as having petroleum products contamination at the following locations: one tank at Building 1851 (UST

TWENTYNINE PALMS MCAGCC HISTORICAL PROGRESS

1); four tanks at Building 1630 (UST 2); four tanks at Building 1573 (UST 3); one tank at Building 1559 (UST 4); two tanks at Building 1440 (UST 5); four tanks at Building 1420 (UST 6); two tanks at Building 1400 (UST 7); six tanks at Building 1138 Gas Station (UST 8); and one tank at Building 1065 (UST 9).

FY92

Sites 31, 32, 37 and 38 - SI phases were completed.

FY93

Sites 1-54 - SI initiated.

FY94

Site 16 - An SI was completed.

USTs 1-9 - A Remedial Investigation for bioventing all nine UST sites was

completed.

Sites 17 and 18 - Removal actions consisting of bioventing were initiated and will be completed in FY00.

UST 8 - Corrective measures initiated and will be completed in FY00.

FY95

Sites 2 and 3 - Removal actions consisting of bioventing were ongoing.

Site 14 - Two Interim Remedial Actions (IRAs) were completed. These included controlling access to the site and adding drainage controls.

USTs 1-9 - Investigations were completed at all nine UST sites.

USTs 2, 3, 5, 6 and 8 - Corrective measures consisting of bioventing were initiated and will be completed in FY00.

USTs 7 and 9 - Corrective measures were initiated at UST 7 (bioventing) and UST 9 (bioheap) and will be completed in FY98.

PROGRESS DURING FISCAL YEAR 1996

FY96

Sites 17, 10-17, 19-29, 31, 33-36, 39-54 - SIs were completed.

Sites 19 and 23 - Completed IRAs.

Sites 4, 10-15, 19, 21, 23, 27-29, 31, 34-36 and 39-51 - Response Complete.

Sites 8, 22 and 54 - Cleanup completed.

UST 4 - Completed IRA and Corrective Measure Implementation.

USTs 5 and 6 - Completed Corrective Measure Operation.

PLANS FOR FISCAL YEARS 1997 AND 1998

FY97

Site 22 - Complete RI/FS.

Sites 8 and 21 - Complete IRAs.

Sites 5 and 25 - Complete RAC.

Site 25 - Complete Remedial Action Operation (RAO) and determine Response Complete.

Site 52 - Determine Response Complete.

FY98

Sites 5 and 6 - Complete RAOs.

Sites 5, 7 and 8 - Complete one IRA at Site 5 and two IRAs at both Sites 7 and 8.

Sites 5, 7 and 8 - Determine Response Complete.

USTs 4 and 7 - Complete IRAs.

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|-----------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | 7 | 47 | | | | | | |
| RI / FS | | | 1 | | | | | |
| RD | 1 | | | | | | | 7 |
| RAC | | 3 | 2 | | 1 | 1 | | 4 |
| RAO | | | 1 | 2 | | | 4 | 2 |
| IRA | 1(2) | 2(2) | 2(2) | 3(5) | | 4(4) | 1(1) | 13(16) |
| RC | 4 | 30 | 2 | 3 | | | 2 | 13 |
| Cumulative % RC | 7% | 63% | 67% | 72% | 72% | 72% | 76% | 100% |
| UST | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
| SA | 9 | | | | | | | |
| CAP | | | | | | | | |
| DES | 8 | | | | | | | 1 |
| IMP | 1 | 1 | | | | 2 | | 2 |
| IMO | | 2 | | | | 1 | | 3 |
| IRA | | 1(1) | | 2(2) | 1(1) | 5(5) | | 8(8) |
| RC | | | | | 1 | | | 8 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 11% | 11% | 11% | 100% |

WARNER SPRINGS SURVIVAL, EVASION, RESISTANCE AND ESCAPE CAMP

WARNER SPRINGS, CALIFORNIA



Engineering Field Division/Activity: SWESTDIV
Major Claimant: CINCPACFLT
Size: 60 Acres
Funding to Date: \$293,000
Estimated Funding to Complete: \$2,910,000

Base Mission: Provides training in survival, evasion, resistance and escape for Pacific fleet Naval Aviators (AIRPAC) and other personnel

Contaminants: Motor oil, lubricants, solvents, paint, ethylene glycol, hydraulic fluid, batteries, used rags and household rubbish (lead and acid)

| | | | | | |
|-------------------------|---|--|---|----------------|---|
| Number of Sites: | | Relative Risk Ranking of Sites: | | | |
| CERCLA: | 1 | High: | 0 | Not Evaluated: | 0 |
| RCRA Corrective Action: | 0 | Medium: | 0 | Not Required: | 0 |
| RCRA UST: | 0 | Low: | 1 | | |
| Total Sites: | 1 | | | | |

Sites Response Complete: 0

PROGRESS AND PLANS

| CERCLA | FY95 and before | FY96 | FY97 | FY98 | FY99 | FY00 | FY01 | FY02 and After |
|------------------------|-----------------|------|------|------|------|------|------|----------------|
| PA / SI | | 1 | | | | | | |
| RI / FS | | | | | | | | 1 |
| RD | | | | | | | | 1 |
| RAC | | | | | | | | 1 |
| RAO | | | | | | | | |
| IRA | | | | | | 1(1) | | 1(1) |
| RC | | | | | | | | 1 |
| Cumulative % RC | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% |