



**UNITED STATES MARINE CORPS**

HEADQUARTERS MARINE CORPS AIR STATION EL TORO  
PO BOX 95001  
SANTA ANA CA 92709-5001

M60050.001880  
M60050.001880  
MCAS EL TORO  
SSIC # 5090.3

IN REPLY REFER TO:

6284  
1AU  
October 7, 1996

Mr. Tayseer Mahmoud  
Department of Toxic Substances Control  
Region 4 Base Closure Unit  
Office of Military Facilities  
245 West Broadway, Suite 350  
Long Beach, CA 90802-4444

Dear Mr. Mahmoud:

Transmitted for your information is a copy of the Final Action Memorandum, Time-Critical Removal Actions at the Marine Corps Air Station, El Toro, Installation Restoration Program (IRP) Site 2 (Magazine Road Landfill) and IRP Site 17 (Communication Station Landfill). The document has been placed in the Administrative Record and the Information Repository.

If you have questions pertaining to the Action Memorandum, please do not hesitate to contact Mr. Joseph Joyce, Base Realignment and Closure Environmental Coordinator (BEC), Marine Corps Air Station, El Toro at (714) 726-3470.

Sincerely,

*F. A. P. Joyce*  
for

JOSEPH JOYCE  
Base Realignment and Closure  
Environmental Coordinator  
By direction of  
the Commanding General

Encl:  
(1) "Final Action Memorandum"



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October 7, 1996

Mr. Larry Vitale  
Regional Water Quality Control Board  
Santa Ana Region  
California Environmental Protection Agency  
2010 Iowa Avenue, Suite 100  
Riverside, CA 92507-2409

Dear Mr. Vitale:

Transmitted for your information is a copy of the Final Action Memorandum, Time-Critical Removal Actions at the Marine Corps Air Station, El Toro, Installation Restoration Program (IRP) Site 2 (Magazine Road Landfill) and IRP Site 17 (Communication Station Landfill). The document has been placed in the Administrative Record and the Information Repository.

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PO BOX 95001  
SANTA ANA CA 92709-5001

IN REPLY REFER TO:

6284  
1AU  
October 7, 1996

Ms. Marcia Rudolph  
26491 Summer Creek  
Lake Forest, CA 92630

Dear Ms. Rudolph:

As a member of the subcommittee for Operable Unit 2 of the Restoration Advisory Board, we are transmitting for your information one copy of the Final Action Memorandum, Time-Critical Removal Actions at the Marine Corps Air Station, El Toro, Installation Restoration Program (IRP) Site 2 (Magazine Road Landfill) and IRP Site 17 (Communication Station Landfill). The document has been placed in the Administrative Record and the Information Repository.

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SANTA ANA, CA 92709-5001

IN REPLY REFER TO:

6284  
1AU  
October 7, 1996

U. S. Environmental Protection Agency  
Attn: Ms. Bonnie Arthur  
Region IX H-9-2  
75 Hawthorne Street  
San Francisco, CA 94105

Dear Ms. Arthur:

Transmitted for your information is a copy of the Final Action Memorandum, Time-Critical Removal Actions at the Marine Corps Air Station, El Toro, Installation Restoration Program (IRP) Site 2 (Magazine Road Landfill) and IRP Site 17 (Communication Station Landfill). The document has been placed in the Administrative Record and the Information Repository.

If you have questions pertaining to the Action Memorandum, please do not hesitate to contact Mr. Joseph Joyce, Base Realignment and Closure Environmental Coordinator (BEC), Marine Corps Air Station, El Toro at (714) 726-3470.

Sincerely,

*F. A. Joyce*  
for

JOSEPH JOYCE  
Base Realignment and Closure  
Environmental Coordinator  
By direction of  
the Commanding General

Encl:  
(1) "Final Action Memorandum"

**FINAL  
ACTION MEMORANDUM**

**TIME-CRITICAL REMOVAL ACTIONS  
AT THE MARINE CORPS AIR STATION, EL TORO  
INSTALLATION RESTORATION PROGRAM (IRP) SITE 2 (MAGAZINE ROAD  
LANDFILL) AND IRP SITE 17 (COMMUNICATION STATION LANDFILL)**

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**Marine Corps Air Station (MCAS), El Toro, California**

**SUBJ: ACTION MEMORANDUM FOR REMOVAL ACTIONS AT THE MARINE CORPS AIR STATION, EL TORO INSTALLATION RESTORATION PROGRAM (IRP) SITE 2 (MAGAZINE ROAD LANDFILL) AND SITE 17 (COMMUNICATION STATION LANDFILL)**

Site Status: NPL  
Category of Removal: Time-Critical Removal Action  
CERCLIS ID: CA6170023208  
Site ID: IRP Site 2 and IRP Site 17

## **I. PURPOSE**

The purpose of this ACTION MEMORANDUM is to document, for the Administrative Record, the Department of the Navy's (DON's) decision to undertake Time-Critical Removal Actions (TCRAs) at Installation Restoration Program (IRP) Site 2 (Magazine Road Landfill) and IRP Site 17 (Communication Station Landfill) at the Marine Corps Air Station (MCAS), El Toro, California. The actions are intended to provide security and to mitigate the erosion of landfill debris along surface drainage channels at the landfill sites. The Department of Defense has the authority to undertake Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response actions, including removal actions, under 42 U.S.C. Section 9604, 10 U.S.C. Section 2705, and federal Executive Order 12580. Site work associated with the removal actions began in June 1996, and field activities are anticipated to continue through December 1997.

The scope of the removal actions at IRP Sites 2 and 17 was based upon reducing potential exposure of human and animal populations to hazardous substances, pollutants, or contaminants which could be transported from the landfill sites during storm events by surface water flows.

The proposed removal actions include the following activities: a) construction of security fencing at IRP Sites 2 and 17 to minimize access to the sites and, therefore, potential exposure of nearby residents and Station personnel to landfill materials; b) protection of landfill areas from erosion by constructing surface drainage improvements at IRP Sites 2 and 17; c) relocation of previously eroded landfill materials along the surface drainages at IRP Sites 2 and 17 to central locations within the boundaries of the landfill sites. Improvements to existing access routes at IRP Sites 2 and 17 will also be made to facilitate the transport of personnel, equipment, and supplies to the work areas. By accomplishing these activities, the proposed removal actions will substantially reduce the identified

pathways of exposure to hazardous substances or pollutants or contaminants for residents near the site, Station personnel working near or at the site, adjacent property owners, and wildlife.

The removal actions at IRP Site 2 are also intended to respond, in part, to the Regional Water Quality Control Board letter to MCAS El Toro dated December 24, 1992 which is attached. The removal actions are being coordinated with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service. Biological surveys for protected natural resources will be conducted coincidental to the performance of the removal actions at each site.

The proposed removal actions for IRP Sites 2 and 17 are deemed consistent with the factors set forth within the National Contingency Plan (NCP), 40 Code of Federal Regulations (CFR) Part 300.

The proposed removal actions for IRP Sites 2 and 17 are intended to be interim measures to protect human health and the environment until the final remedies are implemented at each landfill site. The removal actions are intended, to the extent practicable, to contribute to the efficient performance of any anticipated long-term remedial action with respect to the releases concerned in accordance with 40 CFR 300.415(d).

There are no nationally-significant or precedent-setting issues for this site.

## **II. SITE CONDITIONS AND BACKGROUND**

### **A. Site Description**

#### **1. Removal Site Evaluation**

##### ***IRP Site 2 (Magazine Road Landfill)***

*The following information was extracted or summarized from the Draft Phase II Remedial Investigation Report - Site 2, Marine Corps Air Station, El Toro (Bechtel, 1996).*

IRP Site 2 is located in the foothills of the Santa Ana Mountains at the margin with the Tustin Plain. The site is situated at the lower end of Borrego Canyon drainage basin in the northeast section of the Station. The main channel of Borrego Canyon Wash enters Site 2 from the east and exits at the south end of the site onto the Tustin Plain. A tributary channel enters Site 2 from the west and joins the main channel in the southern half of Site 2. An unlined man-made channel exists between the main channel and north fork in the northern half of the site. IRP Site 2 encompasses approximately 20 acres. The landfill is not being used currently, and it has become overgrown with shrubs and grass. A fill cover of variable thickness has been placed over the landfill.

The Site 2 landfill was used from the late 1950's until about 1980. During the 1970's, all solid waste from MCAS El Toro and some waste from MCAS Tustin were disposed in this landfill. Suspected types of waste include construction debris, municipal waste, batteries, waste oils, hydraulic fluids, paint residues, transformers, and waste solvents.

The majority of landfill material is found in a relatively flat plain located within the stream valley. The flat areas that overlie landfill material are subject to ponding and infiltration of surface water. The boundary of the landfill is usually characterized by steep slopes. These slopes and the stream banks show evidence of erosion and have a potential for collapse. Heavy rainfall occurring in a short period of time can lead to flooding conditions in the washes. This accelerates erosion of landfill wastes, impacts surface water quality, and contributes to contamination of sediment.

Three vegetation community types dominate Site 2: annual grassland, riparian wash, and coastal sage scrub. Annual grassland has invaded the heavily disturbed portions of the landfill, which correspond to the flatter areas of the site. Coastal sage scrub is confined to several undisturbed areas within Site 2 and other areas where scrub species have reinvaded. Sycamore, coast live oak, willow, and eucalyptus trees also occur along washes. This vegetation helps to stabilize the surface and provides habitats for several species of wildlife, including the federally listed California gnatcatcher.

Extensive sampling was performed in air, soil, sediment, surface water, and groundwater in order to characterize the nature and extent of contamination during the Phase I and Phase II Remedial Investigations. Chemicals of Potential Concern (COPCs) were found in these media.

Air sampling indicated that low concentrations of Volatile Organic Compounds (VOCs) and methane are being emitted from the surface of the landfill. Benzene and toluene concentrations from the integrated air samples exceeded the California Air Resources Board (CARB) median values but were below the CARB maximum values for these compounds. 1,1,1-trichloroethane (TCA) from the ambient air samples exceeded the CARB Anaheim median values but were below maximum values for this compound. Various low concentrations of VOCs were detected in isolation flux chamber samples.

A soil gas survey performed at Site 2 identified several areas of total VOC concentrations that exceeded the hot spot threshold of 300 parts per million by volume. The majority of the hot spots consisted of Freon 12 with minor concentrations of vinyl chloride, trichloroethene (TCE), tetrachloroethene (PCE), benzene, and toluene.

Surface, shallow, and subsurface soil samples contained detectable concentrations of VOCs, Semi-volatile Organic Compounds (SVOCs), pesticides, and metals.

Groundwater samples from Site 2 contained detectable concentrations of pesticides, VOCs, SVOCs, metals, and gross alpha and beta activity. Of the VOCs, TCE and PCE exceeded maximum contaminant levels (MCLs). Several metals also exceed MCLs; however, manganese appears to be the only metal that may be attributable to leaching of the landfill.

Sediment samples contained total recoverable petroleum hydrocarbons (TRPH), total petroleum hydrocarbons (TPH) as gasoline, 2-(2methyl-4-chlorophenoxy)-propionic acid (MCPP), arsenic, and beryllium above Preliminary Remediation Goals (PRGs) or MCAS El Toro background concentrations.

Surface water samples contained low concentrations of bicarbonate, chloride, nitrite/nitrate, and total dissolved solids.

Surface water acts as a transport mechanism by transporting dissolved and suspended landfill COPCs offsite. Three surface water drainages cross the site and coalesce through a confluence near the southwestern end of the site. These drainages have intermittent flow, but, during times of significant rainfall, substantial surface water flows through these drainages, resulting in erosion of the surface of the landfill materials and transport of available landfill waste downstream. The surface drainages discharge to San Diego Creek which feeds the Upper Newport Bay Ecological Reserve, a coastal wetlands.

*The following information was extracted or summarized from the Initial Assessment Study of Marine Corps Air Station, El Toro, California, NEESA 13-074 (Naval Energy and Environmental Support Activity (NEESA), May 1986).*

The information reported in the Initial Assessment Study (IAS) was compiled from on-site examinations, interviews, and records review.

Site 2 was operated as a disposal site during the period from the late 1960's through 1980, approximately. The site was used by Facilities Management Department, Station contractors, and others. Wastes were disposed of in trenches near man-made and natural surface drainage channels. The estimated depth of the landfill varies from 25 to 30 feet. Wastes reportedly included construction debris, broken concrete, asphalt, automotive batteries, scrap metals, household refuse, waste motor oil, hydraulic fluid, fuels, lead-based paint residue, containers, solvents, and possibly transformers.

Contaminants are likely to migrate from the site by entering the ground water or by entering the surface drainage system and traveling to San Diego Creek, which empties into the Upper Newport Bay Ecological Reserve. Therefore, this site poses a potential hazard to human health indirectly through the food chain, and to the environment as contaminants migrating from the site enter the surface waters nearby.

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*The following information was extracted or summarized from the Interviews with Active and Retired Personnel from MCAS El Toro (JEG, 1994).*

The Station periodically burned waste oils, waste solvents, and miscellaneous solid wastes at the Original Landfill, and similar refuse burns were conducted infrequently at Site 2.

*The following information was extracted or summarized from the Health Assessment for El Toro Marine Corps Air Station, Santa Ana, Orange County, California, CERCLIS No. CA6170023208 (Agency for Toxic Substances and Disease Registry, February 1993).*

The Agency for Toxic Substances and Disease Registry (ATSDR) conducted a health assessment for MCAS El Toro during the period from 1991 through 1993. The assessment included the following activities: a) a site visit during the period from 21-25 March 1991; b) interviews with Joint Public Affairs staff, the Station's industrial hygienist, the Station's occupational medicine physician, and the Community Planning and Liaison staff to identify any on-station or off-station community health concerns; c) participation in a Technical Review Committee meeting.

ATSDR has categorized the El Toro Marine Corps Air Station as an indeterminate public health hazard due to the limited data available from on-station media that would indicate whether or not humans are being exposed to levels of contaminants expected to cause adverse health effects.

The assessment states "Access to Site 2 is restricted by fence. Only authorized personnel are permitted to access the site."

### ***IRP Site 17 (Communication Station Landfill)***

*The following information was extracted or summarized from the Draft Phase II Remedial Investigation Report - Site 17, Marine Corps Air Station, El Toro (Bechtel, 1996).*

IRP Site 17 is located in the foothills of the Santa Ana Mountains at the margin with the Tustin Plain. The site occupies approximately 20 acres in a ravine between Borrego Canyon Wash and Agua Chion Wash in the northeast section of the Station. Most of Site 17 is composed of an active unlined drainage channel that drains a relatively flat area at the north end of Site 17 and empties into a plowed field at the base of the site. The landfill is not being used currently, and it has become overgrown with shrubs and grass. A fill cover of variable thickness has been placed over sections of the landfill.

The overall gradient of the main channel through the central portion of the Site 17 study area is approximately 7 percent. However, the surface gradient is highly irregular. Depending on location, the gradient of the channel can be less than 3 percent or greater than 10%. Portions with steeper gradients are subject to erosion while other localized areas

are relatively flat and subject to ponding. Severe erosion has occurred where a paved access road approaches the site from the southeast, creating a small cliff where the road is undermined. Severe erosion has also occurred at the toe of the landfill and has created vertical stream banks approximately 5 feet deep. Erosion of landfill wastes is a problem because it impacts surface water quality, and contributes to contamination of sediment.

Three vegetation community types dominate Site 17: annual grassland, riparian wash, and coastal sage scrub. Annual grassland has invaded the heavily disturbed portions of the landfill, which correspond to the flatter areas of the site. Coastal sage scrub is confined to several undisturbed areas within Site 17 and other areas where shrub species have reinvaded. The riparian wash vegetation is primarily mule fat and tree tobacco. This vegetation helps to stabilize the surface and provides habitats for several species of wildlife, include the federally listed California gnatcatcher.

Extensive sampling was performed in air, soil, and groundwater in order to characterize the nature and extent of contamination during the Phase I and Phase II Remedial Investigations. Several COPCs were found in these media. The types and concentrations of COPCs are discussed in the following paragraphs.

A soil gas survey performed at and adjacent to Site 17 identified very low VOC concentrations that did not exceed the hotspot threshold of 300 parts per million by volume. The majority of the soil gas detected was Freon 113; no methane was detected.

Surface, shallow, and subsurface soil samples contained detectable concentrations of VOCs, semi-volatile organic compounds (SVOCs), pesticides, herbicides, polychlorinated biphenyls (PCBs), dioxins, and metals. SVOCs, pesticides, PCBs, and metals exceeded U.S. EPA Preliminary Remediation Goals or background concentrations for MCAS El Toro in shallow soil (0 - 10 feet deep). Herbicides, dioxin, and metals exceeded the MCAS El Toro reference levels or background concentrations in subsurface soil (greater than 10 feet deep).

Groundwater samples from Site 17 contained detectable concentrations of VOCs, SVOCs, petroleum hydrocarbons, metals, and gross alpha and beta activity. Manganese, selenium, and thallium exceed the U.S. EPA maximum contaminant levels at one downgradient monitoring well.

Surface water acts as a transport mechanism by eroding the landfill and transporting waste downstream. Erosion of landfill materials has occurred and will continue to occur under the present site conditions, as observed in rubble and debris extending through the mouth of the canyon southwest of the landfill area.

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*The following information was extracted or summarized from the Initial Assessment Study of Marine Corps Air Station, El Toro, California, NEESA 13-074 (Naval Energy and Environmental Support Activity (NEESA), May 1986).*

The information reported in the Initial Assessment Study (IAS) was compiled from on-site examinations, interviews, and records review.

Site 17 was operated as a disposal site during the period from 1981 through 1983, approximately. Wastes reportedly included cooking grease, oils, fuels, and municipal debris. It was reported that a 1,000-gallon vacuum truck repeatedly discharged liquid wastes, including cooking grease and oils and fuels from sumps, to Site 17. The site was reportedly used for the disposal of rubble and municipal waste and other unknown types of wastes; any type of waste generated at the Station between 1981 and 1983 may have been disposed of at this landfill. Reportedly, the site has also been used by "midnight dumpers" for rubble and municipal debris.

*The following information was extracted or summarized from the Interviews with Active and Retired Personnel from MCAS El Toro (JEG, 1994).*

The Site 17 landfill was used primarily for construction debris, however, the Facilities Management Department did not have control over the types of wastes which were disposed of into the landfill. Employees indicated that it was possible that waste chemicals were disposed of into the landfill. No refuse burns were allowed at this landfill.

*The following information was extracted or summarized from the Health Assessment for El Toro Marine Corps Air Station, Santa Ana, Orange County, California, CERCLIS No. CA6170023208 (Agency for Toxic Substances and Disease Registry, February 1993).*

The assessment recommends "Restrict access to Site 17 - Communications Landfill, to prohibit children from the neighboring family housing complex from using the area as a playground."

### ***Evaluation of IRP Sites 2 and 17***

IRP Sites 2 and 17 have been evaluated according to the criteria presented in 40 CFR 300.415 (b) and due to the presence of exposed landfill debris, including drums and containers in surface drainages at both sites, the following conditions have been determined to apply: a) actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; b) actual or potential contamination of sensitive ecosystems; c) hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release; d) weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

The proposed removal actions for IRP Sites 2 and 17 have been identified and selected following the evaluation of appropriate removal actions described in 40 CFR 300.415(e). The following actions have been determined to be appropriate: a) fences, warning signs, or other security of site control precautions - where humans or animals have access to the release; b) drainage controls, for example, run-off or run-on diversion - where needed to reduce migration of hazardous substances or pollutants or contaminants off-site or to prevent precipitation or run-off from other sources, for example, flooding, from entering the release area from other areas; c) excavation, consolidation, or removal of highly contaminated soils from drainage or other areas - where such actions will reduce the spread of, or direct contact with, the contamination; d) removal of drums, barrels, tanks, or other bulk storage containers that contain or may contain hazardous substances or pollutants or contaminants - where it will reduce the likelihood of spillage, leakage, exposure to humans, animals, or food chain; e) containment, treatment, or disposal of hazardous materials - where needed to reduce the likelihood of human, animal, or food chain exposure.

It should be noted that the ATSDR assessment incorrectly states that access to IRP Site 2 is restricted. Prior to the construction of the security fencing in August and September 1996, the site was accessible to the public. Nearby residents from Station housing, pedestrians, equestrians, and vehicles traveling along Irvine Boulevard had access to the site.

## **2. Physical Location**

The Marine Corps Air Station (MCAS), El Toro is located in Orange County, California about eight miles southeast of the City of Santa Ana and twelve miles northeast of the City of Laguna Beach. The Station comprises approximately 4,700 acres and elevations vary from approximately 200 to 700 feet above sea level across the Station. The average annual precipitation for this area is approximately 12 inches, and precipitation occurs mostly during the winter.

Magazine Road Landfill (IRP Site 2) and Communication Station Landfill (IRP Site 17) are located in the northeastern section of the Station. Both landfills have received wastes generated during the operation and maintenance of military aircraft and ground support equipment. There are Station residential areas and public facilities located within one-half mile of IRP Sites 2 and 17. The James A. Musick Branch Jail is located on the property adjacent to and within 500 feet of IRP Site 2, and Station housing is located within one-half mile of IRP Site 17.

Most of the land northwest of MCAS El Toro is used to grow oranges and other 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

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wetlands encompassing approximately 750 acres. The surface drainages located on IRP Sites 2 and 17 discharge to San Diego Creek.

The primary mission of the Station has been and currently is to provide for operations and maintenance of military aircraft and ground support equipment. 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. Wastes generated by the Station have included solvents, fuels, hydraulic fluids, waste oil, batteries, and paints. Past operations and disposal practices are believed to have contaminated the groundwater in the vicinity of the Station.

### **3. Site Characteristics**

Site characteristics, as identified during the remedial investigations of IRP Sites 2 and 17, are described in Section II, Part A.1.

### **4. Release or Threatened Release Into the Environment of a Hazardous Substance or Pollutant or Contaminant**

Landfill debris, including municipal wastes and construction debris, has been disposed of at both IRP Sites 2 and 17. Previous reports by the Naval Energy and Environmental Support Activity and Jacobs Engineering Group indicate that a variety of wastes associated with the operations and maintenance of military aircraft and ground support equipment, including waste fuels, hydraulic fluids, dry cleaning solvents, paint thinner, antifreeze, pesticides, batteries, detergents, contaminated rags, and waste oils, were potentially disposed of at IRP Sites 2 and 17.

Containers, including drums, metallic debris, and concrete debris have been exposed along the surface drainage channels at both sites. During storm flows, landfill debris has been transported along the surface drainage channels and has been deposited along adjacent properties near IRP Site 2 and downstream of the landfill boundary at IRP Site 17. The landfill debris may potentially contain hazardous substances or pollutants or contaminants that could be transported by surface run-off along the drainage channels to San Diego Creek and ultimately to the Upper Newport Bay Ecological Reserve.

COPCs which were identified in near-surface soils during the Remedial Investigation include VOCs, SVOCs, pesticides, and metals. COPCs could potentially be released from the landfill or transported downstream during storm flows.

### **5. NPL Status**

The Station was placed on the National Priorities List (NPL) in February 1990 based upon a Hazard Ranking Score of 40.83. The NPL listing was due to the presence of volatile

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organic compound (VOC) contamination in the groundwater. A Federal Facility Agreement (FFA) for MCAS El Toro was signed in October 1990.

## **6. Maps**

Maps of the Station and IRP Sites 2 and 17 are presented as attachments.

## **B. Other Actions to Date**

### **1. Previous Actions**

An Initial Assessment Study (IAS) (equivalent to a Preliminary Assessment (PA)), completed in May 1986, identified 17 potentially contaminated sites at MCAS El Toro, including IRP Site 2 and IRP Site 17.

Planning for Remedial Investigation activities was accomplished during the period from 1989 through 1991.

The Agency for Toxic Substances and Disease Registry (ATSDR) published a health assessment for MCAS El Toro in 1993.

Phase I and II Remedial Investigation field activities were conducted during the period from 1991 through 1996 at IRP Sites 2 and 17, and the draft Phase II Remedial Investigation Reports for each site were published in 1996.

### **2. Current Actions**

The Draft Final Remedial Investigation Reports and the Draft Feasibility Studies for IRP Sites 2 and 17 are expected to be completed in 1996.

As the lead federal agency, the DON has initiated a community relations program in coordination with the U.S. EPA, California Department of Toxic Substances Control (DTSC), and the Regional Water Quality Control Board (RWQCB) to solicit community input and keep the community informed of the status of the removal actions. A Restoration Advisory Board (RAB) has been established at MCAS El Toro to allow a wider range of community involvement. It currently meets every other month. The RAB broadens the focus for community input and participation in all aspects of the MCAS El Toro IRP activities.

The DON has established and maintains an Administrative Record and Information Repository. The Action Memorandum and the Summary Report for the Time-Critical Removal Actions at IRP Sites 2 and 17 will be placed in the Administrative Record and Information Repository.

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The Navy/Marine Corps provided information concerning the removal actions to the public in a fact sheet which was published in April 1996

The Navy/Marine Corps has notified the Orange County Flood Control District of the proposed plans for the removal actions at IRP Site 2 in the vicinity of Borrego Canyon Wash. The County is planning for the future extension of Alton Parkway, which will be located in close proximity to the estimated boundaries of IRP Site 2. The Navy/Marine Corps requested a meeting with the County in a letter dated April 19, 1996, which is included in the attachments. County representatives provided available information pertaining to the Borrego Canyon Wash watershed. The County has not proceeded with the development of detailed plans for the Alton Parkway extension and associated surface water drainage structures. However, the Navy/Marine Corps will take all precautions to ensure that future roadway extension projects are not negatively impacted by the activities conducted during the removal actions.

### **C. State and Local Authorities Roles**

#### **1. State and Local Actions to Date**

The DON is the lead federal agency for the removal actions and the U.S. EPA is the lead regulatory agency because MCAS El Toro is an NPL site of the Superfund Program. Federal Executive Order 12580 delegates the authority to the Department of Defense to undertake CERCLA response actions (Federal Executive Order 1987).

The BRAC Cleanup Team (BCT) was established in October 1993. The BCT consists of representatives from the United States Marine Corps/Navy, California EPA DTSC, and EPA Region IX. The BCT has provided oversight and technical advice during the planning and implementation of the Remedial Investigation, the development of the remedial alternatives of the Feasibility Studies, and the development of the plans for the removal actions at IRP Sites 2 and 17.

The DON requested in a letter dated July 26, 1996 (attached) that the California EPA DTSC identify potential chemical-specific, location-specific, and action-specific Applicable or Relevant and Appropriate Requirements (ARARs) for the presumptive remedies for Operable Unit 2B, which includes IRP Sites 2 and 17, and Operable Unit 2C pursuant to 40 CFR 300.515(h)(2) and Section 7.6(b) of the Federal Facilities Agreement. The DON received ARARs from the California EPA DTSC on September 5, 1996, and the ARARs are discussed in Section V. Many of the ARARs identified by the California EPA are applicable only to the final remedy.

## **2. Potential for Continued State and Local Response**

The BCT will continue to provide oversight and technical advice throughout the implementation of the removal actions and during the development of the final remedies for IRP Sites 2 and 17. It is expected that the Department of the Navy's BRAC funds will continue to be the exclusive source of funding for the Installation Restoration Program.

### **III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT AND STATUTORY AND REGULATORY AUTHORITIES**

#### **A. Threats to Public Health or Welfare**

Threats to public health or welfare due to potential releases to the environment at IRP Sites 2 and 17 are consistent with the criteria described in 40 CFR 300.415(b)(2).

The presence of landfill debris in surface drainage channels at IRP Sites 2 and 17 creates the potential for exposure to hazardous substances or pollutants or contaminants by nearby populations, animals, or food chains. Specific chemicals of potential concern are identified in Section II.A.1.

Weather conditions, such as storm events, provide mechanisms for the transport and deposition of landfill materials onto adjacent properties. Drums and/or other containers, metallic debris, and concrete debris are visible along the surface drainage channels at each site, and the nearby populations and Station personnel could be exposed to contaminants or pollutants from these sources. Routes of exposure include dermal absorption and ingestion of contaminated food, water, or soil.

#### **B. Threats to the Environment**

Potential threats to the environment due to potential releases from IRP Sites 2 and 17 are consistent with the criteria described in 40 CFR 300.415(b)(2).

The presence of landfill debris in surface drainage channels at IRP Sites 2 and 17 creates the potential for exposure to hazardous substances or pollutants or contaminants by animals. Specific chemicals of potential concern are identified in Section II.A.1.

Drums and/or other containers are visible along the surface drainage channels at each site, and these containers could release contaminants to the environment.

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#### IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of pollutants or contaminants from this site, if not addressed by implementing the response actions identified in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

#### V. PROPOSED ACTIONS AND ESTIMATED COSTS

##### A. Proposed Actions

##### 1. Proposed Action Description

- **Construction of security fencing around IRP Sites 2 and 17.** The construction of fences as a site control measure is identified as a potentially appropriate CERCLA removal action in 40 CFR 300.415(e)(1).
- **Removal of landfill debris from surface drainage channels at IRP Sites 2 and 17.** The removal of the debris will mitigate a release or a threatened release of hazardous substances or pollutants or contaminants during storm events in accordance with 40 CFR 300.415(b)(2)(v).
- **Mitigation of continued erosion of landfill debris along surface drainage channels at IRP Sites 2 and 17.** The mitigation measures will reduce the migration of hazardous substances or pollutants or contaminants off-site or into other areas in accordance with 40 CFR 300.415(e)(2).

Improvements will also be made to existing access routes at IRP Sites 2 and 17 to facilitate the transportation of equipment, supplies, and personnel to the work areas.

A summary report will be published following the completion of field work. The summary report will include information and maps describing fence locations, debris removal activities, erosion mitigation measures, and other site work.

##### 2. Contribution to Remedial Performance

The proposed actions, to the maximum extent practicable, will contribute to the efficient performance of the long-term remedial actions for IRP Sites 2 and 17 in accordance with 40 CFR 300.415(d).

##### 3. Description of Alternative Technologies

The **No Action Alternative** was evaluated and determined to not be protective of human health and the environment. The cost of the No Action Alternative is \$0. If no actions are

taken, then the potential exposure of human and animal populations to hazardous substances or pollutants or contaminants from IRP Sites 2 and 17 would continue. Contamination will most likely continue to spread from IRP Site 2 to the adjacent properties during storm flows along Borrego Canyon Wash and could cause pollutants or contaminants to be introduced to the Upper Newport Bay Ecological Reserve during flood flows. Contamination will most likely continue to spread from IRP Site 17 to the adjacent downstream areas. This spread of contamination could result in an increased health risk to the exposed populations.

#### **4. Engineering Evaluation/Cost Analysis (EE/CA)**

Not applicable.

#### **5. Applicable or Relevant and Appropriate Requirements (ARARs)**

Section 300.415(j) of the NCP provides that removal actions must attain ARARs to the extent practicable considering the exigencies of the situation. As the lead federal agency, the Department of the Navy has identified potentially applicable ARARs for the removal actions.

Section 300.5 of the NCP defines *applicable requirements* as cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstances at a CERCLA site.

Section 300.5 of the NCP defines *relevant and appropriate requirements* as cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not "applicable" to a hazardous substance, pollutant, or contaminant; remedial action; location; or other circumstances at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site and are well-suited to the particular site.

Because CERCLA on-site response actions do not require permitting, only substantive requirements are considered as possible ARARs. Administrative requirements such as approval of, or consultation with, administrative bodies; documentation; reporting; record keeping; and enforcement are not ARARs for CERCLA actions confined to the site.

Only those state standards that are identified by a state in a timely manner and are more stringent than federal requirements may be applicable or relevant and appropriate.

There are three types of ARARs. The first type includes chemical-specific requirements. These ARARs set limits on concentrations of specific hazardous substances, contaminants, and pollutants in the environment. Examples of this type of ARAR are ambient water

quality criteria and drinking water standards. The second type of ARAR includes location-specific requirements that set restrictions on certain types of activities based on site characteristics. These include restrictions on activities in wetlands, floodplains, and historic sites. The third type of ARAR includes action-specific requirements. These are technology-based restrictions that are triggered by the type of action under consideration. Examples of action-specific ARARs are RCRA regulations for waste treatment, storage, and disposal or the South Coast Air Quality Management District regulations for air emissions.

ARARs must be identified on a site-specific basis from information about specific chemicals at the site, specific features of the site location, and actions that are being considered as removal actions.

*Clean Water Act, Section 404 and 33 CFR Part 320 et seq*

The substantive requirements of the Clean Water Act, Section 404 are applicable for the placement of fill material to abate the erosion of landfill debris in potential wetlands areas at IRP Sites 2 and 17. The Navy/Marine Corps corresponded with the U.S. Army Corps of Engineers, Los Angeles District in early 1996, and the Army's letter of response dated April 22, 1996 is included in the attachments. The Army stated that CERCLA response actions are not subject to permitting requirements under Section 404 of the Clean Water Act.

*33 CFR 330 - Nationwide Permit Program.* The nationwide permit refers to a type of general permit which authorizes activities on a nationwide basis unless specifically limited. The following activities and conditions were determined to be appropriate.

*33 CFR 330, Appendix A-Index of the Nationwide Permits and Conditions  
Nationwide Permits*

38. Cleanup of Hazardous and Toxic Waste. Specific activities required to effect the containment, stabilization or removal of hazardous or toxic waste materials that are performed, ordered, or sponsored by a government agency with established legal or regulatory authority provided the permittee notifies the district engineer in accordance with the "Notification" general condition.

*Nationwide Permit Conditions, General Conditions*

13. Notification. The prospective permittee must notify the District Engineer as early as possible.

*Executive Order 11990, Protection of Wetlands (40 CFR 6)*

The substantive requirements of the Executive Order are potentially applicable for the placement of fill material and other field activities in potential wetlands areas at IRP Sites 2 and 17.

*Executive Order 11988, Protection of Floodplains (40 CFR 6)*

The substantive requirements of the Executive Order are potentially applicable if field activities are conducted in floodplain areas at IRP Sites 2 and 17.

*The Toxic Substances Control Act (TSCA) 15 USC 2601 et seq*

TSCA and 40 Code of Federal Regulations Part 761 for characterization and management of TSCA-regulated materials are potentially relevant and appropriate due to the possibility of encountering landfill debris containing polychlorinated biphenyls and/or asbestos-containing materials during implementation of the removal actions at IRP Sites 2 and 17.

*Title 10, Code of Federal Regulations, Section 20.2202(a)(iii), as incorporated by reference to Title 17, California Code of Regulations, Section 30253.*

The requirements of the regulations are potentially applicable if radioactive materials are encountered during the implementation of the removal actions at IRP Sites 2 and 17.

*National Archaeological and Historical Preservation Act (36 CFR 65, 40 CFR 6.301(3), and 16 USC Section 469)*

The requirements are potentially applicable if significant scientific, prehistoric, historic, and archaeological artifacts are identified within the proposed work areas at IRP Sites 2 and 17.

*National Historic Preservation Act (36 CFR 800)*

The requirements are potentially applicable if significant historic properties are identified within the proposed work areas at IRP Sites 2 and 17.

*Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq*

The requirements of RCRA and Title 22 (22 CCR Division 4.5, Chapter 11, Articles 1, 2, 3, 4, and 5, and 22 CCR Division 4.5, Chapter 14, Articles 3 and 4) of the California Code of Regulations for characterization and management of wastes are potentially applicable if RCRA-regulated wastes are encountered during the implementation of the removal actions at IRP Sites 2 and 17.

Federal RCRA requirements may be relevant and appropriate for on-site CERCLA activities that constitute treatment, storage, or disposal. The corrective action management unit (CAMU) rule, addressing management of hazardous waste under corrective action at RCRA facilities, was promulgated by the U.S. EPA in 1993 (set forth in 40 CFR 264.552). It allows certain forms of management of hazardous waste to occur within the boundaries of a facility without triggering RCRA land disposal restrictions (LDRs). In general, both the RCRA LDRs set forth in 22 CCR 66268.40 and 66268.42 and the CAMU rule are considered potential ARARs for CERCLA actions that involve management or disposal of hazardous waste. Soils at IRP Sites 2 and 17 may include RCRA-restricted wastes, and consequently, the CAMU rule is potentially an ARAR.

*Endangered Species Act of 1973, 16 USC Section 1536(a)*

The requirements of the Endangered Species Act are potentially relevant due to the presence of the federally listed California gnat catcher and protected habitat at locations within IRP Sites 2 and 17. The Navy/Marine Corps proposes to provide for mitigation during the implementation of the final remedy at each landfill site. The U.S. Fish and

Wildlife Service responded to the Navy/Marine Corps proposal in a letter dated August 19, 1996 which is attached.

*Clean Air Act (CAA) 40 USC 7401 et seq*

The Clean Air Act (CAA) establishes the National Ambient Air Quality Standards (NAAQS). Substantive requirements of the South Coast Air Quality Management District (SCAQMD) Rules that were submitted to the U.S. EPA as part of the State Implementation Plan (SIP) on 15 November 1994 under the CAA are potential federal ARARs for air emissions.

*Regulation IV - Prohibitions*

*SCAQMD Rule 401 - Visible Emissions*

*This rule limits any visible emissions from any single source to less than Ringlemann No. 1 or 20 percent opacity for 3 minutes in any hour (Ref. Health and Safety Code 41701). The requirements of the rule are potentially applicable.*

*SCAQMD Rule 402 - Nuisance.*

*This rule prohibits the discharge of any air contaminant or other material (including odorous compounds) that causes injury or annoyance to the public, endangers the comfort, repose, health, or safety of the public or causes damage to business or property. In general, a notice of violation may be issued upon receipt of six verified complaints or for any property damage or personal injury (Ref. Health and Safety Code 41700). The requirements of the rule are potentially applicable.*

*SCAQMD Rule 403 - Fugitive Dust*

*This rule limits on site activities so that the concentrations of fugitive dust at the property line shall not be visible. In addition, PM10 levels shall not exceed 50 micrograms per cubic meter as determined by the difference between upwind and downwind samples collected on high volume particulate matter samplers. These requirements do not apply if the wind gusts exceed 25 miles per hour. The rule also requires every reasonable precaution to minimize fugitive dust and the prevention and cleanup of any material accidentally deposited on paved streets. This rule shall not apply during life-threatening situations or during a declared disaster or state of emergency. The requirements of the rule are potentially applicable.*

*SCAQMD Rule 404 - Particulate Matter*

*This rule limits equipment from discharging particulate emissions in excess of 0.01 to 0.196 grain per cubic foot based upon a given volumetric (dry standard cubic feet per minute) exhaust gas flow rate averaged over one hour or one cycle of operation. It excludes steam generators or gas turbines. The requirements of the rule are potentially applicable.*

*SCAQMD Rule 405 - Solid Particulate Matter*

*This rule limits equipment from discharging particulate emissions in excess of 0.99 to 30 pounds per hour based on a given process weight. The requirements of the rule are potentially applicable.*

*SCAQMD Rule 407 - Liquid and Gaseous Air Contaminants*

*This rule limits equipment from discharging carbon monoxide emissions in excess of 2,000 ppm and sulfur dioxide emissions of 500 ppm or greater averaged over 15 minutes. It excludes stationary internal combustion engines, propulsion of mobile equipment, or emergency venting. The requirements of the rule are potentially applicable.*

*SCAQMD Rule 408 - Circumvention*

*This rule prohibits a person from building, erecting, installing, or using any equipment, the use of which reduces or conceals an emission which would otherwise constitute a violation of these rules or Chapter 3 (starting with 41700) of Part 4, of Division 26 of the Health and Safety Code. The requirements of the rule are potentially applicable.*

*SCAQMD Rule 409 - Fuel Combustion Contaminants*

*This rule limits the emissions of particulate matter from the exhaust of a combustion source (such as a gas turbine) to 0.23 grams per cubic meter (0.1 grains per standard cubic foot) at 12 percent CO<sub>2</sub> averaged over 15 minutes. It excludes internal combustion engines. The requirements of the rule are potentially applicable.*

*SCAQMD Rules 431.1, 431.2, and 431.3 - Sulfur Content of Gaseous, Liquid, or Fossil Fuels*

*These rules limit sulfur compounds from combustion of gaseous fuels not to exceed 40 ppm, 0.05 percent by weight for liquid fuels, and 0.56 pounds of sulfur per million BTU for solid fossil fuels. The requirements of the rules are potentially applicable.*

*SCAQMD Rule 474 - Fuel Burning Equipment - Oxides of Nitrogen*

*This rule limits the concentrations of oxides of nitrogen (as NO<sub>2</sub>) averaged over 15 minutes, from any non-mobile fuel burning equipment, to a range of 125 to 300 ppm for gaseous fuels and 225 to 400 ppm for solid and liquid fuels depending on equipment size. The requirements of the rule are potentially applicable.*

*Regulation X - National Emission Standards for Hazardous Air Pollutants*

*This regulation implements the provisions of Part 61, Chapter 1, Title 40 of the Code of Federal Regulations (CFR) under the supervision of the AQMD Executive Order. It specifies emissions testing, monitoring procedures or handling of*

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*hazardous pollutants as beryllium, benzene, mercury, vinyl chloride and asbestos. The requirements of the rule are potentially applicable.*

*Regulation XI - Source Specific Standards*

*Rule 1150 - Excavation of Landfill Sites*

*This rule states that no person shall initiate excavation of an active or inactive landfill without an Excavation Management Plan approved by the Executive Officer of AQMD. The Plan shall provide information regarding the quantity and characteristics of the material to be excavated and transported and shall identify mitigation measures including gas collection and disposal, baling, encapsulating, covering the material, and chemical neutralizing. The requirements of the rule are potentially applicable.*

*Rule 1166 - Volatile Organic Compound Emissions from Decontamination of Soil*

*This rule limits the emissions of volatile organic compounds (VOCs) from contaminated soil to less than 50 ppm. For contaminated soil with 50 ppm or greater, an approved mitigation plan, describing removal methods and mitigation measures, must be obtained from the District prior to proceeding with the excavation. Uncontrolled spreading of contaminated soil is not permitted. The requirements of the rule are potentially applicable.*

*California Water Code, Chapter 5, Article 1*

*Requires cleanup and abatement of conditions of pollution or nuisance or threatened pollution or nuisance. The requirements are applicable.*

*California Department of Fish and Game Location-Specific ARARs*

*California Fish and Game Code Sections 5650 (a), (b), and (f)*

*Action must be taken if toxic materials are placed where they can enter the waters of the State. There can be no releases that would have a deleterious effect on species or habitat. The requirements are potentially applicable.*

*California Fish and Game Commission Wetlands Policy (adopted 1987)*

*Actions must be taken to assure that there is "no net loss" of wetlands acreage or habitat value. Action must be taken to preserve, protect, restore, and enhance California's wetland acreage and habitat values. The requirements of the policy are included as "to be considered" (TBC) requirements.*

*California Fish and Game Code Sections 2090-2096*

*Actions must be taken to conserve endangered species, there can be no releases and/or actions that would have a deleterious effect on species or habitat. The requirements of the policy are included as "to be considered" (TBC) requirements.*

*California Fish and Game Code Section 3005*

*Action must be taken to prohibit the taking of birds and mammals, including taking by poison. The requirements are potentially applicable.*

*California Fish and Game Code Section 1600*

*Action must be taken for the general protection and conservation of fish and wildlife resources. The requirements are included as "to be considered" (TBC) requirements.*

*California Fish and Game Code Section 1601*

*The Department must propose reasonable modifications to public construction projects that would alter the bed, channel or bank of any river, stream or lake and may substantially adversely affect an existing fish or wildlife resource. The requirements are potentially applicable.*

*California Fish and Game Code Section 1603*

*Any streambed may not be altered without first notifying the Department. Section 1603 also imposes a substantive requirement to the extent it requires streambed alteration to not substantially adversely affect an existing fish or wildlife resource. The requirements are potentially applicable.*

*California Fish and Game Code Sections 2080 and 1900 et seq*

*Action must be taken to conserve endangered species and to conserve native plants, there can be no releases and/or actions that would have a deleterious effect on species or habitat. The requirements are potentially applicable.*

*Title 14, California Code of Regulations (CCR), Division 7, Chapter 3-Minimum Standards for Solid Waste Handling and Disposal, Articles 7.1 through 7.8*

*14 CCR 17658, Chapter 3, Article 7.4 (Disposal Site Improvements): Site security. The perimeter of the landfill must be secured either through barriers or topographic constraints to discourage unauthorized entry.*

*[For consolidation and excavation sites]*

*and*

*14 CCR 17767, Chapter 3, Article 7.8 (Disposal Site Closure and Postclosure Maintenance): Security at closed sites. All points of access to the site must be restricted, except permitted entry points. All monitoring, control, and recovery systems shall be protected from unauthorized access. [For closing sites]*

*Some of the requirements of the regulations are applicable. Access to IRP Sites 2 and 17 will be restricted as a result of the implementation of the removal actions.*

*14 CCR 17659, Chapter 3, Article 7.4 (Disposal Site Improvements): Access roads. Landfill roads must be reasonably smooth to minimize dust and tracking of materials onto public roads. [For consolidation and excavation sites]*

The requirements of the regulation are applicable. Dust generation during implementation of the removal actions will be minimized.

*14 CCR 17686, Chapter 3, Article 7.5 (Disposal Site Operations): Scavenging. Scavenging is prohibited.* [For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17687, Chapter 3, Article 7.5 (Disposal Site Operations): Salvaging permitted. Salvaging is permitted in a planned and controlled manner.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17688, Chapter 3, Article 7.5 (Disposal Site Operations): Volume reduction and energy recovery. Volume reduction and energy recovery are permitted in a planned and controlled manner.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17690, Chapter 3, Article 7.5 (Disposal Site Operations): Storage of salvage. Salvage material must be safely isolated for storage.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17691, Chapter 3, Article 7.5 (Disposal Site Operations): Removal. Storage time for salvage materials shall be limited to a safe duration.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17692, Chapter 3, Article 7.5 (Disposal Site Operations): Non-salvageable items. Items capable of impairing public health shall not be salvaged without approval by the agencies.* [For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17701, Chapter 3, Article 7.6 (Disposal Site Controls): Nuisance control. Each site shall be operated and maintained so as not to create a public nuisance.*

[For consolidation and excavation sites]

The requirements of the regulation are potentially applicable.

*14 CCR 17706, Chapter 3, Article 7.6 (Disposal Site Controls): Dust control. The operator shall take adequate measures to minimize the creation of dust.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17708, Chapter 3, Article 7.6 (Disposal Site Controls): Drainage and erosion control. Adequate drainage shall be provided. Effects of erosion shall be promptly repaired and steps taken to prevent further occurrence.*

[For consolidation and excavation sites]

The requirements of the regulation are applicable.

*14 CCR 17709, Chapter 3, Article 7.6 (Disposal Site Controls): Contact with water. No solid waste shall be deposited in direct contact with surface water.*

[For consolidation and excavation sites]

The requirements of the regulation are potentially applicable.

*14 CCR 17710, Chapter 3, Article 7.6 (Disposal Site Controls): Grading of fill surface. Covered surfaces of the disposal area shall be graded to promote run-off and prevent ponding, accounting for future settlement.*

[For consolidation and excavation sites]

The requirements of the regulation are potentially applicable.

*14 CCR 17711, Chapter 3, Article 7.6 (Disposal Site Controls): Litter Control. Litter and loose materials shall be routinely collected and disposed of properly.*

[For consolidation and excavation sites]

The requirements of the regulation are potentially applicable.

## 6. Project Schedule

A. The field work associated with the removal actions began in June 1996 and is anticipated to continue through December 1997.

The Action Memorandum is expected to be signed in September 1996. The summary report is expected to be published by February 1998.

### B. Estimated Costs:

Biological Surveys:	\$ 200,000
Fencing:	\$ 300,000
Debris Removal:	\$1,500,000
Erosion Protection:	\$3,500,000
20% Contingency for Debris Removal and Erosion Protection:	\$1,000,000
Total:	\$6,500,000

The proposed removal actions are currently partially funded at approximately \$3,000,000 with additional funding anticipated in Fiscal Year 1997.

## VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

If the proposed actions are delayed or not taken, then exposure of human and animal populations to hazardous substances or pollutants or contaminants from IRP Sites 2 and 17 will continue. Contamination will most likely continue to spread from IRP Site 2 to the adjacent properties during storm flows along Borrego Canyon Wash and could cause pollutants or contaminants to be introduced to the Upper Newport Bay Ecological Reserve during flood flows. Contamination will most likely continue to spread from IRP Site 17 to the adjacent downstream areas. This spread of contamination could result in an increased health risk to the exposed populations.

## VII. OUTSTANDING POLICY ISSUES

None.

## VIII. RECOMMENDATION

This decision document represents the selected removal actions for IRP Sites 2 and 17 at the Marine Corps Air Station, El Toro developed in accordance with CERCLA as amended and is not inconsistent with the NCP. This decision is based upon the Administrative Record for this site.

  
Joseph Joyce

Base Realignment and Closure  
Environmental Coordinator  
By direction of the Commanding General

10/2/96  
Date

### Attachments

- 1) Site Maps (Station Map, IRP Site 2, IRP Site 17)
- 2) Regional Water Quality Control Board letter to MCAS El Toro dated December 24, 1992
- 3) MCAS El Toro letter to Orange County Flood Control District dated April 19, 1996
- 4) U.S. Fish and Wildlife Service letter to Southwest Division, Naval Facilities Engineering Command dated August 19, 1996
- 5) Southwest Division, Naval Facilities Engineering Command letter to U.S. Fish and Wildlife Service dated August 27, 1996
- 6) Department of the Army letter to MCAS El Toro dated April 22, 1996
- 7) MCAS El Toro letter to California Environmental Protection Agency, Department of Toxic Substances Control dated July 26, 1996
- 8) Administrative Record Index for Time-Critical Removal Actions at IRP Sites 2 and 17, MCAS El Toro.

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**IX. References**

Agency for Toxic Substances and Disease Registry, 1993. Health Assessment for El Toro Marine Corps Air Station, Santa Ana, Orange County, California, CERCLIS No. 6170023208. February.

Bechtel National, Inc. 1996. Draft Phase II Remedial Investigation Report, Operable Unit 2B - Site 2, Marine Corps Air Station, El Toro, California. March.

Bechtel National, Inc. 1996. Draft Phase II Remedial Investigation Report, Operable Unit 2B - Site 17, Marine Corps Air Station, El Toro, California. March.

California Regional Water Quality Control Board, Santa Ana Region. 1992. Letter to the Marine Corps Air Station, El Toro. December.

Department of the Navy. 1996. Base Closure and Realignment Act Cleanup Plan.

Department of the Navy. 1995. DON Environmental Restoration Program Fiscal Years 1996-2000. September.

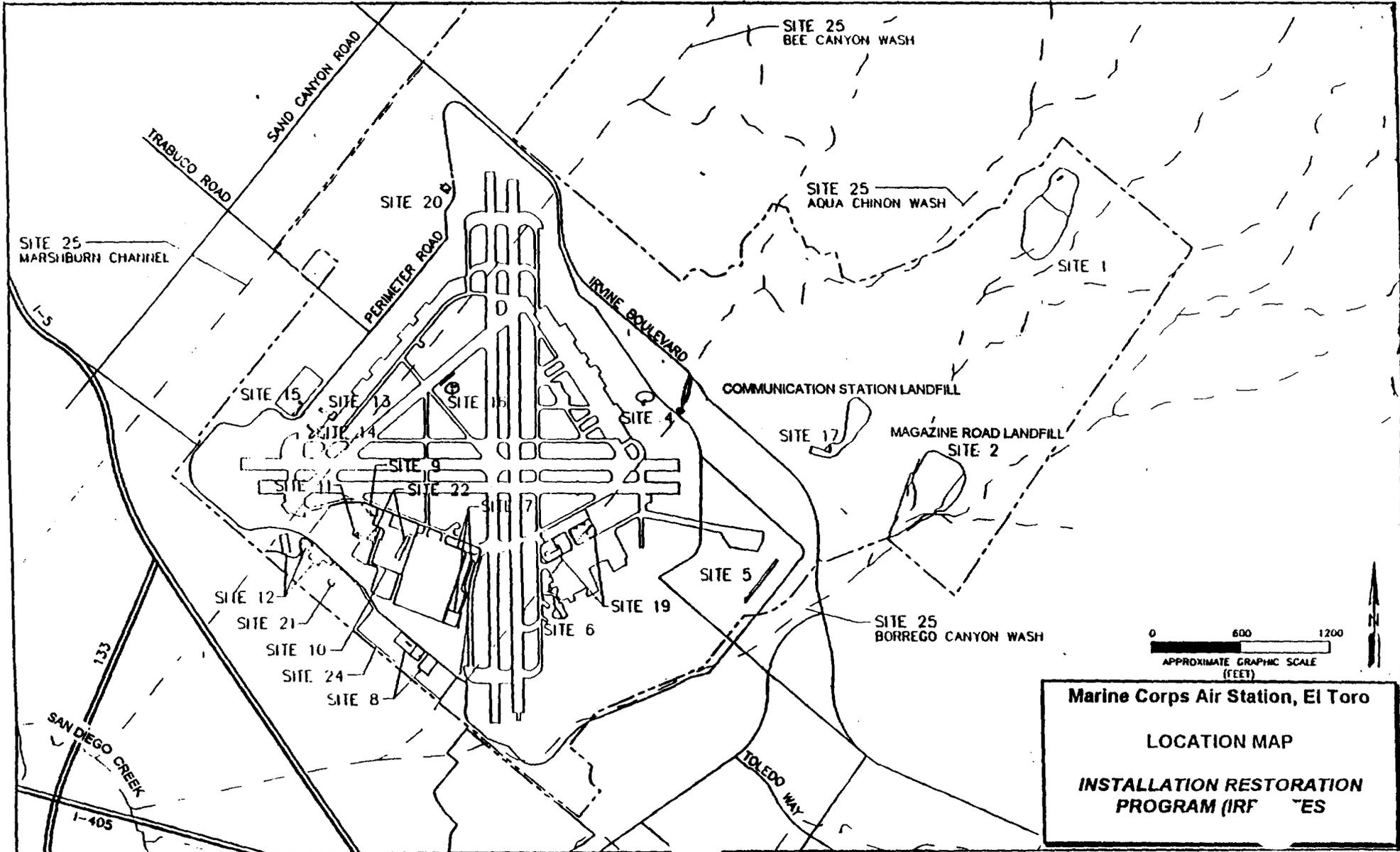
Naval Energy and Environmental Support Activity (NEESA). 1986. Initial Assessment Study of Marine Corps Air Station, El Toro, California, NEESA 13-074. May.

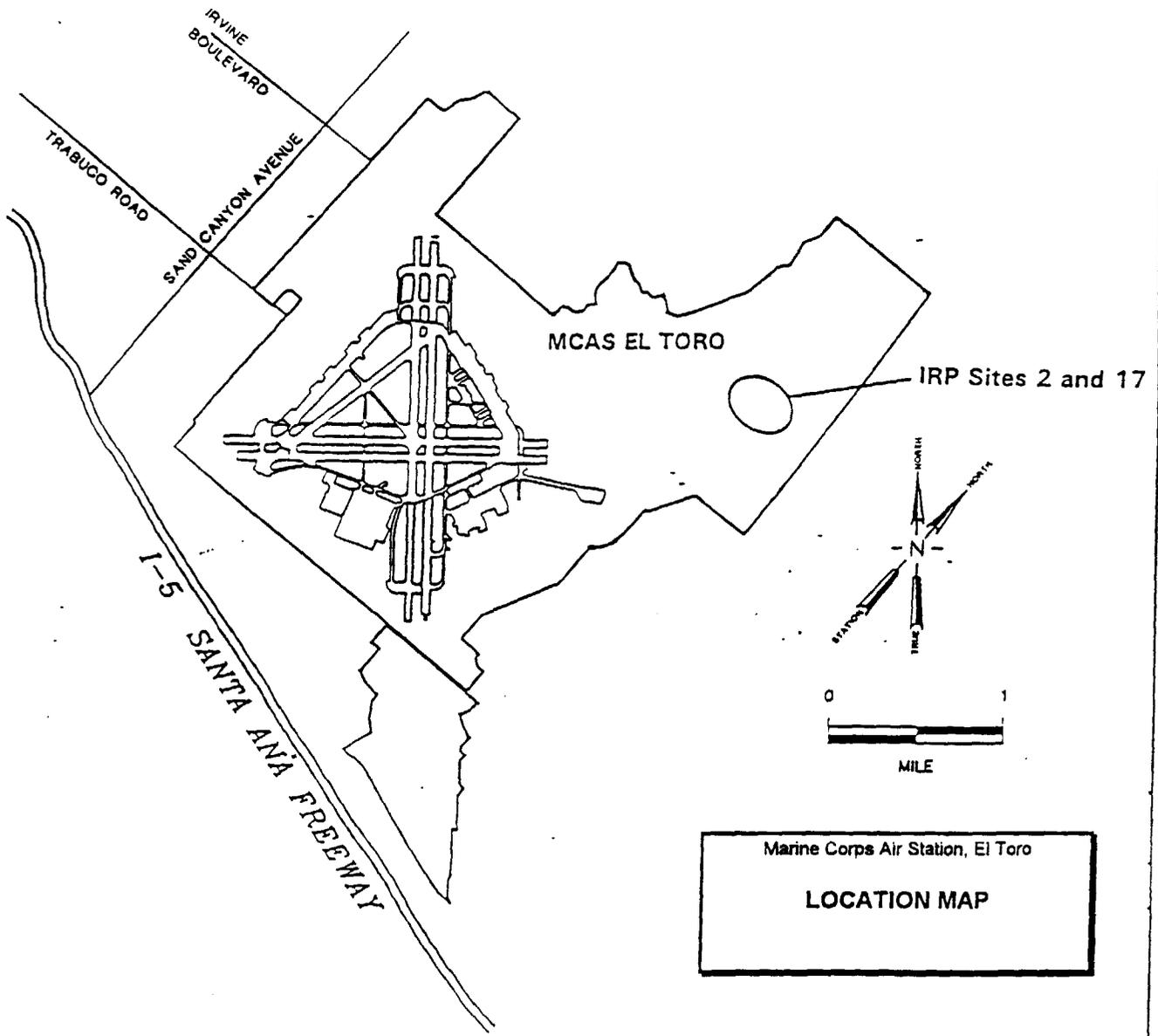
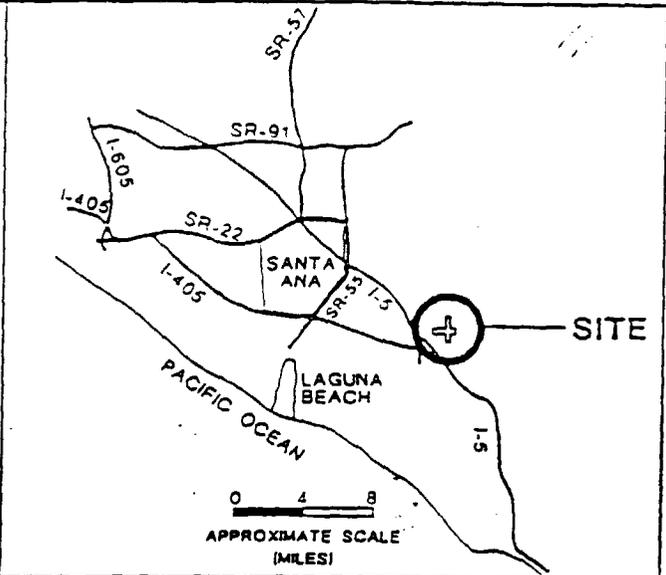
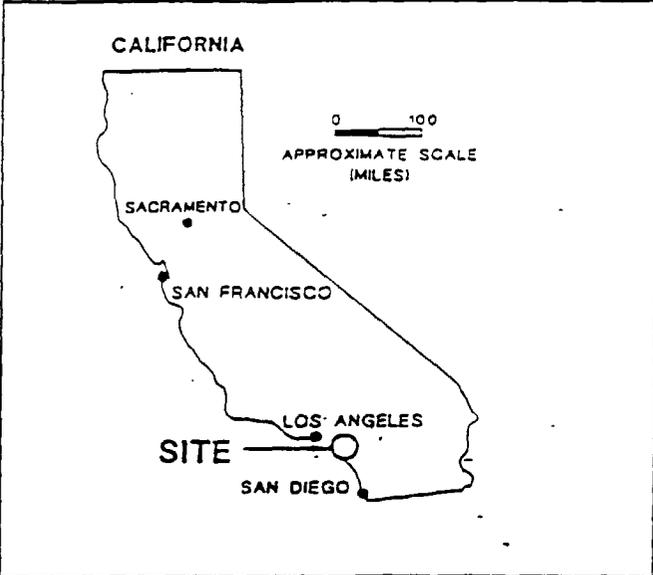
Jacobs Engineering Group. 1994. Project Note No. PN-0284-07, Contract Task Order (CTO) No. 284, Interviews with Active and Retired Personnel from MCAS El Toro. June.

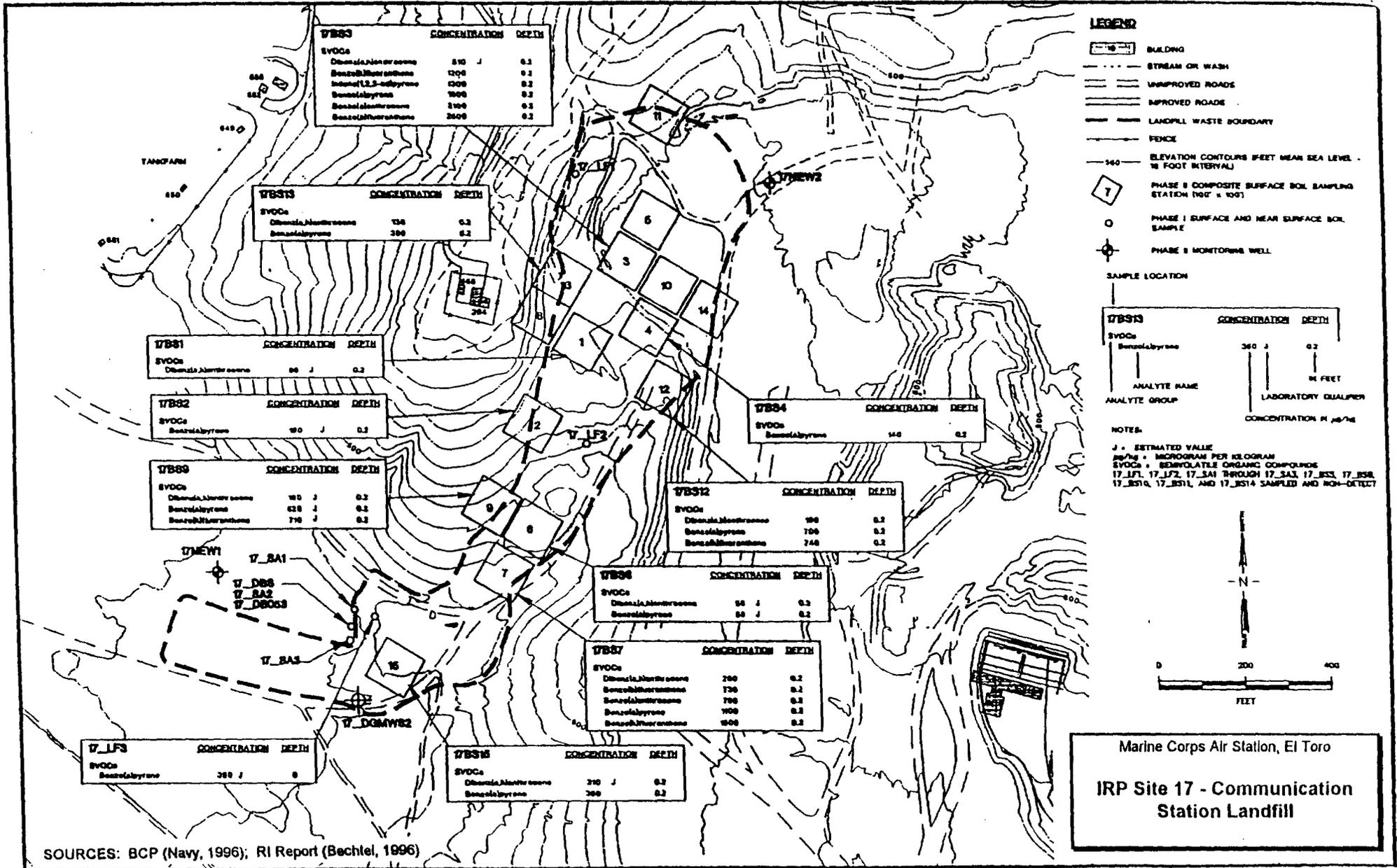
## ATTACHMENTS

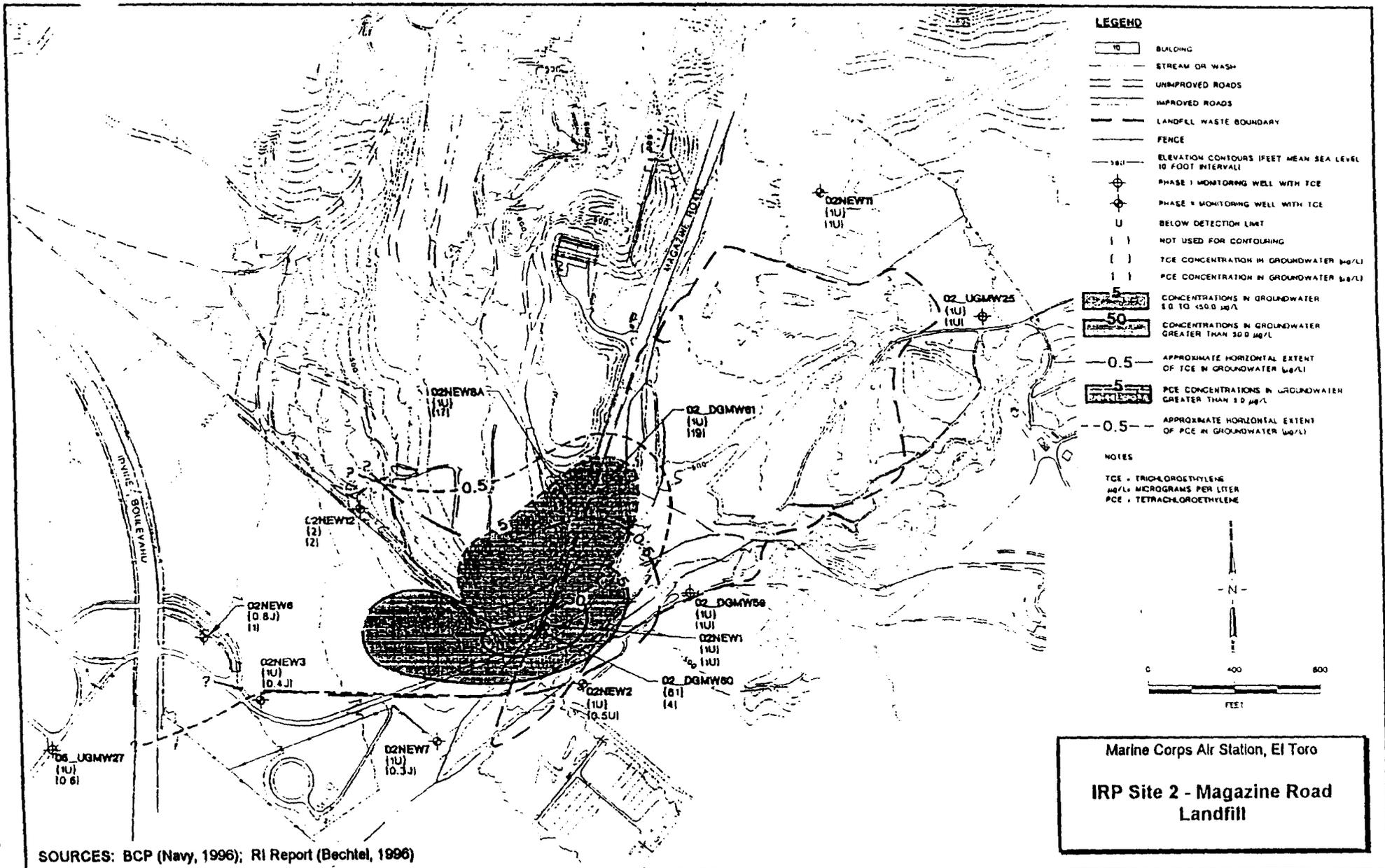
MCAS EL TORO INSTALLATION RESTORATION PROGRAM (IRP) SITES

SITE NUMBER	SITE DESCRIPTION	SITE NUMBER	SITE DESCRIPTION	SITE NUMBER	SITE DESCRIPTION
1	Explosive Ordnance Disposal Range	9	Crash Crew Pit No. 1	17	Communication Station Landfill
2	Magazine Road Landfill	10	Petroleum Disposal Area	18	Station-Wide Ground Water (OU 1)
3	Original Landfill	11	Transformer Storage Area	19	Aircraft Expeditionary Refueling (ACER) Site
4	Ferrocene Spill Area	12	Sludge Drying Beds	20	Hobby Shop
5	Perimeter Road Landfill	13	Oil Change Area	21	Materials Management Group
6	Drop Tank Drainage Area No. 1	14	Battery Acid Disposal Area	22	Tactical Air Fuel Dispensing System
7	Drop Tank Drainage Area No. 2	15	Suspended Fuel Tanks	24	Potential Volatile Organic Compounds (VOC) Source Area
8	DRMO Storage Area	16	Crash Crew Pit No. 2	25	Major Drainages









## CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

NTA ANA REGION

IOWA AVENUE, SUITE 100

...ERSIDE, CA 92507-2409

PHONE: (714) 782-4130

FAX: (714) 781-6268



December 24, 1992

LCDR. L. D. Sarafini, CEC, USN  
Environmental Director  
Facilities Management Department  
Marine Corps Air Station  
El Toro, California 92709-5010

Subject: Request for Abatement, Site 2 Landfill  
Marine Corps Air Station, El Toro

Dear Sir: Commander Sarafini

We are writing as response to conditions observed during my recent visit to MCAS El Toro. During the Remedial Project Managers's site tour at stop 8, we stopped to overlook, towards the north across Borrego Canyon Wash, Site 2 the Magazine Road Landfill. The landfill is being washed out by surface flows down Borrego Canyon. We were informed that this condition (washing out of landfilled wastes) has been occurring, at least since the last major rainfall event (December 7, 1992). Discharges of such waste directly to waters of the State are in violation of the California Water Code. Because landfilled wastes will be washed directly into Borrego Wash during significant rainfall events, please initiate actions which will abate this situation as soon as possible. Please respond with your intentions to abate this situation before January 22, 1993.

For any questions on this matter, please contact me at (714) 782-4494.

Sincerely,

John Broderick  
Special Projects Section

cc: Mr. John Hamill, United States Environmental Protection Agency  
Mr. Manny Alonzo, California Department of Toxic Substances Control  
Mr. Andy Piszkin, Southwest Division, Naval Facilities Engineering Command



UNITED STATES MARINE CORPS

HEADQUARTERS MARINE CORPS AIR STATION EL TORO  
PO BOX 95001  
SANTA ANA CA 92709-5001

IN REPLY REFER TO:

6284

1AU

19 APR 1986

Orange County Flood Control District  
Attn: Mr. Nakasone  
Manager, Flood Program Division  
P. O. Box 4048  
Santa Ana, CA 92702

Dear Mr. Nakasone:

We are planning for emergency removal action at Marine Corps Air Station (MCAS) El Toro, Magazine Road Landfill, (Installation Restoration Program (IRP) Site 2), in order to protect the landfill from erosion along Borrego Canyon Wash. We understand that your agency may have information pertaining to discharge from, and sediment transport in Borrego Canyon Wash, channel-related development upstream of Magazine Road Landfill, and similar erosion protection projects in the vicinity of MCAS El Toro. This information would be useful in our planning for the removal actions. We would like to arrange a convenient time to meet with you to discuss the availability of this information.

Please contact Ms. Lynn Hornecker, Environmental Engineer, Naval Facilities Engineering Command, Southwest Division at (619) 532-3737, and she will arrange a time for us to meet.

Sincerely,

JOSEPH JOYCE

Base Realignment and Closure  
Environmental Coordinator  
By direction



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Ecological Services  
Carlsbad Field Office  
2750 Loker Avenue West  
Carlsbad, California 92008

August 19, 1996

Michael C. Stroud, Manager  
Southwest Division: Attention: T. Wright  
Naval Facilities Engineering Command  
United States Navy  
1220 Pacific Highway, Code 20  
San Diego, California 92132-5190

Re: Installation Restoration Program (IRP) Emergency Activities at Two Landfill sites on Marine Corps Air Station, El Toro, Orange County, California (1-6-96-F-302).

Dear Mr. Stroud:

The Fish and Wildlife Service (Service) has reviewed the emergency actions proposed for implementation in relation to the referenced. These interim emergency projects occur in areas adjacent to habitat occupied by federally-listed threatened coastal California gnatcatchers (*Poliophtilla californica californica*) (gnatcatcher).

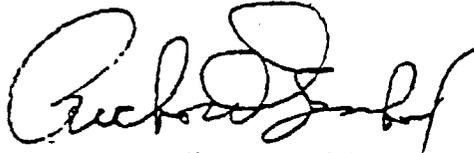
The primary interim project is the installation of a fence around the landfill sites, being addressed in the final IRP. This fence will be installed within existing road right of ways or firebreaks. Installation will commence after fledging of nearby gnatcatchers. The other interim projects include the removal of surface and limited subsurface debris, limited grading of stream banks with placement of rip-rap along severely eroded sections to reduce erosion of landfill material, placement of debris collected from the stream channel at a central location at each landfill site, widening of access roads, and construction of staging areas and field office facilities along Magazine Road.

It is the understanding of the Service that a vegetation map is currently being prepared in order to plan for the avoidance of sensitive habitats. The Service also understands that MCAS, El Toro will provide us the opportunity to review the placement of these activities to insure avoidance of the gnatcatcher. Given the immediate need to clean debris emerging from the landfills and a commitment to compensate for any potentially unavoidable impacts to gnatcatcher habitat, the Service concurs with your need to proceed with the emergency actions, provided the following measures are implemented and formal consultation is initiated as soon as practicable after the emergency is under control (as per 50 CFR 402.05):

1. Prior to implementation of the emergency actions, the locations of activities shall be reviewed by and concurred with the Service.
  - a. The landfill collection, staging areas, and field office facilities shall be located in previously disturbed areas away from occupied habitat.
  - b. The widening of the gravel roads shall avoid gnatcatcher habitat to the maximum extent possible.
2. Habitat disturbed by the removal of debris, placement of rip-rap, and/or the road widening shall be compensated for by revegetation/restoration of disturbed/cleaned sites at a ratio of 2 acres restored for each acre disturbed.
  - a. The restoration plan shall be developed as part of the formal consultation on the emergency remedy and subject to Service approval. If the final IRP precludes an adequate on-site restoration option, then off-site restoration shall be implemented.
3. The emergency activities shall be conducted outside the gnatcatcher breeding season (February 30 through August 30) to the maximum extent practicable.

This concurrence does not preclude additional avoidance, minimization, or compensation measures that may be determined to be appropriate for the final IRP. The Service anticipates ongoing consultation with your agency for these proposed actions and the final plan. If you have any questions regarding this letter or the consultation, please do not hesitate to contact Marjorie Nelson of my staff at (619) 431-9440.

Sincerely,



Gail C. Kobetich  
Field Supervisor



DEPARTMENT OF THE NAVY  
SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
1220 PACIFIC HIGHWAY  
SAN DIEGO, CA 92132-5190

11015  
Ser 231TW/241  
AUG 27 1996

Mr. Gail Kobetich, Field Supervisor  
Attn: Ms. Marge Nelson  
U.S. Fish and Wildlife Service  
2730 Loker Avenue West  
Carlsbad, CA 92008-6608

Dear Mr. Kobetich:

This letter is in reference to our Installation Restoration Program (IRP) response activities at two landfill sites at Marine Corps Air Station (MCAS), El Toro.

This is to confirm our receipt of your letter of August 19, 1996 concurring with our remedial actions at MCAS El Toro, specifically sites number 2 and 17. At this time, we would like to inform you that the Marine Corps has changed the designation of the Comprehensive Environmental Response, Compensation, and Liability Act removal actions at IRP Sites 2 and 17 at the Marine Corps Air Station, El Toro from "emergency" to "time critical" due to the length of the planning period. A time-critical removal action has an allowable planning period of six months or less before on-site activities are initiated. We will advise you of future developments as they occur.

We appreciate your continued assistance and support on this issue. If you have any questions, please call Mr. Tommy Wright, Natural Resources Specialist at (619) 532-3757.

Sincerely,

MICHAEL C. STROUD  
Manager, Natural Resources Branch  
By direction of the Commander

Copy to:

Eric Stein, U.S. Army Corps of Engineer Los Angeles District, P.O. Box 2711, Los Angeles,  
CA 90053-2325

Assistant Chief of Staff, Installations, Code 1JP5, Marine Corps Air Station, El Toro, P.O.  
Box 94003, Santa Ana, CA 92709-4003

Bill Sedlak, OHM, 2031 Main Street, Irvine, Ca 92714



DEPARTMENT OF THE ARMY  
LOS ANGELES DISTRICT, CORPS OF ENGINEERS  
300 NORTH LOS ANGELES STREET  
LOS ANGELES, CALIFORNIA 90012

April 22, 1996

REPLY TO  
ATTENTION OF:

Office of the Chief  
Regulatory Branch

United States Marine Corps  
Attn: Joseph Joyce  
P.O. Box 95001  
El Toro Marine Corps Air, California 92709-5001

Gentlemen:

This letter is in regard to your request (File No. 96-204-LTM) dated March 4, 1995, for a Section 404 authorization for actions to be performed at IRP Site 17 (Communication Station Landfill) and IRP Site 12 (Magazine Road Landfill) at Marine Air Corps Station El Toro, under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The proposed actions include bank stabilization, removal of potentially hazardous landfill debris from stream channels, installation of fencing, repairs to channel crossings and existing access roads, and construction of a new drainage channel to divert surface runoff from the landfill area.

Pursuant to Regulatory Guidance Letters Nos 85-7, 89-2, and 94-2 (enclosed), response actions pursued under the authority of CERCLA are not subject to permitting requirements under Section 404 of the Clean Water Act. However, CERCLA response actions must incorporate best management practices and consideration of public interest factors. Activities impacting waters of the U.S. which occur outside the scope or geographic boundaries specified under a CERCLA order are still subject to Section 404 permitting requirements.

If you wish to receive technical support for future CERCLA response actions which may impact waters of the U.S. or have any further questions, please contact Lisa T. Morales of my staff at (213) 894-3935. Please refer to this letter in your reply.

Sincerely,

for Mark Durham  
Chief, South Coast Section  
Regulatory Branch

Enclosure(s)

cf: USFWS; Attn: Jack Fancher  
CDPG; Attn: Terry Dickerson  
USFPA; Attn: Harriet Hill

Reference: RGL 85-07  
 Subject: SUPERFUND PROJECTS  
 Title: SUPERFUND PROJECTS  
 Issued: 07/05/85  
 Expires: - 12/31/87  
 Originator: DAEN-CWO-N

Description: PROVIDES GUIDANCE ON EXEMPTION OF EPA CERCLA (SUPERFUND) PROJECTS FROM SEC 404. EXTENDED BY RGL 89-02.

1. Recently, the Chief Counsel, Mr. Lester Edelman, responded to a letter from Mr. William N. Hedeman, Jr., Director, Office of Emergency and Remedial Response, Environmental Protection Agency (EPA) which dealt with the need for Department of Army authorizations for the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) actions. This letter summarizes Mr. Edelman's opinion and provides operating guidance for field interaction with the EPA.

2. The EPA's basic position is that Congress did not intend for CERCLA response actions to be subject to other environmental laws. Rather, as a matter of sound practice, CERCLA response actions generally should meet the standards established by those laws. Consequently, it is the EPA's position that neither it nor the states, in pursuing response actions at the location of the release or threatened release under the authority of CERCLA, are required to obtain permits under Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act for those actions.

3. Mr. Edelman stated in part that he has some reservations about the position that the EPA has taken. Nevertheless, he recognizes that the EPA has the primary authority for the interpretation and application of CERCLA, and therefore would defer to the EPA's reading of its own statutory authorities, at least for the time being.

4. In light of this legal opinion, FOAs should not require applications for the EPA or state response actions at the location of the release or threatened release pursued under the authority of CERCLA. Any permit applications in process should be terminated.

5. Both the EPA and OCE believe that the FOAs' expertise in assessing the public interest factors for dredging and filling operations can contribute to the overall quality of the CERCLA response action. The Director of Civil Works will be establishing

Reference: RGL 85-07  
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4. In light of this legal opinion, FOAs should not require applications for the EPA or state response actions at the location of the release or threatened release pursued under the authority of CERCLA. Any permit applications in process should be terminated.
5. Both the EPA and OCE believe that the FOAs' expertise in assessing the public interest factors for dredging and filling operations can contribute to the overall quality of the CERCLA response action. The Director of Civil Works will be establishing

a group from his staff to work with the EPA staff to develop a framework for integrating the Corps Section 10, Section 404 and, if appropriate, Section 103 concerns into the EPA's substantive Superfund reviews.

6. Until specific guidance is provided from OCE, FOAs should provide technical support to the EPA regions and/or the states on matters within their field of expertise.

FOR THE CHIEF OF ENGINEERS:

Reference: RGL 89-02  
Subject: SUPERFUND PROJECTS  
Title: EXTENSION OF REGULATORY GUIDANCE LETTER (RGL 85-07)  
Issued: 06/10/89  
Expires: ~ 12/31/91  
Originator: CECW-OR  
Description: SUPERFUND PROJECTS

RGL 85-07, subject; "Superfund Projects" is extended until 31 December 1991 unless sooner revised or rescinded.

FOR THE DIRECTOR OF CIVIL WORKS:

B. N. GOODE  
Acting Chief, Operations and Readiness  
Division  
Directorate of Civil Works

Reference: RGL 94-02

Subject: SUPERFUND PROJECTS

Title: SUPERFUND PROJECTS

Issued: 08/17/94

Expires: 12/31/99

Originator: DAEN-OR

Description: SUPERFUND PROJECTS - REGULATORY GUIDANCE LETTER  
(RGL) 85-07 IS REISSUED

1. Regulatory Guidance Letter (RGL) 85-07 subject: "Superfund Projects" is hereby reissued (copy enclosed).
2. This RGL was previously extended by RGL 89-2. Although the extension expired, RGL 85-07 has continued to be U.S. Army Corps of Engineers policy.
3. This guidance expires 31 December 1999 unless sooner revised or rescinded.

FOR THE DIRECTOR OF CIVIL WORKS:

JOHN P. ELMORE, P.E.

Chief, Operations, Construction and Readiness Division  
Directorate of Civil Works

a group from his staff to work with the EPA staff to develop a framework for integrating the Corps Section 10, Section 404 and, if appropriate, Section 103 concerns into the EPA's substantive Superfund reviews.

6. Until specific guidance is provided from OCE, FOAs should provide technical support to the EPA regions and/or the states on matters within their field of expertise.

FOR THE CHIEF OF ENGINEERS:

C.E. EDGAR III  
Brigadier General, USA  
Acting Director of Civil Works



**UNITED STATES MARINE CORPS**

HEADQUARTERS MARINE CORPS AIR STATION EL TORO  
PO BOX 85001  
SANTA ANA CA 92708-5001

IN REPLY REFER TO:

5090

1AU

26 JUL 1996

Mr. Tayscer Mahmoud  
Site Mitigation Branch  
California Environmental Protection Agency  
Department of Toxic Substance Control, Region 4  
245 West Broadway, Suite 350  
Long Beach, CA 90802-4444

Dear Mr. Mahmoud:

Pursuant to 40 CFR Section 300.515(h)(2), and Section 7.6(b) of the Federal Facilities Agreement (FFA) and consistent with V.A.2.c of the August 1, 1990, Memorandum of Understanding between the Department of Health Services, the State Water Resources Control Board, and the Regional Water Quality Control Boards for the Cleanup of Hazardous Waste Sites, we are hereby requesting that the Department of Toxic Substances Control, as the lead agency for the State of California, identify potential State chemicals, locations, and action-specific Applicable or Relevant and Appropriate Requirements (ARARs) for Operable Units (OU) 2B and 2C (Landfill Sites 2 & 17 and 3 & 5).

We have previously transmitted to your site characterization data in the Phase I Remedial Investigation (RI) Technical Memorandum dated May 7, 1993 (for OU-1, OU-2 and OU-3 sites), the Draft Phase II Remedial Investigation Reports for Sites 2 and 17 dated March 20, 1996 and the Draft Phase II Remedial Investigation Reports for Sites 3 and 5 dated April 12, 1996.

The remedial alternatives for OU2B and 2C have been screened and developed for the detailed analysis of alternatives phase of the Feasibility Study (FS) for each site. A project description and list of the proposed alternative for OU-2B and 2C are attached.

Timely identification of potential State ARARs is required under Section 121(d)(2)(A) of CERCLA and under the National Contingency Plan (NCP), 40 CFR 300.400(g) and 300.515(d) & (h). Experience to date around the country has shown that a failure to identify ARARs with sufficient precision, early in the RI/FS process, can cause severe disruptions in timely implementation of remedial action. To ensure timely and complete ARARs identification for OU-2B and 2C, please include the following information:

1. A specific citation to the statutory or regulatory provision(s) for the potential State ARAR and the date of enactment or promulgation.
2. A brief description of why the potential State ARAR is applicable or relevant and appropriate to the particular OU (or IR Site).

3. A description of how the potential State ARAR would apply to potential remedial action, including: specific numeric discharge, effluent, or emission limitations; hazardous substance/constituent action or cleanup levels; etc., if the State intends to take the position that the potential State ARAR includes such limitations, levels, etc.
4. If the State believes its proposed ARAR is more stringent than the corresponding Federal ARAR, please provide the rationale and technical justification for this position.
5. If the State determines that there is not enough information to fully respond to our request, please identify any additional information that would be required to support identification of State ARARs and their application. Consistent with 40 CFR 300.515(h)(2) and the FFA, we are requesting that you send a response via first class mail addressed to the undersigned and postmarked within 30 calendar days of receipt of this request.

We would like to discuss your response at a meeting as provided in FFA Section 7.6(b). Please direct any technical questions that you may have concerning this request to the undersigned at (714) 726-3470 and any legal questions to Mr. Rex Callaway, Associate Counsel (Environmental), at (619-532-1662).

Sincerely,



JOSEPH JOYCE

Base Realignment and Closure  
Environmental Coordinator  
By direction of  
the Commanding General

Encl:

- (1) Project Description and List Remedial Alternatives, OU-2B Site 2
- (2) Project Description and List Remedial Alternatives, OU-2B Site 17
- (3) Project Description and List Remedial Alternatives, OU-2B Site 3
- (4) Project Description and List Remedial Alternatives, OU-2B Site 5

Copy to:

NAVAFACENCOM, SWD (Code 09C.RC)  
NAVAFACENCOM, SWD (Code 1831.AP)

## MCAS EL TORO ACTION MEMORANDUM SITES 2 &amp; 17 FINAL ADMINISTRATIVE RECORD INDEX

UIC No.	DOC.NO.	PRC.DATE	FROM.....	SUBJECT.....	CLASSIFICATION	KEY WORDS	Site...	Location.....
DOCUMENT TYPE...	DOC. DATE	FROM.SIGNATURE.....						
CONTR/GUID. NO.	CTO.NO.	TO.....						
APPROX.#. OF PAGES	EPA.CAT#	TO.SIGNATURE.....						
M60050 MISC NEESA 13-074 0200	000684 05/01/86 00000 01.1	04/05/95 05/01/86 00000 01.1	NEESA PORT HUENEME E.B. LUECKER SOUTHWEST DIVISION	INITIAL ASSESSMENT STUDY OF MCAS EL TORO	ADMIN RECORD	IAS EE/CA(*) AM EL TORO	4,7,11,13, 14,19,20 OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 GUID CA6170023208	000079 02/08/93 00000 11.4	11/01/93 02/08/93 00000 11.4	ROBERT C. WILLIAMS DEPT H & H DANA SAKAMOTO SOUTHWESTDIV	AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, PUBLIC HEALTH ASSESSMENT-PUBLIC COMMENT RELEASE FOR MCAS EL TORO	ADMIN RECORD	PUBNOT ATSDR COMMENTS AM EL TORO		SOUTHWEST DIVISION MCAS EL TORO
M60050 MM N6871189D9296 0020	001034 06/28/94 00284 01.6	12/08/95 06/28/94 00284 01.6	JACOBS ENGINEERING M. ARENDS SOUTHWEST DIVISION R. GREEN	INTERVIEW WITH ACTIVE AND RETIRED PERSONNEL FROM MCAS EL TORO REGARDING PROCEDURES FOR STORAGE AND DISPOSAL OF HAZARDOUS MATERIALS AND WASTE	ADMIN RECORD	DISPOSAL AM EL TORO	5,2,17,3,4 13,10,9,8, 12,1,3,5,7 11,14,15, 16,19,21, 22, OU1,OU2 OU2A,OU2B OU2C,OU3	SOUTHWEST DIVISION
M60050 RPT N6871192D4670 0300	001452 03/01/96 00076 03.6	04/08/96 03/01/96 00076 03.6	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT (OU) 2B - SITE 17 VOLUME 1 OF V SIGNED MARCH 14, 1996	ADMIN RECORD	RI OU AM EL TORO	OU2B,17	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0300	001453 03/01/96 00076 03.6	04/08/96 03/01/96 00076 03.6	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OU2B - SITE 17 VOLUME II OF V, APPENDICES A - E SIGNED MARCH 14, 1996	ADMIN RECORD	RI OU AM EL TORO	OU2B,17	SOUTHWEST DIVISION MCAS EL TORO
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M60050 RPT N6871192D4670 0300	001457 03/01/96 00076 03.6	04/08/96 03/01/96 00076 03.6	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT FOR OU2B - SITE 2 VOLUME 1 OF VI SIGNED MARCH 13, 1996	ADMIN RECORD	RI OU AM EL TORO	OU2B,2	SOUTHWEST DIVISION MCAS EL TORO



TOTAL RECORDS PRINTED: 15

REPORT SPECIFICATION FOR: RPT178

TITLE: MCAS EL TORO ACTION MEMORANDUM SITES 2 & 17 FINAL ADMINISTRATIVE

FILE: COMBINED Key Info. with Activity File

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[01] Key Words IS "AM EL TORO " & UIC.No. IS "M60050 "

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01 Doc. Date

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