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March 1998

EPA Superfund Record of Decision:

El Toro Marine Corps Air Station, OU 2A (Site 24-VOC Source Area Vadose Zone) El Toro, CA 9/29/1997

DRAFT FINAL
INTERIM RECORD OF DECISION
OPERABLE UNIT 2A
SITE 24 – VOC SOURCE AREA
VADOSE ZONE
MARINE CORPS AIR STATION
EL TORO, CALIFORNIA

SEPTEMBER 1997

DECLARATION

DECLARATION

SITE NAME AND LOCATION

Site 24, Volatile Organic Compound (VOC) Source Area – Operable Unit 2A (OU-2A) – Vadose Zone
Marine Corps Air Station (MCAS) El Toro
Santa Ana, California 92709

STATEMENT OF BASIS AND PURPOSE

This Interim Record of Decision (ROD) presents the selected remedial action for vadose zone soil at Site 24 at Marine Corps Air Station (MCAS) El Toro, located in El Toro, California.

This document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), 42 *United States Code* Section 9602 et seq., and, to the extent practicable, in accordance with the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 *Code of Federal Regulations* Section 300 et seq. The administrative record index for this site (Attachment A) identifies the documents upon which the selection of the remedial action is based. Also, because of the close relationship between OU-2A and OU-1 (the regional groundwater VOC contamination plume), the administrative record for OU-1 is hereby incorporated by reference into the administrative record for OU-2A.

The State of California (through the California Environmental Protection Agency Department of Toxic Substances Control and Santa Ana Regional Water Quality Control Board) and the United States Environmental Protection Agency (U.S. EPA) concur on the selected remedy.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present a current or potential threat to public health and welfare or to the environment.

DESCRIPTION OF THE REMEDY

Site 24, the VOC Source Area, comprises two contaminated media, soil and groundwater. This Interim ROD addresses remediation of contamination in the soil at Site 24. Remediation of groundwater at Site 24 will be addressed in a separate ROD.

The selected remedy for remediation of soil at Site 24 is soil vapor extraction (SVE), the U.S. EPA presumptive remedy for VOC-contaminated soil. This process uses a vacuum to pull VOC-contaminated vapors from the soil through SVE wells. Once the vapors are pulled to the surface, they are passed through an activated carbon filter to remove the VOCs before the air is discharged to the atmosphere. When the activated carbon filters

become saturated with VOCs, the carbon is returned to the manufacturer where it is regenerated and the VOCs are destroyed. The selected remedy includes the following:

- construction, operation, and maintenance of an SVE system to remove trichloroethene and other VOCs from the soil,
- performance monitoring throughout the predicted 2 to 4 years of remediation,
- treatment of VOC-contaminated soil gas (vapors) with activated carbon filters to meet air quality standards prior to discharge to the atmosphere
- confirmatory soil gas sampling at the end of the vadose zone remediation to confirm that average VOC concentrations are too low to contaminate groundwater above the maximum contaminant levels, and
- the vadose zone will be resampled at the conclusion of groundwater remediation. If the average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

SVE addresses the primary risk posed by soil contamination (which can be characterized as a principal threat at this site) by removing and permanently destroying the contaminants from soils, thereby significantly reducing the toxicity, mobility, or volume of hazardous substances in this medium. By removing VOCs from the soil, further groundwater contamination is minimized or prevented, thereby reducing the time required for groundwater cleanup. Deed restrictions will be required during remediation to prevent disturbance of monitoring wells and SVE equipment. These restrictions are not expected to be necessary once remediation of soils is complete. However, the vadose zone will be resampled at the conclusion of groundwater remediation. If the average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment (or resource recovery) technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. Because this remedy will not result in hazardous substances remaining above health-based levels, the 5-year review will not apply to this action.

Declaration

Signature: _____ Date:_____

Mr. Joseph Joyce
Base Realignment and Closure Environmental Coordinator
Marine Corps Air Station El Toro

Signature: _____ Date:_____

Mr. John E. Scandura, Chief
Southern California Operations
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Department of Toxic Substances Control

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Mr. Daniel D, Opalski, Chief
Federal Facilities Cleanup Branch
United States Environmental Protection Agency, Region IX

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ACRONYMS/ABBREVIATIONS

AOC	area of concern
ARAR	Applicable or Relevant and Appropriate Requirement
BACT	best available control technology
BCT	Base Realignment and Closure Cleanup Team
bgs	below ground surface
BNI	Bechtel National, Inc.
BRAC	Base Realignment and Closure
BTEX	benzene, toluene, ethylbenzene, and xylenes
CAA	Clean Air Act
Cal-EPA	California Environmental Protection Agency
CAS	Chemical Abstract Service
CCR	*California Code of Regulations*
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	*Code of Federal Regulations*
cm/s	centimeters per second
COPC	chemical of potential concern
CPT	cone penetrometer test
CSF	cancer slope factor
DCE	dichloroethene
DOD	United States Department of Defense
DQO	data quality objective
DON	United States Department of the Navy
DTSC	Department of Toxic Substances Control
DURA	Data Usability in Risk Assessment
FFA	Federal Facilities Agreement
FS	Feasibility Study
ft^3/min	cubic feet per minute
H&SC	Health and Safety Code
H&SP	Health and Safety Plan
HHRA	Human Health Risk Assessment
HI	hazard index
HQ	hazard quotient
IAS	Initial Assessment Study
IRP	Installation Restoration Program

ACRONYMS/ABBREVIATIONS (continued)

MCAS	Marine Corps Air Station
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
MICR	maximum individual cancer risk
MSL	mean sea level
NACIP	Navy Assessment and Control of Installation Pollutants
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPDES	National Pollutant Discharge and Elimination System
NPL	National Priorities List
O&M	operation and maintenance
OCEMA	Orange County Environmental Management Agency
OU	Operable Unit
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
POC	point of compliance
QA/QC	quality assurance/quality control
RAB	Restoration Advisory Board
RACER	Remedial Action Cost Engineering Requirements
RAGS	U.S. EPA Risk Assessment Guidance for Superfund
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facilities Assessment
RfD	reference dose
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
RME	reasonable maximum exposure
ROD	Record of Decision
ROG	reactive organic gas
RWQCB	(California) Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act of 1986
SCAQMD	South Coast Air Quality Management District
SDWA	Safe Drinking Water Act
SIP	State Implementation Plan
SIPOA	Site Inspection Plan of Action

ACRONYMS/ABBREVIATIONS *(continued)*

SVE	Soil Vapor Extraction
SVOC	semivolatile organic compound
SWDIV	Southwest Division Naval Facilities Engineering Command
SWMU	solid waste management unit
SWRCB	(California) State Water Resources Control Board
TBC	to be considered
TCE	trichloroethene
TDS	total dissolved solids
UCL	upper confidence limit
USC	*United States Code*
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VGAC	vapor-phase granular activated carbon
VOC	volatile organic compound

DECISION SUMMARY

Section 1
SITE NAME, LOCATION, AND DESCRIPTION

1.1 SITE NAME

The portion of Operable Unit 2A (OU-2A) addressed in this decision document consists of contaminated soil at the Volatile Organic Compound (VOC) Source Area, also known as Installation Restoration Program (IRP) Site 24, at Marine Corps Air Station (MCAS) El Toro.

1.2 SITE LOCATION

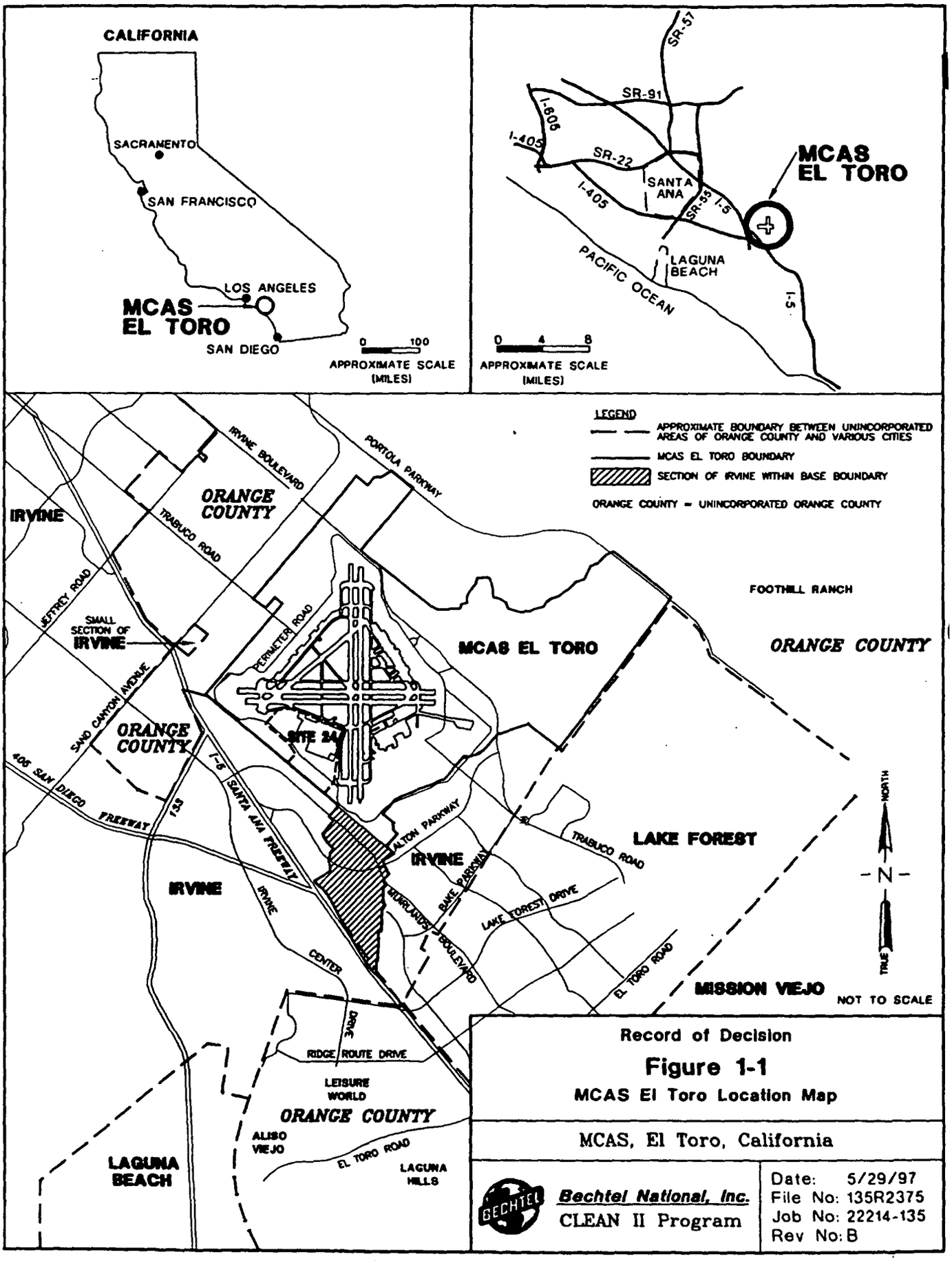
MCAS El Toro lies in a semiurban agricultural area in southern California, approximately 8 miles southeast of the city of Santa Ana and 12 miles northeast of the city of Laguna Beach (Figure 1-1). Land northwest of the Station is used for agricultural purposes. The land to the south and northeast is used mainly for commercial, light industrial, and residential purposes. Site 24 is located in the southwest quadrant of MCAS El Toro.

1.3 SITE DESCRIPTION

Site 24 encompasses approximately 200 acres. The site slopes to the west from an elevation of about 320 feet above mean sea level (MSL) at the intersection of the east-west and north-south runways to approximately 240 feet above MSL near the end of the east-west runway. The site is largely industrialized and contains two large aircraft hangars (Buildings 296 and 297) and several smaller buildings that are used for aircraft and vehicle maintenance and repair (Figure 1-2). Maintenance activities (e.g., degreasing) that occurred within these buildings may have contributed to the VOC contamination present at the site.

The Site 24 surface cover consists of unpaved open ground, asphalt, and concrete. The majority of the site (170 acres) is paved. Asphalt-covered areas are used primarily for access roads and parking lots for military and personal vehicles. Asphalt ranges from approximately 2 to 4 inches thick and varies in condition stationwide. Concrete-covered areas historically had the highest frequency of industrial activities at Site 24. Concrete blankets most of the industrialized portions of the site, Buildings 296 and 297 (the two aircraft hangars), Building 295 (the helicopter hangar), and Building 324 (an access apron to the former engine test facility). Concrete thickness ranges from approximately 6 inches to 14 inches, based on recent drilling operations.

A network of storm drains discharges rainwater and any other fluids that accumulate on the paved surfaces of Site 24. The majority of the wastewater that feeds the storm sewer network is generated from the concrete-paved areas of Site 24 where most of the industrial activity takes place. The storm drain network for the industrial facilities of Site 24 discharges to Agua Chinon and Bee Canyon Washes near the Station boundary.



Record of Decision

Figure 1-1

MCAS El Toro Location Map

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date: 5/29/97
File No: 135R2375
Job No: 22214-135
Rev No: B

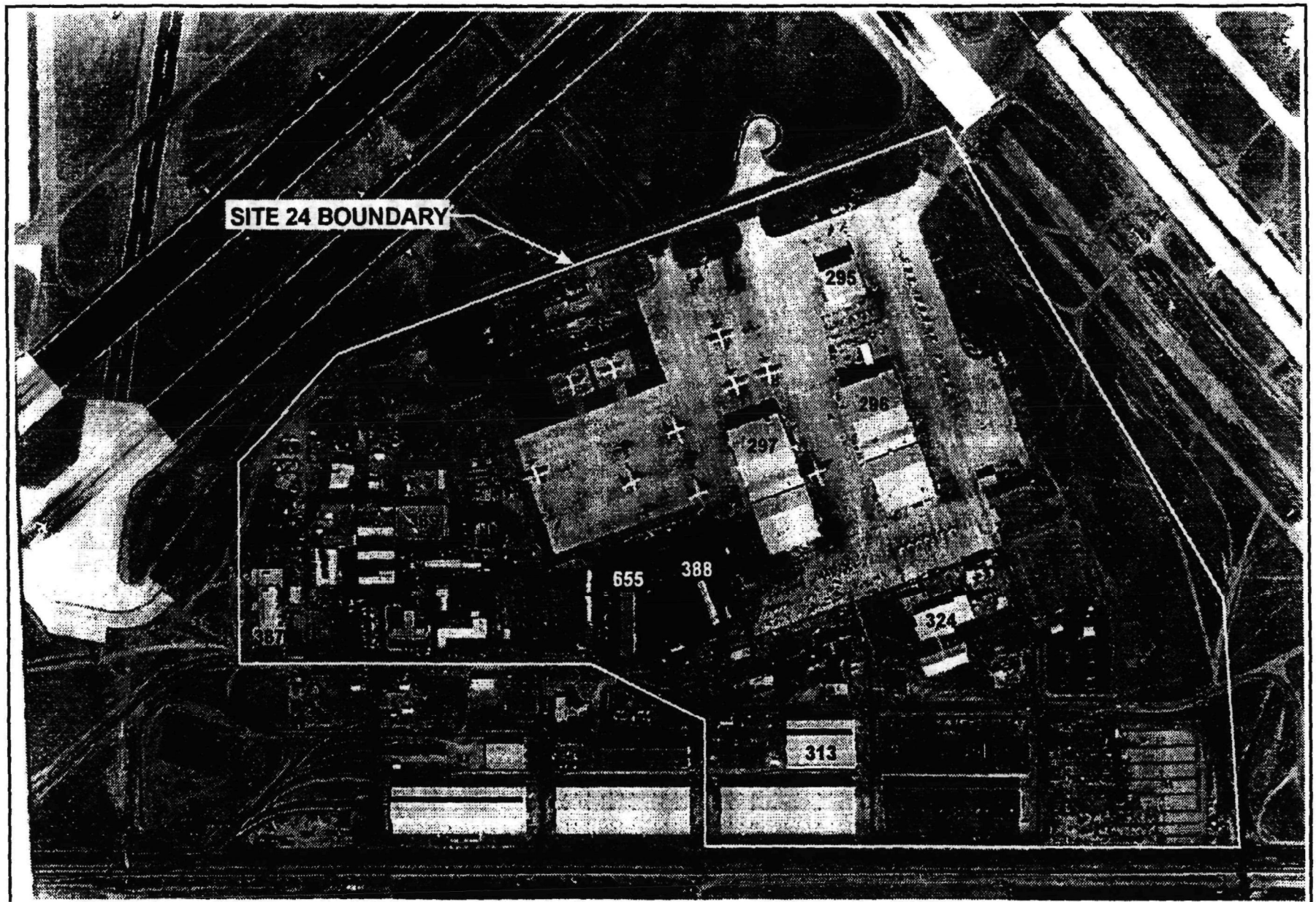


Figure 1-2
Aerial Photograph of Site 24 (1980)

135E2376.CDR 5/27/97

1.4 GEOLOGY AND HYDROGEOLOGY

An analysis of soil boring logs at Site 24 infers that three units of alluvial fan deposition are present. Coarse-grained stream channel deposits (sands and gravels) are interbedded with intermediate-grained (silty sand and clayey sand) and fine-grained overbank deposits (silts and clays), which were investigated to approximately 260 feet below ground surface (bgs). Figures 1-3 and 1-4 are geologic cross sections that illustrate the stratigraphy beneath Site 24. These units were found to be somewhat continuous and laterally extensive on a large scale, yet highly heterogeneous on a small scale due to the interbedded nature of sediments deposited in the alluvial setting.

Groundwater is first encountered approximately 85 to 120 feet beneath Site 24. This first water-bearing unit, or shallow groundwater unit, appears to be laterally continuous across the site. The total thickness of the unit appears to be greater than 100 feet based on boring logs from the Site 24 Remedial Investigation (RI). The upper 40 to 50 feet is relatively sandy with some fine-grained interbeds. The lower portion (the bottom 50 to 120 feet) of the unit, while still containing massive sandy units, becomes increasingly interbedded with finer-grained sediments.

An intermediate zone separates the shallow groundwater unit from a deeper, principal aquifer. The intermediate zone beneath MCAS El Toro consists of finer grained alluvial sediments that are estimated to be approximately 90 feet thick (JEG 1994a). At Site 24, separation of the shallow groundwater unit from the principal aquifer is supported by lithologic, geochemical, and cone penetrometer test (CPT) data. Geotechnical analytical results from the shallow groundwater unit, intermediate zone, and principal water-bearing zone indicate vertical hydraulic conductivities for the intermediate zone that are several orders of magnitude lower than the two water-bearing zones (BNI 1997a).

The principal aquifer comprises the early Pleistocene San Pedro Formation and is the main water-production zone for the Irvine area. In general, deep-screened wells located near pumping centers in the main portion of the Irvine groundwater subbasin (Irvine Subbasin) indicate seasonal fluctuations in piezometric pressure more than shallow-screened intervals in the same wells (JEG 1994a). Water-level data from multiport monitoring and cluster wells in the Irvine Subbasin support hydraulic separation between the shallow groundwater unit and the deeper, principal aquifer. Although small vertical hydraulic head differences are shown to exist between shallow and deeper water-bearing intervals on Site 24, Phase II RI analytical data do not indicate downward migration of VOCs from the shallow groundwater unit to the principal aquifer on Site 24. However, the off-Station trichloroethene (TCE) contamination of the principal aquifer is verification that some migration has occurred. Migration could be enhanced by vertical gradients developed by agricultural well pumping.

Site 24 is located within the Irvine Subbasin, which has been designated by the California Regional Water Quality Control Board (RWQCB), Santa Ana Region, as a public water supply source (RWQCB 1995). The regional aquifer beneath Site 24 is not currently a

source of municipal drinking water; however, groundwater in the vicinity of the Station is used for agricultural purposes. One on-Station groundwater well that belongs to the Irvine Company, located at the westernmost end of the east-west runway, is used for irrigation and is connected to the regional irrigation distribution system. The other irrigation wells are located west (three wells) and northwest (four wells) of the station.

1.5 CURRENT LAND USE

MCAS El Toro is bordered on the south and west by the city of Irvine and on the north and east by unincorporated lands. The city of Irvine controls development in surrounding areas that are suitable for urbanization. However, local jurisdictions do not have authority over federal lands.

MCAS El Toro encompasses about 4,738 acres. Approximately 1,000 acres are designated for outleases that are not available for development because airfield safety clearances render them unsuitable for any other use. The outleased lands are at the corners of the Station and are used for agricultural purposes, including landscape nurseries, livestock grazing, and crop production.

Land use on MCAS El Toro consists of a few general types. General Station land uses are described in the following four quadrants, as defined by the bisecting north-south and east-west runways.

- The northwest quadrant consists of administrative services (including the MCAS El Toro headquarters, family and bachelor housing, and community support services).
- The northeast quadrant consists of Marine Aircraft Group activities (including training, maintenance, supply and storage, and airfield operations), family housing, community services, and ordnance storage in areas isolated by topographic relief and distance from other developments.
- The southeast quadrant consists of administrative services, maintenance facilities, ordnance storage, and the golf course.
- The southwest quadrant (Site 24) consists of aircraft maintenance facilities, supply and storage facilities, and limited administrative services.

Historically, land use around MCAS El Toro has been largely agricultural. However, the land to the south, southeast, and southwest has been developed over the past 10 to 15 years for commercial, light industrial, and residential uses. Currently, expanding commercial areas are located adjacent to the Station. Additional residential areas are located to the northwest and west of the Station. Adjacent land to the northeast and northwest is used for agriculture.

Growth projections through the year 2000 for the area surrounding the Station indicate continued urbanization. The estimated population in the city of Irvine in 1990 was 105,311. Population projections indicate further increases to 118,570 by the year 2000

and 208,220 by the year 2020. Population growth has occurred primarily in the central residential districts within 2 to 3 miles of the station.

1.6 FUTURE LAND USE

MCAS El Toro is scheduled for closure in 1999. A Community Reuse Plan has been prepared (MCAS Local Redevelopment Authority 1996). The primary alternative for future development of the area that contains Site 24 is airport support.

El Toro Marine Corps Air Station, El Toro, California

Please contact Region 9 for copy of the following figures:

Figure 1-3 - (Geologic Cross Sections A-A' and B-B')

Figure 1-4 - (Geologic Cross Sections C-C' and D-D')

Section 2
SITE HISTORY AND ENFORCEMENT ACTIVITIES

MCAS El Toro was commissioned in 1943 as a Marine Corps pilot fleet operation training facility. In 1950, the Station was selected for development as a master jet station and permanent center for Marine Corps aviation on the west coast. The Station mission has involved the operation and maintenance of military aircraft and ground-support equipment. Much of the industrial activity supporting this mission took place in the southwestern quadrant of the Station, where Site 24 is located.

Past operations and practices at MCAS El Toro have contributed to soil and groundwater VOC contamination. Industrial activities at Site 24, such as dust suppression with waste liquids, paint stripping, degreasing, vehicle and aircraft washing, and waste disposal practices may have involved the use of solvents containing VOCs such as TCE and tetrachloroethene (PCE). Wastes from these practices may have reached the surface or subsurface through leakage, runoff, storm drains, or direct application to the soil. These wastes are believed to be the source of VOCs detected in the regional groundwater. The precise origin, nature, and use of TCE released at the site and the specific circumstances and quantities of individual releases are not documented. TCE usage at MCAS El Toro is believed to have been discontinued in the mid-1970s.

Environmental remediation activities at MCAS El Toro are performed under the IRP. The IRP was developed in 1980 by the United States Department of Defense (DoD) to comply with federal guidelines to manage and control past hazardous waste disposal actions (DON 1992). The first indication of contamination at the Station occurred during routine water quality monitoring in 1985, when the Orange County Water District discovered TCE in groundwater at an irrigation well located approximately 3,000 feet downgradient of MCAS El Toro.

In 1985, the United States Department of the Navy (DON) began to work on an Initial Assessment Study (IAS) to locate potentially contaminated sites on the Station. This work was conducted for the Naval Facilities Engineering Command under the Navy Assessment and Control of Installation Pollutants (NACIP) Program, which was the DON version of the DoD IRP at that time. The IAS report identified 17 sites as potential sources of contamination (Brown and Caldwell 1986). The identification of potentially contaminated sites was based on the results of record searches and employee interviews. The report recommended sampling locations and sample analytical parameters to confirm the suspected contamination at the sites.

In 1987, the Marine Corps contracted for a review of the IAS to produce a Site Inspection Plan of Action (SIPOA) (JMM 1988). In July 1987, while the SIPOA study was under way, RWQCB Santa Ana Region issued a cleanup and abatement order to the Marine Corps. This order required the Station to initiate a perimeter groundwater VOC investigation and submit a draft report. The SIPOA released in August 1988 included a recommendation of 19 sites for study and amended the site sampling plans proposed in the IAS report. This SIPOA report served as the basis for the Sampling and Analysis Plan for the remedial investigation/feasibility study (RI/FS) sites.

In June 1988, the U.S. EPA recommended adding MCAS El Toro to the National Priorities List (NPL) of the Superfund Program due to VOC contamination at the station boundary and in the

agricultural wells west of the Station. MCAS El Toro was added to the NPL on 15 February 1990. In October 1990, the Marine Corps/DON signed a Federal Facilities Agreement (FFA) with U.S. EPA Region IX, California Department of Health Services (now referred to as the California Environmental Protection Agency [Cal-EPA] Department of Toxic Substances Control [DTSC]), and the RWQCB Santa Ana Region (FFA 1990). The FFA is a cooperative agreement that:

- assures environmental impacts are investigated and appropriate response actions are taken to protect human health and the environment;
- establishes a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions;
- facilitates cooperation, exchange of information, and participation of the parties; and
- assures adequate assessment, prompt notification, and coordination between federal and state agencies.

The implementation of the FFA is included as one of the responsibilities of the Base Realignment and Closure (BRAC) Cleanup Team (BCT). The BCT consists of representatives from the DON Southwest Division Naval Facilities Engineering Command (SWDIV), U.S. EPA, DTSC, and RWQCB Santa Ana Region. The team was established to manage and coordinate environmental restoration and compliance programs related to the closure and disposal of MCAS El Toro by July 1999 (BNI 1997a). In addition, the MCAS El Toro BCT has specified in its mission and vision statements that:

- fast-track remediation of sites is necessary to expedite reuse; and
- restoration and reuse is to be maximized by 1999.

In December 1989, the DON began to prepare a Phase I RI Work Plan and associated documents for MCAS El Toro. The DON reviewed the available reports and other documents pertinent to past disposal practices at the Station and concluded that 22 sites would be investigated (JEG 1993a). These sites were grouped into three OUs. OU-1 comprised the regional VOC groundwater investigation (Site 18), which was conducted both on and off the Station. OU-2 included the four landfill sites (Sites 2, 3, 5, and 17) and Site 10, the petroleum disposal area (this site was later moved to OU-3). The remaining 16 sites were grouped together as OU-3. These sites were considered to be potential sources for a variety of contaminants. The principal objectives of the Phase I RI were to evaluate the source(s) of contamination in regional groundwater west of the Station and determine whether contamination exists and is affecting the environment at sites in OU-2 and OU-3.

The results of the Phase I RI were documented in a draft Technical Memorandum issued in July 1993 (JEG 1993a), a draft RI report for OU-1 issued in July 1994 (JEG 1994a), and in a draft Soil Gas Technical Memorandum issued in October 1994 (JEG 1994b). A variety of contaminants in the groundwater, soil, surface water, and sediment at MCAS El Toro was identified during the Phase I RI. Contaminants in the soil and sediment consisted primarily of low concentrations of semivolatile organic compounds (SVOCs), petroleum hydrocarbons,

pesticides, herbicides, and polychlorinated biphenyls (PCBs) (JEG 1993a). It was also concluded during the Phase I RI that the source of contamination for regional groundwater is in the southwest quadrant of the Station, but no specific source was identified. The sampling events yielded sufficient information to warrant conducting a preliminary risk assessment of contaminants at the sites for both groundwater and soil contamination. The results of the Phase I RI provided the primary data for the Phase II RI/FS.

In March 1993, MCAS El Toro was placed on the BRAC III list of military facilities considered for closure. Under the terms of the FFA, Station closure would not affect the DON's obligation to conduct the RI/FS and to comply with the other requirements of the FFA (FFA 1990, Section 37, Base Closure).

Concurrent with the Phase I RI, the DON conducted a Resource Conservation and Recovery Act (RCRA) Facilities Assessment (RFA) at MCAS El Toro. The purpose of the RFA was to evaluate whether an additional 140 sites at MCAS El Toro would require further investigation under the Phase II RI/FS program. The final RFA report was submitted in July 1993 (JEG 1993b). Based on an evaluation of the sampling visit results, 25 solid waste management units (SWMUs)/areas of concern (AOCs) were recommended for further action. Site 23 (Wastewater Treatment Plant Sewer Lines) was evaluated in the RFA and recommended for no further action. The sewer lines are located within Site 24 which was added to the Phase II RI scope.

Interviews with active and retired personnel from the Fuel Operations Division and Facility Management Department (currently the Installations Department) were held in July 1994 at MCAS El Toro (JEG 1994c). The objectives of the meeting were to supplement and confirm information obtained from past interviews and field investigations, to obtain a better understanding of current and historical operations at MCAS El Toro, and to identify new areas of potential environmental concern at MCAS El Toro. Those interviewed had knowledge of operations and procedures for storage and disposal of hazardous materials and waste. The interview panel consisted of regulatory agency personnel, DON and MCAS El Toro personnel, and contractor personnel.

The subjects covered during the interviews included underground storage tanks (USTs), aboveground storage tanks, RI/FS investigation sites, tank farms, disposal procedures, disposal areas, and accidental or unintentional spills or leaks that may have occurred. Much of the information gathered from previous interviews and field investigations was confirmed. The interview panel discussed the types of wastes known to be deposited in each of the landfills, the depth and the boundaries of the landfills, and how the wastes were handled. Other subjects discussed included the types of operations that occurred on the Station and the types of chemicals used in these operations.

In July 1995, a final Work Plan for the Phase II RI/FS was issued (BNI 1995). This Work Plan presented an approach to conduct the Phase II RI at 24 sites including two new sites, Site 24 and Site 25. The objectives of the plan were to present a statistically based sampling strategy to numerically establish confidence that inferences made from the data are correct, establish background concentrations of metals in soils and groundwater, and, ultimately, collect sufficient

information to support risk management decision. The Phase II RI was conducted in 1995 and 1996.

Table 2-1 summarizes the enforcement activities and environmental investigations that have occurred at MCAS El Toro.

Table 2-1
Summary of Environmental Investigations Relevant to Site 24

Date	Investigation	Objective	Summary of Findings
1985	IAS[a]	Locate potentially contaminated sites at MCAS[b] El Toro using record searches and employee interviews.	Identified 17 sites as potential sources of contamination. Recommended sampling locations and sample analytical parameters to confirm the suspected contamination at the 17 sites.
1986	OCWD[c] Groundwater Investigation	Investigate source of TCE[d] found in agricultural well west of MCAS El Toro.	After installing a series of monitoring wells and soil vapor probes and reviewing independent investigations, OCWD concluded that MCAS El Toro was the source of TCE contamination detected in groundwater downgradient of the Station.
1988	Site Inspection Plan of Action	Review IAS findings.	Recommended 19 sites for investigation and amended the site sampling plans proposed in the IAS report. This included one site (Site 18) intended to address the off-Station contaminant plume of VOCs[e].
1988	Perimeter Study Investigation	Address the RWQCB[f], Santa Ana Region Cleanup and Abatement Order requiring investigation of the source of regional VOC groundwater contamination.	Detected the presence of VOCs in shallow groundwater near the southwestern boundary of the Station.
1989	Interim pump-and-treat system	Pump and treat VOC-contaminated groundwater from three extraction wells near the Station boundary.	Groundwater was extracted at a combined rate of 30 gallons per minute from three wells and treated with granular activated carbon. Extracted groundwater had concentrations of TCE and PCE[g] from 10 to 160 and 25 to 100 parts per billion, respectively.
1989	Phase I RI[h] Work Plan and associated documents for MCAS El Toro	Formulate Work Plan, Field Sampling Plan, and other RI documents to direct the Phase I fieldwork.	DON concluded that 22 sites would be investigated and grouped into three OUs[i].
1990	Superfund NPL[j]	Identify sites with imminent risks to the public.	MCAS El Toro was added to the NPL for the Superfund Program due to VOC contamination at the Station boundary and in agricultural wells west of the Station boundary.

(table continues)

Table 2-1 (continued)

Date	Investigation	Objective	Summary of Findings
1993	Base Closure and Realignment Act	Identify sites for closure.	MCAS El Toro was placed on the BRAC[k] III list. Under the terms of the FFA[l], Station closure would not affect the DON's obligation to conduct the RI/FS[m] and comply with the other requirements of the FFA.
1993	Phase I RI	The draft Technical Memorandum and draft OU-1 RI Reports document the results of the Phase I RI. The principal objectives of the Phase I RI were to make an initial determination regarding the existence and risks of contamination at sites in OU-1, OU-2, and OU-3. Sites 24 and 25 were added during the Phase I RI.	Various contaminants in the groundwater, soil, surface water, and sediment were detected at MCAS El Toro. Soil and sediment contaminants were primarily SVOCs[n], petroleum hydrocarbons, pesticides, herbicides, and PCBs[o]. The Phase I RI concluded that the source of contamination for regional groundwater was the southwest quadrant of the Station, but it did not indicate specific sources. A preliminary risk assessment was conducted for contaminants at the sites in both groundwater and soil.
1993	RCRA[p] Facility Assessment	Evaluate whether an additional 140 sites at MCAS El Toro would require further investigation under the Phase II RI/FS program.	Based on the RCRA Facility Assessment results, SWMUs/AOCs[q] were recommended for further action. This action included additional subsurface investigation or other activities such as inspection of underground storage tanks, repair of cracks in concrete-paved areas, and excavation of contaminated soil. Of these 25 SWMUs/AOCs, 2 were recommended for further action under the Phase II RI/FS program. Site 23 was investigated and recommended for no further action.
1994	Phase I Soil Gas Survey for Sites 24 and 25	Identify potential VOC sources at Sites 24 and 25.	The soil gas survey investigated soil conditions (generally 12 to 20 feet below ground surface). Elevated concentrations of VOCs were detected beneath the aircraft maintenance hangars (Buildings 296 and 297). TCE was the compound most frequently detected. Other VOCs detected included PCE, 1,1-dichloroethene, Freon 113, carbon tetrachloride, and chloroform.

(table continues)

Table 2-1 (continued)

Date	Investigation	Objective	Summary of Findings
1994	Interviews with active and retired personnel	To supplement and confirm information from past investigations and interviews, obtain a better understanding of current and historical operations, and identify new areas of potential environmental concern.	The interview panel provided information about types of operations that occurred on-Station and types of chemicals used in these operations.
1995	Final Work Plan for Phase II RI/FS and associated documents	Present an approach to conduct the Phase II RI at 24 sites at MCAS El Toro using the U.S. EPA DQO[r] process. Establish background concentrations of metals in soils. Establish a process to collect sufficient information to support decisions on risk management.	Established DQO process for conducting RI/FS. Two new sites, Sites 24 and 25, were established for investigation in Phase II.
1996	Interim-Action FS for groundwater contamination designated as OU-1	Evaluate potential actions to reduce the impact of the VOC-contaminated groundwater on the OCWD Desalter Project.	A range of remedial alternatives has been prepared and presented for public comment. A decision is expected by the end of 1997.
1996	RI for Site 24 vadose zone VOC contamination	Determine the nature and extent of contamination in the vadose zone at Site 24 and evaluate the human-health risk due to this contamination.	Soil and groundwater were investigated. The RI linked the groundwater hot spot identified during the Phase II RI with high concentrations of TCE in the vadose zone beneath Buildings 296 and 297.
1996	FS for vadose zone contamination at Site 24	Evaluate potential actions to remediate the VOC-contaminated soils at Site 24.	SVE[s] is presented as the presumptive remedy most appropriate for remediation of contaminated soils.

Notes:
- [a] IAS – Initial Assessment Study
- [b] MCAS – Marine Corps Air Station
- [c] OCWD – Orange County Water District
- [d] TCE – trichloroethene
- [e] VOC – volatile organic compound
- [f] RWQCB – Regional Water Quality Control Board
- [g] PCE – tetrachloroethene

(table continues)

Table 2-1 (continued)

[h] RI – Remedial Investigation
[i] OU – operable unit
[j] NPL – National Priorities List
[k] BRAC – Base Realignment and Closure
[l] FFA – Federal Facilities Agreement
[m] FS – Feasibility Study
[n] SVOC – semivolatile organic compound
[o] PCB – polychlorinated biphenyl
[p] RCRA – Resource Conservation and Recovery Act
[q] SWMU/AOC – solid waste management unit/area of concern
[r] U.S. EPA DQO – United States Environmental Protection Agency data quality objectives
[s] SVE – soil vapor extraction

Section 3
HIGHLIGHTS OF COMMUNITY PARTICIPATION

There are a total of 24 sites that are being investigated at MCAS El Toro. A Community Relations Plan (BNI 1996a) was developed to document concerns identified during community interviews and provide a detailed description of the community relations activities planned in response to information received from the community. The initial plan was prepared in 1991 and revised in 1993 and 1996. The revisions incorporated the most recent assessment of community issues, concerns, and information needs related to the ongoing environmental investigation and remediation program at MCAS El Toro.

The community relations program includes specific activities for obtaining community input and keeping the community informed. These activities include conducting interviews, holding public meetings, issuing fact sheets to provide updates on current remediation activities, maintaining an information repository where the public can access technical documents and program information, disseminating information to the local and regional media, and making presentations to local groups.

Outside the community relations program, community members and local governmental agencies have participated in planning for the reuse of MCAS El Toro through development of the Community Reuse Plan.

3.1 RESTORATION ADVISORY BOARD

In 1994, individuals from local communities began to play an increasingly significant role in the environmental restoration process with the establishment of the Restoration Advisory Board (RAB). Original membership in the board, which was solicited by the Marine Corps/Navy through paid newspaper notices, exceeded 50 business and homeowners' representatives, locally elected officials and local regulatory agencies, and interested residents. RAB meetings occur approximately every 2 months, are open to the public and include Marine Corps/Navy and regulatory representatives. Several board members from the RAB have taken information from the regular meetings back to the groups they represent, thus contributing to an increased awareness of the installation restoration process. In addition, members of the public can contact RAB members to obtain information or express concerns to be discussed at subsequent RAB meetings. A copy of the RAB meeting minutes is available at the MCAS El Toro Information Repository, located at the Heritage Park Regional Library in Irvine, California. RAB meeting minutes are also located on the DON's SWDIV Environmental Web Page, which can be found at either of the following two Internet addresses:

http://ivory.nosc.mil/~saundel/default.html
http://www.efdswest.navfac.navy.mil/DEP/ENV/default.html

3.2 FACT SHEETS

Facts sheets have been used to ensure an even broader dissemination of information within the local community. The first fact sheet announcing the IRP process at MCAS

El Toro was delivered to residents surrounding MCAS El Toro and mailed to city, state, and federal officials, agencies, local groups, and individuals identified in the Community Relations Plan in November, 1991. Subsequent fact sheets were mailed to the community as significant remediation milestones occurred (Table 3-1). These fact sheets have included information concerning the status of site investigations, the upcoming remedy selection process, ways the public can participate in the investigation and remediation of MCAS El Toro, and the availability of the Administrative Record. The fact sheets are mailed to approximately 1,800 households, businesses, public officials, and agencies in an effort to reach as many community members as possible.

Table 3-1
Summary of MCAS[a] El Toro Fact Sheets

Fact Sheet Number	Date	Summary of Contents
–	11/91	Information Update/IRP[b] Process
–	12/92	Information Update
1	12/93	Phase II RI[c] Results
2	12/93	RAB[d] Formation
3	07/95	Information Update/Tank 398
4	10/95	Information Update/Engineering Evaluation/Cost Analysis
5	11/95	MCAS El Toro Building 673-T3 Certification for Closure
6	04/96	Looking Back-Moving Forward Update on IRP Progress
7	12/96	Groundwater Remediation OU[e]-1 and OU-2A

Notes:
[a] MCAS – Marine Corps Air Station
[b] IRP – Installation Restoration Program
[c] RI – Remedial Investigation
[d] RAB – Restoration Advisory Board
[e] OU – operable unit

3.3 PROPOSED PLAN FOR SITE 24

The Phase II RI report, the vadose zone FS report, and the vadose zone Proposed Plan for Site 24 were released to the public in April 1997. These documents were made available to the public at the information repository maintained at the Heritage Park Regional Library. The notice of availability for these documents was published in the Orange County Register and the Los Angeles Times (Orange County edition) on 23 April 1997. The notices also announced the availability of the administrative record file for review. Complete administrative record files are available at the Southwest Division Naval Facilities Engineering Command in San Diego and at MCAS El Toro. A partial record file is available for review at the information repository. The information repository also contains a complete index of the administrative record file along with information on how

to access the complete file at the Station. The Proposed Plan was also distributed to the MCAS El Toro project mailing list.

A public comment period was held from 30 April to 30 May 1997. In addition, a public meeting was held on 15 May 1997. This meeting was announced in the Orange County Register and the Los Angeles Times (Orange County Edition) on 09 May 1997 and in the Proposed Plan. Media alerts were also used to notify reporters that the public was invited to the meeting and to encourage the reporters to attend and publicize the event. At this meeting, representatives from the DON, MCAS El Toro, and environmental regulatory agencies answered questions about site conditions and the remedial alternatives under consideration and a public recorder recorded verbal and written public comments. Comment forms were also provided to encourage submittal of written comments after the meeting. A response to the comments received during this period is included in the Responsiveness Summary, which is part of this ROD. This decision document presents the selected remedial action for the Site 24 vadose zone at MCAS El Toro in Orange County, California, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The decision for this site is based on information contained within the administrative record.

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Section 4
SCOPE AND ROLE OF OPERABLE UNIT

OU-2A was defined to address the source of regional groundwater contamination. Although other OUs have been identified at MCAS El Toro, these OUs are not related to the VOC source area.

Site 24 poses a potential threat to human health because of the possibility of ingestion, inhalation, or dermal contact with the contaminated groundwater beneath the site. There is no significant risk due to VOCs in shallow soil. The purpose of this response is remove the VOCs in the soil beneath the site in order to minimize or prevent future contamination of groundwater. The action described in this decision document is an interim action because only vadose zone soil is addressed. The vadose zone is the soil interval from the ground surface to the water table. The vadose zone soil interval is approximately 85 to 120 feet thick beneath Site 24. Remediation of contaminated groundwater at Site 24 will be addressed in a separate ROD.

In addition to Site 24, OU-2A also contains Site 25, Major Drainages. Site 25 was originally included in OU-2A because it was thought to have a potential to contribute to the regional groundwater contamination. Site 25 has now been investigated and it has been determined that this site is not a source of the regional VOC contamination. Site 25 will be addressed in a separate ROD.

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Section 5
SUMMARY OF SITE CHARACTERISTICS

This section provides an overview of site contamination and the actual and potential routes of exposure posed by the conditions at the site.

5.1 POTENTIAL SOURCES OF CONTAMINATION

The VOCs at Site 24 may have come from solvents containing TCE and PCE that were used at Site 24 until approximately 1975. The precise origin, nature, and use of VOCs released at the site and the specific circumstances and quantities of individual releases are not documented. Active VOC sources are believed to no longer exist at Site 24. Therefore, there were no clearly visible or currently active aboveground sources (or activities) that could be used as an initial focus of the RIs. Most of the storage facilities have either been abandoned in place or completely removed, and former disposal practices have been discontinued. In some cases, remnants of formerly active sources are visible at the surface, and in other cases they are not. Because there are no currently active, aboveground sources to locate former release areas, potential VOC sources were identified by reviewing the RFA and Phase I data; reviewing Station records; conducting interviews with former operations staff involved with solvent storage, use, and disposal; and inspecting facilities within Site 24.

The potential sources at Site 24 were divided into two categories: subsurface and surface. These categories are based on the mechanism by which VOCs may have been released into the subsurface. Table 5-1 summarizes the two categories of potential sources of VOC contamination at Site 24.

Table 5-1
Two Categories of Potential Sources of VOC Contamination at Site 24

Potential Source	Description
Subsurface Source	Former degreaser pits and solvent tanks Storm drains and industrial wastewater lines Vehicle wash racks with associated drains and sumps Underground storage tanks
Surface Source	Aircraft washing Waste-handling practices Hazardous waste storage areas Tarmac runoff

5.1.1 Potential Subsurface Sources

Potential subsurface sources include former degreaser pits and solvent tanks, storm drain and industrial wastewater sewer lines, vehicle wash racks with associated drains and sumps, and underground storage tanks. These are areas and features where releases may have occurred at discrete point source locations, at regular intervals, and directly into the subsurface. Potential subsurface source areas exist where permanent, man-made facilities

are designed into the infrastructure that may have directed solvents to precise locations (point sources) of release. These facilities were designed to handle industrial waste at regular intervals as a function of the industrial activities they supported. These point-source areas are subsurface features that were in direct contact with soil beneath Site 24. Table 5-2 presents a survey of the potential subsurface sources at Site 24, including location, physical description, and potential VOC release mechanisms.

5.1.2 Potential Surface Sources

Potential surface sources are located where practices, as opposed to infrastructure, resulted in intermittent releases at different locations on the Station. These types of potential releases may have occurred at random locations on the ground surface as a result of aircraft washing, temporary waste storage, handling and disposal practices, surface cover runoff, and dust-suppression activities. Potential surface sources are summarized in Table 5-3 and include hazardous waste storage areas, ditches that collected runoff adjacent to paved areas, areas where solvents may have been used with water for aircraft washing, and open areas of the ground where occasional dumping of liquid waste may have occurred.

5.2 TYPES OF CONTAMINATION AND AFFECTED MEDIA

The chemicals of concern at Site 24 are VOCs. VOCs are present in soil and groundwater. VOCs reported to be present at the site include TCE, PCE, 1,1-dichloroethene (DCE), and carbon tetrachloride. The horizontal and vertical extent of VOCs in the vadose zone was characterized using soil and soil gas sampling and analysis. This characterization showed that the primary VOC source is present beneath Buildings 296 and 297, extending to the south with decreasing concentrations to the southern Station boundary. Several smaller source areas exist in the soil beneath Site 24, including a PCE soil gas plume located west of Building 297. The VOC concentrations in soil gas generally increase with depth, and the highest concentrations occur near the water table. VOCs in the area of Buildings 296 and 297 extend to groundwater directly beneath those buildings. Measured soil gas and groundwater TCE concentrations demonstrate that TCE mass flux is from the vadose zone toward groundwater. The trend of increasing soil gas concentrations with depth suggests a depleting source at the surface that is consistent with the assumed end of TCE usage in approximately 1975.

The horizontal and vertical extent of VOCs in groundwater was characterized using Phase I RI data combined with additional monitoring well and HydroPunch sampling and analysis. This characterization showed that VOCs from the soils at Site 24 have impacted shallow groundwater beneath the site, but the deeper groundwater or principal aquifer is not affected beneath Site 24. However, as shown in Figure 5-1, the principal aquifer west of the Station boundary has low-level TCE contamination. VOCs besides TCE were found in the groundwater, but only within the plume.

Table 5-2
Potential Subsurface Sources of VOC[a] Contamination at Site 24

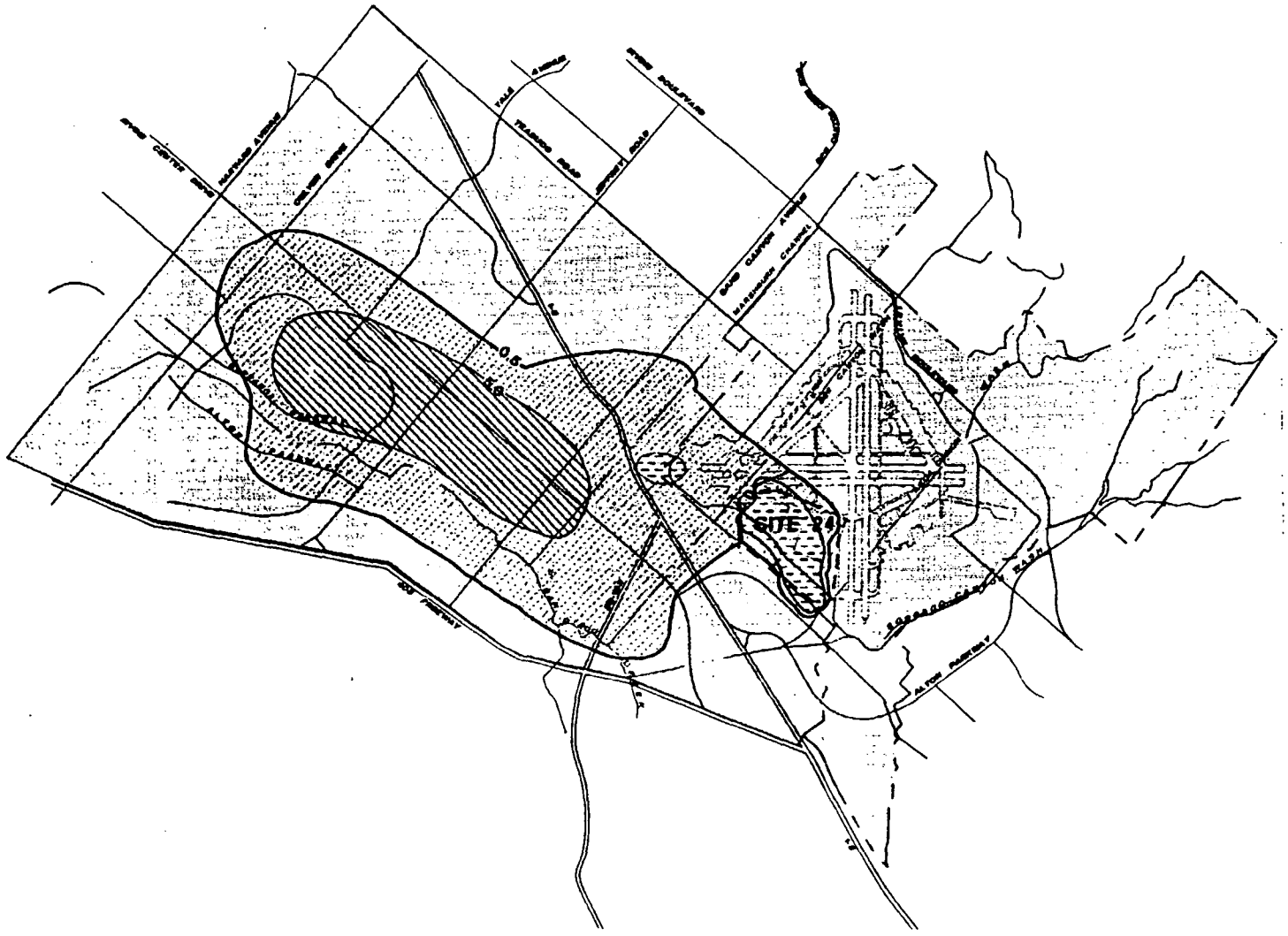
Potential Sources	Physical Description	Location(s) Nearest Building	Potential VOC Release Mechanism	Vadose Zone VOC Detections (RFA[b] soil, Phase I soil gas, and Phase II soil data)	Status
Vehicle wash racks	Vehicle wash rack, 3,200 square feet, concrete	Northeast side of Building 386	Possible releases of VOCs mixed with water through cracks or overspill and leakage from subsurface piping. RFA: SWMU[c]/AOC[d] 110	Shallow soil gas: No VOCs found (Phase I RI[e]). Shallow soil: PCE[f], maximum value = 11 µg/kg[g] (RFA), attenuates with depth.	Currently active.
	Vehicle wash rack, 900 square feet, concrete	North end of Building 655	Possible releases of VOCs mixed with water through cracks or overspill or leakage from subsurface piping. RFA: SWMU/AOC 198 RFA reported large cracks in concrete; dark stains and leaking oil pans were observed on surface during the VSI[h].	Shallow soil gas: TCE[i] and PCE (Phase I RI). Shallow soil: PCE, maximum value = 16 µg/kg, 5 feet bgs[j] (RFA).	Currently active.
Degreaser pits	Thirteen degreaser pits with solvent tanks	Three pits in Building 296, four pits in Building 297, six pits in Building 324	Possible releases mixed with water from subsurface pits or from drains that are connected to those pits. Drain connections and joints are subject to defects, which could result in releases.	Shallow soil gas: TCE, PCE, and Freon 113 (Phase I RI). Shallow soil: TCE only, maximum value = 25 µg/kg (Phase II RI).	Thirteen degreaser pits have been taken out of service and/or abandoned in place.
Storm drains and industrial wastewater lines	Storm drains and industrial wastewater lines	Connected to degreaser pits in Buildings 296, possibly 297, and 324; network of drains and lines throughout Site 24	Storm drains from Buildings 296 and 297 eventually discharged into washes near Site 24. Building 324 is tied to industrial wastewater sewer network. All lines are in direct contact with vadose zone. Connections are subject to defects in joints and collars, which could result in releases mixed with water.	Shallow soil gas data indicates elevated TCE and PCE concentrations near Buildings 296 and 297 and to a lesser degree at Building 324.	The industrial wastewater lines were reportedly used for only 6 months (dates unknown). The method or date of abandonment is unknown. The storm drain system is currently active and is connected to some of the industrial facilities of Site 24.
USTs[j]	Oil/water separator UST 297-B; 100-gallon steel; installed in 1982	Northeast side of Building 297	Possible leaking UST RFA: SWMU/AOC 76	Shallow soil gas: TCE, PCE (Phase I RI). Shallow soil: TCE, maximum value = 12 µg/kg (RFA); attenuates with depth.	Currently active. Scheduled for removal in 1997.
	Waste oil UST 529; 25,000-gallon concrete; installed in 1944	25 feet northeast of Building 529	Possible leaking UST RFA: SWMU/AOC 145	Shallow soil gas: No VOCs found. Shallow soil: PCE, maximum value = 4 µg/kg (RFA); attenuates with depth.	Currently inactive. Scheduled for removal in 1996 or 1997.
	Fuel UST 326-B; 250-gallon steel stored JP-5 (jet fuel)	East of Building 326, north of Building 324	Possible leaking UST RFA: SWMU/AOC 283	Shallow soil gas: TCE and PCE (Phase I RI). Shallow soil: TCE; maximum value = 3 µg/kg (RFA); attenuates with depth.	Currently inactive. Scheduled for removal in 1996 or 1997. RFA recommended no further action.
	Oil/water separator UST 759-A; 100-gallon steel; installed in 1982	Northwest of Building 655	Possible leaking UST RFA: SWMU/AOC 199	Shallow soil gas: TCE and PCE (Phase I RI). Shallow soil: No TCE or PCE found.	Currently active.
	Waste oil UST 655; 2,000-gallon fiberglass; installed in 1984	Northeast of Building 655	Possible leaking UST RFA: SWMU/AOC 250	Shallow soil gas: TCE and PCE (Phase I RI). Shallow soil: PCE; maximum value = 9 µg/kg (RFA); attenuates with depth.	Removed in 1993. RFA recommended no further action.

Notes:
[a] VOC – volatile organic compound
[b] RFA – Resource Conservation and Recovery Act (RCRA) Facility Assessment
[c] SWMU – solid waste management unit
[d] AOC – area of concern
[e] RI – Remedial Investigation
[f] PCE – tetrachloroethene
[g] µg/kg – micrograms per kilogram
[h] VSI – visual site inspection
[i] TCE – trichloroethene
[j] UST – underground storage tank

Table 5-3
Potential Surface Sources of VOC[a] Contamination at Site 24

Potential Sources	Physical Description	Location(s) Nearest Building	Potential VOC Release Mechanism	Vadose Zone VOC Detections (RFA[b] soil, Phase I soil gas, and Phase II soil data)	Status
Hazardous waste storage areas	Hazardous waste storage areas, approximately 1 acre, unpaved; hazardous waste storage areas, 260 square feet, concrete	Between Buildings 324 and 326 Near Building 800	Unpaved drum storage area; drums could leak. RFA: SWMU[c]/AOC[d] 95 Aluminum shed over concrete surface cover; stored waste oil, antifreeze, expired batteries, and grease. SWMU/AOC 229	Shallow soil gas: PCE[e] and TCE[f] (Phase I RI[g]). Shallow soil: PCE, maximum value = 3 µg/kg[h], 5 feet bgs[i] (RFA). Shallow soil gas: TCE and PCE (Phase I RI). Shallow soil: TCE, maximum value = 4 µg/kg, 40 feet bgs (RFA).	Unknown. Currently active.
Tarmac runoff parking apron PA-1	Aircraft parking apron, 34,000 square feet, concrete, constructed in 1973	Northwest of Building 297	Possible releases of VOCs mixed with water from runoff toward southwest; unlined drainage ditch at southern edge.	Shallow soil gas: TCE and PCE (Phase I RI). Shallow soil: No RFA soil samples collected in this area.	Currently active; ditch was lined with asphalt according to 1995 aerial photograph and site visit.
Aircraft washing operations	Aircraft washing operations	Unknown	Employee interviews indicate aircraft may have been sprayed with solvent then rinsed with water. The waste stream generated from this practice could have infiltrated the vadose zone.	Locations unknown; therefore, no direct investigation data are available.	Use of solvents with VOCs has been discontinued.
	Liquid wastes used for dust suppression	Unknown	Employee interviews indicate use of liquid waste spread over unpaved areas along the flight line for dust suppression.	Locations unknown; therefore, no direct investigation data are available.	Use of solvents with VOCs has been discontinued.
Waste handling	Waste-handling practices	Unknown	Employee interviews indicate liquid wastes were occasionally dumped to the open ground or into storm drain network.	Locations unknown; therefore, no direct investigation data are available.	Use of solvents with VOCs has been discontinued.

Notes:
[a] VOC – volatile organic compound
[b] RFA – Resource Conservation and Recovery Act (RCRA) Facility Assessment
[c] SWMU – solid waste management unit
[d] AOC – area of concern
[e] PCE – tetrachloroethene
[f] TCE – trichloroethene
[g] RI – Remedial Investigation
[h] µg/kg – micrograms per kilogram
[i] bgs – below ground surface



LEGEND

GEOGRAPHICAL EXTENT OF GROUNDWATER INVESTIGATION

TCE CONCENTRATIONS IN GROUNDWATER JUNE 1993 TO DECEMBER 1993

BELOW 5 PARTS PER BILLION (ppb)

ABOVE 5 ppb (SHALLOW GROUNDWATER)

RANGES FROM ABOVE 5 ppb TO 50 ppb (PRINCIPAL AQUIFER)

—0.5— TCE CONTOUR IN ug/L

—5.0— TCE CONTOUR IN ug/L

— — SITE 24 BOUNDARY

0 4000 8000

FEET

Record of Decision

Figure 5-1

TCE Concentrations in the Shallow and Principal Aquifers

MCAS, El Toro, California

Bechtel National, Inc.

CLEAN II Program

Date: 9/18/97
File No. 135H2686
Job No. 22214-135
Rev No. A

5.2.1 Vadose Zone Contamination

The Phase I RI sampling and analysis program demonstrated that soil gas sampling was the most effective way to characterize the nature and extent of VOCs in the vadose zone. Potential source areas were identified by investigating the upper 20 feet of soil, with some samples collected as deep as 30 feet bgs. TCE hot spots were identified beneath Buildings 296 and 297. The Phase II investigation extended the Phase I soil gas survey by sampling for VOCs from approximately 30 feet bgs to the groundwater. Together, these soil gas investigations helped characterize the horizontal and vertical extent of VOCs in the vadose zone.

The VOC concentrations in soil gas generally increase with depth, with the highest concentrations near the water table (Figures 5-2 and 5-3). VOCs in the area of Buildings 296 and 297 extend to groundwater directly beneath those buildings. Measured soil gas and groundwater TCE concentrations demonstrate that TCE mass flux is from the vadose zone toward groundwater. The trend of increasing soil gas concentrations with depth suggests a depleting source at the surface that is consistent with the assumed end of TCE usage in about 1975. The TCE-contaminated area also extends to the south of Buildings 296 and 297, decreasing in concentration to the southern Station boundary.

Figures 5-2 and 5-3 are cross sections that illustrate the vadose zone beneath Site 24. In general, these cross sections show that the TCE concentrations in soil gas increase and are more widely distributed with depth. The highest concentrations are near the water table. TCE in soil gas was reported at concentrations up to 6,120 µg/L, which exceeds the concentration in equilibrium with TCE-contaminated groundwater. This indicates that an active mechanism exists to transfer TCE from the vadose zone to groundwater. Low TCE concentrations in soil and soil gas near the surface may be due to continued flushing by infiltrating water after TCE use was discontinued and by volatilization of the TCE into the atmosphere.

VOCs were reported in soil samples only at very low concentrations. This is probably due to a low organic carbon content in the soil, release of TCE to the vadose zone in the dissolved phase, release to the atmosphere, and flushing with infiltrating surface water. Although much of the VOC contamination present at Site 24 is believed to have entered the soil at or close to the surface, the current contamination level near the ground surface is low relative to deeper in the vadose zone. Soil samples collected from the upper 10 feet of soil at Site 24 contained VOC concentrations less than 21 micrograms per kilogram (µg/kg). The highest TCE concentration detected in soil from the vadose zone during the Phase I RI was 400 µg/kg, and during the Phase II RI the highest concentration was 190 µg/kg.

5.2.2 Groundwater Contamination

At the conclusion of the Phase I RI, the groundwater hot spot was defined as the area represented by TCE concentrations greater than 500 µg/L. This hot spot was located

approximately 1,500 feet northwest of Building 297. Groundwater beneath Site 24 was further investigated during the Phase II RI to complete the horizontal and vertical characterization of VOCs. Groundwater samples were collected from three new water table monitoring wells, three deep monitoring wells, two air-sparging wells, eight HydroPunch locations, and one existing well. In addition, an abandoned water-supply well was located and sampled to assess VOC concentrations.

Horizontal Characterization

TCE concentrations in groundwater samples collected from wells 24NEW7 and 24NEW8 (at the northern extent of the TCE groundwater hot spot) were 33 µg/L and less than 1 µg/L, respectively. TCE was detected in groundwater beneath Building 296 at 3,100 µg/L (HCPT83), beneath Building 297 at 1,300 µg/L (HCPT81), and at 1,000 µg/L from the sample collected at well 24NEW4. These Phase II data extended the groundwater hot spot to the southeast and linked the VOC-contaminated soil beneath Buildings 296 and 297 to the groundwater hot spot. Figures 5-4 and 5-5 illustrate the TCE contaminant plume in the shallow groundwater unit. The contours in these figures are based on data from Phase I and Phase II groundwater sampling. Phase II monitoring wells and HydroPunch locations have been included in Figure 5-4. The TCE concentrations reported at the respective sampling locations are also included. For HydroPunch samples, only the highest TCE concentration is recorded.

The upper 40 feet of the shallow groundwater unit is characterized by fairly uniform TCE concentrations that extend from Building 297 to the Phase I hot spot. Concentrations in this area range from 560 to 1,300 µg/L. One groundwater sample collected beneath Building 296 contained 3,100 µg/L TCE at a depth of approximately 60 feet below the water table. The chemical data are generally consistent with stratigraphic analysis, which demonstrates that a fairly sandy unit with some fine-grained interbeds occupies the upper 40 feet of the shallow groundwater unit. This stratification in the aquifer is illustrated in geologic cross section B-B′ (Figure 5-2), which is approximately parallel to groundwater flow. TCE concentrations in groundwater are contoured in cross sections B-B′ and C-C′ (Figure 5-3).

Vertical Characterization

At the conclusion of the Phase I RI, the vertical characterization of VOCs in groundwater beneath Site 24 was based on data from one nested monitoring well (18_BGMW03A, B, C, and E). The nested well consisted of four separate wells, drilled within approximately 10 feet of each other and screened at different depths.

The groundwater samples collected from these wells gave the first indication of the vertical extent of VOCs in groundwater beneath Site 24. The water table well (18_BGMW03E) contained 370 µg/L TCE in December 1992, and 210 µg/L in July 1993. This well is screened between 124 and 164 feet bgs. The next deeper well (18_BGMW03C) did not contain TCE above the detection limit. The well screen is

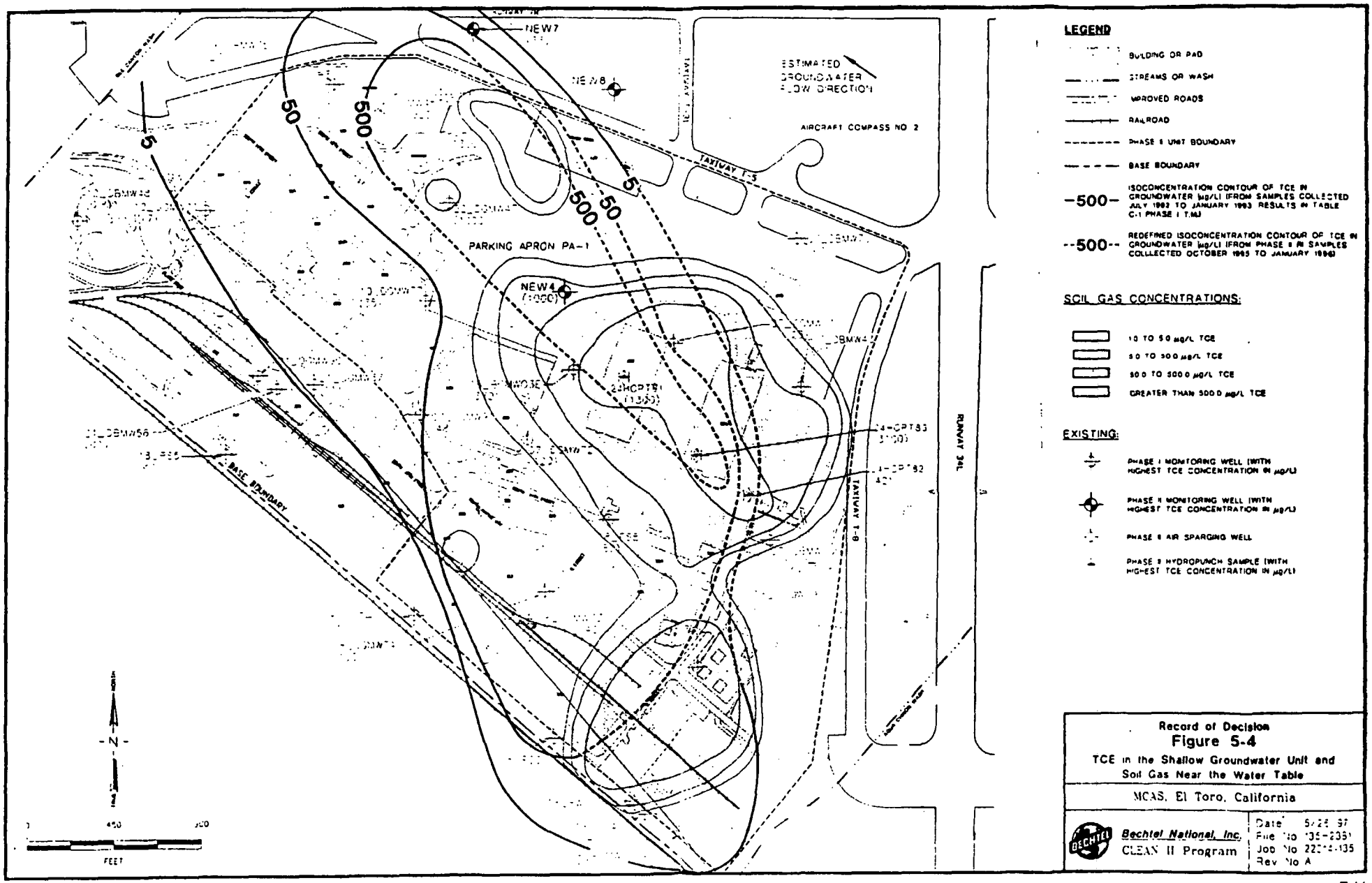


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Figure 5-4

TCE in the Shallow Groundwater Unit and Soil Gas Near the Water Table

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Date 5/28/97
File No 1035-2051
Job No 22214-135
Rev No A

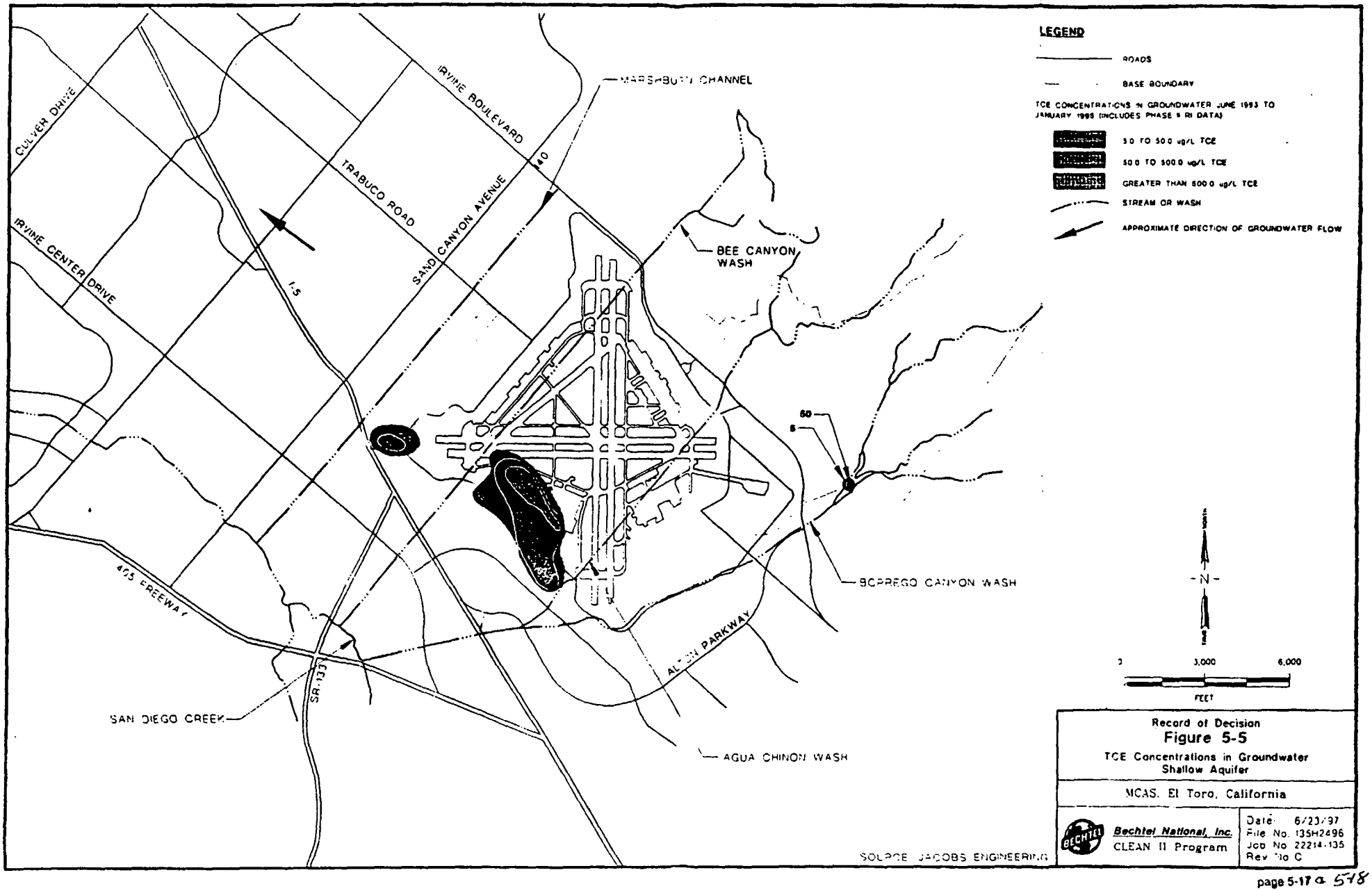

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Figure 5-5
TCE Concentrations in Groundwater Shallow Aquifer

MCAS. El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date: 6/23/97
File No. 135H2496
Job No. 22214-135
Rev No C

between 222 and 242 feet bgs. According to the boring log, a 24-foot-thick layer of silt and clay separates wells 18_BGMW03E and 18_BGMW03C at depths between 180 and 204 feet bgs. In July 1993, the next deeper well screen (18_BGMW03D; 280 to 300 feet bgs) had an estimated TCE concentration of 0.8 µg/L.

Silt and clay layers that separate sandy units were encountered in all deep borings and CPT locations. Hydraulic conductivity measurements yielded a range of vertical conductivity values for silts and clays between 10^{-5} and 10^{-6} centimeters per second (cm/s) at depths between 160 and 220 feet bgs (BNI 1997a). These data are shown on the geologic cross section drawings (Figures 1-3 and 1-4). Beneath the coarser grained beds in the upper 40 feet of the shallow groundwater unit are silt and clay beds. The TCE concentration in groundwater decreases markedly as the upper permeable units are separated from lower permeable units by these silts and clays.

The highest concentration of TCE in groundwater was found beneath Building 296 at a depth of 169 feet bgs. TCE was detected at 3,100 µg/L at sample location HCPT83. The sample collected 16 feet deeper (185 feet bgs) contained TCE at a concentration of 26 µg/L.

Based on a review of the groundwater sample results from the deep monitoring wells 18_BGMW03, 24NEW1, 24NEW5, and the HydroPunch locations, the vertical extent of TCE contamination in groundwater beneath Site 24 is limited to approximately the top 100 feet of the saturated zone. This is probably due to the very low-permeability silt and clay units described previously, and the lack of a strong downward gradient. Off-Station, the vertical extent of TCE contamination is much greater and includes the principal aquifer. The TCE plume in the principal aquifer is shown on Figure 5-6. Off-Station, the maximum reported TCE concentration was 47.8 µg/L in well 18_MCAS07-4 from a sample collected on 12 December 1995 (OCWD 1996). Migration of TCE from the shallow groundwater unit to the principal aquifer is probably due to downward gradients caused by agricultural well pumping.

5.3 MASS OF TCE

The mass of TCE at Site 24 was estimated in the Phase II RI report (BNI 1997a). At Site 24, approximately 1,500 pounds of TCE are estimated to be present in soil gas. Assuming the soil pore space is equally shared by soil gas and soil moisture, an additional 4,000 pounds of TCE would be present in the soil moisture. Based on the low organic carbon content of the soil, the adsorbed mass of TCE is on the order of 500 pounds. The mass of TCE in groundwater beneath Site 24 is estimated to be approximately 2,000 pounds. Based on these estimates, there is approximately 3 times more TCE in the vadose zone than in the groundwater at Site 24.

5.4 ROUTES OF EXPOSURE

Currently, there are no complete exposure pathways to receptors from groundwater at Site 24 because groundwater beneath this site is not being used for potable purposes or

for irrigation. Exposure to contamination in soils could occur through ingestion, inhalation, or dermal contact.

The fate and transport discussion presented in the Phase II RI report (BNI 1997a) showed that VOCs present in the soil at Site 24 have the ability to migrate to groundwater. VOCs in soils can migrate through the vadose zone in the following ways:

- as a vapor,
- dissolved in soil moisture, or
- as a dense nonaqueous-phase liquid (DNAPL).

Most VOCs have a high vapor pressure and tend to volatilize readily in the vadose zone. These vapors have a high relative density when compared to air and tend to sink through the vadose zone where the soil has significant permeability. Molecular diffusion is another mechanism responsible for vapor migration. Diffusion occurs outward, away from the zones of highest concentration. Both mechanisms can create a substantial volume of contaminated soil gas that is highly mobile when compared to the liquid counterpart. Soil vapor from VOC sources has been shown to contribute to groundwater contamination (Mercer and Cohen 1993).

The liquid phases are most influenced by gravity and capillary pressure. When the gravity force exceeds the necessary capillary entry pressure, VOC-contaminated fluids migrate downward toward the water table. Because of the relatively high fluid density and low viscosity of a DNAPL compared to water, small amounts of these fluids can migrate even more effectively than water through relatively thick vadose zones. However, the RI concluded that since most of the VOCs released at Site 24 were dissolved in water as a result of cleaning and washing activities, it is likely that the majority of the liquid present in the vadose zone is found in the dissolved form. The relatively low VOC concentrations present in the vadose zone support this hypothesis.

Migration of vapors and dissolved-phase VOCs from the vadose zone to groundwater is a concern because calculations and modeling performed as part of the Phase II RI showed that the concentration of TCE and PCE in the soils is high enough for these VOCs to continue to contaminate the shallow aquifer below Site 24 above the maximum contaminant levels (MCLs) (BNI 1997a). This means that remediation of groundwater alone may not be effective in protecting human health, and that the source of groundwater contamination (i.e., VOCs in the vadose zone) should also be addressed.

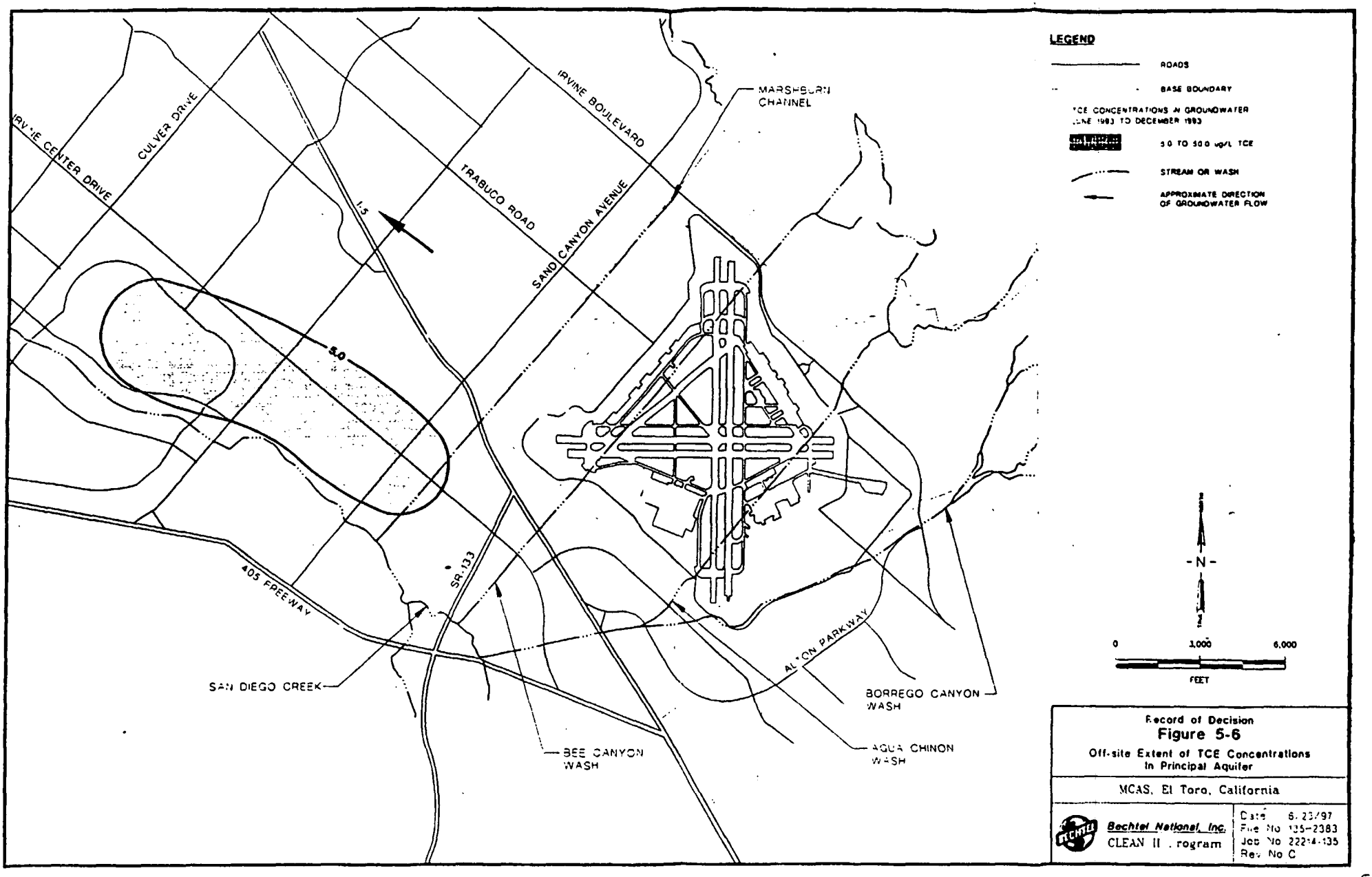

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Figure 5-6
Off-site Extent of TCE Concentrations in Principal Aquifer

MCAS, El Toro, California

Bechtel National, Inc.
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Date 6/23/97
File No 125-2383
Job No 22214-135
Rev No C

Section 5 Summary of Site Characteristics

El Toro Marine Corps Air Station, El Toro, California

Please contact Region 9 for copy of the following figures:

Figure 5-2 - (Cross Sections A-A' and B-B' - Analytical Results for TCE)

Figure 5-3 - (Cross Sections C-C' and D-D' - Analytical Results for TCE)

Section 6
SUMMARY OF SITE RISKS

A human-health risk assessment (HHRA) was conducted for Site 24 using data collected during the RI. The human-health evaluation methodology is provided in Section 6 and Appendix P of the draft final RI report (BNI 1997a). No ecological risk assessment was performed for this site because it is highly industrialized and does not provide a suitable habitat for any endangered or threatened species of wildlife.

6.1 CONTAMINANT IDENTIFICATION

The procedures used to identify the chemicals of potential concern (COPCs) to be evaluated in this assessment are consistent with EPA's Risk Assessment Guidance for Superfund (U.S. EPA 1989) and Guidance for Data Usability in Risk Assessment (U.S. EPA 1992a). Only VOCs were evaluated. The VOCs evaluated included those identified as COPCs during the Phase I RI and additional VOCs detected during the Phase II RI. The COPCs used were the 14 VOCs identified in the upper 10 feet of soil and in groundwater from monitoring wells located within the site. Except for 2-hexanone, the COPCs in soil were also found in the groundwater. Nine additional COPCs were present in the groundwater. COPCs for soil and groundwater are shown in Table 6-1.

6.2 EXPOSURE ASSESSMENT

Site 24 is located in a highly industrialized portion of MCAS El Toro. The site contains buildings supporting the aircraft activities at the Station and concrete parking areas for vehicles and aircraft. Off-Station land near Site 24 is zoned for commercial, industrial, and agricultural use. MCAS El Toro is scheduled to be closed in 1999. According to the proposed reuse plan, the primary reuse of Site 24 is aviation support. However, since this plan may not represent the final reuse of Site 24, a variety of scenarios, including residential, industrial, recreational, and excavation were considered in the risk assessment.

6.2.1 Residential Scenario

Under the residential scenario, the resident is assumed to be a person who lives in a house on-site from birth to age 30. Thirty years is the 90th percentile of time that people in the United States live at one address (U.S. EPA 1989). Because soil excavation to about 10 feet may occur during the construction of basements and swimming pools and some of the soil from the subsurface may be left on the surface, COPCs in soil to 10 feet bgs or samples closest to 10 feet bgs are treated as being available to the resident. Water used in the home is assumed to come from a private well which draws water from the shallow aquifer beneath the site. The exposure routes used in the risk assessment for the resident included ingestion, dermal contact, and inhalation of soil VOCs and ingestion, dermal contact, and inhalation of groundwater VOCs. Although it is unlikely that anyone would install a private well to obtain water for home use (due to the availability of a municipal water supply), the potential risk presented by the COPCs in groundwater was estimated using exposure conditions associated with residential use of the groundwater (as tap water).

Table 6-1
Chemicals of Potential Concern in Soil and Groundwater

Soil (0 to 2 feet bgs*)	Soil (0 to 10 feet bgs)	Groundwater
Acetone	Acetone	Acetone
Benzene	Benzene	Benzene
2-butanone	2-butanone	Bromodichloromethane
Carbon disulfide	Carbon disulfide	Bromoform
Carbon tetrachloride	Carbon tetrachloride	2-butanone
1,2-dichloroethene (mixture)	1,2-dichloroethene (mixture)	Carbon disulfide
Ethylbenzene	Ethylbenzene	Carbon tetrachloride
2-hexanone	2-hexanone	Chloroform
Methylene chloride	Methylene chloride	Chloromethane
Tetrachloroethene	Tetrachloroethene	Dibromochloromethane
Toluene	Toluene	1,2-dichloroethane
1,1,1-trichloroethane	1,1,1-trichloroethane	1,1-dichloroethene
Trichloroethene	Trichloroethene	1,2-dichloroethene (mixture)
Xylenes	Xylenes	Ethylbenzene
		4-methyl-2-pentanone
		Methylene chloride
		Styrene
		Tetrachloroethene
		Toluene
		1,1,1-trichloroethane
		1,1,2-trichloroethane
		Trichloroethene
		Xylenes

Note:
* bgs – below ground surface

6.2.2 Industrial Scenario

If the site were redeveloped for commercial business, the individuals most likely to be exposed would be owners and employees of the businesses. An office worker was chosen to represent business owners and employees. The office worker is a person who works 8 hours a day in a commercial building on-site for a period of 25 years, which is the exposure duration recommended by U.S. EPA (U.S. EPA 1989) for workers. Only COPCs in the upper 2 feet of soil are considered to be available to the office worker. The workplace water supply is assumed to be provided by the local water utility. Therefore, exposure of the office worker to COPCs in the groundwater at the workplace is not

considered to be possible. Exposure routes for soil include ingestion, dermal contact, and inhalation of VOCs.

6.2.3 Recreational Scenario

If the site were redeveloped into a park, the most highly exposed individuals would be people involved in grounds maintenance or park users, depending on the frequency and amount of time spent at the park. A park user was chosen for the risk assessment rather than a grounds maintenance worker because the risk to the park user approximates the risk to the grounds maintenance worker if the latter spends 1 or 2 days a week on maintenance work. The park user is assumed to be an older child from ages 9 to 16 years who plays unsupervised in the park daily 2 hours a day for 7 years. This exposure regimen was arbitrarily chosen after evaluation for its reasonableness. As with the office worker, only COPCs in the upper 2 feet of soil are considered to be available to the park user. Exposure routes for soil include ingestion, dermal contact, and inhalation of VOCs. COPCs in groundwater are assumed to be unavailable to the park user while at the park.

6.2.4 Excavation Worker Scenario

The excavation worker is a person who works installing underground utility lines, basements, and swimming pools. This worker is assumed to work for 8 hours a day for 1 year (250 work days). The excavation worker is exposed to soil to a depth of 10 feet bgs. Exposure routes for soil include ingestion, dermal contact, and inhalation of VOCs.

6.2.5 Exposure Assumptions

Table 6-2 presents the exposure assumptions for each of the scenarios analyzed in the risk assessment for Site 24. Exposure conditions used in the estimation of risk were chosen to represent what is known as "reasonable maximum exposure" (RME). Use of these exposure conditions tends to overestimate risk. This effort to overestimate risk is deliberate; it provides risk managers a margin of error when making remediation decisions. The combination of the intake variables, expressing the exposure conditions for each receptor, results in a chronic daily dose. The dose is an estimate of exposure for each pathway.

6.2.6 Calculation of Exposure-Point Concentration

An exposure-point concentration is the concentration of a chemical in soil, water, or air at the point of contact with a receptor. In observance of the concept of the reasonable maximum exposure (RME), the 95 percent upper confidence level (UCL) of the arithmetic mean of the measured concentrations of each COPC was used as the exposure-point concentration except when the number of measurements was less than four or when

Table 6-2
Values Assigned to Dose Equation Parameters

Equation Parameter	Units	Resident Child[a]	Resident Adult	Office Worker	Excavation Worker	Recreational Child[b]
Averaging time (cancer)	days	25,550	25,550	25,550	25,550	25,550
Averaging time (noncancer)	days	ED[c] × 365	ED × 365	ED × 365	ED × 365	ED × 365
Body weight	kg[d]	15	70	70	70	46
Dermal absorption factor	unitless	Value Depends on Chemical				
Exposed skin surface area (soil)[e]	cm^2[f]	2,000	5,000	5,000	5,000	3,000
Exposed skin surface area (water)[g]	cm^2	7,000	19,000	NA[h]	NA	NA
Exposure duration (cancer)	years	6	24[i]	25	1	7
Exposure duration (noncancer)	years	6	24	25	1	7
Exposure frequency (air)[j]	days/year	350	350	250	250	350
Exposure frequency (water, bath)	days/year	350	350	NA	NA	NA
Exposure frequency (soil)[j]	days/year	350	350 (oral) 100 (dermal)	250	250	350
Exposure time (water, bath)	hours/day	0.25	0.25	NA	NA	NA
Exposure time (air)	hrs/day	24	24	8	8	2
Intake rate (air)	m^3/hr[k]	0.42	0.83	0.83	2.5	2.5
Intake rate (soil)	mg/day[l]	200	100	50	480	100
Intake rate (water)	L/day[m]	1	2	NA	NA	NA
Permeability constant	cm/hr[n]	Value Depends on Chemical				
Soil adherence factor	mg/cm^2[o]	1	1	1	1	1

Notes:
- [a] child age = 0 to 6 years
- [b] child age = 9 to 16 years
- [c] ED – exposure duration
- [d] kg – kilograms
- [e] exposed skin = 25 percent of mean total body surface area; values rounded to the nearest 1,000 cm^2 (U.S. EPA 1992b)
- [f] cm^2 – square centimeters
- [g] exposed skin (percent of mean total body surface area): resident child/adult = 100 percent (bath); values rounded to the nearest 1,000 cm^2
- [h] NA – not applicable
- [i] for the resident adult, the total exposure duration is 30 years with 6 years as a child and 24 years as an adult
- [j] exposure frequency: standard default for resident and worker; exposure regimen for recreational child developed specifically for this assessment
- [k] m^3/hr – cubic meters per hour
- [l] mg/day – milligrams per day
- [m] L/day – liters per day
- [n] cm/hr – centimeters per hour
- [o] mg/cm^2 – milligrams per square centimeter

the 95 percent UCL exceeded the highest measured concentration. In those cases, the highest measured concentration was used as the exposure-point concentration. The measured concentrations were assumed to have a lognormal distribution. Hence, the 95 percent UCL for a lognormal distribution was calculated in accordance with procedures recommended by the U.S. EPA (1992a).

6.3 TOXICITY ASSESSMENT

Cancer slope factors (CSFs) have been developed by the U.S. EPA's Carcinogenic Assessment Group for estimating excess lifetime cancer risks associated with exposure to potentially carcinogenic chemicals. CSFs are expressed in units of $(mg/kg\text{-}day)^{-1}$.. In addition to the U.S. EPA-derived CSFs, Cal-EPA has developed CSFs for a group of carcinogens. Following DON policy, both U.S. EPA and Cal-EPA CSFs were used in the estimation of the risk from those chemicals when present. Cancer potency factors are derived from the results of human epidemiological studies or chronic animal bioassays to which animal-to-human extrapolation and uncertainty factors have been applied.

Reference doses (RfDs) have been developed by U.S. EPA for indicating the potential for adverse health effects from exposure to chemicals exhibiting noncarcinogenic effects. RfDs, which are expressed in units of mg/kg-day, are estimates of lifetime daily exposure levels for humans, including sensitive individuals. RfDs are derived from human epidemiological studies or animal studies to which uncertainty factors have been applied (e.g., to account for the use of animal data to predict effects on humans). These uncertainty factors help ensure that the RfDs do not underestimate the potential for adverse noncarcinogenic effects to occur.

Table 6-3 shows the CSFs and RfDs for the COPCs detected in soil and groundwater at Site 24.

6.4 RISK CHARACTERIZATION

Excess lifetime cancer risks are determined by multiplying the chronic daily dose with the CSF. These risks are probabilities that are generally expressed in scientific notation (e.g., 1×10^{-6} or 1E-6). An excess lifetime cancer risk of 1×10^{-6} indicates that, as a plausible upper bound, an individual has a one-in-a-million chance of developing cancer as a result of site-related exposure to a carcinogen over a 70-year lifetime under the specific exposure conditions at a site. The U.S. EPA has established guidelines to manage cancer risks. Using these guidelines, excess cancer risks in the range of between 10^{-6} and 10^{-4} or less are generally considered acceptable.

Potential concern for noncarcinogenic effects of a single contaminant in a single medium is expressed as the hazard quotient (HQ) (or the ratio of the estimated dose to the contaminant's RfD). By adding the HQs for all contaminants within a medium or across all media to which a given population may reasonably be exposed, the hazard index (HI) can be generated. The HI provides a useful reference point for gauging the potential significance of multiple contaminant exposures within a single medium or across media.

The U.S. EPA has established guidelines for noncancer risks. Using these guidelines, an HI of less than 1.0 is generally considered protective of human health. If the HI is greater than 1.0, an assessment of the chemicals is performed to determine whether the HI represents an unacceptable noncarcinogenic human-health risk.

The results of the risk assessment for Site 24 are summarized in Table 6-4. The table identifies the total cancer and/or noncancer risk for each receptor. In addition, it identifies the chemicals contributing the majority of the cancer risk and HI (risk drivers), the media associated with the risk drivers, and the exposure routes by which the risk drivers exert their effects. Cancer risks and risk drivers shown in Table 6-4 are based on a combination of U.S. EPA and Cal-EPA CSFs.

Noncancer risk in a resident child was calculated; however, noncancer risk in the resident child is usually higher than in a resident adult because the child consumes more soil over the assumed 6 years of exposure than an adult does over the assumed 24 years of exposure.

The results indicate that if no remediation occurred and homes were built on-site, the lifetime excess upper-bound cancer risk presented by COPCs in the groundwater and soil to adult occupants of the homes would be about 2 chances in 1,000 (risk estimate of 2×10^{-3}). The risk is primarily associated to the groundwater with 11 of the 23 COPCs in the groundwater accounting for most of the risk. Risk from exposure to COPCs in groundwater and soil by children living in the homes would be less than 7×10^{-4}. The results also showed that the concentrations of TCE and carbon tetrachloride in groundwater from on-site wells are high enough to cause systemic effects in occupants of the homes since HIs for both of the compounds exceeded 1.0.

The results indicate that if the site contained an office building or a park, or if a pit with a depth of up to 10 feet were dug on the site and no remediation were performed, the lifetime excess upper-bound cancer risk presented by COPCs in the soil would be no more than about five chances in one billion (5×10^{-9}) for people working in the building, playing in the park, or working in the pit. The results also indicate that the concentrations of the COPCs in the soil are not high enough to cause systemic effects (noncarcinogenic effects) to the same people.

6.5 SUMMARY OF SITE RISKS

Risks posed by VOCs in soils are below the risk range considered acceptable by the U.S. EPA. However, risks posed by VOCs in groundwater exceed this risk range. In addition, the fate and transport analysis for Site 24 shows that the VOCs in soil have the potential to migrate to groundwater where they may continue to contaminate groundwater above the risk range considered acceptable to the U.S. EPA. Therefore, it is necessary to take action to remediate VOCs in soils to prevent further contamination of the groundwater.

Table 6-3
Cancer Slope Factors and Reference Doses for Chemicals of Potential Concern in Soil and Groundwater at Site 24

Chemical Name	CAS[b]	CANCER CLASS Oral	In[c]	Dermal	ORAL CSF[d]	Ref[e]	INHALATION CSF	Ref	ESTIMATED DERMAL CSF	Ref	U.S. EPA[a] ORAL RfD[f]	Ref	U.S. EPA INHALATION RfD	Ref	CALCULATED DERMAL RfD	Ref
4-methyl-2-pentanone	108-10-1	NE[g]	NE	NE	NA[h]	NA	NA				8.00E-02	H2[i]	2.29E-02	H2	8.00E-02	R[j]
Acetone	67-64-1	D[k]	D	D	NA	NA	NA				1.00E-01	I[l]	1.00E-01	R	1.00E-01	R
Benzene	71-43-2	A[m]	A	A	2.90E-02	I	2.90E-02	I	2.90E-02	R	1.71E-03	R	1.71E-03	E[n]	1.71E-03	R
Bromodichloromethane	75-27-4	B2[o]	B2	B2	6.20E-02	I	6.20E-02	R	6.20E-02	R	2.00E-02	I	2.00E-02	R	2.00E-02	R
Bromoform (tribromomethane)	75-25-2	B2	B2	B2	7.90E-03	I	3.85E-03	I	7.90E-03	R	2.00E-02	I	2.00E-02	R	2.00E-02	R
Carbon disulfide	75-15-0	NE	NE	NE	NA	NA	NA				1.00E-01	I	2.00E-01	I	1.00E-01	R
Carbon tetrachloride	56-23-5	B2	B2	B2	1.30E-01	I	5.25E-02	I	1.30E-01	R	7.00E-04	I	5.71E-04	E	7.00E-04	R
Chloroform	67-66-3	B2	B2	B2	6.10E-03	I	8.05E-02	I	6.10E-03	R	1.00E-02	I	1.00E-02	R	1.00E-02	R
Chloromethane	74-87-3	C[p]	C	C	1.30E-02	H[q]	6.30E-03	H	1.30E-02	R						
Dibromochloromethane	124-48-1	C	C	C	8.40E-02	I	8.40E-02	R	8.40E-02	R	2.00E-02	I	2.00E-02	R	2.00E-02	R
1,2-dichloroethane	107-06-2	B2	B2	B2	9.10E-02	I	9.10E-02	I	9.10E-02	R						
1,2-dichloroethene (mixture)	540-59-0	D	D	D	NA	NA	NA				9.00E-03	H2	9.00E-03	R	9.00E-03	R
1,1-dichloroethene	75-35-4	C	C	C	6.00E-01	I	1.75E-01	I	6.00E-01	R	9.00E-03	I	9.00E-03	R	9.00E-03	R
Ethylbenzene	100-41-4	D	D	D	NA	NA	NA				1.00E-01	I	2.90E-01	I	1.00E-01	R
2-hexanone	591-78-6	NA	NA	NA	6.00E-02[r]		5.71E-02[r]								6.00E-02[r]	R
Methyl ethyl ketone	78-93-3	D	D	D	NA	NA	NA				6.00E-01	I	2.86E-01	I	6.00E-01	R
Methylene chloride	75-09-2	B2	B2	B2	7.50E-03	I	1.65E-03	I	7.50E-03	R	6.00E-02	I	8.57E-01	H2	6.00E-02	R
Styrene	100-42-5	B2	B2	B2	2.00E-01	I	2.90E-01	I							2.00E-01	R
Tetrachloroethene	127-18-4	B2	B2	B2	5.20E-02 5.1E-02[s]	E	2.03E-03 2.1E-02[s]	E	5.20E-02	R	1.00E-02	I	1.00E-02	R	1.00E-02	R
Toluene	108-88-3	D	D	D	NA	NA	NA				2.00E-01	I	1.14E-01	I	2.00E-01	R
1,1,1-trichloroethane	71-55-6	D	D	D	NA	NA	NA				9.00E-02	X[t]	2.86E-01	X	9.00E-02	R
1,1,2-trichloroethane	79-00-5	C	C	C	5.70E-02	I	5.60E-02	I	5.70E-02	R	4.00E-03	I	4.00E-03	R	4.00E-03	R
Trichloroethene	79-01-6	B2	B2	B2	1.10E-02	E	6.00E-03	E	1.10E-02	R	6.00E-03	E	6.00E-03	R	6.00E-03	R
Xylenes	1330-20-7	D	D	D	NA	NA	NA				2.00E+00	I	2.00E-01	R	2.00E+00	R

Notes:

[a] U.S. EPA – United States Environmental Protection Agency
[b] CAS – Chemical Abstract Service
[c] In – inhalation
[d] CSF – cancer slope factor (units in inverse of milligrams per kilogram per day)
[e] Ref – reference
[f] RfD – reference dose (units in milligrams per kilogram per day)
[g] NE – not established
[h] NA – not available
[i] H2 – 1995 Health Effects Assessment Summary Table (U.S. EPA 1995a)
[j] R – route-to-route extrapolation
[k] D – not classifiable as to human carcinogenicity
[l] I – 1995 Integrated Risk Information System (U.S. EPA 1995b)
[m] A – human carcinogen
[n] E – 1994 Environmental Criteria and Assessment Office
[o] B2 – probable human carcinogen with sufficient evidence in animals and inadequate or no evidence in humans
[p] C – possible human carcinogen
[q] H – 1994 Health Effects Assessment Summary Table (U.S. EPA 1994)
[r] estimated
[s] CSFs derived from California Environmental Protection Agency
[t] X – withdrawn from Integrated Risk Information System and/or Health Effects Assessment Summary Table

Table 6-4
Summary of Human-Health Risk Results

Characteristic	Resident Adult	Resident Child	Recreational Child	Office Worker	Excavation Worker
Total cancer risk					
COPCs[a] in soil	2.2E-08	9.4E-09	2.4E-09	5.4E-09	5.1E-10
COPCs in groundwater	2.0E-03	7.4E-04	NA[b]	NA	NA
Total	2.0E-03	7.4E-04	2.4E-09	5.4E-09	5.1E-10
Hazard index					
COPCs in soil	9.4E-04	2.5E-03	4.7E-04	2.9E-04	7.8E-04
COPCs in groundwater	8.6E+01	2.0E+02	NA	NA	NA
Total	8.6E+01	2.0E+02	4.7E-04	2.9E-04	7.8E-04
Risk drivers (carcinogenic effects and associated risk)[c,d]	Benzene (1.3E-06) Bromodichloromethane (5.2E-06) Carbon tetrachloride (1.1E-05) Chloroform (1.1E-05) Chloromethane (1.1E -06) Dibromochloromethane (1.1E-06) 1,2-dichloroethane (4.6E-06) 1,1-dichloroethene (5.0E-05) Tetrachloroethene (4.7E-06)[c] 1,1,2-trichloroethane (4.2E-06) Trichloroethene (1.9E-03)	Bromodichloromethane (1.9E-06) Carbon tetrachloride (4.2E-06) Chloroform (4.2E-06) 1,2-dichloroethane (1.7E-06) 1,1-dichloroethene (1.8E-05) Tetrachloroethene (1.7E-06) 1,1,2-trichloroethane (1.6E-06) Trichloroethene (7.1E-04)	None	None	None
Risk drivers (noncancer effects) and associated hazard index	Trichloroethene (8.5E+01)	Carbon tetrachloride (1.3E+00) Trichloroethene (2.0E+02)	None	None	None
Medium of concern[e]	Groundwater	Groundwater	NA	NA	NA
Exposure route of concern[f]	Ingestion, inhalation, dermal contact	Ingestion, inhalation, dermal contact	NA	NA	NA

Notes:
- [a] COPC – chemical of potential concern
- [b] NA – not applicable
- [c] based on United States Environmental Protection Agency and California Environmental Protection Agency cancer slope factors
- [d] risk driver – COPC that poses a minimum multimedia cancer risk of 1.0E-06 or minimum hazard index of 1.0
- [e] medium of concern – medium (e.g., soil) with COPCs that pose minimum multimedia cancer risk of 1.0E-06 or minimum hazard index of 1.0
- [f] exposure route of concern – intake route through which COPCs pose a minimum multimedia cancer risk of 1.0E-06 or minimum hazard index of 1.0

Section 7
DESCRIPTION OF ALTERNATIVES

Based on the Phase I and Phase II RIs, the baseline human-health risk assessment, and a review of applicable or relevant and appropriate requirements (ARARs), the following remedial action objectives were established for soil at Site 24:

- reduce concentrations of VOCs in the VOC source areas to prevent or minimize further degradation of the shallow groundwater unit above the MCL for drinking water; and
- continue vadose zone remediation until the average VOC soil gas concentrations are below threshold concentrations (concentrations capable of contaminating groundwater above the MCLs).

Remedial action objectives for groundwater at Site 24 will be addressed in a separate ROD.

The remedial action objectives for Site 24 were intended primarily to assure that VOC-contaminated soils at Site 24 do not continue to contaminate the shallow groundwater unit beneath the site. The VOC mass removed would then not have the opportunity to migrate from the shallow groundwater unit to the principal aquifer. The principal aquifer (Irvine Forebay I) is designated by the Santa Ana RWQCB as a current or potential source of drinking water, along with other beneficial uses such as agriculture and industry.

The development of alternatives to meet the remedial action objectives followed the requirements identified in CERCLA, as amended by SARA, 42 *United States Code* (USC) Section 9602 et seq., and to the extent practicable, the NCP. The development of remedial alternatives was also guided by prior U.S. EPA experience at VOC-contaminated sites. The document Presumptive Remedies: Policies and Procedures (U.S. EPA 1993a) describes certain preferred technologies or presumptive remedies for VOC-contaminated soil. Use of these technologies is designed to expedite the investigation and selection of remediation alternatives.

The presumptive remedy approach allowed the feasibility study (FS) to focus on those technologies that have proved to be most effective in the past. The presumptive remedy selected for detailed evaluation in the FS was SVE in the vadose zone source area. The evaluation of technologies and screening process that led to the development of this alternative is documented in the Site 24 FS report (BNI 1997b). In addition to SVE, a no action alternative was also evaluated in the FS. The no action alternative is intended to serve as a baseline against which the other alternatives may be evaluated.

7.1 ALTERNATIVE 1 – NO ACTION

Alternative 1, the no action alternative, is required by CERCLA to provide a basis from which to develop and evaluate the other remedial alternatives. Under the no action alternative, no remediation measures or access or land-use controls would be initiated at Site 24. Although groundwater monitoring is not a part of Alternative 1, sampling and analysis of groundwater would continue under the MCAS El Toro Long-Term Groundwater Plan. The no action alternative would have no effect on the physical, biological, or chemical processes controlling the fate and transport of existing

contamination at the site. With no action, VOCs in the soil beneath Site 24 could continue to contaminate the shallow groundwater at levels exceeding the federal MCLs for drinking water. This could cause the eventual remediation of groundwater (addressed in a separate ROD) to be more costly and time consuming. There is no direct cost associated with Alternative 1.

7.2 ALTERNATIVE 2 – SOIL VAPOR EXTRACTION

Alternative 2 is SVE, the U.S. EPA presumptive remedy for VOC-contaminated soil. This process uses a vacuum to pull VOC-contaminated vapors from the soil through SVE wells. Once the vapors are pulled to the surface, they are passed through an activated carbon filter to remove the VOCs before the air is discharged to the atmosphere. When the activated carbon filters become saturated with VOCs, the carbon is returned to the manufacturer, where it is regenerated and the VOCs are destroyed.

The selected remedy includes the following:

- construction, operation, and maintenance of an SVE system to remove TCE and other VOCs from the soil;
- performance monitoring throughout the predicted 2 to 4 years of remediation;
- treatment of VOC-contaminated soil gas (vapors) with activated carbon filters to meet air quality standards prior to discharge to the atmosphere;
- confirmatory soil gas sampling at the end of the vadose zone remediation to confirm that average VOC concentrations are too low to contaminate groundwater above the MCLs; and
- the vadose zone will be resampled at the conclusion of groundwater remediation. If the average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

Wastes, such as drill cuttings and contaminated personal protective equipment, would be generated during the on-site activities associated with Alternative 2. Although these wastes are not expected to be classified as characteristic hazardous wastes, that determination will be made at the time the waste is generated.

Wastes generated from treatment of VOCs (e.g., spent carbon) may be classified as hazardous if they exceed the criteria for toxicity established by the RCRA. Hazardous waste determinations will be made at the time the waste is generated.

Institutional controls, including deed restrictions and access restrictions, are not required at this time to protect human health because surface and near-surface soils have low levels of VOC contamination and present a very low incremental risk to human health. However, deed restrictions will be used to protect the SVE wells and equipment and provide access to operate the system. Transfer of the property will be in accordance with Section 120(h)(3) of CERCLA.

SVE addresses the primary risk posed by soil contamination (which can be characterized as a principal threat at this site) by removing and permanently destroying the contaminants from soils, thereby significantly reducing the toxicity, mobility, or volume of hazardous substances. By removing VOCs from the soil, further groundwater contamination is minimized or prevented, thereby reducing the time required for groundwater remediation.

The estimated net present worth cost for this remedial action is approximately $4.9 million in 1996 dollars. This includes capital costs of approximately $1.1 million, operations and maintenance costs of approximately $2.5 million, and monitoring costs of approximately $1.3 million. Remediation of contaminated soil is estimated to take 2 to 4 years to complete and would be conducted without excavating contaminated soil.

7.2.1 Description of the Soil Vapor Extraction System

The conceptual design of the SVE system (Figure 7-1) is based on the results of the subsurface soil and soil gas investigations performed as part of the Phase II RI for Site 24 (BNI 1997a) and the results of the SVE pilot test performed as part of the Phase II FS (BNI 1996b). TCE was used as the design VOC because it is the most frequently detected contaminant at the site and because the footprint of the TCE plume in the vadose zone generally encompasses the footprints of the other VOC contaminants.

The subsurface soil and soil gas investigations indicated that the primary TCE source area is in the vicinity of Buildings 296 and 297. A secondary VOC source area, which consists chiefly of PCE, was also identified to the west of Building 297. The SVE system is designed to target these source areas. For the purpose of developing a conceptual design, the vadose zone was divided into three vertical zones: a shallow zone (0 to 40 feet bgs), an intermediate zone (41 to 70 feet bgs), and a deep zone (71 to 110 feet bgs). In general, the areal extent of the TCE plume in the shallow zone is relatively limited. With depth, the source area becomes more extensive and reaches its maximum areal extent in the deep zone. The SVE wells are designed to be screened over discrete intervals targeting a specific vertical zone. Screening over discrete intervals will allow the remediation efforts to focus on distinct stratigraphic units where variations in air permeability may be low in comparison to the adjacent units. In addition, with simple manifold and valving arrangements, a high level of flexibility can be built into the system, allowing the operator to focus the remediation efforts three dimensionally.

The conceptual SVE well field design estimates that complete coverage of the TCE source area within each zone is accomplished with an approximate well spacing of 400 feet. The final design will be fine-tuned as additional information is collected. A well spacing of 400 feet was selected based on the results of the SVE radius of influence test conducted as part of the Site 24 FS (BNI 1996b). The SVE well field consists of 21 existing SVE wells and 27 proposed wells (Figures 7-2 through 7-4) with variable depths and screened intervals. Three different types of proposed wells are included: shallow, intermediate, and deep. The conceptual design of each proposed well is shown

in Table 7-1. The designs of existing SVE wells are provided in Table 7-2. Additional SVE wells may be added at the design stage to target the different areas of contamination shown in Figures 7-2 through 7-4.

The conceptual well designs provided in Table 7-1 were developed for the purpose of cost estimating. Actual well designs and locations should be based on the subsurface conditions, including depth to groundwater and stratigraphy determined at the time of drilling.

The conceptual design flow for the proposed and existing 4-inch-diameter SVE wells is 125 cubic feet per minute (ft^3/min) per well. The conceptual design flow for the existing 2-inch-diameter SVE wells is 100 ft^3/min per well. The total system flow is estimated to be 5,500 ft^3/min at a vacuum of approximately 30 inches of water. The extracted vapors will be treated on-site using vapor-phase granular activated carbon (VGAC).

7.2.2 Results of Pilot Testing

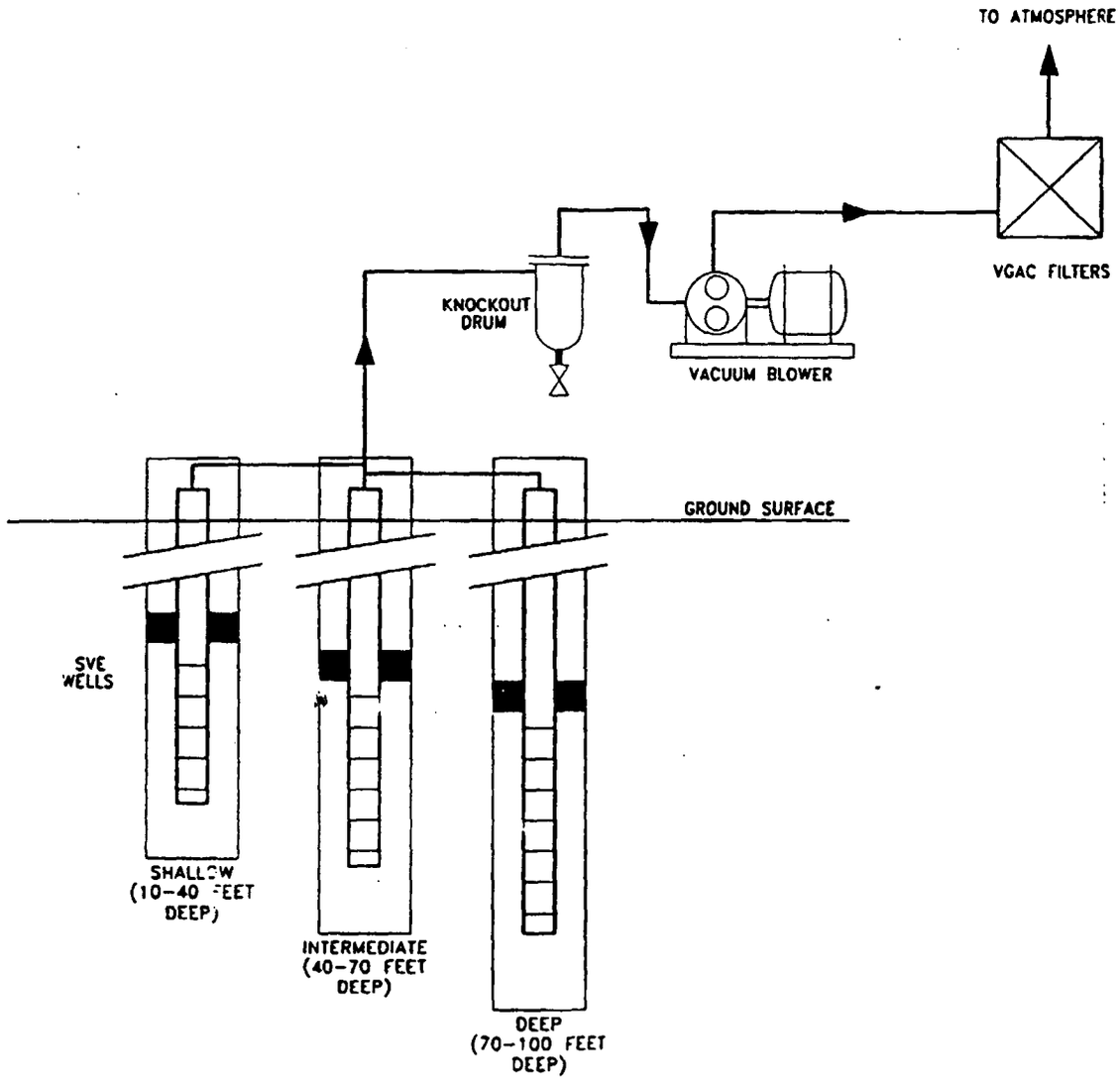
As part of the RI/FS process, SVE pilot tests are being conducted to evaluate the efficiency of using SVE to remove VOCs at Site 24. The first pilot test, conducted for 19 days, removed approximately 225 pounds of TCE and 50 pounds each of 1,1-DCE and Freon 113 from one SVE well. The radius of influence of the well was estimated to be approximately 280 feet. Additional 1-day tests confirmed that many of the other SVE wells had a similar radius of influence. Based on the 1-day test data, an initial VOC mass removal rate of about 190 pounds per day was estimated from 20 SVE wells. The test data show that SVE is a promising technology for removing VOCs at Site 24.

Three additional SVE wells were pilot tested by the DON in 1996 and 1997. As of July 1997, approximately 870 pounds of TCE had been removed using SVE at Site 24. Additional pilot testing is planned in 1997 to evaluate SVE efficiency within other contaminated areas.

7.2.3 Operation of the Soil Vapor Extraction System

The goal of operating SVE at Site 24 is to attain the remedial action objectives for the vadose zone. To accomplish the remedial action objectives, the following general steps will be followed:

- **SVE System Design and Construction** - The SVE system will be designed to reduce VOC concentrations in areas of the vadose zone characterized as having the ability to impact groundwater above the MCLs. Reducing VOC concentrations in soil gas will also reduce the VOC concentrations adsorbed to soil particles and dissolved in soil moisture. The SVE system design process will begin with the evaluation of existing pilot test data from SVE wells at Site 24. Pilot test data include applied vacuum and resultant extraction flow rate; effluent VOC concentrations; estimated soil gas travel time; induced vacuum at nearby wells; and stratigraphic relationships with other wells. Additional SVE wells will be installed and tested in a like manner to complete



Record of Decision

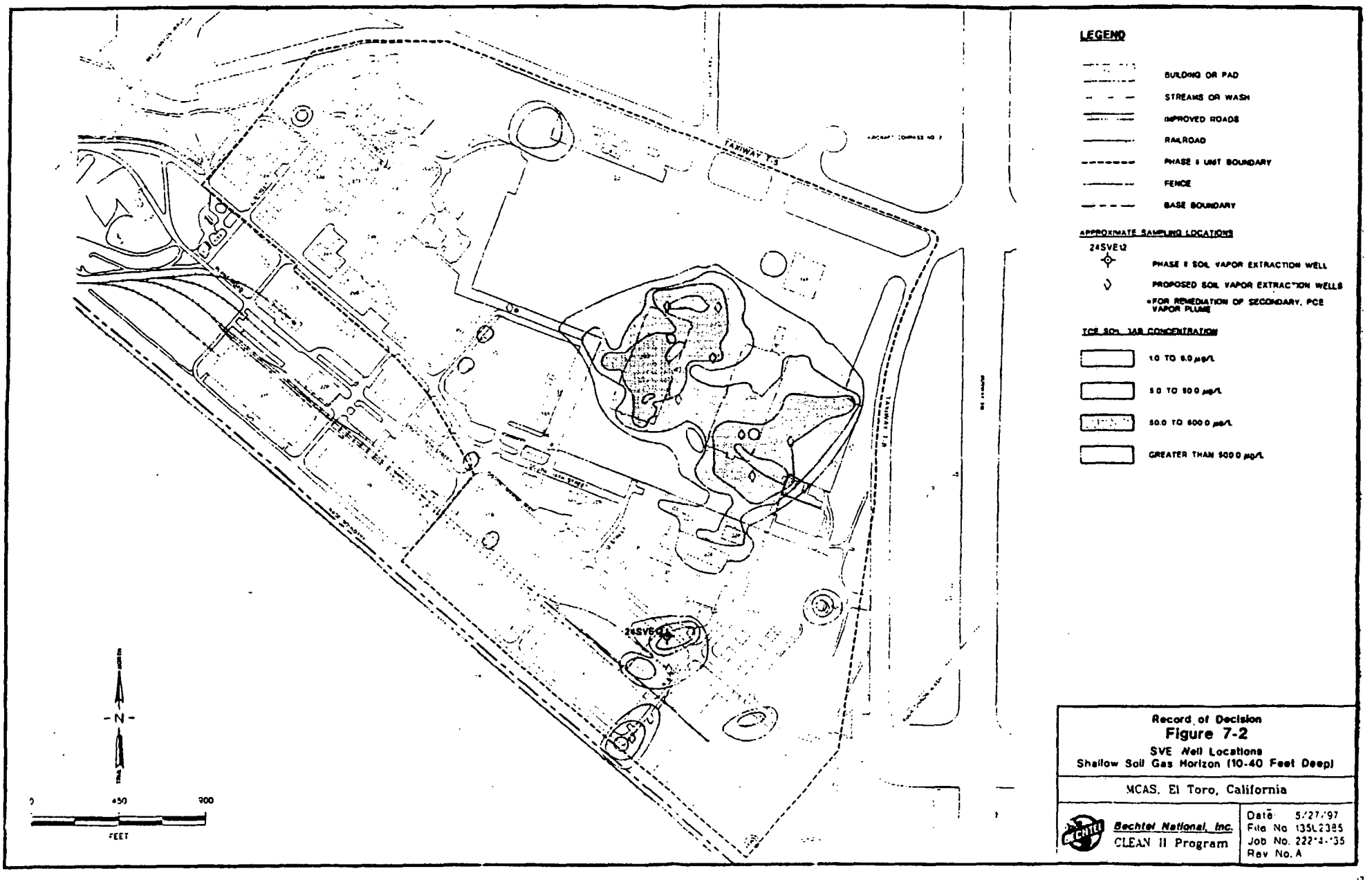
Figure 7-1

Soil Vapor Extraction Process Flow Diagram

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date 5/26/97
File No 135S2384
Job No 22214-135
Rev No A



Record of Decision
Figure 7-2
SVE Well Locations
Shallow Soil Gas Horizon (10-40 Feet Deep)

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date 5/27/97
File No 135L2385
Job No. 22243-135
Rev No. A

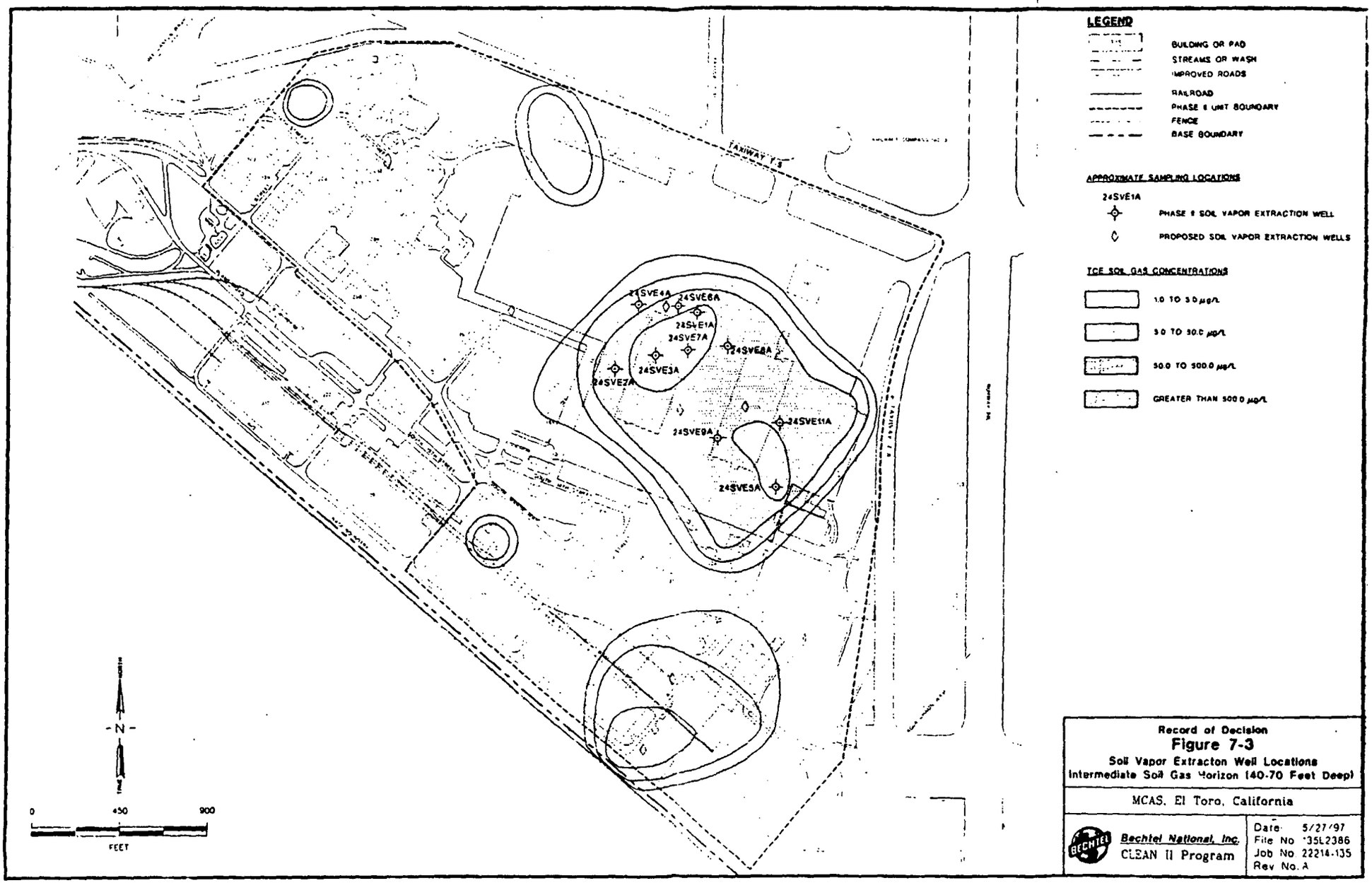


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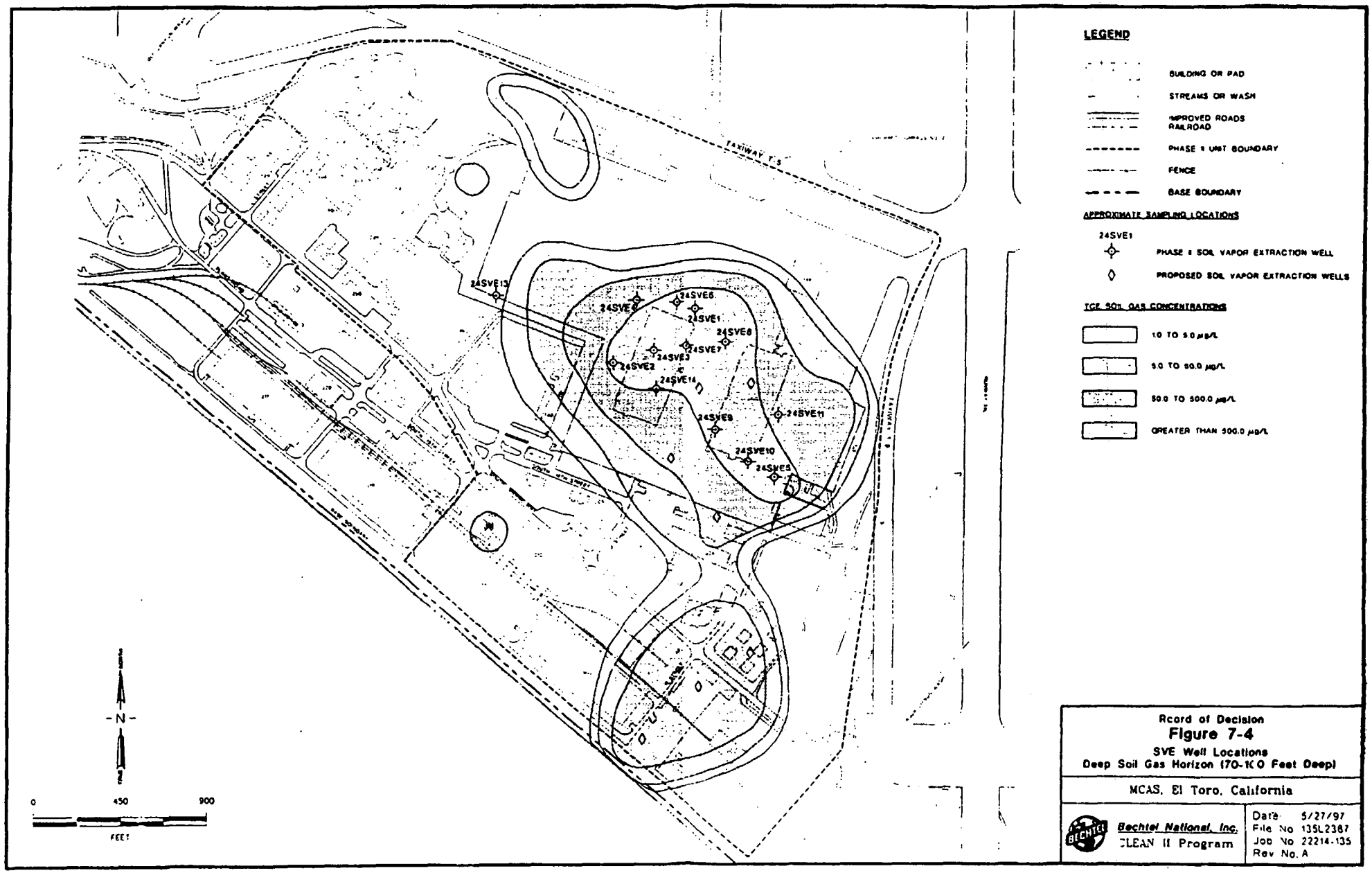
Figure 7-3

Soil Vapor Extracton Well Locations
Intermediate Soil Gas Horizon (40-70 Feet Deep)

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date: 5/27/97
File No. 35L2386
Job No. 22214-135
Rev. No. A



Rcord of Decision

Figure 7-4

SVE Well Locations

Deep Soil Gas Horizon (70-100 Feet Deep)

MCAS, El Toro, California

Bechtel National, Inc.
CLEAN II Program

Date 5/27/97
File No 135L2367
Job No 22214-135
Rev No. A

Table 7-1
Conceptual Design of SVE[a] Wells

Well Type	Total Depth (feet)	Screened Interval (feet bgs[b])	Number of Proposed Wells	Diameter (inches)
Deep	100	70 to 100	8	4
Intermediate	70	40 to 70	7	4
Shallow	40	10 to 40	12	4

Note:
[a] SVE – soil vapor extraction
[b] bgs – below ground surface

Table 7-2
Existing SVE[a] Well Characteristics

Boring Number	SVE Well/ Piezometer No.	Casing Type	Screen Type	Screened Interval (feet bgs[b])
24B2	24SVE12	2-inch Sch[c] 40 PVC[d]	2-inch Sch 40 PVC, 0.02-inch	34 to 74
24B6	24SVE5	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	68 to 88
	24SVE5A	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	42 to 57
24B7A	24SVE10	4-inch Sch 40 PVC	4-inch Sch 40 PVC, 0.01-inch	79 to 109
24B9	24SVE9	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	91 to 111
	24SVE9A	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	55 to 85
24B10	24SVE11	2-inch Sch 80 PVC	2-inch Sch 80 PVC, 0.02-inch	79 to 109
	24SVE11A	2-inch Sch 80 PVC	2-inch Sch 80 PVC, 0.02-inch	43 to 73
24B14	24SVE8	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	83 to 113
	24SVE8A	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	50 to 78
24B15	24SVE7	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	80 to 110
	24SVE7A	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	63 to 74
24B16	24SVE14	2-inch Sch 80 PVC	2-inch Sch 80 PVC, 0.02-inch	78 to 108
24B17	24SVE3	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	80 to 105
	24SVE3A	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	45 to 60
24B18	24SVE2	2-inch Sch 40 PVC	4-inch Sch 40 PVC, 0.02-inch	80 to 105
	24SVE2A	2-inch Sch 40 PVC	4-inch Sch 40 PVC, 0.02-inch	40 to 70
24B21	24SVE4	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	85 to 105
24B22	24SVE6	4-inch PVC	4-inch PVC, 0.01-inch	85 to 109.5
24B23	24SVE1	4-inch Sch 40 PVC	4-inch Sch 40 PVC, 0.02-inch	91 to 109
24B26	24SVE13	2-inch Sch 40 PVC	2-inch Sch 40 PVC, 0.02-inch	79 to 109

Notes:
[a] SVE – soil vapor extraction
[b] bgs – below ground surface
[c] Sch – schedule
[d] PVC – polyvinyl chloride

construction of the SVE well field in the vadose zone target areas. The aboveground treatment system will be sized to accommodate the expected soil vapor extraction flow rate.

- **SVE System Startup** - Initial startup of the SVE system will focus on operating those wells that produce the highest VOC concentrations. Operating the wells with the highest VOC concentrations maximizes VOC loading on the carbon filters and reduces operational cost. As VOC concentrations are reduced at the initial well groups, other SVE wells can be incorporated into the operating system.
- **SVE System Optimization** - The goal of SVE system optimization is to maximize the VOC concentrations in the extracted soil gas. System operation will be optimized by evaluating monitoring data from individual SVE wells and adjusting air flow such that VOC concentrations in the combined effluent are maximized. VOC concentrations from individual wells and the combined effluent will be monitored using field instruments and through laboratory analysis of vapor samples. It is expected that VOC concentrations will be sharply reduced during the first several weeks or months of operation, followed by smaller reductions over a longer time period. As extracted VOC concentrations approach asymptotic conditions, the SVE system will be operated in a pulsed mode. During the off-cycle of pulsed mode operation, VOC concentrations "rebound" to a somewhat higher equilibrium concentration due to mass transfer from soil and soil moisture and diffusion from lower permeability zones. After equilibrium conditions are reestablished (approximately 30 days), the system is energized and operated until asymptotic conditions are reached again. This process is generally repeated until the "rebound effect" has been reduced.

7.2.4 Development of Soil Gas Concentration Threshold Values

Soil gas threshold concentrations represent contamination levels that have the potential to contaminate groundwater above the MCLs. Threshold concentrations are used as remedial action objectives for the vadose zone. Achievement of the soil gas concentration thresholds is a conservative means of demonstrating and ensuring compliance with the MCLs. Soil gas threshold concentrations are based on the following criteria:

- soil gas extending to the saturated zone,
- a 40-foot groundwater mixing zone,
- Henry's law equilibrium conditions between soil gas and infiltrating soil moisture, and
- using MCL concentrations to define contaminated groundwater.

Aquifer Mixing Zone Calculations

To calculate vadose zone mass loading of VOCs to groundwater, a mixing-zone thickness must be assumed or acquired from analytical and geologic data. Stratigraphic data from soil borings, CPT, HydroPunch, and monitoring wells at Site 24 suggest a continuous aquifer mixing zone approximately 40 feet thick beneath and downgradient of the primary source area at Site 24. Analytical data from groundwater samples taken from HydroPunch points and groundwater monitoring wells underneath and downgradient of Buildings 296 and 297 indicate that this 40-foot interval is relatively homogeneous (within one order of magnitude) with respect to dissolved TCE concentrations in groundwater samples.

The following assumptions were made in performing the aquifer mixing-zone calculations:

- homogenous and isotropic conditions in the vadose and saturated zones,
- instantaneous mixing,
- aquifer mixing-zone thickness of 40 feet,
- 400-foot-wide cross section for the mixing zone,
- linear groundwater velocity of 200 feet per year,
- no TCE partitioning to soil or aquifer material,
- infiltration rate of 1 foot per year,
- infiltration area of 160,000 square feet,
- porosity of 28 percent in the vadose zone, and
- porosity of 22 percent in the saturated zone.

These assumptions were developed based on site-specific data when possible (BNI 1997a). Site-specific data included mixing-zone thickness and porosity. When site-specific data were not available, conservative values were used that tend to overestimate VOC transport to groundwater. This model assumes a 1-foot-per-year infiltration, which is a conservative value based on the average regional rainfall of 1 foot per year and the estimated volume of wastewater for an industrial facility. Conservative transport of VOCs (no partitioning to soil) also overestimates VOC loading to groundwater.

These calculations provide an estimated ratio of the volume of groundwater flowing through a given area to the volume of recharge that the aquifer receives from the vadose zone over the defined area. As clean groundwater flows into the contaminated interval, it will dilute the volume of contaminated recharge that the aquifer receives from the vadose zone. The calculation is summarized in Table 7-3.

Henry's Law Calculations

Henry's law was used to convert soil gas concentrations to equilibrium VOC concentrations in the infiltrating water.

Table 7-3
Mixing-Zone Calculations

Advection Rate[a] (0.008 ft/ft[b] × 15 ft/day[c]/0.22) × 365 day/yr[d]	Groundwater Volume[e] (per year) 200 ft/yr × 40 ft × 400 ft × 0.22	Recharge Volume[f] 1.0 ft/yr × 400 ft × 400 ft × 0.28	Mixing-Zone Ratio[g]: 704,000/ 44,800
200 ft/yr[h]	704,000 ft^3/yr[i]	44,800 ft^3/yr	15.7 to 1

Notes:
- [a] groundwater flow equation;
  average linear velocity = (hydraulic head × hydraulic conductivity)/porosity
- [b] ft/ft – feet per foot
- [c] ft/day – feet per day
- [d] day/yr – days per year
- [e] volume of groundwater that passes through the aquifer in 1 year =
  advection rate × height × area × porosity
- [f] recharge volume = infiltration rate × height × area × porosity
- [g] mixing-zone ratio = groundwater volume/recharge volume)
- [h] ft/yr – feet per year
- [i] ft^3/yr – cubic feet per year

For dilute solutions, an equilibrium soil vapor concentration can be calculated using a concentration of a VOC dissolved in a liquid using Henry's law. The reverse is also correct. Using the dimensionless form of Henry's constant, the calculation is shown as:

$$H_d = C_d/C_l$$

where:

H_d = dimensionless Henry's constant
C_a = vapor concentration
C_l = solute concentration

Henry's law was used to calculate equilibrium VOC concentrations in infiltrating water based on VOC concentrations in soil gas. This defines the potential for vadose zone contamination to impact groundwater above MCLs. A concentration threshold value is calculated for soil gas that would cause infiltrating water to load groundwater above the MCL level. The concentration threshold for soil gas is calculated by multiplying the U.S. EPA MCL (by VOC species) by a rounded mixing-zone ratio (15) and the Henry's constant. The results are shown in Table 7-4. These calculations assume equilibrium conditions exist between phases.

7.2.5 Monitoring

The SVE system will be operated continuously at the start of remediation and optimized based on monitoring data to maximize the extracted VOC concentrations. When VOC concentrations approach asymptotic conditions, the system should be operated in a pulsed

Table 7-4
Vadose Zone Concentration Threshold Calculations

VOC[a] Species	U.S. EPA MCL[b] (µg/L)[c]	Henry's Constant (dimensionless)	Concentration Threshold Calculations	Soil Gas Concentration Threshold Result (µg/L)	Highest Soil Gas Concentration Detected (µg/L)
Trichloroethene	5	0.363	5 × 15 × 0.363	27	6,120
Tetrachloroethene	5	0.923	5 × 15 × 0.923	69	192
Carbon tetrachloride	5	0.813	5 × 15 × 0.813	61	31
1,1-dichloroethene	6	6.26	6 × 15 × 6.26	563	447
Freon 113	1,200[d]	13.0	1,200 × 15 × 13.0	234,000	2,520

Notes:
[a] VOC – volatile organic compound
[b] U.S. EPA MCL – United States Environmental Protection Agency maximum contaminant level
[c] µg/L – micrograms per liter
[d] California MCL

mode to evaluate and address any "rebound effect." Vadose zone conditions will be monitored as part of the SVE system operation and maintenance. Once monitoring shows VOCs in the soil gas have been reduced below concentrations capable of contaminating groundwater above the MCLs (threshold concentrations), soil gas samples will be collected to confirm that no further SVE is required. Table 7-4 presents threshold concentrations for five VOCs detected at Site 24.

Groundwater remediation is expected to take longer than remediation of soils. To assure that soils above groundwater are not recontaminated in the interim between remediation of the vadose zone and groundwater, the vadose zone will be resampled at the conclusion of groundwater remediation. If average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

7.2.6 Periodic Reviews

Periodic reviews, involving a detailed analysis of the monitoring data, will be conducted to determine the adequacy of the remedy. These reviews would be discontinued once the soil gas concentration is less than the threshold value (Table 7-4) and groundwater remediation has been completed. Because this remedy will not result in hazardous substances remaining above health-based levels, the five-year reviews required by CERCLA Section 121(c) are not applicable to this action.

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Section 8
SUMMARY OF THE COMPARATIVE ANALYSIS OF ALTERNATIVES

This section summarizes the comparative analysis that was conducted to evaluate the relative performance of each remedial alternative in relation to the nine evaluation criteria outlined in CERCLA Section 121(b), as amended. The purpose of the comparative analysis is to identify the relative advantages and disadvantages of each alternative. The evaluation criteria that follow are based on requirements promulgated in the NCP:

- Overall Protection of Human Health and the Environment
- Compliance with ARARs
- Long-Term Effectiveness and Permanence
- Reduction of Toxicity, Mobility, or Volume
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

8.1 OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Alternative 1 (no action) would not substantially alter the current or potential future risks to human health or the environment. Although the human-health risk assessment performed as part of the Phase II RI indicated that there was an insignificant risk of exposure to the VOCs in the top 10 feet of soil at Site 24, their persistence at greater depths in the subsurface contributes to the continued contamination of groundwater below the site (BNI 1997a). The excess upper-bound cancer risk presented by exposure to VOCs in the groundwater based on a residential exposure scenario was on the order of 1 in 1,000 (1×10^{-3}). The human-health risk assessment also indicated that the VOC concentrations in groundwater of the shallow groundwater unit were high enough to potentially cause noncarcinogenic effects to receptors.

Alternative 1 would not reduce these risks significantly, nor would it reduce the potential for further migration of VOCs from the shallow groundwater unit to the principal aquifer and, thus, would not provide for the protection of human health or the environment. Alternative 1 is not considered to be an effective solution for environmental problems at Site 24.

Alternative 2 (SVE) would not reduce the current risks at the site. However, Alternative 2 would reduce potential future risks by minimizing or preventing future

contamination of groundwater beneath the site. Alternative 2 is therefore considered protective of human health and the environment.

8.2 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Pursuant to Section 121(d)(1) of CERCLA (42 *United States Code* [USC] Section 9621[d]), remedial actions must attain a degree of cleanup that assures protection of human health and the environment. Additionally, remedial actions that leave hazardous substances, pollutants, or contaminants on-site must meet standards, requirements, limitations, or criteria that are ARARs. Federal ARARs for any site may include requirements under any federal environmental laws. State ARARs include promulgated requirements under state environmental or facility-siting laws that are more stringent than any federal ARARs and that have been identified by the state in a timely manner.

CERCLA Section 121 states that, at the completion of a remedial action, a level or standard of control required by an ARAR will be attained for wastes that remain on-site. In addition, the NCP, 40 CFR Section 300.435(b)(2), requires compliance with ARARs during the course of the remedial design/remedial action. ARARs are only triggered when a remedial action is taken. Therefore, an ARAR discussion is not necessary for the no action alternative. Alternative 2 complies with all ARARs for Site 24 soils as discussed in Section 10 of this document.

8.3 LONG-TERM EFFECTIVENESS AND PERMANENCE

Alternative 1 would have little long-term effectiveness at reducing risk associated with VOC contamination in the groundwater or lessening VOC migration from the vadose zone to groundwater.

Alternative 2 uses SVE to reduce the VOC concentrations in soil to a level below that which would contaminate groundwater above the MCLs. Monitoring and periodic reviews would be used to assure the effectiveness of the remedial action. Monitoring would continue until remediation of soil is complete and would also be performed at the completion of groundwater remediation to ensure that the soil has not been recontaminated from VOCs in groundwater. Successful implementation of this alternative would accomplish the remedial action objectives and, thus, be protective of human health and the environment.

SVE provides long-term protection by reducing VOC concentrations in the vadose zone, thereby preventing further groundwater contamination. Removal of VOCs is permanent; these contaminants are captured by VGAC and destroyed when the carbon is regenerated. Approximately 6,000 pounds of TCE are estimated to be in the vadose zone at Site 24. By removing VOCs from the vadose zone before they migrate to groundwater, SVE is expected to shorten the time required for groundwater remediation.

8.4 REDUCTION OF TOXICITY, MOBILITY, OR VOLUME

Alternative 1 does not provide a reduction of toxicity, mobility, or volume through treatment.

Alternative 2 does provide a reduction in toxicity, mobility, and volume. SVE is a well-demonstrated remedial technology with permanent, long-term effectiveness for removing VOCs from the vadose zone. VOCs are volatilized in the subsurface and removed by vacuum-induced flow via SVE wells. The VOC-laden vapor stream is treated with VGAC to meet discharge requirements. During this treatment, the VOCs are temporarily transferred to the carbon. Once the VGAC capacity has been attained, the activated carbon is removed and transported off-site to a regeneration facility where the VOCs are desorbed and thermally destroyed.

Some residual risk may remain as the result of VOCs retained in the vadose zone in low-permeability zones or stagnant zones (i.e., zones in which the SVE wells do not induce advective flow). Removal of VOCs from these zones may be limited by molecular diffusion of the VOCs to the advective flow zones. The potential for stagnant zones to develop can be reduced through SVE well design and layout. SVE well screen intervals can be designed to isolate low-permeability layers and allow remediation efforts to focus on specific vertical intervals. Overlapping of SVE well radii of influence and cycling their period of operation can also reduce the potential for stagnant zones to develop.

8.5 SHORT-TERM EFFECTIVENESS

The no action alternative does not entail any on-site remedial activities and, therefore, would not have any impacts on the surrounding community, workers, or the environment. The time required for the alternative to be protective of human health and the environment is controlled by the rate of natural attenuation processes.

Short-term impacts associated with the implementation of Alternative 2 include the increased risk of exposure to workers associated with the handling of contaminated soils and vapors. An additional short-term impact associated with Alternative 2 is the risk of vehicular accidents and releases during transport of contaminated VGAC. Potential on-site exposures and risks from these activities would be controlled through use of personal protective equipment, monitoring, and conformance with a site-specific health and safety plan. Transport risks would be minimized to the extent feasible by using a licensed commercial hauler. Impacts to the surrounding community or the environment are expected to be negligible because any inadvertent releases to the atmosphere would be diluted before reaching the closest communities.

The time to reduce average VOC concentrations in soil gas to levels established as remediation goals is highly dependent on the subsurface conditions (e.g., lithologies and air permeability). A preliminary estimate of the time required to meet cleanup goals is approximately 2 to 4 years; however, a more precise estimate can be made after the initial SVE system performance is analyzed.

8.6 IMPLEMENTABILITY

Alternative 1 would be the most easily implemented alternative from a technical perspective, since it would involve no on-site construction or other remedial activities. However, the administrative feasibility of this alternative is low, given the potential opposition to a no action scenario.

Implementation of Alternative 2 would include the construction of an SVE system; additional SVE wells; a vapor-conveyance system; a treatment system; and operation, maintenance, and performance monitoring. Construction and operation of this system entails standard, proven practices known to be readily implementable. Difficulties regarding feasibility, availability of equipment and services, or schedule are not anticipated.

8.7 COST

There are no costs associated with Alternative 1.

The cost estimate for Alternative 2 was developed using the Remedial Action Cost Engineering Requirements (RACER) system developed by the U.S. Air Force. RACER cost models are based on generic engineering solutions for environmental projects, technologies, and processes. These solutions are derived from historical project information, government laboratories, construction management agencies, vendors, contractors, and engineering analysis. RACER cost estimates are made site specific through modifications of the geographic and project-specific factors. The estimated net present-worth cost for this remedial action is approximately $4.9 million in 1996 dollars. This includes capital costs of approximately $1.1 million, operations and maintenance costs of approximately $2.5 million, and monitoring costs of approximately $1.3 million. Cost-estimating details, including assumptions and RACER input parameters, are provided in Appendix D of the Site 24 FS report.

8.8 STATE ACCEPTANCE

DTSC and the RWQCB have reviewed the Site 24 RI/FS reports and the Proposed Plan and concur with the selected remedy for remediation of the vadose zone source area.

8.9 COMMUNITY ACCEPTANCE

The Proposed Plan has been presented to the community and discussed at a public meeting. The responsiveness summary portion of this ROD addresses the public's comments and concerns about the selected remedy for the site.

Section 9
SELECTED REMEDY

Based on the Site 24 RI/FS reports and the administrative record for the site, as well as an evaluation of comments submitted by interested parties during the public comment period, DON has selected Alternative 2 as the remedy for remediation of the vadose zone at Site 24. The selected alternative includes the following components:

- construction, operation, and maintenance of an SVE system to remove TCE and other VOCs from the soil,
- performance monitoring throughout the predicted 2 to 4 years of remediation,
- treatment of VOC-contaminated soil gas (vapors) with activated carbon filters to meet air quality standards prior to discharge to the atmosphere,
- confirmatory soil gas sampling at the end of vadose zone remediation to confirm that average VOC concentrations are too low to contaminate groundwater above the MCLs, and
- the vadose zone will be resampled at the conclusion of groundwater remediation. If the average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

Since the risk assessment showed that soils present from 0 to 10 feet bgs do not present an unacceptable risk to human health and the environment and remediation of deeper subsurface soil will eliminate the threat of future contamination of groundwater above the MCLs, it will not be necessary to review the site conditions every 5 years.

The selected alternative is believed to provide the best balance of trade-offs among the alternatives with respect to the evaluation criteria. Based on the information available at this time, DON believes the preferred alternative offers:

- a high level of performance when assessed against the following NCP evaluation criteria: short-term effectiveness, long-term effectiveness and permanence, implementability, compliance with ARARs, and overall protection of human health and the environment; and
- a cost-effective means of accomplishing the remedial action objectives for the site.

Table 9-1 summarizes the cost estimate for the selected alternative. The cost estimate includes capital costs and operation and maintenance (O&M) costs assumed to extend for a period of 2 to 4 years. The 2- to 4-year time frame does not necessarily reflect the duration of the O&M activities at the site; the discontinuation or prolongation of O&M activities will be determined based on the results of sampling designed to evaluate the effectiveness of remediation.

Other advantages of the selected remedy include its ease of implementation (it uses readily available, proven technologies to extract and treat vapors), its compatibility with existing and future land uses, and its inclusion of provisions for future assessments at the conclusion of groundwater remediation. The existing infrastructure at the site should not be affected by the implementation of Alternative 2.

Some modifications to the selected remedy (e.g., depth and spacing of wells) may be necessary as a result of the remedial design and construction processes. Detailed design specifications, performance evaluations, and schedule will be determined during the remedial design phase.

Table 9-1
Alternative 2 Cost Estimate Summary

Cost Category	Capital Costs	Annual Operation, Maintenance, and Monitoring Costs
Direct Costs, SVE[a] System		
Equipment and wells	$262,000	$274,000
Vapor-phase activated carbon	164,000	451,000
Professional labor	26,000	
Subtotal Direct Costs	**$452,000**	**$725,000**
Indirect Costs	272,000	178,000
Remedial Design[b]	50,000	
Escalation[c]	91,000	124,000
Contingency[d]	173,000	205,000
Total SVE System[e]	**$1,038,000**	**$1,232,000**

Cost Category	Monitoring Costs (first year)	Monitoring Costs (subsequent years)
Direct Costs	$525,000	$127,000
Indirect Costs	137,000	40,000
Escalation[c]	91,000	27,000
Contingency[d]	150,000	39,000
Total SVE Monitoring	**$903,000**	**$233,000**

Notes:
- [a] SVE – soil vapor extraction
- [b] remedial design represents approximately 7 percent of direct and indirect costs
- [c] escalation modifies the costs in the RACER database from January 1992 to the midpoint of the project assumed to be October 1996 for capital costs and July 1997 for operation and maintenance costs
- [d] a 20 percent contingency has been added to cover cost increases that may occur as a result of unforeseen conditions that typically occur on remediation projects
- [e] total does not include annual monitoring costs presented below

Section 10
STATUTORY DETERMINATIONS

Under CERCLA, DON's primary responsibility is to undertake remedial actions that achieve adequate protection of human health and the environment. In addition, section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action must comply with ARARs established under federal and state laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and use permanent solutions and alternative treatment technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that, as their principal element, permanently and significantly reduce the volume, toxicity, or mobility of hazardous waste. The following sections discuss how the selected remedy meets these statutory requirements and preferences. Complete discussions are found in the FS reports for soil and groundwater at Site 24 (BNI 1996c, 1997b)

10.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

Remedial action objectives for the site were concerned primarily with limiting future migration and exposures to contaminated media at the site. The selected remedy protects human health and the environment by assuring the continued isolation of the contaminated media at the site. Currently, there are no exposure pathways to contaminated media at the site. Potential future threats to human health include exposure to contaminated groundwater; remediation of soils will prevent future contamination of groundwater above MCLs. Remediation of contamination already existing in groundwater will be addressed in a separate ROD. It will not be necessary to place deed restrictions on the site to protect human health because the contaminated soils are not close enough to the surface to present an unacceptable risk to human health. However, deed restrictions will be required during remediation to prevent disturbance of monitoring wells and SVE equipment. There are no short-term threats associated with the selected remedy that cannot be readily controlled. In addition, no adverse cross-media impacts are expected from the remedy. Groundwater remediation is expected to take longer than remediation of soils. To assure that soils above groundwater are not recontaminated in the interim between remediation of the vadose zone and groundwater, the vadose zone will be resampled at the conclusion of groundwater remediation. If average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

10.2 COMPLIANCE WITH ARARs

The selected remedy will comply with the substantive portions of all ARARs. Section 121(e) of CERCLA, USC Section 9621(e), states that no federal, state, or local permit is required for remedial actions conducted entirely on-site. Therefore, actions conducted entirely on-site must meet only the substantive, not the administrative, requirements of the ARAR. Any action that takes place off-site is subject to the full requirements of the federal, state, and local regulations. The chemical-, location-, and action-specific ARARs

for the selected remedy for Site 24 are presented in Tables 10-1, 10-2, and 10-3, respectively, and discussed below.

10.2.1 Chemical-Specific ARARs

Chemical-specific ARARs are health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, establish the acceptable amount or concentration of a chemical that may be found in, or discharged to, the ambient environment. If a chemical has more than one cleanup level, the most stringent level will be identified as an ARAR for this remedial action. The selected remedial action can be implemented to comply with chemical-specific ARARs.

The federal law that gives rise to potential chemical-specific ARARs is RCRA. California state requirements considered as part of the ARARs analysis include the State Water Resources Control Board (SWRCB) Resolutions 68-16 and 92-49 and Title 23 CCR.

10.2.1.1 ARARS FOR VADOSE ZONE REMEDIATION

General

The DON has determined that the substantive provisions of Title 22 CCR Section 66264.94(a)(1), (a)(3), (c), (d), and (e) constitute "relevant and appropriate" federal ARARs for groundwater and vadose zone (i.e., the unsaturated zone) contamination associated with Site 24. The substantive provisions of Title 22 CCR 66264.94 are considered to be relevant and appropriate for this remedial action and are federal ARARs because this requirement was approved by the EPA in its 23 July 1992 authorization of the State of California's RCRA program and is federally enforceable. The State of California disagrees with the DON. This regulation is a part of the State's authorized hazardous waste control program. It is the State's position that the regulation is a state ARAR and not a federal ARAR. See 55 Fed. Reg. 8765, March 8, 1990, and U.S. v. State of Colorado, 990 F.2d 1565, (1993).

The DON and the State of California have not agreed whether State Water Resources Control Board Resolution Nos. 92-49 and 68-16 are ARARs for the remedial action at Site 24. Therefore, this Record of Decision documents each of the party's positions on the resolutions, but does not attempt to resolve the issue.

DON's Position Regarding SWRCB Resolution Nos. 68-16 and 92-49

The DON has determined that SWRCB Resolution Nos. 68-16 and 92-49 and 23 CCR 2550.4 do not constitute ARARs for this remedial action because they are state requirements and are not more stringent than the federal ARAR provisions of 22 CCR 66264.94. The NCP set forth in 40 CFR 300.400(g) provides that only state standards more stringent than federal standards may be ARARs (see also Section 121(d)(2)(A)(ii) of CERCLA).

Table 10-1
Chemical-Specific ARARs[a] for Selected Remedy

Action/Requirement	Citation	ARAR Determination	Comments
	FEDERAL		
AIR			
Resource Conservation and Recovery Act[b] TCLP[c] regulatory levels; persistent and bioaccumulative toxic substances TTLCs[d] and STLCs[e].	Title 22 CCR[f], 66261.24(a)	Applicable	Using the RCRA[g] definition of hazardous waste, there is the potential for some of the spent carbon to exceed TCLP limits for TCE[h], making it a characteristic hazardous waste. Generator requirements are applicable.
SOIL AND GROUNDWATER			
Groundwater and vadose zone protection standards: Owners/operators of RCRA treatment, storage, or disposal facilities must comply with conditions in this section that are designed to assure that hazardous constituents entering the groundwater from a regulated unit do not exceed the concentration limits for contaminants of concern set forth under Section 66264.94 in the uppermost aquifer underlying the waste management area beyond the point of compliance.	22 CCR 66264.94, except 66264.94(a)(2), and 94(b)	Relevant and appropriate	Applicable for hazardous waste TSD[i] facilities; potentially relevant and appropriate in site-specific circumstances, such as when the source of the waste is unknown but the waste is similar in composition to listed waste or when waste constituents have released or have the potential to release to groundwater. Because the waste released from the vadose zone to the groundwater in OU-2A, in particular TCE, is similar in composition to listed waste, this requirement is determined to be relevant and appropriate.
	STATE		
SOIL			
Cal-EPA[j] Department of Toxic Substances Control Definition of "non-RCRA hazardous waste."	22 CCR 66261.22(a)(3) and (4), 66261.24(a)(2) to (a)(8), 66261.101, 66261.3(a)(2)(C), or 66261.3(a)(2)(F)	Applicable	Soil removed during well construction is determined not to be a listed waste, but may be a characteristic RCRA or non-RCRA hazardous waste. Generator requirements are applicable.

(table continues)

Table 10-1 (continued)

Notes:

[a] ARAR – applicable or relevant and appropriate requirement

[b] Statutes and policies, and their citations, are provided as headings to identify general categories of potential applicable or relevant and appropriate requirements (ARARs) for the convenience of the reader. Listing the statutes and policies does not indicate that the Department of the Navy accepts the entire statutes or policies as potential ARARs. Specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential ARARs.

[c] TCLP – toxicity characteristic leaching procedure

[d] TTLC – total threshold limit concentration

[e] STLC – soluble threshold limit concentration

[f] CCR – *California Code of Regulations*

[g] RCRA – Resource Conservation and Recovery Act

[h] TCE – trichloroethene

[i] TSD – treatment, storage, and disposal

[j] Cal-EPA – California Environmental Protection Agency

Chemical-specific concentrations used for Feasibility Study evaluation may not be ARARs indicated in this table, but may be concentrations based upon other factors. Such factors may include the following:

Human health risk-based concentrations (40 *Code of Federal Regulations* [CFR] 300.430[e][A][1] and [2])

Ecological risk-based concentrations (40 CFR 300.430 [e][G])

Practical quantitation limits of contaminants (40 CFR 300.430[e][A][3])

Many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables.

Table 10-2
Location-Specific ARARs[a] for Selected Remedy

Location/Requirement	Citation	ARAR Determination	Comments
	FEDERAL		
Hazardous Waste Control Act[b]			
Facility within 100-year floodplain must be designed, constructed, operated, and maintained to avoid washout.	22 CCR[c] 66264.18(b)	Applicable	This requirement is applicable because some SVE[d] wells will be located within the 100-year floodplain.
Executive Order 11988, Protection of Floodplains			
Actions taken within a floodplain should avoid adverse effects, minimize potential harm, and restore and preserve natural and beneficial values.	40 CFR[e] 6, Appendix A; excluding Sections 6(a)(2), 6(a)(4), 6(a)(6); 40 CFR 6.302	Applicable	As indicated previously, this requirement is applicable because some of the proposed SVE wells will be located within the floodplain.

Sources:
BNI 1997
FEMA 1989
Jacobs Engineering 1992, 1993a

Notes:
[a] ARAR – applicable or relevant and appropriate requirement
[b] Statutes and policies, and their citations, are provided as headings to identify general categories of potential applicable or relevant and appropriate requirements for the convenience of the reader. Listing the statutes and policies does not indicate that the Department of the Navy accepts the entire statutes or policies as potential applicable or relevant and appropriate requirements. Specific potential applicable or relevant and appropriate requirements are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential applicable or relevant and appropriate requirements.
[c] CCR – *California Code of Regulations*
[d] SVE – soil vapor extraction
[e] CFR – *Code of Federal Regulations*

Table 10-3
Action-Specific ARARs[a] for Selected Remedy

Action/Requirement	Citation	ARAR Determination	Comments
	FEDERAL		
Resource Conservation and Recovery Act, 42 USC[b] 6901 et seq.[c]			
Person who generates waste shall determine if that waste is a hazardous waste.	22 CCR[d] 66262.10(a), 66262.11	Applicable	Applicable for any operation where waste is generated. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation and treatment residues, are hazardous will be made at the time the wastes are generated.
Pre-Transport Requirements			
Hazardous waste must be packaged in accordance with DOT[e] regulations prior to transporting.	22 CCR 66262.30	Applicable	Applicable for any operation where waste is generated and transported. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation at treatment residues, are hazardous will be made at the time the wastes are generated.
Hazardous waste must be labeled in accordance with DOT regulations prior to transporting.	22 CCR 66262.31	Applicable	Applicable for any operation where waste is generated and transported. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation at treatment residues, are hazardous will be made at the time the wastes are generated.
Provides requirements for marking hazardous waste prior to transporting.	22 CCR 66262.32	Applicable	Applicable for any operation where waste is generated and transported. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation at treatment residues, are hazardous will be made at the time the wastes are generated.

(table continues)

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
A generator must ensure that the transport vehicle is correctly placarded prior to transport of hazardous waste.	22 CCR 66262.33	Applicable	Applicable for any operation where waste is generated and transported. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation at treatment residues, are hazardous will be made at the time the wastes are generated.
Establishes requirements for a generator to accumulate hazardous waste on-site for 90 days or less without a permit or grant of interim status.	22 CCR 66262.34	Applicable	Applicable for any operation where waste is generated and transported. The determination of whether wastes generated during remedial activities, such as soil cutting from well installation at treatment residues, are hazardous will be made at the time the wastes are generated.
Clean Air Act 40, USC 7401 et seq.			
Regulates discharge to air. Addresses major sources of air pollutants.	40 USC Section 7410; portions of 40 CFR[f] Section 52.220 applicable to SCAQMD[g]	Applicable	Applicable for emissions from SVE[h] system.
All new sources of air pollution that may result in a net emission increase of any nonattainment air contaminant or any halogenated hydrocarbons are to employ BACT[i].	SCAQMD Rule 1303	Applicable	Applicable to emissions from SVE system. Current SCAQMD policy requires BACT only when the net emissions increase exceeds 1 pound per day of any nonattainment air contaminant for a given unit. The SCAQMD BACT guidelines generally require the use of a carbon absorber as BACT to control off-gas. Treatment facilities will be equipped with carbon absorbers

(table continues)

Table 10-3 (continued)

Action/Requirement	Citation	ARAR Determination	Comments
	STATE		
South Coast Air Quality Management District			
Applies to stationary source, constructed or modified after effective date of requirement, that emits carcinogenic air contaminants. Requires that T-BACT[j] be employed for new stationary equipment when the operation of that equipment results in a higher than allowable maximum individual cancer risk.	SCAQMD Rule 1401	Applicable	Requires that applicant demonstrate that the cumulative impact of emissions from new or modified source and all other permitted units within 100 meters owned or operated by the applicant are below a maximum individual cancer risk of 10^{-6}. T-BACT is required if maximum individual cancer risk exceeds this limit. Off-gas control for SVE discharge is to be below the 10^{-6} threshold.

Notes:

[a] ARAR – applicable or relevant and appropriate requirement
[b] USC – *United States Code*
[c] Statutes and policies, and their citations, are provided as headings to identify general categories of potential applicable or relevant and appropriate requirements. Specific potential applicable or relevant and appropriate requirements are addressed in the table below each general heading.
[d] CCR – *California Code of Regulations*
[e] DOT – Department of Transportation
[f] CFR – Code of Federal Regulations
[g] SCAQMD – South Coast Air Quality Management District
[h] SVE – soil vapor extraction
[i] BACT – best available control technology
[j] T-BACT – best available control technology – toxics

The provisions of 22 CCR 66264.94 and 23 CCR 2550.4 that address groundwater and vadose zone concentration limits are identical. Therefore, 23 CCR 2550.4 is not more stringent than 22 CCR 66264.94 and its provisions are not state ARARs.

Section III.G of SWRCB Resolution No. 92-49 provides in relevant part that regional boards shall "..., in approving any alternative cleanup levels less stringent than background, apply Section 2550.4..." Because this resolution incorporates and relies upon the provisions of 23 CCR 2550.4, which are not more stringent than 22 CCR 66264.94, SWRCB Resolution No. 92-49 is also not more stringent and, hence, its provisions are not state ARARs.

The DON has determined that further migration of VOCs through the vadose zone and groundwater is not a discharge governed by the language in SWRCB Resolution No. 68-16. More specifically, the language of SWRCB Resolution No. 68-16 indicates that it is prospective in intent, applying to new discharges in order to maintain existing high-quality waters. It is not intended to apply to restoration of waters that have already been degraded. However, the DON has applied the principles of SWRCB Resolution No. 68-16 through its interpretation of 22 CCR 66264.94 in a manner consistent with SWRCB Resolution No. 92-49.

State of California's Position Regarding SWRCB Resolution Nos. 68-16 and 92-49

The State of California disagrees with DON's assertion that SWRCB Resolution Nos. 68-16 and 92-49 are not ARARs and believes that both resolutions are applicable requirements for the remedial action. However, the State does not intend to dispute the ROD. See below.

Relationship between Groundwater and Vadose Zone

In the Draft OU-1 Interim Action FS (IAFS) report, the DON addressed the issue of whether cleanup of groundwater to background was technologically or economically feasible (JEG 1995, Appendix H). The DON concluded that achieving background levels of constituents is not technologically or economically feasible consistent with the requirements of 22 CCR 66264.94, 23 CCR 2550.4, and SWRCB Resolution Nos. 68-16 and 92-49 and federal MCLs were identified as the controlling cleanup level/concentration limits. Federal MCLs were deemed to be adequately protective of human health and the environment. The FFA signatories agreed on and approved this conclusion in the IAFS report. The DON hereby adopts this determination for this ROD.

The Phase II RI for Site 24 estimated the soil gas concentration thresholds above which VOCs in soil (listed in Table 7-4) were capable of contaminating groundwater above their respective MCLs (Table 7-4). These values represent soil gas cleanup objectives and are designed to ensure that groundwater at the point of compliance (POC) is not contaminated above the MCLs for VOCs. See Title 22 CCR Section 7 66264.94, Title 23 CCR Section 2550.5, and the NCP preamble at 55 Fed. Reg. 8753, March 8, 1990.

The threshold concentrations shown in Table 7-4 are consistent with the groundwater and vadose zone requirements of Title 22 CCR Section 66264.94, Title 23 CCR Section 2550.4, SWRCB Resolution No. 92-49, and SWRCB Resolution No. 68-16. Achievement of the threshold concentrations is a conservative means of demonstrating and ensuring compliance with the MCL at the POC because the threshold concentrations are designed to prevent groundwater just outside the mixing zone from exceeding MCLs. Groundwater concentrations at the POC would be expected to be lower because of natural attenuation, primarily due to diffusion and dispersion.

The Regional Water Quality Control Board does not agree that the method and criteria used for determining "threshold concentrations" for shutoff of the SVE system complies with State Water Resources Control Board Resolution No. 92-49 or with Title 23, California Code of Regulations, Section 2550.4 or Title 22, California Code of Regulations, Section 66264.94. It is the Board's position that the use of a 40-foot mixing zone and a POC in the ground water and other assumptions used in setting "threshold concentrations" will not necessarily result in cleanup of the vadose zone to the extent technically and economically achievable and at least to a level that assures that contaminants will not discharge into ground water at levels greater than the aquifer cleanup levels for the underlying ground water. However, the Marine Corps has agreed to reevaluate the shutoff criteria in the final ROD for Site 24. Therefore, the Regional Water Quality Control Board will not dispute this Interim ROD.

10.2.1.2 CHARACTERIZATION OF WASTES

Federal and state requirements for characterizing wastes generated during implementation of the remedial action will be applicable (Table 10-1). Using the RCRA or state definitions of hazardous waste, drill cuttings and contaminated personal protective equipment generated from the implementation of the remedial action are not anticipated to be classified as RCRA or non-RCRA hazardous waste. Wastes generated from treatment of VOCs (e.g., spent carbon) may be classified as hazardous if they exceed the criteria for toxicity. Waste generated from the remedial action will be tested at the time it is generated to determine the waste classification prior to storage and/or disposal.

Some of the soil cuttings and/or the spent activated carbon may not be classified as federal hazardous waste but could be classified as a California-regulated non-RCRA hazardous waste. The material would then have to be managed according to California hazardous waste management regulations and disposed in a Class I landfill. Spent activated carbon that is regenerated off-site may also have to be managed according to California hazardous waste management regulations.

10.2.2 Location-Specific ARARs

Location-specific ARARs are restrictions on the concentrations of hazardous substances or on the conduct of activities solely because they are in specific locations. Special locations include floodplains, wetlands, historic places, and sensitive ecosystems or

habitats. The selected remedial action can be implemented to comply with location-specific ARARs.

Some of the proposed SVE wells may be located within a 100-year floodplain. Therefore, 22 CCR 66264.18(b) and substantive provisions of Executive Order 11988 are applicable as shown in Table 10-2. Executive Order 11988 (Protection of Floodplains) (40 CFR 6, Appendix A, excluding Sections 6[a][2], [4], and [6]; 40 CFR 6.302) requires that actions taken within floodplains should avoid adverse effects, minimize potential harm, and restore and preserve natural and beneficial values. None of the activities planned should have adverse impacts on the floodplain.

The National Archaeological and Historical Preservation Act requires federally funded projects to identify and mitigate the impacts of project activities on significant scientific, prehistoric, historic, or archaeological data. No prehistoric or historic sites were identified in existing data for the area that could be impacted by the remedial action. It is planned that all SVE wells will be placed on Site 24. This site is currently heavily disturbed. Therefore, Phase I archeological surveys are not required.

10.2.3 Action-Specific ARARs

Action-specific ARARs are technology- or activity-based requirements or limitations for remedial activities. These requirements are triggered by the particular remedial activities conducted at the site. The selected remedial action can be implemented to comply with action-specific ARARs.

Federal laws that give rise to potential ARARs for actions to be undertaken as part of Alternative 2 include the RCRA and the Clean Air Act (CAA). In addition, because spent granular activated carbon from the liquid-phase or vapor-phase systems may contain radon, U.S. EPA guidelines for disposal of drinking water treatment waste containing naturally occurring radionuclides are also to be considered (TBC) for the remedial action.

10.2.3.1 FEDERAL

RCRA

Waste steams created in the course of implementing the remedial action would be subject to RCRA requirements for determining whether wastes would be classified as hazardous.

Hazardous waste determinations for the soil cuttings generated from the installation of the monitoring wells and the spent carbon from the off-gas treatment would be made at the time the waste is generated. If these wastes are determined to be hazardous, then the appropriate requirements outlined in Table 10-3 for packaging, labeling, marking, placarding, and accumulating these materials for final disposal would need to be followed.

Clean Air Act

Off-gas from SVE operation would need to comply with the air emissions requirements of the SCAQMD. Requirements that have been incorporated in the State Implementation Plan (SIP) and are therefore considered to be potential federal ARARs include Rules 212 and 1303. These requirements and their applicability to Alternative 2 are discussed below.

Rule 212 is the Standard for Approving Permits. Its substantive requirements are listed below.

- Equipment should be designed, controlled, or equipped with such air pollution control equipment that it may be expected to operate without emitting air contaminants in violation of the California Health and Safety Code (H&SC) Sections 41700, 41701, or 44300 (et seq.) or of the SCAQMD rules.
- Public notification is required for significant projects, defined as having any of the following conditions:
  - units are located within 1,000 feet of the fence line of a school;
  - increase in on-site emissions of lead in excess of 3 pounds per day or the daily maximums specified in Rule 1309.1(a);
  - the emission of reactive organic gas (ROG) exceed 30 pounds per day; and
  - the individual cancer risk equals or exceeds 1 in 1,000,000.

Based on preliminary conceptual design estimates, the SVE system, which uses VGAC filters to remove VOCs and control TCE emissions, would not qualify as a significant project; therefore, public notification would not be required and Rule 212 is not an ARAR. In addition, public notification requirements are not ARARs because they are not environmental standards of control.

SCAQMD Rule 1303 requires that all new sources of air pollution that result in a net increase of any nonattainment air contamination or any halogenated hydrocarbons employ the best available control technology (BACT). Current SCAQMD policy (SCAQMD 1990) sets the threshold of net emissions increase at 1 pound per day of any nonattainment air contaminant (including ROGs such as TCE) for any permitted unit when BACT is required. Current SCAQMD guidelines do not establish BACT for the SVE technology; however, SCAQMD guidelines list carbon adsorption as the BACT for air strippers for groundwater treatment (SCAQMD 1990). It is currently planned to treat VOCs from the SVE system utilizing VGAC filters and therefore the remediation should comply with the intent of the BACT guidelines. Therefore, SCAQMD Rule 1303 is applicable for the remedial action at Site 24.

U.S. EPA Guidelines for the Disposal of Water Treatment Plant Wastes

Radon has been detected in some off-Station wells, and there is the potential for it to accumulate on the liquid-phase granular activated carbon (LGAC) used for removal of

VOCs from residual liquid. The U.S. EPA Office of Drinking Water guidelines (U.S. EPA 1990) provide TBC criteria for controlling worker exposure and managing spent carbon. Also, since it is anticipated that the carbon will be regenerated off-site (rather than disposed of in a landfill), additional restrictions on handling and transporting of the material may need to be considered. Specifically, if the level of activity of the spent carbon reaches 2,000 pCi/dry gram from the sum of all isotopes, then the material would need to be manifested as a low-level radioactive waste per U.S. Department of Transportation requirements (49 CFR 171-180).

10.2.3.2 STATE

California state requirements that are potential ARARs for actions to be undertaken as part of Alternative 2 are described in the following subsections.

South Coast Air Quality Management District

The off-gas from the SVE treatment system needs to comply with SCAQMD requirements for air emissions. Requirements that have not been incorporated in the SIP and are therefore considered to be state ARARs include Rules 402 and 1401.

Rule 402. Rule 402 prohibits the discharge of any air emissions in quantities that may cause injury, detriment, nuisance, or annoyance to the public. The DON has determined that a "nuisance" condition as set forth in Rule 402 does not exist at Site 24 and is not posed by the remedial alternatives. In addition, other federal and state ARARs addressing actual and potential air emissions will assure adequate protection of human health and the environment.

Rule 1401. Rule 1401 involves new source review of carcinogenic air contaminants. It requires that an applicant substantiate that the cumulative impacts of emissions from new, relocated, or modified permit units and from all other permit units located within 100 meters that are owned or operated by the applicant for which applications were submitted on or after 01 June 1990 will not result in any of the following:

a) a maximum individual cancer risk (MICR) of greater than 1 in 1,000,000 (1×10^{-6}) at any receptor location, if the permit unit is constructed without toxics using best available control technology-toxics (T-BACT);

b) an MICR of greater than 10 in 1,000,000 (1×10^{-5}) at any receptor location, if the permit unit is constructed with T-BACT; and

c) more than 0.5 excess cancer cases in the population that is subject to a risk of greater than 1 in 1,000,000 (1×10^{-6}).

Furthermore, the MICR may not exceed 1/70 of the maximum allowable risk specified in item a) or b), above, in any 1 year at receptor locations within residential areas.

Rule 1401 is applicable for the remedial action at Site 24 because the SVE units represent new stationary sources of emission. Rule 1401 specifies the risk assessment and

emission calculation procedures to be used in determining compliance with the requirements. Currently, SCAQMD has no guidelines for what constitutes T-BACT; instead, the T-BACT determination is made by the air quality engineer who is reviewing the permit application.

MCAS El Toro does not own any other permitted units within 100 meters of the proposed SVE locations. Based on preliminary conceptual design information, the VGAC unit will be designed so that the MICR will be below the 1-in-1,000,000 threshold limit, and therefore, would meet the requirements of Rule 1401.

10.3 COST-EFFECTIVENESS

The selected remedy has been determined to provide overall effectiveness proportional to its costs; it is therefore considered cost-effective. The estimated net present-worth cost for this remedial action is approximately $4.9 million. This includes capital costs of approximately $1.1 million, O&M costs of approximately $2.5 million, and monitoring costs of approximately $1.3 million. Technologies included in Alternative 2 are readily implementable and have been widely used and demonstrated to be effective.

10.4 UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES (OR RESOURCE RECOVERY TECHNOLOGIES) TO THE MAXIMUM EXTENT PRACTICABLE

DON and the State of California have determined that the selected remedy represents the maximum extent practicable to which permanent solutions and alternative treatment technologies can be used in a cost-effective manner at Site 24. This alternative is protective of human health and the environment and complies with the ARARs for Site 24. VOC contaminants within the vadose zone will be extracted and permanently destroyed. Although some residual contamination may remain in the soils, the concentration should not be high enough to contaminate groundwater above the MCLs. Alternative 2 is readily implementable using standard equipment and methods. Implementation is expected to take approximately 2 to 4 years. During implementation, workers will use personal protective equipment and adhere to the site health and safety plan to minimize exposure to soil cuttings and contaminated vapors. The cost of Alternative 2, although higher than the cost of the no action alternative, represents the lowest cost of an effective, permanent solution for soil remediation.

The most decisive factor in the selection of Alternative 2 is that use of SVE and VGAC will permanently reduce the toxicity and volume of VOC contaminants and reduce future contamination of groundwater above the MCLs.

10.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

CERCLA Section 121(b) identifies a statutory preference for alternatives that utilize treatment to reduce the toxicity, mobility, or volume of contamination. Alternative 2 complies with this requirement.

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Section 11
DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for Site 24 was released for public comment in April 1997. The Proposed Plan identified Alternative 2, SVE, as the preferred alternative for the site. DON reviewed all written and verbal comments submitted during the comment period. Upon review of these comments, it was determined that no significant changes to the remedy, as it was originally identified in the Proposed Plan, were necessary.

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Section 12
REFERENCES

Bechtel National, Inc. 1995. Final Work Plan Phase I Remedial Investigation/Feasibility Study. Marine Corps Air Station El Toro, CA.

———. 1996a. Final Updated Community Relations Plan, Marine Corps Air Station El Toro, CA.

———. 1996b. Draft Soil Vapor Extraction Pilot Test Report. Marine Corps Air Station El Toro, CA.

———. 1996c. Draft Phase II Feasibility Study Report, Operable Unit 2A - Site 24. Marine Corps Air Station El Toro, CA.

———. 1997a. Draft Final Phase II Remedial Investigation Report, Operable Unit 2A - Site 24. Marine Corps Air Station El Toro, CA.

———. 1997b. Draft Final Phase II Feasibility Study Report, Operable Unit 2A - Site 24. Marine Corps Air Station El Toro, CA.

———. 1997c. Base Realignment and Closure Cleanup Plan (BCP) for Marine Corps Air Station El Toro, CA.

BNI. *See* Bechtel National, Inc.

Brown and Caldwell. 1986. Initial Assessment Study of Marine Corps Air Station El Toro, California. CLE-C01-01F018-A2-016.

California Regional Water Quality Board, Santa Ana Region. 1995. Water Quality Control Plan. Santa Ana River Basin (8).

DON. *See* United States Department of the Navy.

Federal Facilities Agreement. 1990. Federal Facility Agreements Between the U.S. Marine Corps, EPA Region IX, California Department of Health Services, and State Water Resources Control Board.

Federal Emergency Management Agency. 1989. Maps for Orange County. September.

FEMA. *See* Federal Emergency Management Agency.

FFA. *See* Federal Facilities Agreement.

Jacobs Engineering Group, Inc. 1992. RCRA Part B Permit Application, MCAS El Toro. SWDIV NAVFAC. June.

———. 1993a. Marine Corps Air Station El Toro: Installation Restoration Program Phase I Remedial Investigation Draft Technical Memorandum.

———. 1993b. Marine Corps Air Station El Toro: Installation Restoration Program Final RCRA Facility Assessment Report.

———. 1994a. Marine Corps Air Station El Toro: Installation Restoration Program Draft Remedial Investigation Report for Operable Unit 1. Irvine, CA.

———. 1994b. Marine Corps Air Station El Toro: Installation Restoration Program Remedial Investigation/Feasibility Study draft Soil Gas Survey Technical Memorandum, Sites 24 and 25. Irvine, CA.

———. 1994c. Interviews with active and retired personnel from MCAS El Toro, conducted by Jacobs Engineering Group, Inc., CTO-284. Irvine, CA.

———. 1995. Marine Corps Air Station El Toro, CA. Installation Restoration Program Draft Operable Unit 1 Interim Action Feasibility Study.

James M. Montgomery Engineers, Inc. 1988. MCAS El Toro and Tustin Site Inspection Plan of Action.

JEG. *See* Jacobs Engineering Group, Inc.

JMM. *See* James M. Montgomery Engineers, Inc.

Marine Corps Air Station El Toro. Local Redevelopment Authority. 1996. MCAS El Toro Community Reuse Plan. August.

MCAS El Toro. *See* Marine Corps Air Station El Toro.

Mercer and Cohen. 1993. Dense Nonaqueous Phase Liquid (DNAPL) Site Evaluation. Library of Congress.

Orange County Water District, Letter to Ms. Bonnie Arthur, Mr. Tayseer Mahmoud, and Mr. Larry Vitale, dated 03 September 1996. Preliminary OCWD Comments on MCAS El Toro OU-1 Draft Final RI/FS Report.

RWQCB. *See* California Regional Water Quality Control Board.

SCAQMD. *See* South Coast Air Quality Management District.

South Coast Air Quality Management District. 1990. Best Available Control Technology Guidance.

United States Department of the Navy. 1992. Navy/Marine Corps Installation Restoration Manual.

U.S. Environmental Protection Agency. 1989. Risk Assessment Guidance for Superfund. Volume 2. Environmental Evaluation Manual. Interim Final. EPA/540-1-89-001. U.S. Environmental Protection Agency, Office of Emergency and Remedial Response, Washington, D.C.

———. 1990. Suggested Guidelines for the Disposal of Drinking Water Treatment Wastes Containing Naturally Occurring Radionuclides. U.S. EPA Office of Drinking Water. July.

———. 1992a. Guidance for Data Usability in Risk Assessment.

———. 1992b. Dermal Exposure Assessment: Principle and Applications Interim Report. Office of Research and Development. EPA/600/8-91/011B.

———. 1993a. Presumptive Remedies: Policies and Procedures.

———. 1993b. Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils. Office of Solid Waste and Emergency Response.

———. 1994. Health Effects Assessment Summary Tables.

———. 1995a. Health Effects Assessment Summary Tables.

———. 1995b. Integrated Risk Information System.

U.S. EPA. *See* U.S. Environmental Protection Agency.

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SUMMARY OF STATE ARARs RECEIVED IN RESPONSE TO DTSC ARARs SOLICITATION

SUMMARY OF STATE ARARs RECEIVED IN RESPONSE TO DTSC ARARs SOLICITATION

As the lead state agency, the Cal-EPA DTSC, is primarily responsible for identification of potential ARARs. In response to the DTSC's 01 May 1996 ARARs request letter, the DON received input from the following agencies:

- Cal-EPA Water Resources Board (memorandum dated 03 June 1996);
- California Department of Fish and Game (memorandum dated 05 June 1996);
- California Department of Health Services (memorandum dated 23 May 1996);
- County Sanitation Districts of Orange County (letter dated 29 May 1995);
- SCAQMD (letter dated 31 May 1996);
- California Department of Transportation (letter dated 04 June 1996);
- Orange County Environmental Management Agency (letter dated 30 May 1996);
- Orange County Water District (letter dated 05 June 1996); and
- Regional Water Quality Control Board, Santa Ana Region (memorandum dated 05 June 1996).

DON reviewed all potential ARARs submitted by the agencies noted above, compared them with federal ARARs, and reached a conclusion as to which are the most stringent and/or "controlling" ARARs for each alternative.

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RESPONSIVENESS SUMMARY

RESPONSES TO COMMENTS RECEIVED DURING PUBLIC COMMENT PERIOD

RESPONSIVENESS SUMMARY
MARINE CORPS AIR STATION - EL TORO, CALIFORNIA
PROPOSED PLAN, OPERABLE UNIT 2A, SITE 24 VADOSE ZONE

Letters Received During Public Comment Period

Comments by: ***Courtney Wiercioch, Program Manager, MCAS El Toro Local Redevelopment Authority, in a letter dated May 30, 1997***

Number	Comments	Response
1a	The LRA is supportive of the soil vapor extraction process in removing volatile organic compounds (VOCs) at IRP Site 24. It is estimated that the extraction process will be in operation from 2 to 4 years with completion scheduled to occur subsequent to surplus property transfer to the LRA. Please provide data which substantiates the 2 to 4 year time frame. Also status reports generated during monitoring of the extraction process should include an estimated project completion date which will assist the LRA with its building reuse planning and implementation process.	The United States Department of the Navy (DON) is conducting soil vapor extraction (SVE) pilot tests at Marine Corps Air Station (MCAS) El Toro. The results of these tests to date support an estimated SVE system operation of 2 to 4 years. As additional data become available, the estimated time required for remediation will be refined. Remedial operation status reports will include refined project completion estimates, as appropriate. Data supporting the estimated 2 to 4 year operation of an SVE system can be found in the Site 24 Remedial Investigation (RI) and Feasibility Study (FS) reports which are available for review in the information repository located at the Heritage Park Regional Library, 14361 Yale Avenue, in Irvine, California. Please call (714) 551-7151 for current operating hours.
1b	While the LRA fully supports efforts to remediate IRP Site 24, the soil vapor extraction system should be designed and located to ensure that any proposed reuse of Buildings 296 and 297, and all other facilities in the vicinity, will not be negatively impacted. The proposed reuse of these buildings will require that all paved surfaces be clear of obstructions (e.g., system will not impede building, parking, runway or aircraft apron use). It is requested that the LRA be allowed to comment on the proposed design, for location purposes only, prior to final approval.	SVE pilot tests have been ongoing at Site 24 for approximately one year on an operating airfield. Impacts to airfield operation have been minimized by coordinating with air operations personnel and designing around foreseeable problems (e.g., using flush-mounted, traffic-rated well covers). In general, busy traffic areas, such as taxiways, are accommodated during the design phase by using underground piping. Aboveground piping is generally installed in areas where traffic is minor or can be easily rerouted. Future land reuse will be considered during the final design of an SVE system. As with the current pilot tests, impacts to operations from future work will be limited as much as possible. The DON will coordinate with the Local Redevelopment Authority (LRA) on this issue.

(table continues)

Responses to Public (continued)

Number	Comments	Response
1c	Subsequent to the successful completion of the extraction process, it is expected that monitoring will be continued on a regular basis in accordance with existing state and federal regulations. The LRA requests assurances that monitoring will not interfere with planned reuse and that the LRA be immediately notified if any new or recurrent public safety hazard exists.	After successful completion of vadose zone remediation, no additional monitoring is planned as part of the vadose zone remedy. However, groundwater monitoring will continue at Site 24, and soil gas may also be monitored as part of the groundwater remedy. Monitoring activities, like remediation activities, will be carefully planned to minimize interference with site reuse. The DON will promptly notify the LRA of any significant findings from future monitoring efforts.
1d	Please confirm that subsequent to the initiation of the operation of the soil vapor extraction system (remedy), that there will be no health risks associated with excavation of the site to a depth of at least 50 feet.	Human-health risks were evaluated for exposure to soil to a depth of 10 feet. The assessment concluded that the risk from exposure to VOCs in soil was very minor (an excess lifetime cancer risk of about 5 chances in one billion for the resident; risk was less for the office and excavation workers). Risk assessments are not normally performed for soil below 10 feet because there are normally no complete exposure pathways to soil below this depth. Remediation of contaminated soil may or may not be completed prior to property transfer. If the SVE system is still operating at the time of deed transfer, deed restrictions will be used to protect the SVE wells and equipment and provide access to operate the system. Deep excavation would be prohibited without prior approval of the DON and Federal Facilities Agreement (FFA) signatories. Such a proposal for deep excavation would have to be evaluated on a site-specific basis to assure that the excavation would not interfere with the effectiveness of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) remedy. Deed restrictions are not anticipated to be required once remediation is complete. Also, once remediation is complete, the DON does not anticipate any adverse health risks associated with excavation of soils down to 50 feet at Site 24.

(table continues)

Number	Comments	Response
1e	IRP Site 24 includes Buildings 296 and 297 which were previously used for metal plating, radium plating, and other aircraft related rework. Please provide information on any other non-VOC contaminates [sic] which may impact the site and/or the proposed soil vapor extraction process.	The Site 24 investigation was directed at VOCs. However, other Installation Restoration Program (IRP) sites were developed within the boundary of Site 24 to address non-VOC contaminants. Non-VOC contaminants at Site 24 were evaluated as part of the investigation of IRP Sites 7, 8, 9, 10, 11, and 22. The investigation findings for these sites will be summarized in separate Proposed Plans. The Proposed Plan for Sites 9, 10, and 22 was distributed in June 1997. The Proposed Plan for Sites 7, 8, and 11 is expected to be distributed in 1999. None of the contaminants identified to date at these sites would affect the proposed SVE system. Besides the IRP sites, the use and eventual closure of facilities supporting the operation of MCAS El Toro will be evaluated for non-VOC contaminants that may have an impact to surrounding soils within the boundary of Site 24. All these locations of potential environmental concern are summarized in the Base Realignment and Closure (BRAC) Cleanup Plan (BCP). The BCP is available for review in the information repository located at the Heritage Park Regional Library, 14361 Yale Avenue, in Irvine, California.
1f	Please confirm the LRA's understanding that subsequent to having the final remedy in place, the property associated with IRP Site 24 will be transferred to the LRA with no institutional controls or restrictions on ultimate reuse of the property.	During remediation of soils, the DON plans to place restrictions on Site 24 to protect the SVE wells, associated equipment, and system monitoring and to allow access to complete the remediation and monitor progress. These restrictions are expected to be removed once vadose zone remediation is complete. Deed restrictions are also expected to be necessary to protect the groundwater remediation system and prevent contact with contaminated groundwater. These would restrict the future landowner(s) and/or user(s) of the site from damaging the groundwater wells and/or associated piping, from performing subsurface drilling or excavation that would expose groundwater, and from extracting groundwater for drinking, irrigation, or commercial purposes. The deed would also reserve a nonexclusive easement to allow continued access for the DON, the designated DON contractor, and regulatory agencies to monitor the effectiveness of the cleanup, perform site inspections, and/or take additional remedial or removal actions. The vadose zone will be resampled at the conclusion of groundwater remediation. If the average soil gas concentrations are found to be above the threshold limits, additional vadose zone remediation may be necessary.

(table continues)

Comments by:	*Bruce Myatt, in a letter dated May 30, 1997*	
Number	**Comments**	**Response**
		Also, as discussed in Response 1e, Site 24 also includes other IRP sites within its boundaries (e.g., IRP Sites 7, 8, 9, 10, 11, and 22). At this time, the DON does not plan to place any institutional controls or restrictions on the IRP sites within Site 24. However, until the Proposed Plans for these sites are developed and adopted, the DON cannot make a firm determination regarding land-use restrictions.
2a	Below you will find a description of several concerns related to the effectiveness and possible risks associated with the referenced plan. • Freon is known to be difficult to capture in carbon beds. Freon from the MCAS soils will probably pass through the carbon and into the atmosphere. • Dioxins and furans are known by-products of the thermal combustion of halogenated chemicals, such as those identified in the MCAS soils. Their formation occurs through these two mechanisms, (1) incomplete combustion, and (2) "de novo synthesis." When carbon (saturated with MCAS halogens) is thermally regenerated by conventional methods, dioxin and furan emissions will probably be released from the Regeneration site due to both mechanisms of formation. • MEK and other keytone solvents (such as those identified in MCAS soils) are known to result in combustion when they come in contact with carbon. Carbon bed fires due to other causes are not uncommon. If a carbon fire starts in the proposed MCAS adsorption beds, dioxin and furan emissions will probably be released from the MCAS site due to both mechanisms of formation. What levels of emissions (dioxins, furans, and Freons) are anticipated with the proposed carbon adsorption system? What emissions levels (dioxins, furans, and freons) are deemed acceptable?	Freon 113, which is present in soil gas at MCAS El Toro, has an adsorption capacity in activated carbon of approximately 7 to 12 percent. This means that 7 to 12 pounds of Freon 113 can be adsorbed onto 100 pounds of activated carbon. Once the carbon has absorbed this amount of Freon 113, breakthrough occurs, and it is necessary to change out the carbon. To prevent releases into the atmosphere, activated-carbon canisters are generally connected in series. Effluent vapor concentrations are monitored at each canister. When breakthrough occurs in the first canister, the canister is removed, the second canister replaces the first, and a new canister is added. Continuous SVE pilot tests at MCAS El Toro have demonstrated successful adsorption of Freon to activated carbon. Carbon will not be regenerated at MCAS El Toro. The carbon vendor will regenerate the spent carbon at an off-site facility in compliance with all applicable regulations. A thermal shutdown sensor is typically used to prevent overheating and combustion of the carbon beds. Production and emission of dioxins and furans is not expected because no thermal combustion will occur on site. However, any emissions that did occur would meet the emission limits requirements of the South Coast Air Quality Management District (SCAQMD). These limits are calculated based on site-specific data. For SVE systems that use offgas control, such as activated carbon, SCAQMD requires that emissions do not cause an excess cancer risk greater than one in a million (1×10^{-6}).

(table continues)

Comments by:	*Marcia Rudolph, MCAS El Toro RAB member, in a letter dated May 29, 1997*	
Number	**Comments**	**Response**
2b	Some flameless oxidization systems have been shown to effectively reach levels of complete combustion where dioxin, furan and freon emissions are virtually eliminated. Has the flameless oxidation solution been considered?	Flameless oxidation or catalytic oxidation, was considered in the FS report for Site 24 (Section 2). However, this option was screened out as a viable technology because it is not cost-effective at the low concentrations and high flow conditions expected at Site 24.
3a	As a member of the MCAS ET RAB, I am aware of the purpose of the Site 24 Proposed Plan. Though this plan deals specifically with the soil in the vadose zone, the implications for the ground water pollution can't be dismissed. Making sure that the source area soil pollution [is remediated] is vital to the assurance to the community that the further [control of] contamination of the ground water can be achieved, or at the least, further degradation can be successfully halted. I continue to doubt that the "Presumptive" solution of SVE is indeed the "Prescription" for this problem. The success that may have been achieved in Riverside with this process may be due to the character of the soils in that arid, desert location. Does there exist sufficient data to prove in a reasonable certainty that the SVE solution will achieve the same or similar results in the clay, shale layered soils under Site 24?	Evidence that the SVE system will work effectively at Site 24 is provided by three pilot tests that have taken place at the site. Test No. 1 was conducted at one well for 2½ weeks, and 253 pounds of trichloroethene (TCE) were removed. Test No. 2 was conducted at the same well 6 months later. The SVE system operated for 10½ weeks, and 251 pounds of TCE were removed. The third test was conducted at a different well in another area of Site 24 for approximately 4½ weeks, and 310 pounds of TCE were removed. This is a total of over 800 pounds of TCE removed. In addition, in the first well, the TCE vapor concentration dropped from 1,300 micrograms per liter (µg/L) to 200 µg/L from the start of the first test until the end of the second test. These results show that, within a reasonable certainty, the SVE solution will prove effective at reducing the amount and concentration of TCE at Site 24. It is expected that some areas of Site 24, including low-permeability soils (e.g., clayey layers, will be more difficult to remediate. To increase airflow, these areas may receive a higher density of SVE wells, may be pneumatically fractured, or may simultaneously receive air extraction and injection. These strategies will be finalized during the remedial design phase.
3b	The issue of the "rebound effect" after turning off the SVE has not been sufficiently address(ed) to my satisfaction. How long will it take for the maximum effect cleanup of the vadose zone to be achieved, and what models have been run to determine the "rebound effect," and how long will it take to return to turning the SVE back on to continue the cleanup to acceptable levels without a further 'rebound', AND, most critically, do the Marine Corps and the DON take responsibility for completing the entire cleanup of the site, including the monitoring and resolution of the 'rebound'?	The time to reduce the concentrations of TCE in the Site 24 vadose zone to a value below the threshold concentration is estimated to be 2-4 years. However, the exact time cannot be predicted more accurately until the SVE wells are installed, their rate of removal is determined, and the amount of rebound is known. The SVE system operation will be optimized to maximize VOC concentrations and operated continuously until VOC concentrations begin to approach asymptotic conditions. The DON does not plan to cease operation of the SVE system until data indicate that the rebound effect will not cause the average concentrations in soil to exceed the threshold values.

(table continues)

Responses to Public (continued)

Number	Comments	Response
3c	What contingency plans have been made to cover the contingency that IF the Norton hardware is used, that they will not need to 're-possess' it should their 'rebound effect' require further SVE to clear the 'rebound' to acceptable levels?	The Norton system is currently being used to address rebound. The system is expected to become available at the beginning of 1998; however, if there is a possibility that the system will be repossessed, it may not be used at MCAS El Toro.
3d	What Deed Restrictions will be placed on the area above the vadose zone?	Please see the response to Comment 1f above.
3e	Finally, the issue of the compliance with CEQA and Environmental Law as to the compliance to the need for a '...public meeting...' as it relates to the event held May 15, 1997 at Irvine City Hall. The event was successful as [in elucidating the main points] of the SVE issue, but only drew 35 folk[s] out of an affected population of over 300,000. There WAS coverage in the local Register Newspaper and notice mailed to members of the Community, but there are more mechanisms listed in the Public Relations Plan that were not used to complete this 'meeting'. Though the exposition was well done and did its best to make a complicated subject understandable to the lay person, the meager attendance, along with the minuscule comments leaves question as to whether this would qualify as a 'meeting' under Government guidelines. It is my belief that a public comment period provided after a presentation to the group assembled followed by a group give and take from the attendees would have even more of a sense of a 'meeting.'	The public meeting held on May 15 conforms to guidance in CERCLA and was chosen because it allowed residents and other interested parties to meet 1:1 with DON and agency personnel to obtain information and ask questions which they might have regarding the proposed alternative for remediation of Site 24. It was felt that this type of meeting would allow all people attending the meeting, even those who are generally reluctant to speak before a large group, to have an opportunity to ask questions, raise issues, and voice their concerns. A public recorder, or court reporter, was available to record public comments on an individual basis. The positive response from the public on both the questionnaires and in interviews with the public recorder attest to the effectiveness of the meeting format. More specifically, the public meeting held on 15 May meets the requirements set forth in CERCLA Sections 117(a) and (d) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) at 40 *Code of Federal Regulations* (CFR) Section 300.430(f)(3) as follows: • Advance notice of the availability of the Proposed Plan was provided in the *Los Angeles Times* (Orange County edition) and the *Orange County Register*.

(table continues)

Responses to Public (continued)

Number	Comments	Response
		• The Proposed Plan and associated supporting documents, such as the Remedial Investigation and Feasibility Study Reports, were made available for review/comment in the administrative record. • The Proposed Plan and public notice both announced the availability of the administrative record and information repository. • The public meeting provided a forum for both written and oral comments. In addition, interested parties were encouraged to submit written comments to Joseph Joyce, the Base Realignment and Closure (BRAC) Environmental Coordinator, by mail or fax. Mr. Joyce's address and fax number were provided in the Proposed Plan. • A 30-day public comment period (30 April – 30 May 1997) was allowed. • The public meeting was held at the Irvine City Hall in close proximity to MCAS El Toro. • A transcript of the public meeting was kept. This transcript was later made available at the Administrative Record File at MCAS El Toro. • A written responsiveness summary was prepared of all comments submitted along with responses to these comments. The public meeting was publicized through notices in the Los Angeles Times (Orange County Edition) and the Orange County Register, media alerts, and mailings to 1,800 households, businesses, public officials and agencies. The DON is also exploring additional ways to encourage the public to participate in upcoming public meetings.

(table continues)

Responses to Public (continued)

Comments by:	*Jerry B. Werner, Member, Restoration Advisory Board, in a letter dated May 30, 1997*	
Number	**Comments**	**Response**
4a	Do you plan to transfer Site 24 after cleanup without any Deed Restrictions - except for groundwater?	Please see the response to Comment 1f.
4b	The proposed cleanup criterion is 27 parts per billion (ppb) of TCE in the soil gas, which is supposed to translate to 5 parts per billion in the ground water. As discussed in the RAB meeting of May 28, 1997, the soil gas will achieve an equilibrium value higher than the 27 ppb after gas pumping is turned off. How do you proposed to establish that the final equilibrium gas concentration in the soil is less than 27 ppb? It would appear that you plan to start/stop gas pumping over an extended period of time - perhaps many years - to establish a satisfactory equilibrium level. An alternative approach to accelerate the process might be to pump to a level lower than 27 ppb. Have you considered this - and if so - to what lower level of gas concentration do you propose?	It is anticipated that it will take between 2 and 4 years to complete the cleanup of the vadose zone at Site 24 and will require starting and stopping the soil vapor extraction system several times over this time period. This is known as pulsed-mode operation. It is common to extract vapors to a concentration lower than the cleanup goal with the expectation of a small rebound. This concentration will be based on data obtained during operation of the SVE system during pulsed-mode operation. It is not possible to propose such a value at this time. The final equilibrium soil gas concentration will be determined by measuring soil gas concentrations in each extraction well. Specific sample numbers and locations will be identified during the remedial design phase.
4c	The proposed Soil Vapor Extraction (SVE) method is considered to be a "presumptive remedy", which means that it has been successfully used on other projects. I have, however, been astonished at the lack of satisfactory answers so far to a number of questions regarding the procedures to be used (one of which is the previous item). Other questions which should be provided for the public record include: a) Will you be continuously monitoring gas "purity" downstream of the carbon adsorption canisters? As I understand it, activated charcoal regurgitates what it has collected after it becomes saturated. I also understand that its adsorption capability is limited by water vapor adsorption. How, then, will you determine when to change the canisters?	a) Effluent air from the carbon units is generally monitored daily during the first weeks of operation and then weekly or biweekly as VOC concentrations decrease. Activated carbon canisters are generally connected in series. Effluent vapor concentrations are monitored at each canister. When saturation, or "breakthrough," occurs in the first canister, the canister is removed, the second (polish canister) replaces the first and a new polish canister is added. In this way, contaminated vapor will continue to be adsorbed onto the activated carbon.

(table continues)

Responses to Public (continued)

Number	Comments	Response
	b) Can you provide us with data on the results of SVE at other sites and their relevance to Site 24?	b) The technical basis for selection of presumptive remedies is described in the United States Environmental Protection Agency (U.S. EPA) guidance document "Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites with Volatile Organic Compounds in Soils." To prepare this document, the U.S. EPA reviewed 88 sites to ensure an even distribution in geographical location, Record of Decision (ROD) signature date, and site size. Of the 88 sites evaluated, 62 used SVE to remove VOCs from soil. This document is available for review in the Administrative Record. The effectiveness of SVE at Site 24 is demonstrated by pilot tests at the site. Test results are discussed in the response to Question 3a.
4d	A great deal of good information was provided to the RAB as a result of the lively discussion at the May 28, 1997 meeting. I suggest that, as a matter of policy, that the minutes of the RAB meetings contain all of the questions asked and the responses. And, if the information requested is not available during the meeting, that responses be provided as part of the mailing with the minutes. Otherwise, the request is usually lost (especially with meetings only every other month).	The Restoration Advisory Board (RAB) meeting minutes are intended to summarize the key issues introduced during the presentation and question and answer periods. "Restoration Advisory Board Guidelines," issued by the U.S. EPA and DoD in May 1994, state that: "The RAB should prepare meeting minutes summarizing the topics discussed at RAB meetings. The meetings should be concise summaries of RAB meetings rather than verbatim transcripts to facilitate effective communication with the local communities." Whenever possible, questions are answered during the RAB meeting. Issues that cannot be answered during the meeting are typically carried over to the next meeting where they are answered and included in summary form in the meeting minutes. The RAB meeting minutes are available in the Administrative Record for MCAS El Toro.
4e	Information on all of the Base sites has been provided over thousands of pages and hundreds of pounds of paper, which make it extremely difficult to adsorb. What is needed for the RODs is a reasonably succinct document for us which meets ALL of the [U.S.] EPA information requirements. Does the "*Proposed Plan for Environmental Restoration at Marine Corps Air Station El Toro (May, 1997)*" meet this requirement?	The Proposed Plan for Site 24 meets the U.S. EPA information requirements for a Proposed Plan, as presented in the U.S. EPA guidance document "Guidance on Preparing Superfund Decision Documents: The Proposed Plan, the Record of Decision, Explanation of Significant Differences; the Record of Decision Amendment." Regulatory requirements for the Proposed Plan are found in the NCP at 40 CFR Section 300.430(f)(2). The Proposed Plan for Site 24 meets these requirements. The ROD will be a separate document and will be included in the Administrative Record for Site 24 and will be available for review by any interested party.

(table continues)

Responses to Public (continued)

Number	Comments	Response
5	While a Public Meeting has been scheduled by the DON for June 18, 1997, it was the consensus of the Board members who attended the May 15th Public Meeting for Site 24 that the meeting format being used was not adequate for informing the general public on the technical issues regarding the proposed cleanup plan. Further, that format did not really provide a mechanism for a public dialog (i.e., a town meeting type of format where everybody hears the questions and the answers). No one else in the public knew the questions that I asked the staff in attendance - or the answers provided; and I, of course, don't know what anyone else asked or was told. As I understand it, there were only a total of 9 comments turned in by the public at that meeting (from an estimated attendance of 35 people, including a number of members of the board who came out of interest to see what type of information was being made available to the general public).	Please see the response to Comment 3e above.
Comments by:	***Sonia Arbetter, Mission Viejo Resident, in a letter dated May 14, 1997***	
6	I am very concerned that the toxic waste and soil contaminants need to be thoroughly cleaned up, as they are polluting ground water under Irvine. Even though I now live in Mission Viejo and I am not as directly concerned with the Marine Base, I lived in Leisure World for 17 years and I was very active in trying to keep El Toro from becoming a blight on the area. South County is still very lovely. There are pristine areas. We don't want what's left in So. Orange County to become spoiled. Thank you for anything positive you can do.	The DON shares your concern that VOC soil contaminants at MCAS El Toro be thoroughly cleaned up and that the source of groundwater contamination be removed. That is why the cleanup action being taken at Site 24 is considered so important.

(table continues)

Comments by:	*Joseph R. Brown, Jr., in a fax dated May 16, 1997*	
Number	**Comments**	**Response**
7	With respect to the cleanup program at the El Toro Marine Base, to what standard will the soil be cleaned? Perhaps this could be expressed in terms of TPH or another standard.	Soil itself does not present a direct risk to human health and the environment because the risk associated with soil at Site 24 is very low (an excess lifetime cancer risk of about 5 chances in 1 billion for a resident). However, the VOC contamination present in soil does present an indirect risk because it has the potential to travel, or migrate, to groundwater where it can contaminate groundwater above acceptable risk levels. Because of this potential impact on groundwater, the cleanup standards for vadose zone soil gas are based on maximum contaminant levels (MCLs) for VOCs in groundwater. MCLs have been developed by the U.S. EPA and California Environmental Protection Agency (Cal-EPA) to assure safe drinking water.
Comments by:	*Jerold J. Werner, in a presentation prepared for the Public Meeting held on May 15, 1997*	
8	My message is that the proposal to clean up Site 24 at the El Toro Marine Base is flawed. I am here as an agent representing a small remediation company located in Orange. Very small. We have two principal owners and three employees. One of the owners is a woman with a chemistry background and the other is a mechanical engineer. Together these two people invented and developed a very unique and clean vapor extraction system to clean up TCE and PCE in soil. We do nothing else but TCE and PCE soil contaminations. Our system is new and uses a different approach and is state of the art. It is housed in a very small trailer on site and is very portable. We don't use carbon; we don't use heat; we don't inject the soil with bugs; we don't excavate; we don't use internal combustion engines; we don't discharge anything into the atmosphere; and unlike the carbon system, we don't generate contaminated carbon.	SVE is the presumptive remedy for cleanup of VOCs in soil. This means that SVE is the remedy that the U.S. EPA has determined is generally most effective for VOC-contaminated sites. The presumptive remedy is described in the U.S. EPA guidance document "Presumptive Remedies: Site Characterization and Technology Selection for CERCLA Sites With Volatile Organic Compounds in Soils." Condensation, the treatment method presented in this comment, was addressed in the FS and screened out because condensation units are more applicable to sites with relatively high VOC concentrations and low air flow (i.e., VOC concentrations on the order of 10,000 µg/L and air flow of approximately 500 cubic feet per minute or less). At sites where condensation units are used, the units are typically replaced with activated carbon after VOC concentrations are reduced to relatively low levels. At MCAS El Toro, the anticipated air flow is expected to be between 5,000 and 10,000 cubic feet per minute and initial VOC concentrations are expected to be approximately 700 µg/L or less. Activated carbon is more economical at these high flow rates and low

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Responses to Public (continued)

Number	Comments	Response
	What we do is to use two very simple properties of chemistry that are in every chemistry 101 textbook. We convert the TCE in the soil back into its original liquid form. We collect the TCE in 55 gallon drums for hazard material transportation. Actually what happens is that the TCE is generally purchased by a manufacturer to be recycled and resold. We currently have three local sites using our units. We always obtain a full [U.S.] EPA permit prior to working on any contaminated site. Let me describe one of our sites. A Fortune 100 company owns this property in Torrance. I can't tell you which company it [is] but everyone in this room would recognize the name. They have a problem. A TCE problem in the soil of this property. We have been on this site 12 months. We have captured and disposed of 19,000 pounds of TCE so far. In addition to us, at the site is also a carbon vapor extraction system. This carbon system has never performed adequately. To date we have billed the Environmental Engineering company in charge of this site approximately $200,000 to remove the 19,000 pounds of TCE from the soil We also have produced weekly reports monitoring the contamination levels found in the soil vapors. Since we bill the engineers for our services and not the property owner, we don't [know] how much was billed by the engineers to the property owner. Our unit runs 24 hours a day, 7 days a week. Even as I speak, we are recovering TCE. We have problems with the Feasibility Study. First and foremost is cost. We are upset that our technology was NOT, NOT included as a potential option to clean up this TCE site. This site was made for us. We made several attempts to contact the engineers and their sub contractors involved in the Phase I and II steps but were repeatedly ignored or rebuffed.	VOC concentrations than a condensation unit. As discussed in responses to Comments 3a and 4c, pilot tests at Site 24 have also confirmed the effectiveness of SVE for the site-specific conditions.

(table continues)

Number	Comments	Response
	There are many problems with any carbon based vapor extraction system. Some were briefly discussed in the Feasibility Study and some were ignored or glossed over. 1. Using carbon as a filtering agent is not new. The Egyptians used it. The present carbon technology originated 60 years ago. 2. The engineers presented the carbon option as state of the art. Nothing 60 years old is state of the art. They may add some bells and whistles but it is not new. 3. The carbon system will clean up the soil but in the process makes contaminated carbon. This is still a problem. 4. It is not efficient. At least one TON of carbon is needed to remove just 200 pounds of TCE from the soil. If their estimates of the TCE in the soil are REALLY wrong, then the cost of the carbon system will increase because of the additional carbon needed. There is no limit to the cost increases. 5. The amount of the TCE absorbed by a 200 pound canister of carbon is subject to a lot of estimates and guess work. It is difficult to measure. 6. In our experience, estimates of the level of contamination in soil made by engineers can be off by as much as 50 to 500 percent. They don't know how much TCE is in the soil. The sampling techniques used for the estimates have serious limitations. The Feasibility Study states that the proposed carbon system meets eight of the nine [U.S.] EPA criteria. We think that it meets seven criteria. At an estimated cost of nearly five million dollars, it certainly must fail the cost effective criteria. When compared to our system, we feel that the general public would reject it in favor of our system and it would fail the criteria of acceptance by the general population. We feet that our system meets all nine of the [U.S.] EPA criteria.	

(table continues)

Responses to Public (continued)

Comments by:	*Jerold J. Werner, in a presentation prepared for the Public Meeting held on May 15, 1997*	
Number	**Comments**	**Response**
	Lets go back to the cost of cleaning up the TCE in the soil. We charge $2,500 up front to set up one of (our) units at a site. The Feasibility Study indicated that the first year's capital cost of using the carbon option was over one million dollars. We charge $500 per day or $180,000 per year to operate one unit. Using the proposed carbon system was estimated at one million dollars, or $2,700 per day, in the first year. We monitor our own systems daily, it is included in the daily rate. The Feasibility Study indicated that the first year monitoring costs alone were going to be $900,000. In addition to the set up fee and the daily rate, our systems require about $700 monthly for electricity. We use lots of power. There is a $100 fee to pick up a 55 gallon drum of TCE for transportation. We also take our own samples of soil vapors and charge only $50. Labs charge in excess of $100 for this service. Summarizing, the Feasibility Study indicated a total cost of approximately five million dollars to use the carbon vapor extraction system to clean up the TCE. Even if we installed two of our units, billing for both, we would clean up this site within two years at a cost of less than $800,000. The final cost is dependent upon how far off the estimates of the level of contamination that is in the soil. It is our firm belief that the engineering company involved in this Feasibility Study made their decision to recommend a carbon vapor system prior to any evaluation of all options. They knew what their answer would be prior to beginning the study. We have found in our experience that many engineering firms fear our technology. They don't like state of the art technology. With our system, they don't like the role they play in remediation. They are reduced to performing minimal monitoring functions and writing reports. Engineers don't like the idea we can cut the costs of solving TCE problems 50 to 90 percent of their estimates. We make environmental engineers eat their estimates of clean up costs.	

(table continues)

Number	Comments	Response
	What I want from the Board is a directive to the Engineers to investigate what we can do. Look at our sites. We are ready for any pilot program. We can hook up to the wells at El Toro and start capturing TCE within ten days. We have just built a new unit and are ready. We are ready to compare ourselves to any carbon vapor system. We are ready for a field demonstration for anyone. We feel confident that our system is a vastly superior system to the proposed carbon system.	
Comments by:	***Gail Reavis, submitted on a meeting evaluation form for the Public Meeting held on May 15, 1997***	
9a	I called all 3 papers (announcing the public meeting) -- 2 were unaware even with your small ad.	Extensive efforts were made to assure that the public and interested parties were informed of the May 15 meeting. Public notices announcing the May 15 meeting were placed in two papers -- the *Los Angeles Times, Orange County Edition*, and the *Orange County Register*. Display-size advertisements were used rather than legal notices to draw attention to the announcement because display advertisements are larger than legal notices. The public meeting was also announced in the Proposed Plan, which was sent to newspaper, television, and radio news organizations as well as to approximately 1,800 households, public officials and agencies, and businesses in the vicinity of MCAS El Toro. In addition, the BRAC Public Affairs Officer followed up the mailings with phone calls to news staff personnel assigned to environmental issues to encourage these individuals to publicize and attend the meeting.
9b	As the ONLY meeting/presentation it was insufficient. Most people do not know what questions to ask. A presentation was needed with a microphone and public comment, so people could share the questions and brain storming.	Please see the response to Comment 3e.

(table continues)

Responses to Public (continued)

Comments by:	*Enid Cohn, resident of Tustin, California, submitted on form provided for comments on May 28, 1997*	
Number	**Comments**	**Response**
10	The soil vapor extraction works well for removal of volatile organics, however other contaminants which are present in the soil at Site 24 will not necessarily be removed, especially if these contaminants are not volatile. This would include heavier hydrocarbons and heavy metals. The source of some volatile organics other than TCE and PCE may be as additives to fuels or industrial compounds. What is planned to be done about locating and cleaning up any heavy metal contamination in near-surface soils (first 5-10 feet)? What is planned to be done about locating and cleaning up any heavier hydrocarbon concentrations of concern in near-surface and deeper soils which may be disturbed during development activities?	Please see the response to Comment 1e.
Comments by:	*Charles R. Bennett, Ph.D., Community Co-Chair/MCAS El Toro RAB, in a letter dated May 29, 1997*	
11	Questions for the Site 24, Proposed Plan A. Cleanup Goals 1. The plan says "Cleanup...will continue until concentrations...are below the threshold levels.", but later "The cleanup goals for soil are established to meet MCLs". Which goal will it be, below the MCL or at the MCL?	The vadose zone cleanup levels for TCE, tetrachloroethene (PCE), carbon tetrachloride, 1,1-dichloroethene (1,1-DCE), and Freon 113 provided in the proposed plan (i.e., soil gas threshold concentrations) are based on groundwater MCLs. Groundwater is required not to exceed the MCLs. Therefore, remediation of the vadose zone should continue until soil gas concentrations (even after rebound) are at or below their threshold values.
	2. Has any information been provided to the administrative record that provides a regulatory justification for use of a water quality term (i.e., MCL) to be indirectly employed (through a soil gas measurement) as a soil cleanup goal, based upon either a regulation or science perspective?	The regulatory justification for use of the MCL is found in the applicable or relevant and appropriate requirements (ARARs) discussion in the Draft Site 24 FS and in Section 10 of the Site 24 Vadose Zone ROD. These documents are available for review at the Administrative Record File at MCAS El Toro.

(table continues)

Responses to Public (continued)

Number	Comments	Response
	3. Should the cleanup goal also include the additional, explicit statement that all other contaminants (e.g., other chlorinates) must also meet the same MCL goal?	The remediation goals and soil gas threshold concentrations for the Site 24 vadose zone address the reduction of concentrations of VOCs, specifically TCE, PCE, carbon tetrachloride, 1,1-DCE, and Freon 113. Extensive soil gas sampling showed that these are the only chlorinated organics reported at high enough concentrations to pose a potential threat to groundwater.
	B. Conceptual Basis of Cleanup: 1. A simple modification of Henry's Law has been proposed to relate soil gas concentrations to groundwater concentrations (see Remedial Investigation). Do the U.S. EPA and the California State Water Quality Control Board approve of this approximation as means of determining a successful attainment of a cleanup goal? Can these agencies validate this procedure (e.g., cite this MCL standard from soil gas measurements being used at other remediation sites that have already attained clean closure)?	Yes, both the U.S. EPA and the Regional Water Quality Control Board (RWQCB) have accepted the methodology presented in the RI and FS for establishing the cleanup goal for soil at Site 24.
	2. If the soil gas measurement standard is accepted as a standard for the Site 24 Vadose Zone cleanup goals, will the U.S. EPA accept this as a significant precedent for the standard to be applied to the Site 24 Groundwater cleanup goal, and ultimately the OU-1 deep aquifer cleanup goal?	The Site 24 Vadose Zone ROD is an interim ROD. It does not establish remediation goals for groundwater. Groundwater remediation goals will be established in the ROD(s) for Site 24 Groundwater and OU-1 (Site 18).

(table continues)

Number	Comments	Response
	C. Data Validation	
	1. The data collected for the RI of Site 24 was seriously flawed, with samples containing target analytes being attributed to outside contamination derived from the operators. Do the U.S. EPA concur with DON that the data collected, the explanations given, and the data validity meet or exceed the standard acceptable for U.S. EPA approval?	The source of 1,2-dichloroethane (1,2-DCA) reported in routine and field quality control (source and rinsate blanks) collected during the Phase II RI at MCAS El Toro has been thoroughly investigated. 1,2-DCA was identified as a trace contaminant in hydrochloric acid that was used as a sample preservative for VOC analyses. In general, 0.5 milliliters (mL) of hydrochloric acid are added to the 40 mL volatile organic analysis (VOA) vials used to collect the water samples. The hydrochloric acid preservative is used to prevent biological breakdown of the VOCs in the water sample. In October 1995, the presence of 1,2-DCA in water samples was investigated. The initial investigation identified the vendor of VOA vials (Eagle Picher) and the specific VOA vial lot number (B5136020) of those samples affected. These VOAs were part of the CLEAN I field supply surplus, which were subsequently used during the Phase II RI. The reported 1,2-DCA concentrations in the water samples ranged from 0.9 to 2.6 µg/L, which is less than the U.S. EPA MCL for drinking water. The associated field quality control samples had reported 1,2-DCA concentrations ranging from 1.1 to 2.2 µg/L. These samples were collected between August 23, 1995 and September 22, 1995. After September 22, the use of VOA vial lot number B5136020 was discontinued. Mr. Mark Thompson, the Quality Assurance/Quality Control Manager of Eagle Picher, reported that the VOA vial lot of concern was not pre-preserved upon shipment from Eagle-Picher. The implication is that the hydrochloric acid that contained trace levels of 1,2-DCA was added after shipment from Eagle Picher. Eagle Picher provided documentation of this problem in a letter dated May 21, 1997. In addition, while the CLEAN II contract laboratory was not responsible for providing the contaminated VOA vials, the CLEAN II laboratory also had experienced similar problems with the presence of 1,2-DCA in hydrochloric acid documented in a letter dated October 13, 1995.

(table continues)

Number	Comments	Response
		The May 21, 1997, and October 13, 1995, letters document the fairly common problem of 1,2-DCA contamination in hydrochloric acid. Our investigation has determined that 1,2-DCA was reported in samples collected in vials from VOA vial lot number B5136020. A review of the data shows that both groundwater samples and quality control samples collected in these VOA vials had reported concentrations of 1,2-DCA. The source of the 1,2-DCA was the hydrochloric acid used as a preservative in the VOA vials. After use of this lot of VOA vials was discontinued, 39 groundwater samples were collected and none had reportable concentrations of 1,2-DCA. Notwithstanding the explanation of 1,2-DCA contaminated hydrochloric acid, the reported concentrations of 1,2-DCA are very low (less than the MCL) and would not significantly change the estimated risk from exposure to groundwater.
	2. Do the Public Participation representatives for the State of California Cal-EPA and U.S. EPA believe the public record on the data validity has been acceptably maintained?	The DON cannot speak for these individuals. However, Cal-EPA and the U.S. EPA have both indicated their acceptance through approval of the Site 24 RI report. Data validation is summarized in Appendix K of the Draft Final RI Report.
	Comments on the Site 24 Proposed Plan A. Cleanup Goals This is an excellent proposed plan, it should be implemented at the earliest opportunity as it means pollutants will begin to be removed from the site.	No response required.
	B. Public Participation 1. The Restoration Advisory Board and its community members were not given sufficient notice that this proposed plan was in place and the comment period was to commence. The FS was formally issued for review in mid-March. At the public Board Meeting on March 26, 1997, there was NO MENTION OF THE SPECIFIC CLEANUP GOAL, as evidenced in the minutes of that meeting. This is not an acceptable level of public participation at the RAB level.	The DON made a presentation at the Public Board Meeting on March 26 that included a discussion of the objectives of the remediation activities at Site 24, the SVE process, the presumptive remedy approach and the results of pilot tests performed at the site. Although the cleanup goals may not have specifically been cited at that meeting, they were presented in the draft final feasibility study which was issued on March 11, 1997. The document was made available for public review at the information repository located at the Heritage Park Regional Library in Irvine, California.

(table continues)

Responses to Public (continued)

Number	Comments	Response
	1. The normal "Public Meeting" in a comment period has become a familiar activity to ma(n)y participants, they are a standard procedure for CERCLA. There is no need to change or modify this common, standard activity. A different activity was held at the Irvine City Hall on May 15, 1997 that complied with the letter of the regulation for the holding of a "Public Meeting" according to the attending U.S. EPA representative. It was advertised as, and appeared to succeed as, an opportunity for individuals to have their individual questions answered, and their individual opinions recorded, if they so wished. While complying with the letter of the regulation, it did not comply with the spirit of the law about a "Public Meeting". It IS incumbent on the DON to demonstrate that their method is clearly superior to the normal "Public Meeting". It IS NOT incumbent on the community to prove the new method is inferior. As advertised, structured and operated, the meeting could not have provided for the needs of the community for public participation in the process. [This unfavorable view was explicitly expressed by each individual community member of the El Toro RAB on 28 May, in 100% opposition to the non-community organizers of the meeting.] While democracy is disorganized, chaotic, difficult, and often inefficient, history teaches that it is what the public want. The deeply respected concept of having "your day in court" means Mary Jones stands up in front of her neighbors in a public forum and tells her Council or her Board or her Judge exactly what she thinks about the issue. While being in compliance with regulation, this public comment period did not provide an acceptable public forum, and hence it does not meet an acceptable standard for public participation in the ROD process. As a superior process has not occurred, return to the "presumptive" method for holding public meetings that is the CERCLA norm -- immediately.	Please see the response to Comment 3e.

(table continues)

Responses to Public (continued)

Number	Comments	Response
	Attachment 1 — Points regarding the Proposed Plan for Site 24 Vadose Zone Soil Remediation: A. The 27 ppb TCE and 69 ppb PCE cleanup targets: What is the basis for these goals? How are these targets justified? Will "rebound" mean targets exceeded?	The 27 ppb TCE and 69 ppb PCE remediation targets for Site 24 soil are based on the MCLs for TCE and PCE in groundwater, respectively. These targets were developed by using Henry's law to convert soil gas concentrations to equilibrium VOC concentrations in water infiltrating through the vadose zone and mixing into groundwater. Rebound is expected to occur and is considered in the operation of the SVE system. To account for rebound conditions, the SVE system will be turned off and the VOC concentrations will be allowed to reach equilibrium. If the average equilibrium concentration exceeds the threshold concentrations, this process will be repeated until average equilibrium soil gas concentrations are at or below their threshold values. This should assure that the targets are not exceeded.
	B. Norton AFB soil remediation was similar to this plan, what has been the degree of success at Norton?	The remediation at Norton Air Force Base has been very successful. Approximately 6,000 pounds of TCE have been removed. The SVE system at Norton is currently being concentrated on isolated areas that exceed the soil remediation level.
	C. Are the El Toro ROD's still on their original schedules?	No. The schedules for several of the MCAS El Toro RODs have been modified to allow more time for pilot testing, resolution of issues associated with institutional controls, ongoing negotiations with the Orange County Water District, and for public comment.
	D. Note: All unresolved issues regarding Site 24, which anyone commented upon earlier, must be resubmitted for this first "official" Public Comment Period to obtain official response.	No response required.

(table continues)

Comments from Public Meeting		
Comments by:	***Danny Querantes, Resident Irvine, California, provided to the court reporter at the May 15, 1997 Public Meeting***	
Number	**Comments**	**Response**
12	The groundwater contamination should be actively pursued immediately. A carcinogen constantly migrating across property lines eventually contaminating a city's drinking water supply is much more threatening to the people. The proposed plan is adequate, at best, and is moving at a snail's pace.	The DON agrees that groundwater contamination needs to be addressed immediately, but the DON needs to make sure that the method of addressing contamination is technically sound. At this time, pilot tests are being conducted to help evaluate several remedial methods. These tests are being conducted in the area of the highest TCE contamination. Once the tests are complete and the ROD for groundwater has been approved, remediation can begin. Meanwhile, the Proposed Plan and ROD for soil at Site 24 are being issued separately from groundwater so that soil remediation can start immediately and minimize or prevent further contamination of groundwater.
Comments by:	***Gail Reavis, Resident Mission Viejo, California, provided to the court reporter at the May 15, 1997 Public Meeting***	
13a	I guess, first of all, I'd like to say--I don't like the format of the open house as opposed to having a meeting where people can hear other people's thoughts and concerns.	Please see the response to Comment 3e.
13b	Mostly, I understand that this cleanup effort is to the level of anticipating that the Air Base will be replaced with an airport, so that the level of cleanup does not have to be as tight. Standards are lower for the cleanup when they put an airport in to a replace an Air Base. I know the Board of Supervisors had voted on having an airport. But I don't think that the issue is resolved satisfactorily, that cleaning it up to this level is not satisfactory.	This statement is not correct. Remediation targets for soil are based on a residential scenario and support using the site for either residential or commercial purposes.

(table continues)

Comments by:	*John Guptill, Polar Marine Incorporated, provided to the court reporter at the May 15, 1997 Public Meeting*	
Number	**Comments**	**Response**
14	With me today is Mr. Donald Rez. Donald Rez is the President of Polar Marine and the inventor of the process that we were talking about to some of these people. And we learned a great deal from the displays, and so forth, and from talking to the gentlemen from the Navy and Marine Corps. And we think the displays were very good. And it's a good show.	No response required.
Comments by:	*Layton Rawlins, Dana Point Sentinel, provided to the court reporter at the May 15, 1997 Public Meeting*	
15	My kept inherent reason we attended this meeting, after reading about it in "The Orange County Register," was that this was going to be, in our opinion, the big story, much bigger than all the attention that is being paid to whether or not there (is to) be an airport at the former El Toro Marine Station. I've been advised by a Retired Marine Colonel that once the Navy Secretary turns in his key to El Toro, that any cleanup that hasn't been done by that time is probably not going to be done. And so, our concern is that we rattle enough sabers between now and the time that the Base is actually closed and that key is transferred over to Orange County, whomever else will take control of that 4738 acres; that we do everything possible to get as much cleanup done as possible if -- hopefully, one hundred percent of the cleanup be attended before the Navy resigns the Base.	The DON is required by law to remediate MCAS El Toro. The responsibility for remediation does not end until remediation is complete. In the case of groundwater, this could be many years after the Station has been turned over for reuse. It is in the Marine Corps' best interest to complete as much of the remediation as possible before the land is turned over because it is easier to obtain access and perform remediation activities while the land is still under the Marine Corps' control. Unfortunately, it is not technologically possible to complete all remediation activities before the Marine Corps closes and transfers the Station.

(table continues)

Comments by: *Elise Steele, Project 99 and TRP, provided to the court reporter at the May 15, 1997 Public Meeting*		
Number	**Comments**	**Response**
16	I would like to suggest, as a public citizen, that we have another Public Meeting, as we have here today, before May 30th, if possible. I do not think enough information was put out in the newspapers. There should have been more people here, certainly from Project 99 and TRP, who are very strong in fighting the El Toro Airport as an international Base reuse. I would suggest that people call me. Because I did find 1st Lt. Matt Morgan, USMC, was most cordial, most helpful. And he would really appreciate having more public opinion, and people helping and learning what this cleanup remedy is all about. There has not been enough time for people to be advised of these meetings. And he suggested there might be more meetings on different site cleanups in the next few years. But I think we should have more meetings on the Site 24, which is the one they are attacking now.	The issues of the remediation of Site 24 and the reuse of the land are separate. The purpose of the Proposed Plan and ROD for Site 24 is to obtain concurrence for operation of an SVE system to reduce concentrations of VOCs in soil. Adoption of the Proposed Plan and ROD will allow the DON to start soil remediation, but does not commit the DON or the public to a particular site reuse. In fact, remediation targets for soil, which are presented in the Proposed Plan and ROD, are based on a residential scenario and support using the site for either residential or commercial purposes. A public notice is used to announce public meetings held for MCAS El Toro. This notice is placed in the *Los Angeles Times* (Orange County Edition) and the *Orange County Register*. Such a notice is required by CERCLA Sections 117(a) and (d) and the NCP at 40 CFR Section 300.430(f)(3). The Site 24 public meeting was also announced in the Proposed Plan that was sent to approximately 1,800 households, public officials and agencies, and businesses. Similar announcements will be used for all future public meetings for the Station.
Comments by: *Nancy Hazlett, Resident, Lake Forest, California, provided to the court reporter at the May 15, 1997 Public Meeting*		
17	And I speak from ignorance, to some degree. I found out a lot today. My only concern would be that this cleanup would be thorough and the Marines, or whoever is in charge, would be committed to completing the cleanup. I've been assured that is so. I just trust it is. We're very anti-airport. And so, there's a concern there, you know, whether the airport will actually go in or not. And I understand that this is sort of proposed with the assumption that the airport will go in. And we certainly don't want the airport to go in, but we do want the cleanup.	Please see the response to Question 16.

(table continues)

Comments by:	*Gerhard "Gary" Knapp, President, GFK Consulting, Ltd., provided to the court reporter at the May 15, 1997 Public Meeting*	
Number	**Comments**	**Response**
18	My comment, basically, is that the technology that's being selected here of activated carbon absorption for these chlorinated solvents is the best and environmentally most effective way of doing the job. That's my personal opinion. And, basically, it is being done properly. It is being removed from the ground. It is being absorbed, the carbon. The carbon can be treated again in an environmentally-accepted manner. So it's the best way to do it.	No response required.
Comments by:	*Harry Chenarides, Resident Aliso Viejo, provided to the court reporter at the May 15, 1997 Public Meeting*	
19	Why am I here? I'm here because the meetings that are conducted at this particular site regarding the safety and cleanliness of the El Toro Air Base affect me, because I am a resident of Aliso Viejo. And in that regard, if another airport site goes into where the Marine Corps Base is in 1999, then I will not only have air pollution, I'll have traffic infrastructure problems coming out the gazoo [sic]. And we'll have all kinds of municipalities -- like water, electricity, telephone lines -- multiplying by the thousands. The airport itself, if it becomes an airport, will increase their flight pattern and timing to one every thirty seconds, as opposed to the military, which has it right now. And they conduct their flights from about 6:00 in the morning till about 7:00 or 8:00 at night. And then, they stop. And that doesn't happen every day of the week, which is what would happen if an international airport went in that particular site. Now, I'm concerned with the board meetings here to the degree that they have spoken about the safety and cleanliness of the site being brought to a residential level, and not stopped at a commercial level.	Please see the response to Comment 16.

(table continues)

Responses to Public (continued)

Number	Comments	Response
	For example, Lt. Matt Morgan has spoken to me, saying they were obligated -- "they," the Marine Corps -- were obligated to bring that up to a residential state of cleanliness regardless, because that's their orders, to bring it up to a residential level. I'm satisfied with that, because I am for a nonaviation use of the El Toro Marine Corps Base. Much to my dismay, the Orange County Board of Supervisors feel that airport site is much more profitable than a nonaviation use of the site. There have been several promotional ideas submitted to the Orange County Board of Supervisors, who speedily reject them without even looking at them. And I know that, because I attend the Orange County Board of Supervisors. And people like Silva, Steiner and Smith have absolutely no concern at all about any proposal that does not talk about an aviation site in that particular area. They are dead set against anything that's nonaviation. In that regard, I'm concerned about what goes on over here. So it's sort of, like I mentioned earlier, a left-handed way of knowing what's going on at this board and how it's being prepared for, whether it will be prepared for, commercial or residential use.	
Comments by:	***Marcia Rudolph, Resident Lake Forest, California, provided to the court reporter at the May 15, 1997 Public Meeting***	
20	Put it this way: My perception is that someone unfamiliar with the process may very well find themselves snowed. I have been involved with the process since the RAB started and am familiar with it. I think it's a good presentation. I think the people involved are doing the best to try and bring this technical information down to the level of the average person who is coming in, you know, wanting to know, you know, are my kids going to turn blue with the pollution in the water. And to that degree, I think this has been helpful.	No response required.

(table continues)

Responses to Public (continued)

Comments by:	*Scott Broten, Resident Aliso Viejo, California, provided to the court reporter at the May 15, 1997 Public Meeting*	
Number	**Comments**	**Response**
21	It seems very appropriate, the selection and the technology. And it seems like -- based on the Remedial Investigation, that they've done a good job of investigating it and presenting it here tonight.	No response required.
Comments by:	*Amy Spurgeon, Resident Orange, California, provided to the court reporter at the May 15, 1997 Public Meeting*	
22	I think it's good that the approach to remove the TCE from the ground through soil vaporization approach -- is that what it is? -- SVE, I think that's positive. Because they've seen it works before; and it removes a great amount of contamination; and it's going to see that there is a way to clean it up. And all these people are working hard at it.	No response required.
Several additional comments were made anonymously on a Meeting Evaluation form used to solicit feedback on the Public Meeting. These comments reiterated the concerns raised in the comments summarized above and are therefore addressed by the comment responses.		

Acronyms/Abbreviations

ARAR – applicable or relevant and appropriate requirement
BCP – BRAC Cleanup Plan
BRAC – Base Realignment and Closure
Cal-EPA – California Environmental Protection Agency
CEQA – California Environmental Quality Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR – *Code of Federal Regulations*
CLEAN – Comprehensive Long-Term Environmental Action Navy
DCA – dichloroethane
DCE – dichloroethene
DON – United States Department of the Navy
FFA – Federal Facilities Agreement
FS – Feasibility Study
IRP – Installation Restoration Program
LRA – Local Redevelopment Authority
MCAS – Marine Corps Air Station
MCL – maximum contaminant level
MEK – methyl ethyl keytone
µg/L – micrograms per liter
mL – milliliter
NCP – National Oil and Hazardous Substances Pollution Contingency Plan
OU – Operable Unit
PCE – tetrachloroethene (perchloroethene)
ppb – parts per billion
RAB – Restoration Advisory Board
RI – Remedial Investigation
ROD – Record of Decision
RWQCB – Regional Water Quality Control Board
SCAQMD – South Coast Air Quality Management District
SVE – soil vapor extraction
TCE – trichloroethene
TPH – total petroleum hydrocarbons
U.S. EPA – United States Environmental Protection Agency
VOA volatile organic analyte
VOC – volatile organic compound

SUMMARY OF RESPONSES TO BCT COMMENTS ON REMEDIAL INVESTIGATION AND FEASIBILITY STUDY REPORTS FOR OU-2A

Summary of Responses to Base Closure Team (BCT) Member Charles R. Bennett, Ph.D. Comments
Marine Corps Air Station – Tustin, California
Remedial Investigation/Feasibility Study for OU-2A

Comment Origin: ***Comments on the Draft Phase II FS Report, provided by letter from Charles R. Bennett, Ph.D., dated March 19, 1997 and resubmitted during the public comment period***

Number	Comments	Response
1a	***Executive Summary*** A. Page ES-5, P 1, L4: The "presumptive remedies" (from the U.S. EPA) are presented as prescriptive remedies for VOC-contaminated sites. Consequently, in order to bypass the identifying and screening of remedial technologies for Site 24, the VOCs should then be considered in total. Consequently, the bifurcation of remedial approaches for OU 1 and OU 2A would have to be rescinded, and a remedy that is comprehensive for both OU 1 and OU 2 must be presented. Does this feasibility study, then, only address some of the VOCs of concern?	Remedial alternatives for Site 24 were developed in accordance with the United States Environmental Protection Agency (U.S. EPA) guidance document "Presumptive Remedies: Site Characterization and Technology Selection for Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Sites With Volatile Organic Compounds in Soils." The Draft Final Feasibility Study (FS) for the Site 24 vadose zone addresses all volatile organic compounds (VOCs) in the vadose zone at Site 24 that are a potential threat to groundwater (i.e., that have the potential to contaminate groundwater above their respective maximum contaminant levels [MCLs]). Additional VOCs may exist at Operable Unit (OU)-1 or OU-2A; however, these VOCs are not considered VOCs of concern for the vadose zone Record of Decision (ROD).
1b	B. Page 1-42, P 2: The commentary regarding 1,2 DCA is flawed, this flaw has been acknowledged by staff personnel as early as February of 1996. Clarification and adequate explanation of these statements has NOT been provided to the RAB since that time. No known written substantiation for these flaws has been provided to the RAB. The persistence of the use of these data, which may be <u>underestimating</u> the potential toxicity of the groundwater, means that the risk assessment may be <u>understating</u> the true risk to human health and the environment. Will this statement ever be corrected?	The source of 1,2-dichloroethane (1,2-DCA) reported in routine and field quality control (source and rinsate blanks) collected during the Phase II Remedial Investigation (RI) at Marine Corps Air Station El Toro has been thoroughly investigated. 1,2-DCA was identified as a trace contaminant in hydrochloric acid that was used as a sample preservative for VOC analyses. In general, 0.5 milliliters (mL) of hydrochloric acid are added to the 40 mL volatile organic analysis (VOA) vials used to collect the water samples. The hydrochloric acid preservative is used to prevent biological breakdown of the VOCs in the water sample.

(table continues)

Responses to BCT Member (continued)

Number	Comments	Response
		In October 1995, the presence of 1,2-DCA in water samples was investigated. The initial investigation identified the vendor of VOA vials (Eagle Picher) and the specific VOA vial lot number (B5136020) of those samples affected. These VOAs were part of the Comprehensive Long-Term Environmental Action Navy (CLEAN) I field supply surplus, which were subsequently used during the Phase II RI. The reported 1,2-DCA concentrations in the water samples ranged from 0.9 to 2.6 micrograms per liter (µg/L), which is less than the U.S. EPA MCL for drinking water. The associated field quality control samples had reported 1,2-DCA concentrations ranging from 1.1 to 2.2 µg/L. These samples were collected between August 23, 1995 and September 22, 1995. After September 22, the use of VOA vial lot number B5136020 was discontinued. Mr. Mark Thompson, the Quality Assurance/Quality Control Manager of Eagle Picher, reported that the VOA vial lot of concern was not pre-preserved upon shipment from Eagle-Picher. The implication is that the hydrochloric acid that contained trace levels of 1,2-DCA was added after shipment from Eagle Picher. Eagle Picher provided documentation of this problem in a letter dated May 21, 1997. In addition, while the CLEAN II contract laboratory was not responsible for providing the contaminated VOA vials, the CLEAN II laboratory also had experienced similar problems with the presence of 1,2-DCA in hydrochloric acid documented in a letter dated October 13, 1995. The May 21, 1997, and October 13, 1995, letters document the fairly common problem of 1,2-DCA contamination in hydrochloric acid. Our investigation has determined that 1,2-DCA was reported in samples collected in vials from VOA vial lot number B5136020. A review of the data shows that both groundwater samples and quality control samples collected in these VOA vials had reported concentrations of 1,2-DCA. The source of the 1,2-DCA was the hydrochloric acid used as a preservative in the VOA vials. After use of this lot of VOA vials was discontinued, 39 groundwater samples were collected and none had reportable concentrations of 1,2-DCA. Notwithstanding the explanation of 1,2-DCA contaminated hydrochloric acid, the reported concentrations of 1,2-DCA are very low (less than the MCL) and would not significantly change the estimated risk from exposure to groundwater.

(table continues)

Responses to BCT Member (continued)

Comment Origin: Comments on the Draft Phase II FS Report, provided by letter from Charles R. Bennett, Ph.D., dated October 7, 1996		
Number	**Comments**	**Response**
2a	General Comment -- Serious approaches to cost-effective treatments of this shallow aquifer water should be made, instead of the approach as given. A. Page v -- regarding the groundwater options, only "No Action" or "Extraction" are offered for thorough analysis. As no "*in Situ*" treatment option was permitted to survive, no critical cost comparisons could be made among the three directions. Elimination of the *in situ* options requires a more comprehensive evaluation prior to their elimination.	This comment refers to groundwater, not soil at Site 24. The Proposed Plan for Site 24 only addresses remediation of vadose zone soil. Groundwater will be addressed in a later plan. For soil, soil vapor extraction (SVE) is essentially an *in situ* option because only the vapors (and not the contaminated soil) are being drawn to the surface for treatment.
2b	B. Page vii -- The extraction volumes are quite significant for the shallow groundwater aquifer option, the cost of extraction is similarly quite significant -- up to $15,000,000. Are there no less costly alternatives to "No Action" than "Extraction" that could be more effective in a shorter period of time?	This comment was made on the draft FS report for Site 24. Subsequent to issuing this report, a decision was made to issue separate FS reports and proposed plans for groundwater and vadose zone soils. The proposed plan currently being addressed is for vadose zone soils only. This comment refers to groundwater, not soils and is most appropriately addressed at a later time when the draft final FS report and proposed plan for groundwater are issued.
2c	C. Page 1-13 -- The IAFS addendum is reported as "in preparation". As the selected alternative may come from these added alternatives, the background and information contained in this addendum need to be shared with the subcommittees, the RAB, and the community.	The Interim-Action Feasibility Study (IAFS) addendum referenced in this comment addresses groundwater, not vadose zone soils. The comment is most appropriately addressed at a later time when the proposed plan for groundwater is issued.
2d	D. Page 1-18 -- The site stratigraphy charts have many question marks, as do the estimated boundaries for the TCE. Uncertainty ranges should be narrowed. Should the analyses to determine stratigraphy be more definitive and only focus on the target analytes of concern (e.g., TCE analysis only) at a much lower cost?	This question marks that are referred to in this comment concern groundwater, not soils at Site 24. The boundaries of the trichloroethene (TCE) in groundwater are being refined as the result of ongoing groundwater remediation pilot testing. If significant changes in the boundaries are discovered, the boundaries will be modified in the draft final FS for groundwater at Site 24.

(table continues)

Number	Comments	Response
2e	E. Page 1-43 -- Regarding responses for the 1,2-dichloroethane detections, the writer's explanation is hopeless and hapless. **If this statement is true, it calls into question every analysis performed in these studies.** If the data is questionable, then none of the performers of the work should be paid for the work, as the entire report must be discounted. A comprehensive "Memorandum of Understanding" should be prepared to detail this result, detail the occurrences of a contamination, determine the extent of this gross failure of field performance, and culminate with a comprehensive determination of the risks to the quality of ALL the analyses. Until that time, this report should be considered unfinished and project deadlines not met. Retroactively, this should apply most directly to the Remedial Investigation report. This is a very serious, **potentially fatal flaw in this work.**	The supposition that 1,2-DCA was introduced to the water sample from contaminated hydrochloric acid has been substantiated as a fairly common laboratory problem. The field investigators were immediately aware of reported detections of 1,2-DCA in both the routine and quality control samples. This is what initiated the investigation to determine the possible source of 1,2-DCA. As stated in Response 1b, after the sample vial lot in question was no longer used, 1,2-DCA was no longer reported in Site 24 groundwater samples. It appears that the 1,2-DCA was introduced into the groundwater samples via the contaminated hydrochloric acid used as a preservative. We disagree that the data are questionable. The RI report which contains these data has been accepted by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) and the U.S. EPA who consider the data sound.
2f	F. Page 1-43 -- The likelihood for the possible presence of 1,2 DCA and its impact on fate and transport is more correctly directed at all the flaws in the Remedial Investigation Report, primarily on page 5-3. [Frankly, I am surprised that none of the other reviewing agents appear to have raised these obvious problems in the earlier report.] There is no literature reference that supports the conversions theorized to form 1,2 DCA. This is not a conversion that is chemically logical for *in situ* conversions in soil and groundwater. This point should be addressed and eliminated in a Technical Memorandum. Why has this error been permitted to be propagated unchallenged?	It appears that this comment applies to the Draft RI for Site 24, not the Draft Final RI. Page 5-3 in the Draft Final RI is a figure showing potential chemical and biological transformation pathways of the tetrachloroethene (PCE)/trichloroethene (TCE) group, but 1,2-DCA is not represented on the figure as a conversion product.
2g	G. Page 2-12 -- The low MCLs and ARARs, as presented in the table, are of concern if there is a potential presence of 1,1,2-TCA or 1,2-DCE. How certain are we that 1,1,2-TCA or 1,2-DCE are not present?	1,1,2-trichloroethane (TCA) and 1,2-dichloroethene (DCE) are present in soil gas at Site 24. 1,1,2-TCA was detected during Phase II in 2 of 290 soil gas samples at a maximum vapor concentration of 2 µg/L. 1,2-DCE was detected during Phase II in 14 of 292 soil gas samples at a maximum concentration of 10 µg/L. These concentrations are not high enough to contaminate groundwater above the MCLs. Therefore 1,1,2-TCA and 1,2-DCE are not considered VOCs of concern for the vadose zone at Site 24.

(table continues)

Responses to BCT Member (continued)

Number	Comments	Response
2h	H. Page 2-19, 20 -- At this point the *in situ* treatments are highlighted. While some of these are described quite well in Appendix B, very few of the agents specifically cited on these pages are ever mentioned again; that is, they are never actually evaluated. Potential *in situ* methods should be critiqued and assessed more thoroughly.	This comment refers to groundwater, not soil. SVE is essentially an *in situ* treatment for soil because only vapors, not soil, are being drawn to the surface for treatment. *In situ* treatment of groundwater will be addressed in the draft final FS for Site 24 groundwater.
2i	I. Table 2-8/Page 2-45, 2-47, 2-49 -- None of the *in situ* options were deemed "Applicable", only "Potentially Applicable". While at first glance this seems fair, the consequences are severe. All subsequent detailed analyses of these *in situ* options are terminated from further consideration at this point. This is certainly valuable if the ultimate objective is to force a choice to one that is only between a very low cost "No Action" or "Natural Attenuation [sic]" choice and a much more expensive "Extraction" choice.	This comment refers to groundwater, not soil. SVE is essentially an *in situ* treatment for soil because only vapors, not soil, are being drawn to the surface for treatment. *In situ* treatment of groundwater will be addressed in the draft final FS for Site 24 groundwater.
2j	J. Table 2-8/Page 2-49 -- "iron filings"... "Difficult to implement due to the depth of groundwater at Site 24." (N.B. ~100 ft to groundwater, page BIII - 24). With these nine words, this *in situ* option is sunk. Could the difficulty to implement this option really cost more than $15,000,000 to overcome? A more rational evaluation of this technology should be made before it is rejected.	This comment addresses groundwater, not vadose zone soils. The comment is most appropriately addressed at a later time when the proposed plan for groundwater is issued.
2k	K. Page 3-2 -- By this point, *in situ* methods are gone from feasibility consideration and further comment beyond this point in the Draft FS is **NOT** significant. *In situ* methods are typically 1/10 the cost [of] any of the comparable *ex situ* treatments. Why bother to waste any time arguing about the negligible differences in the myriad variants on "Extraction", when you have already succeeded in terminating consideration of any serious alternatives with only minimal discussion.	This comment addresses groundwater, not vadose zone soils. For soils, SVE is essentially an *in situ* treatment, because only the vapors and not the soils themselves are extracted for treatment. *In situ* treatment of groundwater will be addressed in the draft final FS for Site 24 groundwater.

(table continues)

Comment Origin: Comments on the Draft Phase II FS Report, provided by letter from Charles R. Bennett, Ph.D., dated August 15, 1996		
Number	**Comments**	**Response**
3a	A. Page v - Regarding the groundwater options, only "No Action" or "Extraction" are offered for thorough analysis. As no "*in situ*" treatment option was permitted to survive, no critical cost comparisons could be made among the three directions. *Was "in situ"* eliminated prematurely?	This comment addresses groundwater, not vadose zone soils. For soils, SVE is essentially an *in situ* treatment, because only the vapors and not the soils themselves are extracted for treatment. *In situ* treatment of groundwater will be addressed in the draft final FS for Site 24 groundwater.
3b	B. Page vii -- The extraction volumes are quite significant for the shallow groundwater aquifer option, the cost of extraction is similarly quite significant -- up to $15,000,000. Is there no less costly alternative to "No Action" than "Extraction"?	This comment addresses groundwater, not vadose zone soils. The comment is most appropriately addressed at a later time when the proposed plan for groundwater is issued.
3c	C. Page 1-13 -- Has the draft OU-1 IAFS been widely distributed? To whom?	The OU-1 IAFS has been submitted to regulatory agencies for review and is available for public review in the Administrative Record for OU-1. In addition, a fact sheet summarizing the results of the OU-1 IAFS was issued to the public in December 1996.
3d	D. Page 1-13 -- The IAFS addendum is reported as "in preparation". As the selected alternative is probably to come from these added alternatives, has the information contained in this addendum been shared yet with the subcommittees, the RAB, and the community?	The IAFS addendum was issued in August 1996 and was shared with the Restoration Advisory Board (RAB) at that time.
3e	E. Page 1-18 -- The site stratigraphy charts have many question marks, as do the TCE estimated boundaries. Uncertainty ranges should be narrowed. Could the analyses to determine stratigraphy be more definitive (e.g., TCE analysis only -- "a rifle shot" approach) rather than so broad (i.e., "the shotgun" approach of analyzing for everything such as TDS, nitrate, pesticides, etc.)?	Please see response to 2d.
3f	F. Page 1-43 -- Regarding 1,2-dichloroethane, the writer's explanation is not supported by the data (see attachment of memo to J. Joyce dated 28 February 1996). Why has there been no response to the community regarding this point? Why was this error permitted to be reiterated unchallenged?	Please see responses to 1b, 2e, and 2f.

(table continues)

Responses to BCT Member (continued)

Number	Comments	Response
3g	G. Page 2-12 -- The low MCLs and ARARs, as presented in the table, are of concern if there is a potential presence of 1,1,2-TCA or 1,2-DCE. Are we certain there is no 1,1,2-TCA or 1,2-DCE present?	See response to 2g.
3h	H. Page 2-19, 20 -- At this point the *in situ* treatments are highlighted. While some of these are described quite well in Appendix B, few of the agents mentioned on these pages are ever mentioned again (i.e., evaluated). Were the potential *in situ* methods evaluated thoroughly?	This comment addresses *in situ* treatment of groundwater, not soil, and is most appropriately addressed in the draft final FS and proposed plan for groundwater at Site 24.
3i	I. Table 2-8/Page 2-45, 2-47, 2-49 -- None of the *in situ* options were deemed "Applicable", only "Potentially Applicable" (N.B. "the devil is in the detail"); consequently, all detailed analyses (e.g., the costs) of these options are terminated. This is effective if your aim is either "No Action" or "Extraction". Has the community commented on the results of this screening method?	This comment addresses *in situ* treatment of groundwater, not soil, and is most appropriately addressed in the draft final FS and proposed plan for groundwater at Site 24.
3j	J. Table 2-8/Page 2-49 -- "iron filings"... "Difficult to implement due to the depth of groundwater at Site 24." (N.B. ~100 ft to groundwater, page BIII - 24). With this one comment, this option is sunk. Could the difficulty to implement this option cost > $15,000,000 to overcome?	This comment addresses treatment of groundwater, not soil, and is most appropriately addressed in the draft final FS and proposed plan for groundwater at Site 24.
3k	K. Page 3-2 -- By this point, *in situ* methods are gone from feasibility consideration. *In situ* methods are typically 1/10 the cost of comparable *ex situ* treatments. Why has this approach been eliminated without careful, detailed review?	This comment addresses *in situ* treatment of groundwater, not soil, and is most appropriately addressed in the draft final FS and proposed plan for groundwater at Site 24.

(table continues)

Comment Origin: Comments on the Site 24 RI Report, provided by letter from Charles R. Bennett, Ph.D., dated January 28, 1996		
4	I perceive a problem in the RI report dated 20 February 1996. Please note the 1,1,2-TCA and/or 1,2-DCA citations on the following pages in the report: 4-12 4-46 4-62 4-67 4-77 5-3 5-4 One or both of these compounds has been found in multiple locations in the soil gas analyses, the soil analyses, and the groundwater analyses. Only in the groundwater has its origin been questioned, and concluded to be a sample contamination. This, of course, can (and should) be confirmed in the travel blanks in the full report appendices to determine if their conclusion is substantiated. Yet, this does not close the case. The chart on page 5-3 is not complete, it has no origin for 1,1,2-TCA. Moreover, I would suggest a reference should be provided to substantiate the hypothesis of the conversion of 1,2-DCE to 1,2-DCA. The text (5.1.2) provides no guidance. What is the consequence? Rather serious, as the presence of 1,1,2-TCA and/or 1,2-DCA requires another chlorinated hydrocarbon source [sic] in addition to PCE and 1,1,1-TCA to have been present. One candidate might be 1,1,2-TCA that has been there from the beginning, at low levels.	1,2-DCA was reported in 3 of the 292 Phase II soil gas samples at a maximum vapor concentration of 6 µg/L. 1,1,2-TCA was reported in 2 of the 292 Phase II soil gas samples at a maximum vapor concentration of 2 µg/L and in 3 of 205 Phase II soil samples at a maximum vapor concentration of 5.9 µg/kg. The primary VOC source is TCE. Within the footprint of the TCE soil gas plume, several other VOCs are present. The figure on Page 5-3 of the Draft Phase II RI is titled "Potential Chemical and Biological Transformation Pathways of the PCE/TCE Group." Please note that the figure was updated in the Draft Final Phase II RI. In addition to potential chemical or biological transformation, the Draft Final Phase II RI also states that other VOCs may have been released with the TCE as impurities found in industrial-grade solvents. However, as explained in the response to question 1a, these other VOCs would only be considered VOCs of concern for the vadose zone ROD if they have the potential to contaminate groundwater above the MCLs. The concentration levels of 1,1,2-TCA and 1,2-DCA are not high enough to contaminate groundwater above the MCLs, and these chemicals are therefore not VOCs of concern for the vadose zone ROD.

(table continues)

Acronyms/Abbreviations:

ARARs	–	applicable or relevant and appropriate requirements
BCT	–	BRAC Cleanup Team
BRAC	–	Base Realignment and Closure
CERCLA	–	Comprehensive Environmental Response, Compensation, and Liability Act
CLEAN	–	Comprehensive Long-Term Environmental Action Navy
DCA	–	dichloroethane
DCE	–	dichloroethene
DTSC	–	Department of Toxic Substances Control
FS	–	Feasibility Study
IAFS	–	Interim Action Feasibility Study
MCLs	–	maximum contaminant levels
µg/L	–	micrograms per liter
mL	–	milliliter
OU	–	Operable Unit
PCE	–	tetrachloroethene
RAB	–	Restoration Advisory Board
RI	–	Remedial Investigation
ROD	–	Record of Decision
SVE	–	Soil vapor extraction
TCA	–	trichloroethane
TCE	–	trichloroethene
TDS	–	total dissolved solids
U.S. EPA	–	United States Environmental Protection Agency
VOA	–	volatile organic analysis
VOCs	–	volatile organic compounds

ATTACHMENT A

ADMINISTRATIVE RECORD FOR SITE 24 VADOSE ZONE

TECHNICAL DOCUMENTS

TECHNICAL DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL TORO

UIC No. / DOCUMENT.TYPE... / CONTR/GUID..NO.. / APPROX.#.OF.PAGES	DOC.NO. / PRC.DATE / DOC.DATE / CTO.NO.. / EPA.CAT#	FROM..... / FROM.SIGNATURE..... / TO..... / TO.SIGNATURE.....	.....SUBJECT.....	CLASSIFICATION	KEY WORDS	...Site...	....Location.....
M60050 RPT 000000000000000 0200	000020 10/29/93 01/01/01 00000 03.4	OCDW R.L. HERNDON	PHASE II REPORT - ADDITIONAL INVESTIGATION AND REMEDIATION OF TRICHLOROETHYLENE CONTAMINATION IN THE VICINITY OF THE MCAS EL TORO	ADMIN RECORD	GW TCE TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT 000000000000000 0030	000768 06/26/95 01/01/01 00000 01.1	NAVY	RESPONSE TO COMMENTS RCRA FACILITY ASSESSMENT REPORT FROM EPA & DTSC	ADMIN RECORD INFO REPOSITORY	COMMENTS RFA TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000	000187 11/01/93 09/11/85 00000 01.1	J. B. LEAP MCAS EL TORO COMMANDING OFFICER NAV PORT HUENEME	INITIAL ASSESSMENT STUDY OF MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	PA TECH/GUID DOC. NFA	1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,18,19, 20,21,22 OU1,OU2, OU2A,OU2B, OU2C, OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0002	001153 12/22/95 11/14/85 00000 01.6	OCWD FOUNTAIN VALLEY N.L. RICHARDSON CRWQCB RIVERSIDE J.R. BENNETT	TRICHLOROETHYLENE TETRACHLOROETHYLENE IN THE GROUNDWATER BASIN IN THE IRVINE AREA	ADMIN RECORD	TCE GW TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 GUID 000000000000000 0050	000[illegible] 10/06/95 01/01/86 00000 11.1	EPA WASHINGTON DC	DRAFT GUIDELINES FOR GROUNDWATER CLASSIFICATION UNDER THE EPA GROUNDWATER PROTECTION STRAGETY	ADMIN RECORD	GW EE/CA(*) GUID TECH/GUID DOC.	4,7,11,13, 14,19,20 OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC NEESA 13-074 0200	000684 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 TECH/GUID DOC. NFA	4,7,11,13, 14,19,20 OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0002	000784 07/07/95 08/05/86 00000 01.2	DHS LOS ANGELES S. SIMPSON MCAS EL TORO W.L. HOEY	COMMENTS ON THE INSTALLATION ASSESSMENT STUDY OF MCAS EL TORO	ADMIN RECORD	COMMENTS TECH/GUID DOC. NFA	OU1,18	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0005	001152 12/22/95 10/29/86 00000 01.6	EPA SAN FRANCISCO L. MARTIN MCAS EL TORO	COMMENTS ON THE REVIEW OF INSTALLATION ASSESSMENT STUDY OF MCAS EL TO	ADMIN RECORD	COMMENTS IAS TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0018	000793 07/07/95 11/04/86 00000 01.2	EPA SAN FRANCISCO J. JOHNSON MCAS EL TORO	REVIEW COMMENTS ON THE INITIAL ASSESSMENT STUDY	ADMIN RECORD	COMMENTS IAS TECH/GUID DOC. NFA	4,6,7,8,10 12,13,15 OU3	SOUTHWEST DIVISION MCAS EL TORO

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UIC No. DOC.NO. DOCUMENT.TYPE... CONTR/GUID..NO.. APPROX.#.OF.PAGES	PRC.DATE DOC.DATE CTO.NO.. EPA.CAT#	FROM..... FROM.SIGNATURE..... TO..... TO.SIGNATURE.....	.....SUBJECT.....	CLASSIFICATION	KEY WORDS	...Site...	....Location.....
M60050 000225 DATA 000000000000000 0018	06/30/94 05/29/87 00000 04.4	MCAS EL TORO J.R. APPLEGATE MCM WASHINGTON D.C.	VOLATILE ORGANIC COMPOUNDS (VOC) COMPLIANCE.	ADMIN RECORD	VOA TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 001135 LTR 000000000000000 0001	12/22/95 03/30/88 00000 10.3	MCAS EL TORO S.R. HOLM OICC SOUTHWEST	MEMBERSHIP FOR THE MCAS EL TORO TRC IS BEING SOUGHT	ADMIN RECORD	TRC TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001136 LTR 000000000000000 0002	12/22/95 04/08/88 00000 10.3	MCAS EL TORO D.V. SHUTER CITY OF IRVINE L. AGRAIN	MEMBERSHIP FOR THE MCAS EL TORO TRC IS BEING SOUGHT	ADMIN RECORD	TRC TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000783 LTR 000000000000000 0007	07/07/95 06/20/88 00000 01.2	EPA SAN FRANCISICO J. CLIFFORD MCAS EL TORO BG SHUTER	CORRESPONSECE REGARDING PLACEMENT OF MCAS EL TORO ON THE NPL	ADMIN RECORD	NPL TECH/GUID DOC. NFA	OU1,18	SOUTHWEST DIVISION MCAS EL TORO
M60050 001139 LTR 000000000000000 0002	12/22/95 07/03/88 00000 01.6	EPA SAN FRANISCO J. ANDERSON WESTERN DIVISION W.H. BOSSERT	DOCUMENTATION FOR FACILITIES PROPOSED FOR INCLUSION ON THE NATIONAL PRIORITIES LIST	ADMIN RECORD	NPL TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000788 PLAN N624785C5592 0250	07/07/95 08/01/88 00000 01.2	JMM J. GOODELL MCAS EL TORO	SITE INSPECTION PLAN OF ACTION IRP MCAS TUSTIN AND EL TORO	ADMIN RECORD	SI RE/CA(*) TECH/GUID DOC. NFA	1,2,3,5,6 7,9,10,11 13,14,16, 17,4,19,8 OU2A,OU2B, OU2C,OU3, OU2	SOUTHWEST DIVISION
M60050 000777 RPT 000000000000000 0175	07/07/95 03/29/89 00000 01.2	OCWD J. REILLY	PHASE I REPORT INVESTIGATION OF TRICHLOROETHYLENE CONTAMINATION IN THE VICINITY OF THE MCAS EL TORO	ADMIN RECORD	TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 000009 RPT N687189D9296 0200	10/29/93 01/01/90 00018 03.3	JACOBS ENGINEERING SOUTHWEST DIVISION	IMPLEMENTATION PLAN - WORK PLAN FOR A REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT THE MCAS, EL TORO	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	001 002 003 004 005 006 007 008 009 010 011 012 013 014 015	SOUTHWEST DIVISION MCAS EL TORO

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M60050	000009 continued							
							016	
							017	
							018	
							019	
M60050	000011	10/29/93		REVISED IMPLEMENTATION PLAN - WORK PLAN FOR A REMEDIAL	ADMIN RECORD	RI	001	SOUTHWEST DIVISION
RPT		02/01/90	JACOBS	INVESTIGATION/FEASIBILITY STUDY AT THE MCAS, EL TORO		FS	002	MCAS EL TORO
N6871189D9296		00018				TECH/GUID DOC.	003	
0200		03.3	SOUTHWESTDIV				004	
							005	
							006	
							007	
							008	
							009	
							010	
							011	
							012	
							013	
							014	
							015	
							016	
							017	
							018	
							019	
M60050	000015	10/29/93	JACOBS ENGINEERING	REVISED IMPLEMENTATION PLAN FOR REMEDIAL INVESTIGATION	ADMIN RECORD	RI		SOUTHWEST DIVISION
RPT		04/04/90		AND FEASIBILITY STUDY WORK PLAN FOR MCAS EL TORO		FS		MCAS EL TORO
N6871189D9296		00018	SOUTHWEST DIVISION	REVISED PER MODIFICATION #03 (16 MARCH 1990)		TECH/GUID DOC.		
0200		03.3				NFA		
M60050	000016	10/29/93	JACOBS ENGINEERING	DRAFT SUMMARY REPORT - COMPREHENSIVE WORK PLAN FOR	ADMIN RECORD	RI	001	SOUTHWEST DIVISION
RPT		04/09/90		REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT		FS	002	
N6871189D9296		00018	SOUTHWEST DIVISION	MCAS EL TORO		TECH/GUID DOC.	003	
0200		03.3				NFA	004	
							005	
							006	
							007	
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							009	
							010	
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							020	
							021	

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M60050 000016 continued						022	
M60050 000023 RPT N6871189D9296	10/29/93 09/10/90 00018 03.1	JACOBS SOUTHWEST DIVISION	DRAFT SITE SAMPLING AND ANALYSIS PLAN - CTO #0018 COMPREHENSIVE WORK PLAN FOR REMEDIAL INVESTIGATION/ FEASIBILITY STUDY AT MCAS EL TORO	ADMIN RECORD	RI SAP TCE VOC FS AAL OU-3 TECH/GUID DOC. NFA	001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021	SOUTHWEST DIVISION
M60050 000024 RPT N6871189D9296	10/29/93 09/10/90 00018 03.3	JACOBS SOUTHWEST DIVISION	DRAFT REMEDIAL INVESTIGATION FEASIBILITY STUDY WORK PLAN - CTO #0018 AT MCAS EL TORO	ADMIN RECORD	RI VOC PCB FS TECH/GUID DOC. NFA	001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022	SOUTHWEST DIVISION
M60050 000995 MISC 000000000000000 0100	10/06/95 10/01/90 00000 01.6	EPA SAN FRANCISCO MCB CAMP PENDLETON	FEDERAL FACILITY AGREEMENT UNDER CERCLA SECTION 120 MCB CAMP PENDLETON ALSO USED IN SUPPORT OF THE MCAS EL TORO EE/CA FOR SITES 4,7,11,13,14,19 & 20	ADMIN RECORD	FFA EE/CA(*) TECH/GUID DOC.	4,7,11,13, 14,19,20	SOUTHWEST DIVISION MCAS EL TORO

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M60050 000190 RPT 000000000000000	03/03/94 11/01/90 00000 07.1	SOUTHWEST DIVISION ENVIRONMENTAL SOUTHWEST DIVISION FILE	MCAS EL TORO INSTALLATION RESTORATION PROGRAM STATUS REPORT SITE HISTORY	ADMIN RECORD	SI TCE RI FS IRP TECH/GUID DOC. NFA	1 2 3 4 5 6 7 8 9 10 11 11 12 13 14 15 16 17 18 19 20 21 22 23 OU1 OU2 OU3 OU4	SOUTHWEST DIVISION MCAS EL TORO
M60050 000680 RPT N6871189D2001 0150	04/05/95 01/22/91 DO 21 04.2	DAMES & MOORE SOUTHWEST DIVISION	DRAFT FEASIBILITY STUDY MCAS EL TORO	ADMIN RECORD	FS TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 000672 PLAN N6871189D9296 0350	04/05/95 02/28/91 00018 03.3	JACOBS ENGINEERING E. ROGER SOUTHWEST DIVISION	DRAFT FINAL RI/FS WORK PLAN MCAS EL TORO	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU1,OU2 18,2,3,5, 10,1, OU 3 4,6,7,8,9, 11,12,13, 14,15,16, 19,20,21, 22	SOUTHWEST DIVISION MCAS EL TORO
M60050 000977 PLAN N6871189D9296 0950	08/30/95 02/28/91 00018 03.1	JACOBS ENGINEERING J. DULEGOWSKI SOUTHWEST DIVISION	DRAFT FINAL SAMPLING AND ANALYSIS PLAN	ADMIN RECORD	SAP TECH/GUID DOC. NFA	OU1,OU2, OU3 18,2,3,5, 10,17,1,4, 6,7,8,9,11 12,13,14, 15,16,19, 20,21,22	SOUTHWEST DIVISION MCAS EL TORO

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M60050 000030 RPT N6871189D9296	10/29/93 03/22/91 00018 01.1	JACOBS ENGINEERING SOUTHWEST DIVISION	DRAFT FINAL SITE MANAGEMENT PLAN MCAS EL TORO	ADMIN RECORD	SMP TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 000106 PLAN N6871189D9296 0075	11/01/93 03/22/91 00018 01.1	J. DOLEGOWSKI JACOBS H. PADRO SOUTHWESTDIV	DRAFT FINAL SITE MANAGEMENT PLAN MCAS EL TORO	ADMIN RECORD	SMP TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 000960 PLAN N6871189D9296 0200	08/18/95 12/14/91 00145 03.3	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION	FINAL WASTE MANAGEMENT PLAN IRP	ADMIN RECORD	WMP TECH/GUID DOC.	OU1 OU2 OU3 18,2,3,5, 10,17,1,4, 6,7,9,9,11 12,13,14, 15,16,19, 20,21,22	SOUTHWEST DIVISION MCAS EL TORO
M60050 000067 RPT N6871189D9296	10/29/93 03/10/92 00099 03.1	 JACOBS SOUTHWESTDIV	FINAL SAMPLING VISIT WORK PLAN MCAS EL TORO	ADMIN RECORD	SAP TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 000069 DATA 000000000000000	10/29/93 04/17/92 00000 03.2	DONALD A. KLEMM HADLEY INDUSTRY ANDY PISZKIN SOUTHWESTDIV	SAMPLE DATA PACKAGE OF CLP ANALYTICAL WORK AND ASSOCIATED QUALITY ASSURANCE/QUALITY CONTROL DATA SAMPLES COLLECTED MARCH 1992 MCAS EL TORO	ADMIN RECORD	CLP QA/QC DATA TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 000076 DATA 000000000000000	11/01/93 08/26/92 00000 02.2	MARK GREGO PACIFIC ANALYTIC HADLEY INDUSTRY	SAMPLES ANALYZED BY THE CLP VOLATILES METHOD	ADMIN RECORD	CLP DATA TECH/GUID DOC.		SOUTHWEST DIVISION
M60050 000110 CLTR 000000000000000	11/01/93 09/16/92 00000 02.2	J. BARNETT HADLEY INDUSTRY A. PISZKIN SOUTHWESTDIV	SAMPLING DATA PACKAGE OF CLP ANALYTICAL WORK AND ASSOCIATED QA/QC SAMPLES COLLECTED DURING MONTH OF JULY 1992.	ADMIN RECORD	CLP DATA QA/QC TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 001208 LTR 000000000000000 0021	01/30/96 12/28/92 00000 02.7	EPA SAN FRANCISCO J. HAMILL SOUTHWEST DIVISION A. PISZKIN	LETTER TRANSMITTING EVALUATION OF ANALYTICAL DATA FROM EPA AUDIT OF EL TORO RI/FS SAMPLING	ADMIN RECORD INFO REPOSITORY	DATA VOLATILES PCB PESTICIDES TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 000867 RPT N6871189D9296 0054	07/18/95 02/08/93 00145 08.1	ASTDR	HUMAN HEALTH RISK ASSESSMENT FOR MCAS EL TORO	ADMIN RECORD	HRA TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO

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M60050 000824 MEMO N6871189D9296 0018	07/07/95 02/15/93 00145 01.6	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION A. PISZKIN	DRAFT POSITION PAPER ON THE PRELIMINARY RISK ASSESSMEN T FOR OU 1, 2, 3 AND THE PROPOSED EL TORO BASELINE HUMAN HEALTH RISK ASSESSMENT FOR OU 1	ADMIN RECORD	RA TECH/GUID DOC. NPA	OU1,OU2, OU3	SOTUHWEST DIVISION MCAS EL TORO
M60050 000083 RPT N6871189D9296	11/01/93 05/07/93 00145 01.1	 JACOBS SOUTHWESTDIV	PHASE I REMEDIAL INVESTIGATION DRAFT TECHNICAL MEMO MCAS EL TORO VOLUME I	ADMIN RECORD	RI OU-1 OU-2 OU-3 EE/CA(*) TECH/GUID DOC. NPA	001 002 003 004 005 006 007 008 009 009 010 011 012 013 014 015 016 017 018 019 020 021 022	SOUTHWEST DIVISION MCAS EL TORO
M60050 000084 RPT N6871189D9296	11/01/93 05/07/93 00145 01.1	 JACOBS SOUTHWESTDIV	PHASE I REMEDIAL INVESTIGATION DRAFT TECHNICAL MEMO MCAS EL TORO VOLUME II	ADMIN RECORD	RI OU-1 OU-2 OU-3 EE/CA(*) TECH/GUID DOC. NPA	001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022	SOUTHWEST DIVISION MCAS EL TORO

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TECHNICAL DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL TORO

UIC NO. / DOCUMENT.TYPE... / CONTR/GUID..NO.. / APPROX.#.OF.PAGES	DOC.NO.	PRC.DATE / DOC.DATE / CTO.NO.. / EPA.CAT#	FROM..... / FROM.SIGNATURE..... / TO..... / TO.SIGNATURE.....	.....SUBJECT.....	CLASSIFICATION	KEY WORDS	...Site...	....Location.....
M60050 RPT N6871189D9296	000085	11/01/93 05/07/93 00145 01.1	 JACOBS SOUTHWESTDIV	PHASE I REMEDIAL INVESTIGATION DRAFT TECHNICAL MEMO MCAS EL TORO VOLUME III	ADMIN RECORD	RI EE/CA(*) WELLS MONITORING TECH/GUID DOC. NFA	001 002 003 004 005 006 007 008 009 010 011 012 013 014 015 016 017 018 019 020 021 022	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9296	000086	11/01/93 05/07/93 00145 01.1	 JACOBS SOUTHWESTDIV	PHASE I REMEDIAL INVESTIGATION DRAFT TECHNICAL MEMO MCAS EL TORO VOLUME IV	ADMIN RECORD	RI EE/CA(*) TECH/GUID DOC. NFA	4,7,11,13, 14,19,20	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9296 0800	000713	04/05/95 05/07/93 00145 03.4	JACOBS ENGINEERING A. MATIN SOUTHWEST DIVISION	PHASE I RI DRAFT TECHNICAL MEMORANDUM VOLUME I & III AND IV	ADMIN RECORD	TECH MEMO RI TECH/GUID DOC. NFA	1,2,3,4,5 6,7,8,9,10 11,12,13, 14,15,16, 17,18,19, 20,21, OU1 OU2,OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000	000132	11/01/93 05/13/93 00000 04.1	A. PISZKIN SOUTHWESTDIV J. J. ZARNOCH EPA	IDENTIFICATION OF STATE "APPLICABLE" OR "RELEVANT AND APPROPRIATE" REQUIREMENTS (ARARs) FOR THE REMEDIAL INVESTIGATION AND FEASIBILITY STUDY MCAS EL TORO	ADMIN RECORD	ARAR RI FS EE/CA(*) TECH/GUID DOC. NFA	OU1,OU2, OU3,1,2,3, 4,5,6,7,8, 9,10,11,12 13,14,15, 16,17,18, 19,20,21 22,24,25 25,26,27	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000	000133	11/01/93 05/20/93 00000 08.1	A. PISZKIN SOUTHWESTDIV J. J. ZARNOCH EPA	ENVIRONMENTAL HEALTH HAZARD ASSESSMENT OF THE CALIF. ENVIRONMENTAL PROTECTION AGENCY (CALEPA) MEMORANDUM ENTITLED "CALIFORNIA CANCER POTENCY FACTORS"	ADMIN RECORD	CANCER CCPF TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO

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M60050 LTR 0000000C0000000 0850	001117 12/22/95 06/28/93 00000 01.6	DTSC SACRAMENTO J.P. CHRISTOPHER SOUTHWEST DIVISION A. PISZKIN	USE OF CALIFORNIA CANCER POTENCY FACTORS FOR MCAS EL TORO WITH STAFF REPORT: INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING	ADMIN RECORD	RISK TECH/GUID DOC.	OU1	SOUTHWEST DIVISION SOUTHWEST DIVISION
M60050 RPT N68711191D4658 0350	000663 04/05/95 08/02/93 DO 02 01.1	SAIC SOUTHWEST DIVISION	FINAL REPORT AERIAL PHOTOGRAPH ASSESSMENT MCAS EL TORO	ADMIN RECORD	TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0025	001748 03/18/97 09/01/93 00000 10.6	EPA PUBLIC INTEREST	FACT SHEET "PRESUMPTIVE REMEDIES:SITE CHARACTERIZATION AND TECHNOLOGY SELECTION FOR CERCLA SITES WITH VOLATILE ORGANIC COMPOUNDS IN SOILS	ADMIN RECORD	CERCLA VOLATILES SOIL TECH/GUID DOC.		SOUTHWEST DIVISION
M60050 MISC 000000000000000 0006	001858 03/25/97 09/01/93 00000 10.6	EPA PUBLIC	PRESUMPTIVE REMEDIES: POLICY AND PROCEDURES QUICK REFERENCE FACT SHEET	ADMIN RECORD COMPENDIUM	TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N68711191D4658 0300	000695 04/05/95 10/25/93 DO 02 01.1	SAIC SOUTHWEST DIVISION	FINAL REPORT AERIAL PHOTOGRAPH ASSESSMENT MCAS EL TORO	ADMIN RECORD	EE/CA(*) TECH/GUID DOC. NFA	4,7,11,13, 14,19,20	SOUTHWEST DIVISION MCAS EL TORO
M60050 MM N68711189D9296 0019	001026 12/08/95 11/01/93 00145 01.6	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION	DQO MEETING MINUTES WITH REGULATORY AGENCIES	ADMIN RECORD	MTG MINS DQOP TECH/GUID DOC. NFA	OU1,18 24,12 OU2,OU2A OU3 1,2,3,4,5, 6,7,8,9,10 11,13,14, 15,16,17, 18,19,20, 21,22,25	SOUTHWEST DIVISION
M60050 LTR 000000000000000 0003	001157 12/26/95 11/01/93 00000 01.1	EPA SAN FRANCISCO J.A. HAMILL SOUTHWEST DIVISION A. PISZKIN	REQUEST FOR REMOVAL ACTION AT AGUA CHINON WASH, AND FOR TIMELY SOIL GAS SURVEY	ADMIN RECORD	RA TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0001	001735 03/04/97 11/08/93 00000 01.6	MCAS EL TORO J.P. CHESSUM EPA SAN FRANCISCO J. HAMILL	DRAFT SAMPLING AND ANALYSIS PLAN, WORK PLAN, QUALITY ASSURANCE PROJECT PLAN, AND HEALTH AND SAFETY PLAN FOR PHASE II OF THE RI SENT FOR REVIEW & COMMENTS W/O ENCL	ADMIN RECORD INFO REPOSITORY	SAP WORK PLAN QAPP H&SP RI TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO

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M60050 000714 PLAN N6871189D9296 0200	04/05/95 11/09/93 00145 03.3	JACOBS ENGINEERING M. BITNER SOUTHWEST DIVISION	PHASE II RI/FS DRAFT WORK PLAN MCAS EL TORO VOLUME I, II, III APPENDIX A DATA QUALITY OBJECTIVES SITES 12 THRU 25	ADMIN RECORD	RI FS EE/CA(*) TECH/GUID DOC. NFA	4,7,11,13, 14,19,20	SOUTHWEST DIVISION MCAS EL TORO
M60050 000841 MEMO N6871189D9296 0012	07/17/95 03/10/94 00145 03.4	CH2M HILL J. DOLEGOWSKI SOUTHWEST DIVISION	RI CONCEPTUAL APPROACH AND RESPONSE TO COMMENTS SOIL GAS SURVEY FOR SITES 24 & 25	ADMIN RECORD INFO REPOSITORY	RI TECH/GUID DOC. NFA	24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 000751 LTR 000000000000000 0011	06/15/95 04/11/94 00000 04.1	DTSC LONG BEACH J.J. ZARNOCH SOUTHWEST DIVISION W.A DOS SANTOS	RESPONSE TO THE REQUEST FOR THE IDENTIFICATION OF STATE ARARs FOR THE RI/FS FOR OU 1	ADMIN RECORD INFO REPOSITORY	ARAR EE/CA(*) TECH/GUID DOC.	OU1,18	SOUTHWEST DIVISION MCAS EL TORO
M60050 000691 PLAN N6871189D9296 0250	04/05/95 04/18/94 00145 03.3	JACOBS ENGINEERING M. BITNER SOUTHWEST DIVISION	DRAFT SOIL GAS SURVEY WORK PLAN RI/FS IRP SITES 24 & 25 MCAS EL TORO	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	24,25	SOUTHWEST DIVISION
M60050 000782 PLAN N6871189D9296 0250	07/07/95 05/16/94 00145 01.2	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION	FINAL SOIL GAS SURVEY WORK PLAN SITES 24 & 25 REVISION 0	ADMIN RECORD INFO REPOSITORY	TECH/GUID DOC. NFA	24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 000709 RPT N6871189D9296 0350	04/05/95 05/19/94 00145 03.4	JACOBS ENGINEERING M. BITNER SOUTHWEST DIVISION	RI REPORT DRAFT OU 1 RI/FS MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	RI TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000820 MEMO N6871189D9296 0004	07/07/95 06/13/94 00145 01.6	JACOBS ENGINEERING SOUTHWEST DIVISION	13 JUNE 1994 SOIL GAS INVESTIGATION MEETING RI/FS	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 000983 MEMO N6871189D9296 0015	10/04/95 06/27/94 00145 01.6	JACOBS ENGINEERING SOUTHWEST DIVISION	TECHNICAL EXHANGE MEETING	ADMIN RECORD INFO REPOSITORY	MTG MINS EE/CA(*) TECH/GUID DOC. NFA	4,7,11,13, 14,19,20	SOUTHWEST DIVISION MCAS EL TORO
M60050 001034 MM N6871189D9296 0020	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 TECH/GUID DOC. NFA	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

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M60050 000646 RPT N6871189D9296 0200	07/19/94 07/01/94 00145 03.0	SOUTHWEST DIVISION JACOBS ENG. MCAS EL TORO	DRAFT OU-1 BASELINE HUMAN HEALTH RISK ASSESSMENT REPORT RI/FS	ADMIN RECORD	RI FS OU HA TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000647 RPT N6871189D9296 0200	07/19/94 07/01/94 00145 03.0	SOUTHWEST DIVISION JACOBS ENG. MCAS EL TORO	INSTALLATION RESTORATION PROGRAM REMEDIAL INVESTIGATION/FEASIBILITY STUDY DRAFT OPERABLE UNIT I REMEDIAL INVESTIGATION REPORT.	ADMIN RECORD	RI FS OU TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000869 RPT N6871189D9296 0090	07/18/95 09/30/94 00145 04.4	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION	ADDENDUM TO THE DRAFT OU-1 INTERIM-ACTION FS REPORT	ADMIN RECORD INFO REPOSITORY	FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001184 PLAN N6871192D4670 0034	01/22/96 03/01/95 00059 03.3	BECHTEL NATIONAL INC T.W. LATAS SOUTHWEST DIVISION	FINAL DATA MANAGEMENT PLAN PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	DMP RI FS TECH/GUID DOC. NFA	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001189 RPT N6871192D4670 0250	01/22/96 03/01/95 00059 03.5	BECHTEL NATIONAL INC T.W. LATAS SOUTHWEST DIVISION	FINAL HEATH AND SAFETY PLAN SUPPLEMENT PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	H&SP TECH/GUID DOC.	OU1,OU2, OU2A,OU2B OU2C,OU3 2,3,4,5,6, 7,8,9,10, 11,12,13, 14,15,16, 17,19,20, 21,22,24, 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001190 PLAN N6871192D4670 1200	01/22/96 03/01/95 00059 03.3	BECHTEL NATIONAL INC T.W. LATAS SOUTHWEST DIVISION	REVISED DRAFT WORK PLAN PHASE II RI/FS	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU1 OU2,OU3,	SOUTHWEST DIVISION
M60050 001234 RPT N6871192D4670 0200	01/31/96 03/01/95 00059 03.2	BECHTEL NATIONAL INC T. LATAS SOUTHWEST DIVISION	DRAFT FIELD SAMPLING PLAN PHASE II RI/FS	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU1,OU2 OU3,1,2,3, 4,5,6,7,8 9,10,11,12 13,14,15 16,17,18 19,20,21 22,23,24 25	SOUTHWEST DIVISION

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M60050 001261 RPT N6871192D4670 0002	02/09/96 03/01/95 00059 02.7	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION J. ASHMAN	SUBMITTAL OF DRAFT QUALITY ASSURANCE PROJECT PLAN FOR THE PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6, 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 000653 PLAN N6871192D4670 1500	03/27/95 03/17/95 00059 03.3	BECHTEL NATIONAL INC T.W. LATAS SOUTHWEST DIVISION	REVISED DRAFT WORK PLAN PHASE II RI/FS MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC. NFA	OU2,OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 001258 RPT N6871192D4670 0003	02/09/96 03/31/95 00059 03.5	BECHTEL NATIONAL INC J. KLEUSENER SOUTHWEST DIVISION J. ASHMAN	FINAL HEALTH AND SAFETY SUPPLEMENT PHASE II RI/FS AND RESPONSE TO COMMENTS ON HEALTH AND SAFETY SUPPLEMENT	ADMIN RECORD INFO REPOSITORY	H&SP COMMENTS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001679 PLAN N6871192D4670 0020	10/01/96 04/06/95 00075 03.3	BNI SAN DIEGO C. CARLISLE SOUTHWEST DIVISION	FINAL DATA MANAGEMENT PLAN	ADMIN RECORD INFO REPOSITORY	DATA QA QC TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 001194 PLAN N6871192D4670 1800	01/22/96 07/01/95 00059 03.3	BECHTEL NATIONAL INC T.W. LATAS SOUTHWEST DIVISION	FINAL WORK PLAN PHASE II RI/FS	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU1,OU2, OU2A,OU2B OU2C,OU3 1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,19,20, 21,22,24 25	SOUTHWEST DIVISION
M60050 001233 RPT N6871192D4670 0200	01/31/96 07/01/95 00059 03.3	BECHTEL NATIONAL INC T. LATAS SOUTHWEST DIVISION	FINAL WORK PLAN PHASE II RI/FS	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU2A,OU2B OU3 1,2,4,6,7 8,9,10,11 12,13,14, 16,17,19 20,21,22 24,25	SOUTHWEST DIVISION

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M60050 PLAN N6871192D4670 0050	001670 09/30/96 07/13/95 00059 04.4	BNI SAN DIEGO T. LATAS SOUTHWEST DIVISION	FINAL INVESTIGATION-DERIVED WASTE MANAGEMENT PLAN	ADMIN RECORD INFO REPOSITORY	INVESTIGATION TECH/GUID DOC. NFA	IDWMP	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0003	000949 08/07/95 07/14/95 00000 10.3	MCAS EL TORO J. JOYCE RAB MEMBERS	NOTICE OF JULY 27, 1995 RAB MEETING	ADMIN RECORD INFO REPOSITORY	RAB TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 PLAN N6871192D4670 1500	001193 01/22/96 08/01/95 00059 03.3	BECHTEL NATIONAL INC T.W LATAS SOUTHWEST DIVISION	FINAL FIELD SAMPLING PLAN PHASE II RI/FS	ADMIN RECORD	RI FS TECH/GUID DOC. NFA	OU1,OU2, OU2A,OU2B OU2C, OU3 1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,19,20, 21,22,24, 25	SOUTHWEST DIVISION
M60050 RPT N6871192D4670 0002	001244 02/09/96 08/01/95 00059 01.1	BECHTEL NATIONAL INC J. KLEUSENER SOUTHWEST DIVISION J. ASHMAN	FINAL QUALITY ASSURANCE PROJECT PLAN, PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	QAPP RI FS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR N6871192D4670 0015	001245 02/09/96 08/01/95 00059 10.1	BECHTEL NATIONAL INC J. KLEUSENER SOUTHWEST DIVISION J. ASHMAN	RESPONSE TO COMMENTS, DRAFT QUALITY ASSURANCE PROJECT PLAN PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	RI FS QAPP COMMENTS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0075	001373 03/19/96 08/01/95 00059 03.4	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION J. ASHMAN	FINAL QUALITY ASSURANCE PROJECT PLAN PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	QAPP TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13, 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D467000 0075	001465 05/21/96 08/01/95 00059 08.0	BECHTEL NATIONAL INC T. LATAS SOUTHWEST DIVISION	FINAL RISK ASSESSMENT WORK PLAN (DOCUMENT SIGNED 8/29/95)	ADMIN RECORD INFO REPOSITORY	RISK TECH/GUID DOC. NFA	OU1,OU2A OU2B,OU2C OU3,1,2,3, 4,5,6,7,8, 9,10,11,12	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001465 continued					13,14,15 16,17,18 19,20,21 22,24,25	
M60050 RPT N6871192D4670 0002	001242 02/08/96 08/16/95 00059 03.2	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION J. ASHMAN	FINAL FIELD SAMPLING PLAN PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0007	001341 03/18/96 09/06/95 00076 03.6	BECHTEL NATIONAL INC T. LATAS SOUTHWEST DIVISION	MEETING MINUTES FOR 6 SEPTEMBER 1994 WEEKLY BRAC CLEANUP TEAM MEETING HELD TO DISCUSS FINDINGS AND DECISIONS REGARDING RI/FS AT SITES 2,3,5,17,24, AND 25	ADMIN RECORD INFO REPOSITORY	RI FS MTG MINS BCP TECH/GUID DOC. NFA	2,3,4,5,17 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001352 03/18/96 09/06/95 00080 10.0	BECHTEL NATIONAL INC D. TEDALDI SOUTHWEST DIVISION J. ASHMAN	SUBMITTAL OF DRAFT FORMER EMPLOYEE INTERVIEW COMMENTS OF 17 AUGUST 1995 CLEAN II AQ/QC FOR MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	COMMENTS TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0130	001370 03/19/96 09/06/95 00059 08.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION J. ASHMAN	FINAL RISK ASSESSMENT WORK PLAN PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	RISK RI FS TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10, 11,12,13, 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0020	001371 03/19/96 09/06/95 00059 10.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION J. ASHMAN	RESPONSES TO VARIOUS AGENCIES COMMENTS ON THE FINAL RISK ASSESSMENT WORKPLAN FOR PHASE II RI/FS	ADMIN RECORD INFO REPOSITORY	RI FS COMMENTS RISK TECH/GUID DOC. NFA	OU2,OU3,1 2,3,4,5,6 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MM . 000000000000000 0005	001569 07/11/96 09/06/95 00000 01.1	BECHTEL NATIONAL INC K. LYONS BCT MEMBERS	MINUTES FROM BRAC CLEANUP TEAM (BCT) MEETING HELD TO DISCUSS FINDINGS OF OU-2 FIELD INVESTIGATIONS, SCHEDULE OF UPCOMING INVESTIGATIONS, AND BCT DECISIONS	ADMIN RECORD INFO REPOSITORY	BCT MTG MINS TECH/GUID DOC. NFA	OU2,2,3,5 17,24,25	SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC 000000000000000 0015	001340 09/13/95 00076 03.6	03/18/96	BECHTEL NATIONAL INC T. LATAS SOUTHWEST DIVISION	MEETING MINUTES FOR 13 SEPTEMBER 1995 BRAC CLEANUP TEAM MEETNG TO DISCUSS FINDINGS AND DISCUSSIONS FOR RI/FS AT SITES 2,3,5,17,24, AND 25	ADMIN RECORD INFO REPOSITORY	RI FS MTG MINS BCT TECH/GUID DOC. NFA	2,3,5,17 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9396 0650	001006 10/15/95 00145 04.2	10/23/95	JACOBS ENGINEERING SOUTHWEST DIVISION	FEASIBILITY STUDY (FS) REPORT DRAFT OU-1 INTERIM-ACTION RI/FS REVISION 0 VOLUME VII OF OU-1 RI/IAFS REPORT APPENDICES B THROUGH J	ADMIN RECORD INFO REPOSITORY	FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9396 0950	001007 10/15/95 00145 04.2	10/23/95	JACOBS ENGINEERING SOUTHWEST DIVISION	FEASIBILITY STUDY (FS) REPORT DRAFT OU-1 INTERIM-ACTION RI/FS REVISION 0 VOLUME VI OF OU-1 RI/IAFS REPORT APPENDIX A GROUNDWATER MODELING REPORT	ADMIN RECORD INFO REPOSITORY	FS GW TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9396 0650	001008 10/15/95 00145 04.2	10/23/95	JACOBS ENGINEERING SOUTHWEST DIVISION	FEASIBILITY STUDY (FS) REPORT DRAFT OU-1 INTERIM-ACTION RI/FS REVISION 0 VOLUME IV OF OU-1 RI/IAFS REPORT	ADMIN RECORD INFO REPOSITORY	FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0003	001675 12/18/95 00073 06.3	10/01/96	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION P. KENNEDY	INVESTIGATION DERIVED WASTE, RI/FS FOR CTO-0073 AND CTO-0076, LETTER OF DECEMBER 19, 1995	ADMIN RECORD INFO REPOSITORY	RI FS IDWMP TECH/GUID DOC.	5	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0250	001269 02/01/96 00073 03.0	02/21/96	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT 2A - SITE 24	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0250	001270 02/01/96 00073 03.0	02/21/96	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT 2A - SITE 24 VOLUME II APPENDICES A-I	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0250	001271 02/01/96 00073 03.0	02/21/96	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT 2A - SITE 24 VOLUME III APPENDIX J	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0250	001272 02/01/96 00073 03.0	02/21/96	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT 2A - SITE 24 VOLUME IV APPENDICES K-P	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0020	001276 02/06/96 00000 11.3	03/12/96	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES 30 JANUARY 1996 WEEKLY BRAC CLEANUP TEAM (BCT) FOR PHASE II RI/FS MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	MTG MINS BRAC TECH/GUID DOC. NFA	1,2,3,4,5 6,7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001276 continued					25,OU2,OU3	
M60050 MISC N6871192D4670 0019	001397 03/20/96 02/06/96 00079 05.4	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINTUES FOR THE 30 JANUARY 1996 WEEKLY BASE CLEANUP TEAM BRIEFING HELD TO DISCUSS OU3, THE BCP, OU2A, AND THE LANDFILL SITES AND MEETING MATERIALS	ADMIN RECORD INFO REPOSITORY	BCP MTG MINS TECH/GUID DOC.	OU2A,OU3 1,4,6,7,8 9,10,11,12 13,14,15 16,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001399 03/20/96 02/14/96 00079 05.4	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINTUES 07 FEBRUARY 1996 WEEKLY BCT BRIEFING HELD TO DISCUSS OU3, THE BCP, LANDFILL SITES, OU2A, OU2B	ADMIN RECORD INFO REPOSITORY	MTG MINS BCP RFA TECH/GUID DOC.	OU3,OU2A, OU2B,1,2,4 7,8,9,10 11,12,13, 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001398 03/20/96 02/20/96 00079 05.4	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINTUES 14 FEBRUARY 1996 WEEKLY BCT BRIEFING HELD TO DISCUSS OU2A, OU2B, THE RCRA FACILITY ASSESSMENT, AND THE BCP	ADMIN RECORD INFO REPOSITORY	BCP MTG MINS RFA BCP TECH/GUID DOC.	OU2A,OU2B 1,2,4,6,7 8,9,10,11 12,13,14 15,16,17 19,20,21, 22,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0300	001413 03/25/96 02/20/96 00073 03.4	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION P. KENNEDY	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT (OU) 2A SITE 24 VOLUME I SIGNED FEBRUARY 20, 1996	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0300	001414 03/25/96 02/20/96 00073 03.4	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION P. KENNEDY	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OU 2A - SITE 24 VOLUME II APPENDICES A - I SIGNED FEBRUARY 20, 1996	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0300	001415 03/25/96 02/20/96 00073 03.4	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION P. KENNEDY	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OU 2A - SITE 24 VOLUME III APPENDIX J SIGNED FEBRUARY 20, 1996	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0300	001416 03/25/96 02/20/96 00073 03.4	BECHTEL NATIONAL INC P. BROOKS SOUTHWEST DIVISION P. KENNEDY	DRAFT PHASE II REMEDIAL INVESTIGATION REPORT OU 2A - SITE 24 VOLUME IV APPENDICES K - P SIGNED FEBRUARY 20, 1996	ADMIN RECORD INFO REPOSITORY	RI OU TECH/GUID DOC.	OU2A,24	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0250	001401 03/20/96 02/28/96 00079 05.4	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	BASE REALIGNMENT AND CLOSRURE PLAN (BCP) DATED MARCH 1, 1996	ADMIN RECORD INFO REPOSITORY	BCP TECH/GUID DOC. RFA	OU1,OU2, OU3,1,2,3, 4,5,6,7,8 9,10,11, 12,13,14 15,16,17	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001401 continued						18,19,20 21,22,24 25	
M60050 MISC N6871192D4670 0023	001400	03/20/96 02/29/96 00079 05.4	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINTUES 21 FEBRUARY 1996 WEEKLY BCT BRIEFING HELD TO DISCUSS OU2A, OU2B, AND OU3 FIELDWORK, INCLUDES MEETING MATERIALS	ADMIN RECORD INFO REPOSITORY	MTG MINS BCP BCT TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2,4 6,7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0009	001396	03/20/96 03/05/96 00079 05.4	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FOR THE 28 FEBRUARUY 1996 BASE CLEANUP TEAM MEETING HELD TO DISCUSS OU3, THE BCP, OU2A, AND THE LANDFILL SITES	ADMIN RECORD INFO REPOSITORY	MTG MINS BCP TECH/GUID DOC. NFA	OU3,OU2A 1,4,6,7,8 9,10,11,12 13,14,15 16,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0020	001382	03/20/96 03/12/96 00079 05.4	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FOR 6 MARCH 1996 BASE CLEANUP TEAM MEETING HELD TO DISCUSS SITES 24,25, LANDFILL SITES, AND OU3 FIELD WORK; MEETING MATERIALS	ADMIN RECORD INFO REPOSITORY	MTG MINS CLEANUP TECH/GUID DOC. NFA	OU3,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0150	001393	03/20/96 03/14/96 00073 03.4	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	REPORT ENTITLED DRAFT GROUNDWATER EXTRACTION AND INJECTION WELL AQUIFER TESTS FOR FINAL PHASE II RI/FS WORK PLAN	ADMIN RECORD INFO REPOSITORY	GW RI FS TECH/GUID DOC.	OU2,OU3,1 2,3,4,5,6, 7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001418	04/03/96 03/18/96 00079 03.1	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FOR 13 MARCH 1996 BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A, OU2B, AND OU3	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2,4 6,7,8,9,10 11,12,13 14,15,16 17,19,20 21,22,24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001412	03/25/96 03/21/96 00079 05.4	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FOR 20 MARCH 1996 WEEKLY BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A,OU2B, OU3, AND EMPLOYEE INTERVIEWS	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2,4, 6,7,8,9,10 11,12,13, 14,15,16, 17,19,20 21,22,24, 25	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001420 RPT N6871192D4670 0050	04/03/96 03/25/96 00073 03.3	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	DRAFT FINAL WORK PLAN FOR AIR SPARGING PILOT TEST	ADMIN RECORD INFO REPOSITORY	AIR VOC TECH/GUID DOC.	24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001331 MISC N6871192D4670 0007	03/18/96 04/01/96 00079 03.6	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FOR 27 MARCH 1996 WEEKLY BASE CLEANUP TEAM MEETING HELD TO DISCUSS SITES 24 AND 25, THE LANDFILL SITES, AND OU3 (SITE 15) FIELDWORK	ADMIN RECORD INFO REPOSITORY	BCT MTG MINS OU TECH/GUID DOC. NFA	OU2A,OU2B, OU3,1,2,3, 4,5,6,7,8, 9,10,11,12 13,14,15 16,17,19 20,21,22 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001749 MISC 000000000000000 0004	03/18/97 04/01/96 00000 10.6	EPA PUBLIC INTEREST	FACT SHEET "A CITIZEN'S GUIDE TO SOIL VAPOR EXTRACTION AND AIR SPARGING"	ADMIN RECORD	SOIL AIR TECH/GUID DOC.		SOUTHWEST DIVISION
M60050 000335 MISC N6871192D467000 0004	06/19/96 04/03/96 00073 10.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	BECHTEL'S RESPONSE TO COMMENTS RECEIVED FROM DTSC AND US EPA ON DRAFT FINAL WORK PLAN FOR AIR SPARGING PILOT TESTING	ADMIN RECORD INFO REPOSITORY	COMMENTS AIR SPARGE PILOT TEST TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 001017 MM N6871192D467000 0004	06/19/96 04/05/96 00079 00.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM 3 APRIL 1996 BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A, OU2B AND OU3	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2, 4,6,7,8,9, 10,11,12 13,14,15 16,17,19 20,21,22 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001613 LTR N6871192D4670 0006	09/04/96 04/15/96 00080 01.6	BNI SAN DIEGO D. TEDALDI SOUTHWEST DIVISION J. JOYCE	REVIEW COMMENTS ON DRAFT FINAL WORK PLAN FOR AIR SPARGING AND DRAFT RI REPORT, OU 2A SITE 24	ADMIN RECORD INFO REPOSITORY	COMMENTS WORK PLAN RI TECH/GUID DOC.	OU2A 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 000365 MM N6871192D467000 0005	06/19/96 04/17/96 00079 00.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM 10 APRIL 1996 WEEKLY BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A, OU2B, OU3, AND RCRA FACILITY ASSESSMENT ADDENDUM	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT RFA TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2,3, 4,6,7,8,9 10,11,12 13,14,15 16,17,19 20,21,22, 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001491 RPT N6871192D467000 0050	05/22/96 04/17/96 00073 02.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	DRAFT WORK PLAN FOR SOIL VAPOR EXTRACTION PILOT TESTING AT SITE 24	ADMIN RECORD INFO REPOSITORY	SV PILOT TEST TECH/GUID DOC.	24	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001982 MISC 000000000000000 0075	09/18/97 04/24/96 00000 10.4	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR APRIL 24, 1996, MEETING-AGENDA, HANDOUTS, & MINUTES OF FEBRUARY 28, 1996, SIGN IN SHEETS OF 4/24/96 RAB MTG.	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT RI GW TECH/GUID DOC.	TANK 398 OU 2A 24 25	SOUTHWEST DIVISIOI MCAS EL TORO
M60050 000159 MM N6871192D467000 0015	06/19/96 04/29/96 00079 00.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM 17 MARCH 1996 WEEKLY BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A, OU2B, AND OU3	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT OU TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2, 4,6,7,8,9 10,11,12, 13,14,15 16,17,19 20,21,22 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001932 LTR 000000000000000 0012	04/29/97 05/01/96 00000 10.1	SOUTHWEST DIVISION L. NUZUM DTSC LONG BEACH T. MAHMOUD	REQUEST THAT DTSC AS LEAD AGENCY FOR STATE OF CALFIORNIA ARARs FOR OPERABLE UNIT (OU) 24	ADMIN RECORD INFO REPOSITORY	REQUEST ARAR TECH/GUID DOC.	24 OU 2 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 000386 MM N6871192D467000 0022	06/19/96 05/02/96 00079 00.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM 24 APRIL 1996 BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU2A, OU2B, OU3, AND MCLS FOR TRICHLOROETHYLENE	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT TCE TECH/GUID DOC. NFA	OU2A,OU2B OU3,1,2, 4,6,7,8,9 10,11,12 13,14,15 16,17,19 20,21,22, 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001505 MM N6871192D4670 0005	06/06/96 05/28/96 00073 01.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM WEEKLY BRAC CLEANUP TEAM MEETING HELD ON 15 MAY 1996 TO DISCUSS OU1, OU2A, OU2B, AND OU3	ADMIN RECORD INFO REPOSITORY	GW BCT MTG MINS TECH/GUID DOC. NFA	OU1,OU2A OU3,1,2, 4,6,7,8,9 10,11,12, 13,14,15 16,18,19 20,21,22 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001506 MM N6871192D4670 0011	06/06/96 05/31/96 00079 01.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MINUTES FROM WEEKLY BRAC CLEANUP TEAM MEETING HELD 22 MAY 1996 TO DISCUSS OU1, OU2A, OU2B, AND OU3	ADMIN RECORD INFO REPOSITORY	OU MTG MINS BCT TECH/GUID DOC. NFA	OU1,OU2A OU2B,OU3 1,2,3,4,5 6,7,8,9,10 11,12,13 14,15,16 17,18,19, 20,21,22 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001510 MM N6871192D467000 0003	06/14/96 06/06/96 00079 01.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FROM 29 MAY 1996 BRAC CLEANUP TEAM MEETING HELD TO DISCUSS OU 1, OU2A, OU2B, AND OU3	ADMIN RECORD INFO REPOSITORY	MTG MINS BCT TECH/GUID DOC. NFA	OU1,OU2A, OU2B,OU3,1 2,4,6,7,8, 9,10,11,12 13,14,15,	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001510 continued					16,17,18 19,20,21 22,24,25	
M60050 RPT N6871192D4670 1000	001635 09/24/96 06/12/96 00073 03.4	BNI SAN DIEGO G. P. BROOKS SOUTHWEST DIVISION	DRAFT FINAL PHASE II RI REPORT OU2A-SITE 24 VOLUME III APPENDICES J	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 1000	001636 09/24/96 06/12/96 00073 03.4	BNI SAN DIEGO G. P. BROOKS SOUTHWEST DIVISION	DRAFT FINAL PHASE II RI REPORT OU2A-SITE 24 VOLUME IV APPENDICES K-P	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU2 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 MM N6871192D4670000 0005	001516 07/03/96 06/14/96 00079 01.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FROM 5 JUNE 1996 BRAC CLEANUP TEAM (BCT) MEETING HELD TO DISCUSS OU 1, 2A, 2B, 2C, 3 AND THE SITE 25 RI/FS	ADMIN RECORD	BCT MTG MINS RI FS TECH/GUID DOC.	OU1,OU2A, OU2B,OU2C OU3,1,2,3, 4,5,6,7,8 9,10,11,12 13,14,15 16,17,18 19,20,21 22,24,25	SOUTHWEST DIVISION
M60050 MM N6871192D4670000 0009	001517 07/03/96 06/20/96 00079 01.1	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	MEETING MINUTES FROM 12 JUNE 1996 BRAC CLEANUP TEAM (BCT) MEETING HELD TO DISCUSS OU 1, 2A, 2B, AND OU 3	ADMIN RECORD INFO REPOSITORY	BCT MTG MINS TECH/GUID DOC. NFA	OU1,OU2A OU2B,OU3,1 2,4,6,7,8, 9,10,11,12 13,14,15, 16,17,18 19,20,21 22,24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0022	001646 09/27/96 07/08/96 00079 10.5	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION P. KENNEDY	JUNE 19, 1996 BCT MEETING MINUTES W/ENCL	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	6 8 15 3 5 OU1 OU2A 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0002	001602 09/04/96 07/22/96 00000 10.1	EPA SAN FRANCISCO B. ARTHUR MCAS EL TORO J. JOYCE	COMMENTS ON THE DRAFT FINAL PHASE II RI REPORT OU 2A-SITE 24 AND COMMENTS ON THE DRAFT FINAL OU 2A FS REPORTS	ADMIN RECORD INFO REPOSITORY	COMMENTS RI FS TECH/GUID DOC.	OU2A 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0003	001603 09/04/96 07/22/96 00000 01.6	DTSC LONG BEACH J. SCANDURA MCAS EL TORO J. JOYCE	APPROVAL OF THE DRAFT FINAL PHASE II RI REPORT SITE 24, OU 2A	ADMIN RECORD INFO REPOSITORY	RI VOC TECH/GUID DOC.	24 OU2A	SOUTHWEST DIVISION MCAS EL TORO

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M60050 XMTL N6871192D4670 0044	001650	09/27/96 07/30/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	JULY 10, 1996 BCT MEETING MINUTES W/ENC	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU1 24 OU2A OU2B OU3 OU2C 18 25 2 17 3 5	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0009	001651	09/27/96 07/30/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	JULY 17, 1996 BCT MEETING MINUTES W/ENC	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU1 24 2 17 OU3 OU3A OU3B OU2B OU2C	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0003	001652	09/27/96 07/30/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	JULY 24, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU1 OU2A 24 25 2 17 OU3 OU2B OU2C	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0003	001653	09/27/96 08/07/96 00080 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	JULY 25, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0018	001654	09/27/96 08/07/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	JULY 16, 1996 BCT MEETING MINUTES W/ENCL	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU3 24 OU3 25 OU3B OU2A 2 17 OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871189D9296 0045	001582	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL,INC SOUTHWEST DIVISION	DRAFT FINAL OU1 INTERIM RI/FS REPORT EXECUTIVE SUMMARY VOLUME I OF IX	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU1 18	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001583 RPT N6871189D9296 2500	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL,INC SOUTHWEST DIVISION	DRAFT FINAL INTERIM OU1 RI REPORT VOLUME II OF IX	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU1 OU2 OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 001584 RPT N6871189D9296 0450	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL,INC SOUTHWEST DIVISION	DRAFT FINAL OU1 HUMAN HEALTH RISK ASSESSMENT REPORT VOLUME III OF IX	ADMIN RECORD INFO REPOSITORY	RISK RI FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001585 RPT N6871189D9296 0450	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL,INC SOUTHWEST DIVISION	DRAFT FINAL OU1 INTERIM-ACTION FEASIBILITY STUDY REPORT VOLUME IV OF IX	ADMIN RECORD INFO REPOSITORY	FS RI TECH/GUID DOC.	OU1 18	SOUTHWEST DIVISION MCAS EL TORO
M60050 001586 RPT N6871189D9296 2500	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL INC SOUTHWEST DIVISION	DRAFT FINAL INTERIM OU1 RI REPORT APPENDICES VOLUME V OF IX	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001587 RPT N6871189D9296 2500	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL INC SOUTHWEST DIVISION	DRAFT FINAL OU1 INTERIM-ACTION FEASIBILITY STUDY REPORT VOLUME VI OF IX	ADMIN RECORD INFO REPOSITORY	RI FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001588 RPT N6871189D9296 0500	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL INC SOUTHWEST DIVISION	DRAFT FINAL OU1 INTERIM-ACTION FEASIBILITY STUDY REPORT VOLUME VII OF IX (APPENDICES B THROUGH J)	ADMIN RECORD INFO REPOSITORY	RI FS ARAR TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001589 RPT N6871189D9296 0275	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL INC SOUTHWEST DIVISION	DRAFT FINAL INTERIM OU1 REMEDIAL INVESTIGATION REPORT ADDENDUM VOLUME VIII OF IX	ADMIN RECORD INFO REPOSITORY	RI FS GW TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001590 RPT N6871189D9296 1500	08/22/96 08/09/96 00145 03.4	JACOBS/CH2M HILL INC SOUTHWEST DIVISION	DRAFT FINAL INTERIM OU1 INTERIM-ACTION FS REPORT ADDENDUM VOLUME IX OF IX	ADMIN RECORD INFO REPOSITORY	RI FS GW TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001645 RPT N6871192D4670 2000	09/27/96 08/09/96 00073 04.2	BNI SAN DIEGO G.BROOKS SOUTHWEST DIVISION	DRAFT PHASE II FEASIBILITY STUDY REPORT OU2A-SITE 24 (DISCREPENCY IN TEXT EDIT TOC TABLES 3-3 THRU 3-7 TO BE IN PLACE IN FINAL PHASE II FS REPORT)	ADMIN RECORD INFO REPOSITORY	FS COST TECH/GUID DOC.	OU2A OU1 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001655 XMTL N6871192D4670 0003	09/27/96 08/14/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	AUGUST 7, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU1 OU2 24 OU2B OU2C OU3 25 OU3B	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001658 XMTL N6871192D4670 0005	09/27/96 08/27/96 00079 10.6	BNI SAN DIEGO D.K. COWSER SOUTHWEST DIVISION R. SELBY	AUGUST 21, 1996 BCT MEETING MINUTES W/ENCL	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	OU1 24 17 2 3 5 OU3A OU3B	SOUTHWEST DIVISION MCAS EL TORO
M60050 001632 XMTL N6871189D9296 0002	09/16/96 09/04/96 00145 01.6	MCAS EL TORO J. DOLEGOWSKI SOUTHWEST DIVISION K. KENNEDY	REVISED TABLES ES-6 RI/FS AND ES-1 FOR OU1 FROM FS	ADMIN RECORD INFO REPOSITORY	ES RI FS TECH/GUID DOC.	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001672 XMTL N6871192D4670 0004	09/30/96 09/11/96 00079 10.5	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	SEPTEMBER 4, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS REMOVAL TECH/GUID DOC.	9 18 25 19 OU2A OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001931 LTR 000000000000000 0003	04/29/97 09/16/96 00000 10.1	CITY OF IRVINE P. HERSH MCAS EL TORO J. JOYCE	COMMENTS REGARDING EVALUATION OF OU1 LAFS ADDENDUM AND OU 2A REMEDIATION ALTERNATIVES	ADMIN RECORD INFO REPOSITORY	COMMENTS OU ADPM TECH/GUID DOC.	OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 001673 XMTL N6871192D4670 0003	09/30/96 09/19/96 00079 10.5	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	SEPTEMBER 17, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS ARAR TECH/GUID DOC. NFA	OU1 OU2B OU2C BLDG. 368	SOUTHWEST DIVISION MCAS EL TORO
M60050 001983 MISC 000000000000000 0050	09/18/97 09/25/96 00000 10.4	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR SEPTEMBER 25, 1996, MEETING-AGENDA, HANDOUTS, & MINUTES OF JULY 31, 1996 RAB MTG., SIGN-IN SHEETS, REV. "BLUE SHEET"	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT MTG MINS TECH/GUID DOC.	TANK 398 OU 1 OU 2A 18 24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001930 LTR 000000000000000 0003	04/29/97 10/08/96 00000 10.1	BL ASSOCIATES M. RUDOLPH SOUTHWEST DIVISION J. JOYCE	COMMENTS ON DRAFT PHASE II FEASIBILITY STUDY FOR OPERABLE UNIT 2A-SITE 24 FROM THE ORANGE COUNTY WATER DISTRICT AND OU2 SUBCOMMITTEE CO-CHAIR W/ENCLS	ADMIN RECORD INFO REPOSITORY	COMMENTS OU FS TECH/GUID DOC.	OU 2A 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001692 RPT N6871193D1459 0350	11/11/96 10/11/96 DO#75 01.1	OHM REMEDIATION W. SEDLAK SOUTHWEST DIVISION	TECHNICAL MEMORANDUM CONTINUATION OF CLEAN II SITE 24 SOIL VAPOR EXTRACTION PILOT TEST	ADMIN RECORD INFO REPOSITORY	TECH MEMO SOIL SVEI H&SP TECH/GUID DOC.	24	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001928 LTR 000000000000000 0014	04/29/97 10/11/96 00000 10.1	EPA SAN FRANCISCO B. ARTHUR MCAS EL TORO J. JOYCE	REVIEWED AND COMMENTS BY AGENCY THE DRAFT PHASE II FEASIBILITY STUFY OPERABLE UNIT 2A REPORT W/ENCLS	ADMIN RECORD INFO REPOSITORY	COMMENTS FS OU TECH/GUID DOC.	OU 2A OU 1 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001929 LTR 000000000000000 0011	04/29/97 10/11/96 00000 10.1	DTSC LONG BEACH T. MAHMOUND MCAS EL TORO J. JOYCE	COMMENTS ON DRAFT PHASE II FEASIBILITY STUDY FOR SITE 24 OU 2A W/ENCLS	ADMIN RECORD INFO REPOSITORY	COMMENTS FS TECH/GUID DOC.	OU 2A 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001706 MM N6871192D4670 0013	11/13/96 10/15/96 00079 10.4	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	SEPTEMBER 25, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	2 17 19 UNIT 2	SOUTHWEST DIVISION MCAS EL TORO
M60050 001707 XMTL N6871192D4670 0004	11/13/96 10/15/96 00079 10.4	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	OCTOBER 9, 1996 BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC. NFA	2 17 3 5	SOUTHWEST DIVISION MCAS EL TORO
M60050 001927 LTR 000000000000000 0005	04/29/97 10/15/96 00000 10.1	EPA SAN FRANCISCO B. ARTHUR MCAS EL TORO J. JOYCE	COMMENTS ON THE DRAFT PHASE II FEASIBILITY STUDY OPERABLE UNIT 2A REPORT ON OCTOBER 11, 1996	ADMIN RECORD INFO REPOSITORY	COMMENTS FS OU TECH/GUID DOC.	OU 2A 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001701 RPT N6871192D4670 0150	11/12/96 10/21/96 00076 03.4	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	SOIL VAPOR EXTRACTION PILOT TEST REPORT - SITE 24	ADMIN RECORD INFO REPOSITORY	SOIL SVEI LAB TECH/GUID DOC.	24	SOUTHWEST DIVISION MCAS EL TORO
M60050 001720 RPT N6871192D4670 0075	11/21/96 11/12/96 00073 04.2	BECHTEL NATIONAL D. COWSER SOUTHWEST DIVISION R. SELBY	AIR-SPARGING PILOT TEST REPORT SITE 24	ADMIN RECORD INFO REPOSITORY	AIR TECH/GUID DOC.	24	SOUTHWEST DIVISION
M60050 001773 LTR 000000000000000 0001	03/20/97 12/04/96 00000 01.6	EPA SAN FRANCISCO G. KISTNER MCAS EL TORO J. JOYCE	EL TORO EXTENSION REQUEST FOR OU 1 AND OU 2A	ADMIN RECORD INFO REPOSITORY	OU REQUEST TECH/GUID DOC.	OU 1 OU 2A 18 24 2	SOUTHWEST DIVISION MCAS EL TORO
M60050 001769 LTR 000000000000000 0003	03/20/97 12/06/96 00000 10.1	DTSC LONG BEACH T. MAHMOUD MCAS EL TORO J. JOYCE	COMMENTS ON AIR-SPARGING PILOT TEST, SITE 24, OU 2A	ADMIN RECORD INFO REPOSITORY	COMMENTS AIR OU TECH/GUID DOC.	24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 001770 LTR 000000000000000 0003	03/20/97 12/06/96 00000 01.6	DTSC LONG BEACH T. MAHMOUD MCAS EL TORO J. JOYCE	COMMENTS ON AIR-SPARGING PILOT TEST, SITE 24, OU 2A	ADMIN RECORD INFO REPOSITORY	COMMENTS AIR OU TECH/GUID DOC.	24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO

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M60050 LTR 000000000000000 0002	001765 03/20/97 12/12/96 00000 10.1	DTSC LONG BEACH T. MAHMOUD VARIOUS AGENCIES SE	COMMENTS ON TECH. MEMO, CONTINUATION OF CLEAN II SITE 24 SVE PILOT TEST, OU 2A	ADMIN RECORD INFO REPOSITORY	TECH MEMO OU TECH/GUID DOC.	24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0003	001753 03/19/97 01/13/97 00124 10.4	BECHTEL NATIONAL INC D. COWSER VARIOUS INDIVIDUALS	JANUARY 7, 1997, MEETING MINUTES ONE-DAY SVE PILOT TEST AT SITE 24	ADMIN RECORD INFO REPOSITORY	MTG MINS VOC TECH/GUID DOC.	24	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0004	001752 03/19/97 01/15/97 00076 10.4	BECHTEL NATIONAL INC D. COWSER MCAS EL TORO	JANUARY 15, 1997, MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TCE FS TECH/GUID DOC.	2	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0006	001820 03/21/97 01/21/97 00000 10.1	DTSC LONG BEACH T. MAHMOUD MCAS EL TORO J. JOYCE	COMMENTS ON AQUIFER TEST REPORT, SITE 24, OU 2A	ADMIN RECORD INFO REPOSITORY	COMMENTS TECH/GUID DOC.	24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0018	001754 03/20/97 01/24/97 00103 10.4	BECHTEL NATIONAL INC D. HALLERBACH SOUTHWEST DIVISION R. SELBY	JANUARY 16, 1997, MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS BCP TECH/GUID DOC.	10 3 5 2 17 19 24 25 OU 2A OU 2B OU 2C TK FARM 2 TANK 398	SOUTHWEST DIVISION MCAS EL TORO
M60050 PLAN N6871192D4670 2000	001745 03/17/97 01/30/97 00103 04.2	BECHTEL NATIONAL INC J. KLUESENER VARIOUS AGENCIES	BASE REALIGNMENT AND CLOSURE CLEANUP PLAN (BCP) DATED MARCH 1997	ADMIN RECORD INFO REPOSITORY	BCP CLEANUP TECH/GUID DOC. NFA	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	SOUTHWEST DIVISION MCAS EL TORO

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M60050 XMTL N68711192D4670 0004	001763 	03/20/97 02/03/97 00073 10.1	BECHTEL NATIONAL INC D. COWSER VARIOUS AGENCIES	RESPONSE TO CAL EPA SOIL-RELATED COMMENTS, DRAFT PHASE II FS FOR SITE 24, OU 2A	ADMIN RECORD INFO REPOSITORY	FS OU SOIL COMMENTS RESPONSE TECH/GUID DOC.	24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N68711192D4670 0004	001759 	03/20/97 02/26/97 00073 10.4	BECHTEL NATIONAL INC P. BROOKS VARIOUS AGENCIES	FEBRUARY 20, 1997, MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS FFA ROD LANDFILL FS GW OU TECH/GUID DOC.	2 3 5 17 24 OU 1 OU 2A 18	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N68711192D4670 0015	001751 	03/19/97 03/06/97 00103 04.4	BECHTEL NATIONAL INC C. CARLISLE VARIOUS AGENCIES	REPLACEMENT PAGES FOR THE BASE REALIGNMENT AND CLOSURE (BRAC) CLEANUP PLAN (BCP) DATED MARCH 1997	ADMIN RECORD INFO REPOSITORY	CLOSURE BRAC CLEANUP BCP TECH/GUID DOC. NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N68711192D4670 3050	001737 	03/17/97 03/11/97 00073 03.4	BECHTEL NATIONAL INC G. BROOKS SOUTHWEST DIVISION	DRAFT FINAL PHASE II REMEDIAL INVESTIGATION REPORT OPERABLE UNIT 2A-SITE 24 VOLUME I, VOLUME II, VOLUME III, APPENDICES A-J, VOLUME IV, APPENDICES K-P	ADMIN RECORD INFO REPOSITORY	RI TECH/GUID DOC.	OU 1 24 OU 2A OU 3 25 BLDG. 296 BLDG. 297 BLDG. 299 BLDG. 359 BLDG. 529 BLDG. 655 BLDG. 800 BLDG. 326 BLDG. 360 7 8	SOUTHWEST DIVISION MCAS EL TORO

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M60050 001737 continued								
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M60050 001741 RPT N6871192D4670 1050	03/17/97 03/11/97 00073 03.4	BECHTEL NATIONAL INC G. BROOKS SOUTHWEST DIVISION	DRAFT FINAL PHASE II VADOSE ZONE FEASIBILITY STUDY REPORT OPERABLE UNIT 2A-SITE 24	ADMIN RECORD INFO REPOSITORY	FS TECH/GUID DOC.	OU 2A 24 BLDG. 296 BLDG. 297	SOUTHWEST DIVISION MCAS EL TORO	
M60050 001926 LTR 000000000000000 0008	04/29/97 03/27/97 00000 10.1	DTSC LONG BEACH T. MAHMOUD MCAS EL TORO J. JOYCE	COMMENTS ON DRAFT PROPOSED PLAN FOR OPERABLE UNIT 2A SITE 24-SOIL W/ENCLS	ADMIN RECORD INFO REPOSITORY	COMMENTS OU SOIL TECH/GUID DOC.	2A 24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO	
M60050 001925 PLAN 000000000000000 0008	04/29/97 04/23/97 00000 04.3	BECHTEL NATIONAL INC C. CARLISLE VARIOUS AGENCIES	PROPOSED PLAN FOR OPERABLE UNIT 2A SITE 24 SOIL VADOSE ZONE CLEANUP	ADMIN RECORD INFO REPOSITORY	OU SOIL CLEANUP TECH/GUID DOC. PUB. PARTICIPATI	2A 24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO	
M60050 001976 LTR 000000000000000 0010	09/18/97 06/05/97 00000 01.6	EPA SAN FRANCISCO MCAS EL TORO J. JOYCE	LETTER CLARIFYING NPL LISTING, UNCONTAMINATED PARCEL IDENTIFICATIONS, AND CERCLA LIABILITY ISSUES INVOLVING TRANSFERS OF FEDERALLY OWNED PROPERTY	ADMIN RECORD INFO REPOSITORY	NPL CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO	
M60050 001984 LTR 000000000000000 0001	09/18/97 06/16/97 00000 01.6	SOUTHWEST DIVISION D. SAKAMOTO O.COUNTY WATER DIST. W. MILLS, JR.	REQUEST FORWRITTEN RESPONSE ON A NEW DRAFT SETTLEMENT AGREEMENT FOR NEGOTIATING ISSUES OF A JNT. VOC/WATER SUPPLY PROJECT BETWEEN DON & O.COUNTY WATER DIST.	ADMIN RECORD INFO REPOSITORY	REQUEST RESPONSE VOC TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO	
M60050 001969 MM 000000000000000 0010	09/18/97 07/31/97 00000 10.4	HAHN BOWERSOCK CORP J. BURGNER MCAS EL TORO	JULY 31, 1997, PUBLIC COMMENT MEETING PROPOSED PLAN FOR ENVIRONMENTAL RESTORATION NO FURTHER ACTION SITES IRP	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT NFA IRP TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO	
M60050 001970 MM 000000000000000 0017	09/18/97 07/31/97 00000 10.4	MCAS EL TORO MEMBERS	JULY 31, 1997, PUBLIC COMMENT MEETING NO FURTHER ACTION SITES HANDOUTS INCLUDES, PUBLIC COMMENT FORMS, MEETING EVALUATION, AND SIGN-UP SHEETS	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI TECH/GUID DOC. COMMENTS NFA		SOUTHWEST DIVISION MCAS EL TORO	
M60050 001979 MISC 000000000000000 0004	09/18/97 07/31/97 00000 10.3	MCAS EL TORO CO BECHTEL NATIONAL INC B. COLEMAN	FAXED COPIES OF VARIOUS NEWS CLIPPINGS: PUBLIC NOTICE DATED JULY 31, 1997 PRESENTATION & DISCUSSION MTG.,IRP PROPOSED PLAN OU 2A-SITE 24,NRA , OU 3A	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI TECH/GUID DOC. OU NFA	OU 2A 24 OU 3A	SOUTHWEST DIVISION MCAS EL TORO	
M60050 001967 RPT N6871192D4670 0129	09/18/97 08/13/97 00135 05.0	BECHTEL NATIONAL INC D. TEDALDI VARIOUS AGENCIES	DRAFT RECORD OF DECISION OPERABLE UNITS 2A AND 3A NO ACTION SITES	ADMIN RECORD INFO REPOSITORY	ROD OU NFA TECH/GUID DOC.	OU 2A OU 3A	SOUTHWEST DIVISION MCAS EL TORO	

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TECHNICAL DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL TORO

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M60050 MM N6871192D4670 0016	001968 09/18/97 08/25/97 00076 10.4	BECHTEL NATIONAL INC D. TEDALDI VARIOUS AGENCIES	AUGUST 6, 1997, BCT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS TECH/GUID DOC.	5 17 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0005	001986 09/18/97 09/05/97 00000 01.6	MCAS EL TORO J. JOYCE VARIOUS AGENCIES	ADVANCED SUBMITTAL OF FFA EXTENSION REQUEST FOR CHGES. ON THE DRAFT FINAL INTERIM RECORD OF DECISION (ROD) FOR OU 2A, OU 2B AND OU 2C	ADMIN RECORD INFO REPOSITORY	FFA REQUEST ROD TECH/GUID DOC.	OU 2A OU 2B OU 2C 24 2 17 3 5	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0015	001977 09/18/97 09/16/97 00000 10.1	MCAS EL TORO	DRAFT RESPONSIVENESS SUMMARY MCAS EL TORO PROPOSED PLAN, OUS 2A AND OU 3A, NO ACTION SITES	ADMIN RECORD INFO REPOSITORY	NFA OU TECH/GUID DOC.	4 6 9 10 13 15 19 20 21 22 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0001	001985 09/18/97 09/18/97 00000 01.6	SOUTHWEST DIVISION R. CALLAWAY EPA SAN FRANCISCO T. ESTRADA, ESQ.	INTERIM RECORD OF DECISION (ROD) OU 2A, SITE 24 VOC SOURCE AREA; MODIFICATION OF THE LANGUAGE INCLUDED AT THE END OF DRAFT FINAL ROD, SECTION 10.2.1.1	ADMIN RECORD INFO REPOSITORY	ROD VOC TECH/GUID DOC.	OU 2A 24	SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0006	001987 09/18/97 09/18/97 00000 01.6	MCAS EL TORO J. JOYCE VARIOUS AGENCIES (BCT)	SUBMITTAL OF FFA EXTENSION REQUEST FOR CHANGES ON THE DRAFT FINAL INTERIM RECORD OF DECISION (ROD) FOR OU 2A, OU 2B AND OU 2C	ADMIN RECORD INFO REPOSITORY	FFA REQUEST ROD TECH/GUID DOC.	OU 2A OU 2B OU 2C 24 25 2 17 3 5	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0015	001978 09/18/97 09/24/97 0063B 10.4	BECHTEL NATIONAL INC D. TEDALDI VARIOUS AGENCIES	SITE (B) BASEWIDE COMMUNITY RELATIONS SUPPORT-RAB MTING MAILER-RAB MTING AGENDA & PUBLIC NOTICE 9/24/97 RAB MTG. MIN. 8/6/97 RAB MTG. (MAILER IN CONFIDTL FILE)	ADMIN RECORD INFO REPOSITORY	CRP RAB MTG MINS TECH/GUID DOC. PUB. PARTICIPATI	24 OU 2A OU 3 OU 3A 25 4 6 9 10 13 15 19	SOUTHWEST DIVISION MCAS EL TORO

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TOTAL RECORDS PRINTED: 192

REPORT SPECIFICATION FOR: RPT443

TITLE: TECHNICAL DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL TORO

FILE: COMBINED Key Info. with Activity File

SELECTION CRITERIA:
[01] Key Words CONTAINS "TECH/GUID DOC." & UIC.No. IS "M60050 "

SORT CRITERIA:
01 Doc. Date

PAGE BREAK LEVEL:
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TYPE REPORT FORM
PAPER COMBO KEY INFO(master activity rpt form)

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M60050 000696 RPT N6871189D9296 0075	07/19/95 11/01/85 00018 01.2	W.R. MILLS ASSOC.	FINAL REPORT TO ORANGE COUNTY WATER DISTRICT TRICHLOROETHYLENE INVESTIGATION NEAR THE EL TORO MARINE AIR STATION	ADMIN RECORD	TCE PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO MCAS EL TORO
M60050 001134 LTR 000000000000000 0001	12/22/95 03/31/88 00000 01.6	MCAS EL TORO CRWQCB RIVERSIDE	MEMBERSHIP FOR THE MCAS EL TORO TRC IS BEING SOUGHT	ADMIN RECORD	TRC PUB. PARTICIPATI	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 000155 LTR 000000000000000	11/01/93 12/21/89 00000 10.1	J. R. FAUNCE MCAS EL TORO B. MAVITY WVHA	TCE CLEANUP CITIZENS ADVISORY COMMITTEE REQUEST FOR MCAS EL TORO REMEDIAL INVESTIGATION WORK PLAN	ADMIN RECORD	TCE CLEANUP RI PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 000417 RPT 000000000000000 0005	07/05/94 02/01/91 00000 10.1	MCAS EL TORO	RESPONSES TO PUBLIC COMMENTS CONCERNING MCAS EL TORO FEDERAL FACILITY AGREEMENT.	ADMIN RECORD INFO REPOSITORY	FFA COMMENTS FIM PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 000097 LTR 000000000000000	11/01/93 02/13/91 00000 10.1	M. ALONZO DEPT. H & H L. NUZUM SOUTHWESTDIV	RESPONSE TO PUBLIC COMMENTS CONCERNING MCAS EL TORO FEDERAL FACILITY AGREEMENT	ADMIN RECORD	FFA COMMENTS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 001014 MM N6871189D9296 0005	12/08/95 04/03/91 00018 01.6	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION	MARCH 20, 1991 TRC MEETING MINUTES	ADMIN RECORD	MTG MINS TRC PUB. PARTICIPATI	OU1 18	SOUTHWEST DIVISION
M60050 000546 MISC 000000000000000 0005	07/07/94 11/01/91 00000 09.3	MCAS EL TORO	FACT SHEET: THE ENVIRONMENTAL CLEANUP OF MARINE CORPS AIR STATION EL TORO.	ADMIN RECORD	HAZ WASTE PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 000892 MISC 000000000000000 0006	07/19/95 11/01/91 00000 10.6	SOUTHWEST DIVISION	FACT SHEET "DESCRIBING INVESTIGATION OF POSSIBLE HAZARDOUS WASTE CONTAMINATION"	ADMIN RECORD	HAZ WASTE PUB. PARTICIPATI	1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,18,19, 20,21,22	SOUTHWEST DIVISION MCAS EL TORO
M60050 001834 MISC 00000000000000 0011	03/24/97 11/18/91 00000 10.4	MCAS EL TORO	PUBLIC FORUM AGENDA WITH HANDOUTS	ADMIN RECORD INFO REPOSITORY	OU CERCLA RI PUB. PARTICIPATI	OU 1 OU 2 OU 4 18 2 3 5 10 17 1 4	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001834 continued						6 7 8 9 11 12 13 14 15 16 19 20 21 22	
M60050 LTR 000000000000000 0004	000555	06/19/96 12/09/91 00000 10.5	MCAS EL TORO L.G. SERAFINI US EPA J. HAMILL	MINUTES FROM THE NOVEMBER 18, 1991 PUBLIC FORUM HELD TO DISCUSS THE REMEDIAL INVESTIGATION	ADMIN RECORD	RI TCE PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0002	000891	07/19/95 12/01/92 00000 10.6	SOUTHWEST DIVISION	FACT SHEET "UPDATE OF THE ENVIRONMENTAL INVESTIGATIONS AT MCAS EL TORO"	ADMIN RECORD	PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MM N6871189D9296 0026	001028	12/06/95 12/17/92 00145 01.6	JACOBS ENGINEERING SOUTHWEST DIVISION	DECEMBER 17, 1992 TRC MEETING MINUTES	ADMIN RECORD	TRC MTG MINS PUB. PARTICIPATI	OU1,OU2, OU3,OU2A OU2B,OU2C 1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,18,19, 20,21,22 24,25	SOUTHWEST DIVISION
M60050 MISC 000000000000000 0008	000890	07/19/95 12/01/93 00000 10.6	SOUTHWEST DIVISION	FACT SHEET "UPDATE OF THE ENVIRONMENTAL INVESTIGATIONS AT MCAS EL TORO"	ADMIN RECORD	PUBNOT PUB. PARTICIPATI	1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16, 17,19,20, 21,22	SOUTHWEST DIVISION MCAS EL TORO
M60050 MEMO N6871189D9296 0043	000861	07/18/95 03/11/94 00145 10.5	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION A. PISZKIN	TECHNICAL REVIEW COMMITTEE (TRC) RAB MEETING SUMMARY	ADMIN RECORD	TRC MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871189D9296 0034	000865	07/18/95 05/20/94 00145 10.4	JACOBS ENGINEERING J. DOLEGOWSKI SOUTHWEST DIVISION A. PISZKIN	RAB MEETING SUMMARY	ADMIN RECORD	RAB MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC 000000000000000 0025	001437	04/08/96 08/16/94 00063 10.0	MCAS EL TORO GENERAL PUBLIC	2 JUNE 1994 MCAS EL TORO RESTORATION ADVISORY BOARD MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0046	000734	06/15/95 08/25/94 00000 10.4	MCAS EL TORO J.JOYCE RAB MEMBERS	RAB MEETING MINUTES, AGENDA AND RAB CHARTER DRAFT	ADMIN RECORD INFO REPOSITORY	MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 LTR 000000000000000 0002	000728	06/15/95 09/19/94 00000 10.4	MCAS EL TORO D. CHANDLER RAB MEMEBERS	RAB MEMBERS RESIGNATIONS, PRIORITIES, ISSUES & COMMUNITY CONCERNS SITE 16	ADMIN RECORD INFO REPOSITORY	MTG MINS PUB. PARTICIPATI	16	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0015	001438	04/08/96 10/12/94 00063 10.0	MCAS EL TORO GENERAL PUBLIC	12 OCTOBER 1994 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0015	001439	04/08/96 12/13/94 00063 10.0	MCAS EL TORO GENERAL PUBLIC	13 DECEMBER 1994 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0020	001440	04/08/96 01/31/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	31 JANUARY 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0020	001441	04/08/96 02/28/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	28 FEBRUARY 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001422	04/03/96 03/24/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING THE 30 MARCH 1995 RESTORATION ADVISORY BOARD MEETING PRINTED IN ORANGE COUNTY REGISTER, LOS ANGELES TIMES, AND THE IRVINE WORLD NEWS	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0020	001444	04/08/96 03/25/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	22 MAY 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001423	04/03/96 04/20/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING THE 27 APRIL 1995 RESTORATION ADVISORY BOARD MEETING PRINTED IN ORANGE COUNTY REGISTER, LOS ANGELES TIMES, AND THE IRVINE WORLD NEWS	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC 000000000000000 0020	001443 04/08/96 04/27/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	27 APRIL 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001424 04/03/96 05/19/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING THE 25 MAY 1995 RESTORATION ADVISORY BOARD MEETING PRINTED IN ORANGE COUNTY REGISTER	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0014	001321 03/14/96 05/31/95 00059 10.0	BECHTEL NATIONAL INC SOUTHWEST DIVISION	MAY 31, 1995 RESTORATION ADVISORY BOARD MEETING MINUTES AND MEETING SIGN-IN SHEETS	ADMIN RECORD INFO REPOSITORY	MTG MINS RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0001	001425 04/03/96 07/20/95 00063 10.0	OC REGISTER PUBLIC	PUBLIC NOTICE ANNOUNCING THE 27 JULY 1995 RESTORATION ADVISORY BOARD MEETING PRINTED IN ORANGE COUNTY REGISTER	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0030	001369 03/19/96 07/25/95 00063 10.6	BECHTEL NATIONAL INC D. CONSER SOUTHWEST DIVISION J. PAYNE	FINAL MCAS EL TORO FACT SHEET #3 AND MAILING LIST	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MM 000000000000000 0016	000966 08/29/95 07/27/95 00000 10.4	RAB MEMBERS	JULY 27, 1995 RAB MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS PUB. PARTICIPATI	OU2 24,25,2,3, 5,17 OU3	SOUTHWEST DIVISION MCAS EL TORO
M60050 MM 000000000000000 0007	001067 12/11/95 07/27/95 00000 10.4	MCAS EL TORO RAB MEMBERS	JULY 27, 1995 RAB MEETING MINUTES	ADMIN RECORD	MTG MINS RAB PUB. PARTICIPATI	OU1,OU2 OU2A,OU2B OU2C,OU3 1,2,3,4,5, 6,7,8,9,10 11,12,13, 14,15,16 17,18,19 20,21,22 24,25	SOUTHWEST DIVISION
M60050 MISC 000000000000000 0020	001445 04/08/96 07/27/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	27 JULY 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0005	001426 04/03/96 08/24/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING THE 31 AUGUST 1995 RESTORATION ADVISORY BOARD MEETING PRINTED IN THE ORANGE COUNTY REGISTER, TUSTIN WEEKLY, AND LA TIMES	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 LTR 000000000000000 0046	001446	04/08/96 08/31/95 00063 10.0	MCAS EL TORO RAB MEMBERS	31 AUGUST 1995 RESTORATION ADVISORY BOARD MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATION AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001427	04/03/96 09/18/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING THE 28 SEPTEMBER 1995 RESTORATION ADVISORY BOARD MEETING AND APPLICATION PERIOD APPEARING IN VARIOUS LOCAL NEWSPAPERS	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0004	001326	03/18/96 09/20/95 00063 10.0	BECHTEL NATIONAL INC A. SCHWARTZ MCAS EL TORO D. CHANDLER	MCAS TUSTIN/MCAS EL TORO RESTORATION ADVISORY BOARD MEMBERSHIP RECRUITMENT PACKAGE AND PUBLIC NOTICE ANNOUNCING MEMBERSHIP	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0020	001447	04/08/96 09/28/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	28 SEPTEMBER 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0014	001327	03/18/96 10/09/95 00063 10.5	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	27 JULY 1995 AND 31 AUGUST 1995 RESTORATION ADVISORY BOARD MEETING MINUTES AND RAB SUBCOMMITTEE ROSTER	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0025	001386	03/20/96 10/09/95 00063 10.0	BECHTEL NATIONAL INC J. KLEUSENER SOUTHWEST DIVISION P. KENNEDY	FINAL MCAS EL TORO FACT SHEET #4, INCLUDES MAILING LIST	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0004	001429	04/03/96 10/19/95 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING 26 OCTOBER RESTORATION ADVISORY BOARD MEETING FOUND IN LA TIMES AND ORANGE COUNTY REGISTER	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0003	001199	01/23/96 11/01/95 00063 10.6	MCAS EL TORO COMMUNITY MEMBERS	FACT SHEET NO. 5 UPDATE ON ENIRONMENTAL RESTORATION PROGRAM AT MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0025	001385	03/20/96 11/30/95 00063 10.0	BECHTEL NATIONAL INC RAB	PUBLIC INFORMATION MATERIALS FOR 11/30/95 RAB MEETING INCLUDING 10/26/95 RAB MEETING MINUTES AND 30 NOVEMBER 1995 RAB MEETING HANDOUTS	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0020	001449	04/08/96 11/30/95 00063 10.0	MCAS EL TORO GENERAL PUBLIC	30 NOVEMBER 1995 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 001409 LTR 000000000000000 0007	03/20/96 01/11/96 00063 10.1	RAB MEMBER L. SIEVERS RAB M. RUDOLPH	RAB MEMBER COMMENTS ON DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN FOR MCAS TUSTIN AND MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	CRP COMMENTS PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001213 MISC N6871192D4670 0011	01/30/96 01/17/96 0063B 10.5	BECHTEL NATIONAL INC H. MASRI SOUTHWEST DIVISION P. KENNEDY	31 JANUARY 1996 RESTORATION ADVISORY BOARD DRAFT MEETING AGENDA, PROPOSED CHANGES TO RAB; MISSION STATEMENT AND OPERATING PROCEDURES, 1996 SCHEDULE	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001411 LTR 000000000000000 0002	03/25/96 01/18/96 00063 10.1	CITY OF LAKE FOREST R. WOODINGS RAB M. RUDOLPH	CITY OF LAKE FOREST COMMENTS ON DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN FOR MCAS TUSTIN AND MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	COMMENTS CRP PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001408 LTR 000000000000000 0002	03/20/96 01/22/96 00063 10.1	RAB M. RUDOLPH MCAS EL TORO J. JOYCE	RESTORATION ADVISORY BOARD COMMENTS TO DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN	ADMIN RECORD INFO REPOSITORY	COMMENTS CRP PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001410 LTR 000000000000000 0004	03/25/96 01/22/96 00063 10.1	RAB MEMBER A. OLQUIN RAB M. RUDOLPH	RAB MEMBER COMMENTS ON DRAFT FINAL UPDATED COMMUNITY RELATIONS PLAN FOR MCAS TUSTIN AND MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	COMMENTS CRP PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001430 MISC 000000000000000 0003	04/03/96 01/24/96 00063 10.0	VARIOUS NEWSPAPERS PUBLIC	PUBLIC NOTICE ANNOUNCING 31 JANUARY RESTORATION ADVISORY BOARD MEETING FOUND IN LA TIMES AND ORANGE COUNTY REGISTER	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001450 MISC 000000000000000 0040	04/08/96 01/31/96 00063 10.0	MCAS EL TORO GENERAL PUBLIC	31 JANUARY 1996 MCAS EL TORO RESTORATION ADVISORY MEETING AGENDA, MINUTES, HANDOUTS AND MATERIALS FOR PRESENTATIONS, AND PUBLIC NOTICE ANNOUNCING MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUBNOT PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001431 MISC 000000000000000 0001	04/03/96 02/21/96 00063 10.0	OC REGISTER PUBLIC	PUBLIC NOTICE ANNOUNCING 28 FEBRUARY RESTORATION ADVISORY BOARD MEETING FOUND IN ORANGE COUNTY REGISTER	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001434 MISC N6871192D4670 0015	04/03/96 02/21/96 0063B 10.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	28 FEBRUARY 1996 RESTORATION ADVISORY BOARD MEETING AGENDA AND PUBLIC NOTICE, RAB INSTALLATION RESTORATION PROGRAM TOUR ANNOUNCEMENT AND MAIL LIST ALSO INCLUDED	ADMIN RECORD INFO REPOSITORY	RAB PUBNOT PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO
M60050 001274 MISC N6871192D4670 0015	03/07/96 02/23/96 0063B 10.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	BASEWIDE COMMUNITY RELATIONS SUPPORT - 1/31/96 RESTORATION ADVISORY BOARD MEETING MAILER INCLUDES DRAFT MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI	SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC 000000000000000 0025	001402 03/20/96 02/27/96 00063 10.0	MCAS EL TORO C. WIEMERT BECHTEL NATIONAL INC B. COLEMAN	DOCUMENTS FOR 23 AND 24 FEBRUARY 1996 MCAS EL TORO RAB TOUR INCLUDES TOUR INFORMATION, PUBLIC NOTICE AND TOWN HALL FLIER	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI	OU1,OU2, OU3,1,2,3, 4,5,6,7,8, 9,10,11,12 13,14,15 16,17,18 19,20,21 24,25	SOUTHWEST DIVISION MCAS EL TORO
M60050 RPT N6871192D4670 0080	001451 04/08/96 03/01/96 00063 10.2	BECHTEL NATIONAL INC A. SCHWARTZ SOUTHWEST DIVISION	FINAL UPDATED COMMUNITY RELATIONS PLAN FOR MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	CRP PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0001	001432 04/03/96 03/06/96 00063 10.0	MCAS EL TORO BASE RESIDENTS	FLIER ANNOUNCING A "TOWN HALL MEETING" FOR RESIDENTS OF MCAS EL TORO HELD ON 6 MARCH 1996 TO DISCUSS CLEANUP OF CONTAMINATED SOILS, USTS USING TECHNOLOGIES	ADMIN RECORD INFO REPOSITORY	PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0075	001982 09/18/97 04/24/96 00000 10.4	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR APRIL 24, 1996, MEETING-AGENDA, HANDOUTS, & MINUTES OF FEBRUARY 28, 1996, SIGN IN SHEETS OF 4/24/96 RAB MTG.	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT RI GW TECH/GUID DOC.	TANK 398 OU 2A 24 25	SOUTHWEST DIVISIOI MCAS EL TORO
M60050 MISC N6871192D4670 0005	001524 07/03/96 04/25/96 00063 10.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	FINAL MCAS EL TORO FACT SHEET #6, UPDATE ON ENVIRONMENTAL RESTORATION PROGRAM AT MCAS EL TORO	ADMIN RECORD INFO REPOSITORY	FACTSHEET PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0005	000543 06/19/96 05/19/96 00063 10.3	MCAS EL TORO J. JOYCE BECHTEL NATIONAL INC B. COLEMAN	PUBLIC NOTICES ANNOUNCING THE APRIL 24, 1996 RESTORATION ADVISORY BOARD MEETING	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670 0010	000909 07/19/95 05/21/96 0063B 10.0	BECHTEL NATIONAL INC D. COWSER SOUTHWEST DIVISION P. KENNEDY	SITE B BASEWIDE COMMUNITY RELATIONS SUPPORT - 5/29/96 RAB MEETING MAILER INCLUDES DRAFT AGENDA AND MINUTES FROM 24 APRIL 1996 RAB AND PUBLIC NOTICE/MTG ANNOUNCE	ADMIN RECORD INFO REPOSITORY	RAB PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001504 06/06/96 05/22/96 00000 10.3	VARIOUS NEWSPAPERS GENERAL PUBLIC	PUBLIC NOTICES APPEARING IN THE ORANGE COUNTY REGISTER IRVINE WORLD NEWS AND LA TIMES ANNOUNCING 29 MAY 1996 RESTORATION ADVISORY BOARD MEETING	ADMIN RECORD INFO REPOSITORY	RAB PUBNOT UST PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC N6871192D4670000 0030	001514 07/03/96 05/29/96 0063B 10.0	MCAS EL TORO RAB ATTENDEES	29 MAY 1996 RESTORATION ADVISORY BOARD AGENDA, MINUTES FROM 24 APRIL 1996 RAB MEETING, AND HANDOUTS FROM 29 MAY 1996 RAB MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS UST PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 001513 MISC N687192D4670000 0010	07/03/96 06/28/96 0063B 10.0	BECHTEL NATIONAL INC J. KLEUSENER SOUTHWEST DIVISION P. KENNEDY	BASEWIDE COMMUNITY RELATIONS SUPPORT - MAILER OF DRAFT MEETING MINUTES FROM 29 MAY 1996 RESTORATION ADVISORY BOARD MEETING, INCLUDES MAILING LIST	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS UST PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 001775 MISC 000000000000000 0001	03/20/97 07/24/96 00000 10.6	ORANGE CO. REGISTER PUBLIC INTEREST	JULY 31, 1996 PUBLIC NOTICE OF MCAS EL TORO AND TUSTIN RAB MEETING	ADMIN RECORD INFO REPOSITORY	PRESS REL RAB OU PUBNOT PUB. PARTICIPATI	13 18	SOUTHWEST DIVISION MCAS EL TORO
M60050 001649 MISC 000000000000000 0003	09/27/96 07/25/96 00000 10.6	LOS ANGELES TIMES ORANGE CO.REG. PUBLIC NOTIFICATION	NEWSPAPER ARTICLES " PUBLIC NOTICE NEWS ADS OF JULY 31, 1996 RAB MEETING"	ADMIN RECORD INFO REPOSITORY	PUBNOT PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 001818 MISC 000000000000000 0001	03/21/97 07/31/96 00000 10.4		RAB MISSION STATEMENT AND OPERATING PROCEDURES	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 001980 MISC 000000000000000 0002	09/18/97 07/31/96 00000 10.3	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR JULY 31, 1996, RAB MEETING-AGENDA, HANDOUTS, & MINUTES FROM MAY 29, 1996 RAB MEETING (W/O ENCLS)	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUB. PARTICIPATI PUBNOT	3 OU 2C 5 OU 2A 24 TANK 398 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001703 MISC 000000000000000 0001	11/13/96 08/26/96 00000 10.6	RAB COMMUNITY CO-CHR M. RUDOLPH ALL RAB MEMBERS	FAXED ANNOUNCEMENT REGARDING FUTURE RAB SUB-COMMITTEE MEETING TO BE HELD ON WEDNESDAY, AUGUST 28, 1996	ADMIN RECORD	RAB PUB. PARTICIPATI		SOUTHWEST DIVISION
M60050 001674 XMTL N6871192D4670 0005	09/30/96 09/20/96 0063B 10.5	BNI SAN DIEGO D. COWSER SOUTHWEST DIVISION R. SELBY	SITE (B) BASEWIDE COMMUNTIY RELATIONS SUPPORT-IR UPDATE AND MAINTENANCE DTE SEPTEMBER 20, 1996	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI	OU1	SOUTHWEST DIVISION MCAS EL TORO
M60050 001983 MISC 000000000000000 0050	09/18/97 09/25/96 00000 10.4	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR SEPTEMBER 25, 1996, MEETING-AGENDA, HANDOUTS, & MINUTES OF JULY 31, 1996 RAB MTG., SIGN-IN SHEETS, REV. "BLUE SHEET"	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT MTG MINS TECH/GUID DOC.	TANK 398 OU 1 OU 2A 18 24 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001727 MM N6871192D4670 0006	11/21/96 11/20/96 0063B 10.4	BECHTEL NATIONAL D. COWSER SOUTHWEST DIVISION R. SELBY	SITE (B) BASEWIDE CRS- RAB MEETING MAILER-REVISED DRAFT RAB MEETING AGENDA FOR 12/4/96 EL RAB MEETING	ADMIN RECORD INFO REPOSITORY	RAB MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC 000000000000000 0156	001848 03/24/97 12/04/96 00000 10.4		DECEMBER 4, 1996 RAB MEETING PUBLIC INFO. MATERIALS INCLDS: MTG. AGENDA, DRF MTG. MIN., MEMBER SIGN-UP SHEET, FACT SHT.#7, EXEC.SUMRY ON DRFT RI OU 3A, ETC.	ADMIN RECORD INFO REPOSITORY	RAB IRP PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0003	001849 03/24/97 12/04/96 00000 10.3	MCAS EL TORO J. JOYCE BECHTEL NATIONAL INC B. COLEMAN	PUBLIC NOTICES OF DECEMBER 4, 1996 RAB MEETING IN LOCAL NEWSPAPERS	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0075	001981 09/18/97 12/04/96 00000 10.4	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR DECEMBER 4, 1996,RAB MEETING-AGENDA, HANDOUTS, & MINUTES OF SEPTEMBER 25, 1996, REVISED "BLUE SHEET" FOR 12/4/96 MTG.	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT MTG MINS RAB OU	OU 3A OU 2B OU 2C OU 1 2 17 18 3 5 4 6 8 9 10 11 12 13 15 16 19 21 21 22	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0056	001850 03/24/97 12/12/96 0063B 10.6	BECHTEL NATIONAL INC H. MASRI VARIOUS AGENCIES	SITE (B) BASEWIDE COMMUNITY RELATIONS SUPPORT - FINAL FACT SHEET NO. 7 (NO. 5 UNDER CLEAN II) WITH ENCLS.	ADMIN RECORD INFO REPOSITORY	CLEANUP PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0004	001762 03/20/97 01/10/97 0063B 10.2	BECHTEL NATIONAL INC H. MASRI SOUTHWEST DIVISION R. SELBY	MARCH 26, 1996, REPLACEMENT PAGES TO FINAL UPDATED COMMUNITY RELATIONS PLAN	ADMIN RECORD INFO REPOSITORY	CRP IRP PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0030	001854 03/25/97 01/15/97 0063B 10.4	BECHTEL NATIONAL INC D. COWSER RAB MEMEBERS	SITES (B) BASEWIDE COMMUNITY RELATIONS SUPPORT-INCLDS. DRAFT RAB MEETING AGENDA, DRAFT PUBLIC NOTICE OF 1/30/97, DRAFT MEETING MINUTES, SIGN-UP SHEET	ADMIN RECORD INFO REPOSITORY	MTG MINS RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO

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M60050 MISC N6871192D4670 0001	001764	03/20/97 01/30/97 00000 10.4		RESTORATION ADVISORY BOARD MEETING W/O ENCL (REF. DOC. #001813 THRU 001822)	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0001	001813	03/21/97 01/30/97 00000 10.4	MCAS EL TORO RAB	JANUARY 30, 1997, RAB MEETING AGENDA	ADMIN RECORD INFO REPOSITORY	RAB PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0031	001756	03/20/97 02/06/97 00073 10.4	BECHTEL NATIONAL INC P. BROOKS VARIOUS AGENCIES	JANUARY 30, 1997, MEETING MINUTES	ADMIN RECORD INFO REPOSITORY	MTG MINS BCP CERCLA PUB. PARTICIPATI	2 17 19	SOUTHWEST DIVISION MCAS EL TORO
M60050 XMTL N6871192D4670 0010	001845	03/24/97 03/26/97 00636 10.1	BECHTEL NATIONAL INC C. CARLISLE VARIOUS AGENCIES	SITES (B) BASEWIDE COMMUNITY RELATIONSHIPS SUPPORT - INCLUDES: MARCH 26, 1997 AGENDA, PUBLIC NOTICE, JANUARY 30, 1997 DRFT MTG. MIN. (RAB MAILER IN CONFID)	ADMIN RECORD INFO REPOSITORY	PUBNOT RAB MTG MINS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MM 000000000000000 0000	001949	06/06/97 03/28/97 00000 10.4	BECHTEL NATIONAL INC D. TEDALDI SOUTHWEST DIVISION T. MARTIN	PUBLIC INFORMATION MATERIALS- MARCH 28, 1997 RAB MEETING	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI RAB	4 6 9 10 13 15 19 20 21 22 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 PLAN 000000000000000 0008	001925	04/29/97 04/23/97 00000 04.3	BECHTEL NATIONAL INC C. CARLISLE VARIOUS AGENCIES	PROPOSED PLAN FOR OPERABLE UNIT 2A SITE 24 SOIL VADOSE ZONE CLEANUP	ADMIN RECORD INFO REPOSITORY	OU SOIL CLEANUP TECH/GUID DOC. PUB. PARTICIPATI	2A 24 OU 2A	SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0002	001936	05/28/97 05/14/97 00000 10.6	ORANGE CO. REGISTER PUBLIC INTEREST	NEWSPAPER ARTICLE "PUBLIC TO COMMENT ON BASE CLEANUP"	ADMIN RECORD INFO REPOSITORY	PUBNOT CLEANUP COMMENTS PUB. PARTICIPATI		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0001	001975	09/18/97 05/22/97 00000 10.3	ORANGE COUNTY REGIST PUBLIC INTEREST	PUBLIC NOTICE "RAB MEETING FOR MAY 29, 1996"	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT RAB MTG MINS		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0150	001974	09/18/97 05/28/97 00000 10.3	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR MAY 28,1997, RAB MEETING-AGENDA, HANDOUTS & DRAFT MEETING MINUTES FROM MARCH 26, 1997 RAB MEETING	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI RAB PUBNOT MTG MINS	24 OU 2A OU 3 OU 2B 2	SOUTHWEST DIVISION MCAS EL TORO

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M60050	001974 continued					17 OU 3A 25 15 19 20 4 6 8 9 10 11 12 13 15 16 19 20 21 22	
M60050 PLAN 000000000000000 0000	001950 	06/06/97 06/16/97 00000 01.6	BECHTEL NATIONAL INC D. TEDALDI SOUTHWEST DIVISION T. MARTIN	PROPOSED PLAN MCAS EL TORO NO FURTHER ACTION SITES	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI NFA	4 6 9 10 13 15 19 20 21 22 25	SOUTHWEST DIVISION MCAS EL TORO
M60050 MM 000000000000000 0010	001969 	09/18/97 07/31/97 00000 10.4	HAHN BOWERSOCK CORP J. BURGNER MCAS EL TORO	JULY 31, 1997, PUBLIC COMMENT MEETING PROPOSED PLAN FOR ENVIRONMENTAL RESTORATION NO FURTHER ACTION SITES IRP	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT NFA IRP TECH/GUID DOC.		SOUTHWEST DIVISION MCAS EL TORO
M60050 MM 000000000000000 0017	001970 	09/18/97 07/31/97 00000 10.4	MCAS EL TORO MEMBERS	JULY 31, 1997, PUBLIC COMMENT MEETING NO FURTHER ACTION SITES HANDOUTS INCLUDES, PUBLIC COMMENT FORMS, MEETING EVALUATION, AND SIGN-UP SHEETS	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI TECH/GUID DOC. COMMENTS NFA		SOUTHWEST DIVISION MCAS EL TORO
M60050 MISC 000000000000000 0001	001971 	09/18/97 07/31/97 00000 10.6	ORANGE COUNTY REGIST PUBLIC INTEREST	PUBLIC NOTICE "PRESENTATION AND DISCUSSION MEETING" DATED JULY 31, 1997	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI NFA PUBNOT		SOUTHWEST DIVISION MCAS EL TORO

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M60050 001972 MISC 000000000000000 0002	09/18/97 07/31/97 00000 10.6	IRVINE WORLD NEWS PUBLIC INTEREST	NEWSPAPER ARTICLE "MARINES INVITE PUBLIC TO ASK, COMMENT ABOUT CLEANUP OF GROUND CONTAMINATION"	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI COMMENTS CLEANUP PUBNOT	25	SOUTHWEST DIVISION MCAS EL TORO
M60050 001979 MISC 000000000000000 0004	09/18/97 07/31/97 00000 10.3	MCAS EL TORO CO BECHTEL NATIONAL INC B. COLEMAN	FAXED COPIES OF VARIOUS NEWS CLIPPINGS: PUBLIC NOTICE DATED JULY 31, 1997 PRESENTATION & DISCUSSION MTG.,IRP PROPOSED PLAN OU 2A-SITE 24,NKA , OU 3A	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI TECH/GUID DOC. OU NFA	OU 2A 24 OU 3A	SOUTHWEST DIVISION MCAS EL TORO
M60050 001973 MISC 000000000000000 0133	09/18/97 08/06/97 00000 10.3	MCAS EL TORO RAB MEMBERS	PUBLIC INFORMATION MATERIALS FOR AUGUST 6, 1997, RAB MEETING-AGENDA, HANDOUTS & DRAFT MEETING MINUTES FROM MAY 28, 1997 RAB MEETING	ADMIN RECORD INFO REPOSITORY	PUB. PARTICIPATI PUBNOT RAB MTG MINS	25 OU 3A 24 OU 2A 4 6 8 9 10 11 12 13 15 16 19 20 21 22	SOUTHWEST DIVISION MCAS EL TORO
M60050 001978 MISC N6871192D4670 0015	09/18/97 09/24/97 00638 10.4	BECHTEL NATIONAL INC D. TEDALDI VARIOUS AGENCIES	SITE (B) BASEWIDE COMMUNITY RELATIONS SUPPORT-RAB MTING MAILER-RAB MTING AGENDA & PUBLIC NOTICE 9/24/97 RAB MTG. MIN. 8/6/97 RAB MTG.(MAILER IN CONFIDTL FILE)	ADMIN RECORD INFO REPOSITORY	CRP RAB MTG MINS TECH/GUID DOC. PUB. PARTICIPATI	24 OU 2A OU 3 OU 3A 25 4 6 9 10 13 15 19 20 21 22 25	SOUTHWEST DIVISION MCAS EL TORO

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TO. . RECORDS PRINTED: 95

REPORT SPECIFICATION FOR: RPT442

TITLE: PUBLIC PARTICIPATION DOCUMENTS- MCAS EL TORO (SORT BY DOCUMENT D

FILE: COMBINED Key Info. with Activity File

SELECTION CRITERIA:
(01) Key Words CONTAINS "PUB. PARTICIPATI"
& Key Words CONTAINS ALL "PUB. PARTICIPATI" & UIC.No. IS "M60050 "

SORT CRITERIA:
01 Doc. Date

PAGE BREAK LEVEL:
00 NO PAGEBREAK

TYPE REPORT FORM
PAPER COMBO KEY INFO(master activity rpt form)

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COMPDM GUID E 1527 0001	000001	09/16/94	AMERCIAN SOCIETY	STANDARD PRACTICE FOR ENVIRONMENTAL SITE ASSESSMENTS: PHASE I ENVIRONMENTAL SITE ASSESSMENT PROCESS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION SALTON SEA
COMPDM GUID E 1528-93 0031	000002	11/17/94	AMERICAN SOCIETY	STANDARD PRACTICE FOR ENVIRONMENTAL SITE ASSESSMENTS: TRANSACTION SCREEN PROCESS	COMPENDIUM	TECH/GUID DOC.	1,2,3,4,5 6,7,8,9,10 11,12,13, 14,15,16 17,18,19, 20,21,22 23,24,25	SOUTHWEST DIVISION SALTON SEA
COMPDM GUID TITLE 22 0000	000020	11/21/94		CALIFORNIA [illegible] OF REGUALTIONS (22 CFR) CHAPTER 14, ARTICLE 7 TITLE 22	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0000	000021	11/21/94		SARA SECTION 211, CHAPTER 160, PARAGRAPH 2705C	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0000	000022	11/21/94		CALIFORNIA CODE OF REGULATIONS, TITLE 22, (22 CFR) DIVISION 4.5	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION NASNI SAN DIEGO
COMPDM GUID 000000000000000 0000	000023	11/21/94		RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) AND HAZAROUS AND SOLID WASTE AMENDMENTS OF 1984	COMPENDIUM	GUID RCRA HSWA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID NIOSH 85-115 0000	000029	11/21/94	NIOSH	OCCUPATIONAL SAFETY AND HEALTH GUIDANCE MANUAL FOR HAZARDOUS WASTE SITE ACTIVITIES	COMPENDIUM	GUID HAZ WASTE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 29 CFR 1926.65 0000	000030	11/21/94	USDOL/OSHA	CODE OF FEDERAL REGUALTIONS TITLE 29, PART 1926.65	COMPENDIUM	GUID CFR TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0000	000033	11/21/94		STATE OF CALIFORNIA HEALTH AND SAFETY CODE SECTION 41805.5	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 15 CFR 0000	000034	11/28/94		15 CFR PART 930 SECTION 930.33(b)	COMPENDIUM	CFR TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM GUID 40 CFR 0000	000035	11/28/94		40 CFR SECTION 146.4	COMPENDIUM	CFR TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 40 CFR 0000	000036	11/28/94		40 CFR SECTION 131.12	COMPENDIUM	CFR TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0008	000055	11/28/94		VGI NCP REQUIREMENTS FOR ARAR's	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID CONF 8710756 0013	000078	11/28/94		IMPLEMENTATION OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540/G87/003 0000	000133	12/15/94	EPA	DATA QUALITY OBJECTIVES FOR REMEDIAL RESPONSE ACTIVITIES 2 PARTS VOL. 1: DEVELOPMENT PROCESS (EPA 540/G87/003) VOL. 2 EXAMPLE SCENARIO (EPA 540/G87/004)	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION NAF EL CENTRO
COMPDM GUID 000000000000000 0000	000277	12/27/94		CALIFORNIA CODE OF REGULATIONS, TITLE 23, DIVISION 3 CHAPTER 15 (DISCHARGES FO WASTE TO LAND) ARTICLE 2, ARTICLE 5, ARTICLE 6	COMPENDIUM	TECH/GUID DOC.		SOUTHWEST DIVISION NAF EL CENTRO
COMPDM GUID PL 95-510 0000	000027	11/21/94 01/01/80		COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0250	000169	12/22/94 01/01/80		EPA NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN UNDER THE CERCLA OF 1980	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 0200	000326	05/15/95 01/01/84	US GEOLOGIAL SURVEY	ELEMENT CONCENTRATIONS IN SOILS AND OTHER SURFICIAL MATERIALS OF THE CONTERMINOUS UNITED STATES US GEOLOGICAL SURVEY PROFESSIONAL PAPER 1270	COMPENDIUM	TECH/GUID DOC.		SALTON SEA
COMPDM GUID 000000000000000 0000	000103	12/01/94 04/01/85	EPA	LABORATORY DATA VALIDATION - FUNCTIONAL GUIDELINES FOR EVALUATING ORGANICS ANALYSIS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM GUID NEESA 20.2-047B 0000	000108 12/01/94 09/01/85		NEESA PORT HUENEME	SAMPLING AND CHEMICAL ANALYSIS QUALITY ASSURANCE REQUIREMENTS FOR THE NAVY INSTALLATION RESTORATION PROGRAM	COMPENDIUM	GUID IRP TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID NEESA 20.2-047 0078	000145 12/15/94 09/01/85		NEESA PORT HUENEME	SAMPLING AND CHEMICAL ANALYSIS QUALITY ASSURANCE GUIDE FOR NAVY ASSESSMENT AND CONTROL OF NACIP PROGRAM	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION NAF EL CENTRO
COMPDM GUID 000000000000000 0000	000102 12/01/94 11/01/85		EPA	LABORATORY DATA VALIDATION - FUNCTIONAL GUIDELINES FOR EVALUATING INORGANICS ANALYSIS	COMPENDIUM	GUID DATA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0050	000366 04/04/96 10/17/86			COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 CERCLA AS AMENDED THROUGH PL 99-499	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM MISC P.L.96-510 0300	000251 09/23/96 12/01/86		US SENATE	THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT OF 1980 (SUPERFUND)P.L. 96-510 AS AMENDED BY THE SARA ACT OF 1986 P.L. 99-499	COMPENDIUM	CERCLA HAZ WASTE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540G87003 0220	000081 11/28/94 03/01/87		EPA WASHINGTON	DATA QUALITY OBJECTIVES FOR REMEDIAL RESPONSE ACTIVITIES DEVELOPMENT PROCESS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID PB90272634 0300	000388 04/05/96 03/01/87		EPA WASHINGTON	DATA QUALITY OBJECTIVES FOR REMEDIAL RESPONSE ACTIVITIES EXAMPLE SCENARIO: RI/FS ACTIVITIES AT A SITE WITH CONTAMINATED SOILS & GROUND WATER	COMPENDIUM	GUID DATA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0006	000057 11/28/94 08/01/87		EPA	THE NEW SUPERFUND WHAT IT IS, HOW IT WORKS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 600887044 0100	000113 12/01/94 08/01/87		EPA	ROLE OF ACUTE TOXICITY BIOASSAYS IN THE REMEDIAL ACTION PROCESS AT HAZARDOUS WASTE SITES (PB88125430)	COMPENDIUM	GUID HAZ WASTE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM MISC 0012	000253 09/23/96 08/01/87		JACOBS ENGINEERING	STANDARD OPERATING PROCEDURE SAMPLE DOCUMENTATION VOL. III, SEC: 30	COMPENDIUM	SOP TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM 000259 MISC 0009	09/23/96 08/01/87	JACOBS ENGINEERING	STANDARD OPERATING PROCEDURE SOIL GAS SAMPLING VOL:III, SEC: 44	COMPENDIUM	SOP TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000109 GUID EPA 540 P870001 0400	12/01/94 12/01/87	EPA WASHINGTON	A COMPENDIUM OF SUPERFUND FIELD OPERATIONS METHODS (PB88181557)	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000131 GUID NEESA 20.2-047B 0000	12/15/94 01/01/88	NEESA PORT HUENEME	SAMPLING AND CHEMICAL ANALYSIS QUALITY ASSURANCE REQUIREMENTS FOR THE NAVY IRP REVISED AUGUST.	COMPENDIUM	QA IRP TECH/GUID DOC.	SOUTHWEST DIVISION NAF EL CENTRO
COMPDM 000238 GUID 000000000000000 0000	12/23/94 01/01/88	NEESA PORT HUENEME	SAMPLING AND CHEMICAL ANALYSIS QUALITY ASSURANCE REQUIREMENTS FOR THE NAVY INSTALLATION RESTORATION PROGRAM	COMPENDIUM	QA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000216 GUID 000000000000000 0000	12/22/94 02/01/88	EPA	LABORATORY DATA VALIDATION FUNCTIONAL GUIDELINES FOR EVALUATING ORGANIC ANALYSIS	COMPENDIUM	DATA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000240 RPT EPA540/1-88/001 0157	09/23/96 04/01/88	EPA-OSWER	SUPERFUND EXPOSURE ASSESSMENT MANUAL REF#OSWER DIRECTIVE 9285.5-1	COMPENDIUM	EXPOSURE GW HAZ WASTE TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000134 GUID 0000	12/15/94 05/01/88	ATI, INC.	LABORATORY QUALITY ASSURANCE MANUAL	COMPENDIUM	QA TECH/GUID DOC.	SOUTHWEST DIVISION NAF EL CENTRO
COMPDM 000141 GUID NEASSA 202047B 0000	12/15/94 06/01/88	NEESA PORT HUENEME	SAMPLING AND CHEMICAL ANALYSIS QUALITY ASSURANCE REQUIREMENTS FOR THE INSTALLATION RESTORATION PROGRAM	COMPENDIUM	QA TECH/GUID DOC.	SOUTHWEST DIVISION NAF EL CENTRO
COMPDM 000361 GUID 000000000000000 0014	04/04/96 06/23/88	CINPACFLT	DEPARTMENT OF THE NAVY CERCLA/SARA/IR REQUIREMENTS AND PROCEDURES	COMPENDIUM	CERCLA GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000215 GUID 000000000000000 0000	12/22/94 07/01/88	EPA	LABORATORY DATA VALIDATION FUNCTIONAL GUIDELINES FOR EVALUATING INORGANIC ANALYSIS	COMPENDIUM	DATA TECH/GUID DOC.	SOUTHWEST DIVISION

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COMPDM 000175 GUID PB89-184626 0300	12/22/94 10/01/88	EPA WASHINGTON	GUIDANCE FOR CONDUCTING REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES UNDER CERCLA, INTERIM FINAL, OFFICE OF EMERGENCY AND REMEDIAL RESPONSE	COMPENDIUM	GUID CERCLA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000201 GUID PB89184626 0250	12/22/94 10/01/88	EPA WASHINGTON DC	GUIDANCE FOR CONDUCTION REMEDIAL INVESTIGATIONS AND FEASIBILITY STUDIES UNDER CERCLA	COMPENDIUM	GUID RI TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000213 GUID 000000000000000 0000	12/22/94 01/01/89	EPA	EPA RISK ASSESSMENT GUIDANCE FOR SUPERFUND (RAGS). VOLUME I HUMAN HEALTHE EAP/540/1-89/002	COMPENDIUM	RA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000274 GUID 000000000000000 0000	12/27/94 01/01/89	USEPA	OSWER DIRECTIVE NO. 9200.5-302	ADMIN RECORD COMPENDIUM	TECH/GUID DOC.	SOUTHWEST DIVISION NAF EL CENTRO
COMPDM 000211 GUID 9285.701A 0200	09/20/96 01/07/89	EPA - OSWER	RISK ASSESSMENT GUIDANCE FOR SUPERFUND HUMAN HEALTH EVALUATION MANUAL PART A INTERIM FINAL PRE-PUBLICATION COPY	COMPENDIUM	RISK HA RI FS TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000127 GUID 000000000000000 0000	12/01/94 02/01/89	EPA	METHODS FOR EVALUATING THE ATTAINMENT OF CLEANUP STANDARDS OFFICE OF POLICY, PLANNING AND EVALUATION FEBRUARY, 1989(a)	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION NASNI SAN DIEGO
COMPDM 000069 GUID EPA 540189001 0150	11/28/94 03/01/89	EPA WASHINGTON	RISK ASSESSMENT GUIDANCE FOR SUPERFUND VOLUME IIIAL ENVIRONMENTAL EVALUATION MANUAL INTERIM FINAL	COMPENDIUM	GUID RA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000200 GUID EPA 540189001 0050	12/22/94 03/01/89	EPA WASHINGTON DC	RISK ASSESSMENT GUIDANCE FOR SUPERFUND VOLUME II ENVIRONMENTAL EVALUATION MANUAL INTERIM FINAL	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000100 GUID 000000000000000 0000	12/01/94 05/01/89	DON	NAVY INSTALLATION RESTORATION (IR) MANUAL	COMPENDIUM	GUID IRP TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000257 RPT PB89-195184 0087	09/23/96 06/01/89	EPA-ORD	STATE OF TECHNOLOGY REVIEW SOIL VAPOR EXTRACTION SYSTEMS EPA/600/2-89/024	COMPENDIUM	SVEI TECH/GUID DOC.	SOUTHWEST DIVISION

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COMPDM 000336 GUID 9355302 0250	08/18/95 06/01/89	EPA WASHINGTON, D.C.	INTERIM FINAL GUIDANCE ON PREPARING SUPERFUND DECISION DOCUMENTS THE PROPOSED PLAN THE ROD EXPLANATION OF SIGNIFICANT DIFFERENCES THE ROD AMENDMENT	COMPENDIUM	ROD TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000194 GUID EPA 540G89007 0150	12/22/94 07/01/89	EPA WASHINGTON DC	GUIDANCE ON PREPARING SUPERFUND DECISION: THE PROPOSED PLAN THE RECORD OF DECISION EXPLANATION OF SIGNIFICANT DIFFERENCES THE ROD AMENDMENT INTERIM FINAL	COMPENDIUM	ROD TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000377 GUID 000000000000000 0350	04/05/96 07/01/89	EPA WASHINGTON	GUIDANCE ON PREPARING SUPERFUND DECISION DOCUMENTS: THE PROPOSED PLAN THE RECORD OF DECISION EXPLANTIONS OF SIGNINFICANT DIFFERENCE THE ROD AMENDMENT	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000221 GUID EPA 540 G-89009 0150	12/22/94 08/01/89	EPA	CERCLA COMPLICANCE WITH OTHER LAWS MANUAL: PART II CLEAN AIR ACT AND OTHER ENVIRONMENTAL STATUTES & STATE REQUIREMENTS	COMPENDIUM	GUID CERCLA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000338 GUID EPA540G89009 0200	11/30/95 08/01/89	EPA WASHINGTON DC	CERCLA COMPLICANCE WITH OTHER LAWS MANUAL: PART II CLEAN AIR ACT AND OTHER ENVIRONMENTAL STATUES AND STATE REQUIREMENTS	COMPENDIUM	CERCLA CAA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000382 GUID PB90 14861 0400	04/05/96 08/01/89	EPA WASHINGTON	CERCLA COMPLIANCE WITH OTHER LAWS MANUAL: PART II CLEAN AIR ACT AND OTHER ENVIRONMENTAL STATUTES AND STATE REQUIREMENTS	COMPENDIUM	CERCLA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000138 GUID 9QA0389 0000	12/15/94 09/01/89	EPA	GUIDANCE FOR PREPARING QUALITY ASSURANCE PROJECT PLANS FOR SUPERFUND REMEDIAL PROJECTS (REGION 9)	COMPENDIUM	QA TECH/GUID DOC.	SOUTHWEST DIVISION NAF EL CENTRO
COMPDM 000185 GUID 9234202FS 0002	12/22/94 09/01/89	EPA	GUIDE TO MANUAL CERCLA COMPLICANCE WITH OTHER LAWS MANUAL	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000182 GUID DIR 9355302FS2 0003	12/22/94 11/01/89	EPA	A GUIDE TO DEVELOPING SUPERFUND PROPOSED PLANS	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000352 GUID EPA 540189002 0300	01/10/96 12/01/89	EPA WASHINGTON DC	RISK ASSESSMENT GUIDANCE FOR SUPERFUND VOLUME I HUMAN HEALTH EVALUATION MANUAL (PART A) INTERIM FINAL	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION

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COMPDM 000217 GUID 000000000000000 0000	12/22/94 01/01/90	EPA	CONTRACT LABORATORY PROGRAM STATEMENT OF WORK FOR ORGANIC ANALYSES	COMPENDIUM	TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000041 GUID 9285.7-05FS 0008	09/20/96 01/09/90	EPA-OSWER	GUIDANCE FOR DATA USEABILITY IN RISK ASSESSMENT	COMPENDIUM	DATA RISK TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000264 MISC 9319.0-01FS 0003	09/23/96 02/01/90	EPA- OSWER	THE FINAL NATIONAL CONTINGENCY PLAN: NEW DIRECTIONS FOR SUPERFUND QUICK REFERENCE FACT SHEET	COMPENDIUM	NCP HAZ WASTE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000220 GUID 000000000000000 0200	12/22/94 03/08/90	EPA	40 CFR PART 300 NATIONAL OIL & HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN; FINAL RULE PART II EPA	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000343 GUID 000000000000000 0090	12/06/95 03/08/90 GUID 11.2		NATIONAL OIL HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN U.S. CODE OF FEDERAL REGULATIONS 40 CFR PART 300	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000322 GUID OSWER 9285.701 0200	05/15/95 04/01/90		RISK ASSESSMENT GUIDANCE FOR SUPERFUND VOLUME I HUMAN HEALTH EVALUTATION MANUAL PART A	COMPENDIUM	TECH/GUID DOC.		SALTON SEA
COMPDM 000344 GUID TITLE 22 0650	12/06/95 04/01/90 00000 11.3	STATE OF CALIFORNIA	TITLE 22, DIVISION 4.5 ENVIRONMENTAL HEALTH STANDARDS FOR THE MANAGEMENT OF HAZARDOUS WASTE	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000263 MISC 9335.3-02FS-2 0003	09/23/96 05/01/90	EPA OSWER	A GUIDE TO DEVELOPING SUPERFUND PROPOSED PLANS QUICK REFERENCE FACT SHEET	COMPENDIUM	GUID CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000442 GUID 0011	04/24/97 10/01/90	PHS SANTA ANA	GUIDELINES FOR SITE INVESTIGATIONS AND MITIGATION	ADMIN RECORD	GUID SI TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000288 GUID 5090.1A 0450	01/04/95 10/02/90	DON	ENVIRONMENTAL AND NATURAL RESOURCES PROGRAM MANUAL OPNAVINST 5090.1A	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION

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RELEVANT GUIDANCE DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL TORO

UIC No. / DOCUMENT.TYPE... / CONTR/GUID..NO.. / APPROX.#.OF.PAGES	DOC.NO. / DOC.DATE / CTO.NO.. / EPA.CAT#	PRC.DATE / FROM.SIGNATURE..... / TO..... / TO.SIGNATURE.....	FROM.....	.....SUBJECT.....	CLASSIFICATION	KEY WORDS	...Site...	....Location.....
COMPDM GUID 920050081 0001	000153	12/15/94 11/01/90	EPA	SUPERFUND BLUEPRINT	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 92005008K 0001	000154	12/15/94 11/01/90	EPA	SUPERFUND TECHNOLOGY	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM RPT 92005008D 0001	000155	12/15/94 11/01/90	EPA	SUPERFUND: FACT vs. FICTION	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 92005008C 0001	000156	12/15/94 11/01/90	EPA	THE SUPERFUND CLEANUP PROCESS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM RPT 92005008B 0001	000157	12/15/94 11/01/90	EPA	HISTORY OF SUPERFUND	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID OSWER 98333A1 0400	000120	12/01/94 12/03/90	EPA WASHINGTON	FINAL GUIDANCE ON ADMINISTRATIVE RECORDS FOR SELECTING CERCLA RESPONSE ACTIONS	COMPENDIUM	GUID CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID DIR 9200311 0085	000195	12/22/94 12/27/90	EPA WASHINGTON DC	FINAL POLICY ON SETTING RI/FS PRIORITIES	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA540P91002 0150	000066	11/28/94 01/01/91	EPA WASHINGTON	USER'S GUIDE TO THE CONTRACT LABORATORY PROGRAM	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 5090.1A 0100	000219	12/22/94 01/17/91	COMNAVBASE	COMNAVBASESANDIEGO REGIONAL OIL & HAZARDOUS SUBSTANCE POLLUTION CONTINGENCY PLAN	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 9355302FS3 0006	000149	12/15/94 04/01/91	EPA	GUIDE TO DEVELOPING SUPERFUND NO ACTION, INTERIM ACTION AND CONTINGENCY REMEDY RODs	COMPENDIUM	GUID ROD TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM MEMO 000000000000000 0004	000420 12/23/96 04/16/91	EPA-OERW	LDR APPLICABILITY FOR INVESTIGATIVE DERIVED WASTE	COMPENDIUM	INVESTIGATION TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID OERR 9345.3-02 0000	000072 11/28/94 05/01/91	U.S. EPA	OFFICE OF EMERGENCY AND REMEDIAL RESPONSE (OERR) DIRECTIVE 9345.3-02 MANAGEMENT OF INVESTIGATION-DERIVED WASTES DURING SITE INSPECTIONS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0002	000228 12/22/94 10/25/91	NOAA	HABITAT PROTECTION POLICY (ADOPTED JUNE 8, 1978)	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540R92003 0085	000199 12/22/94 12/01/91	EPA WASHINGTON DC	RISK ASSESSMENT GUIDANCE FOR SUPERFUND: VOLUME I HUMAN HEALTH EVALUATION MANUAL (PART B, DEVELOPMENT OF RISK-BASED PRELIMINAY REMEDIATION GOALS) INTERIM	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540R92004 0075	000354 01/10/96 12/01/91	EPA WASHINGTON DC	RISK ASSESSMENT GUDIANCE FOR SUPERFUND: VOLUME I HUMAN HEALTH EVALUATION MANUAL (PART C, RISK EVALUATION OF REMEDIAL ALTERNATIVES) INTERIM	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540R92009 0250	000166 12/22/94 01/01/92	EPA WASHINGTON DC	COMMUNITY REALTIONS IN SUPERFUND: A HANDBOOK PB92-963341	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM PLAN 9200.2-14 0500	000248 09/23/96 01/01/92	EPA-OERR	NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTROL PLAN (THE NCP) WITH 1988 AND 1990 PREAMBLES	COMPENDIUM	NCP HAZ WASTE RSE SI RA RI FS TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM RPT 9285.7-06FS 0008	000043 09/20/96 01/07/92	EPA-OSWER	UNDERSTANDING SUPERFUND RISK ASSESSMENT	COMPENDIUM	RISK EXPOSURE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM MISC 9230.0-05FSB 0006	000125 09/20/96 01/09/92	EPA- OSWER	SUPERFUND FACT SHEET: EXPOSURE PATHWAYS QUICK REFERENCE FACT SHEET	COMPENDIUM	HAZMAT EXPOSURE TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM 000135 MISC 9230.0-05FSH 0003	09/20/96 01/09/92	EPA - OSWER	SUPERFUND FACT SHEET: AN OVERVIEW QUICK REFERENCE FACT SHEET	COMPENDIUM	HAZ WASTE PA SI REMOVAL TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000147 MISC 9230.0-05FSK 0004	09/20/96 01/09/92	EPA -OSWER	SUPERFUND FACT SHEET: IDENTIFYING SITES QUICK REFERENCE FACT SHEET	COMPENDIUM	HAZ WASTE NPL TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000115 MISC 9203.1-021 0001	09/20/96 01/11/92	EPA-OSWER	THE SUPERFUND ACCELERATED CLEANUP MODEL (SACM) INTERMITTENT BULLETIN VOL.1 NO.4	COMPENDIUM	HAZ WASTE TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000019 GUID 0000000000000000 0000	11/21/94 02/01/92		NAVY INSTALLATION RESTORATION PROGRAM MANUAL	COMPENDIUM	GUID IRP TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000031 GUID 5090.2 0000	11/21/94 02/01/92	DEPARTMENT OF NAVY	NAVY/MARINE CORPS INSTALLATION RESTORATION MANUAL	COMPENDIUM	GUID IRP TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000441 GUID 0060	04/24/97 03/01/92	STATE OF CALIFORNIA	HEALTH RISK ASSESSMENT PROGRAM, VERSION 1.1: OPERATING INSTRUCTIONS - AIR RESOURCES BOARD AND OFFICE OF ENVIRONMENTAL HAZARD ASSESSMENT	ADMIN RECORD	GUID HRA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000265 GUID 9285.7-09FS 0008	09/23/96 06/01/92	EPA-OWSER	GUIDANCE FOR DATA USEABILITY IN RISK ASSESSMENT QUICK REFERENCE FACT SHEET	COMPENDIUM	GUID RA DATA TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000172 GUID 0000000000000000 0008	12/22/94 07/01/92	EPA	CALIFORNIA EPA CRITERIA FOR CARCINOGENS	COMPENDIUM	GUID TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000210 MISC 9230.0-05FSE 0004	09/23/96 09/01/92	EPA-OSWER	SUPERFUND FACT SHEET: PCBS QUICK REFERENCE FACT SHEET	COMPENDIUM	PCB HAZ WASTE ATSDR TECH/GUID DOC.	SOUTHWEST DIVISION
COMPDM 000313 GUID 0000000000000000 0200	05/12/95 10/01/92	EPA SAN FRANCISCO	GUIDANCE ON CONDUCTING NON-TIME CRITICAL REMOVAL ACTION UNDER CERCLA	COMPENDIUM	RA TECH/GUID DOC.	NTC SAN DIEGO

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COMPDM DATA 000000000000000 0060	000421	12/23/96 01/12/93	EPA-OERW	DRAFT PRELIMINARY ENDANGERMENT ASSESSMENT GUIDANCE MANUAL	COMPENDIUM	ASSESSMENT TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 0100	000330	05/15/95 02/01/93	US AIR FORCE	NFRAP GUIDE: MAKING, DOCUMENTATION, AND EVALUATING NO FURTHER ACTION PLANNED DECISIONS. FINAL DRAFT	COMPENDIUM	TECH/GUID DOC.		SALTON SEA
COMPDM GUID 000000000000000 0500	000371	04/05/96 07/01/93	EPA	CODE OF FEDERAL REGULATIONS 40 PARTS 300 TO 399	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 9360.0-32 0068	000018	11/21/94 08/01/93	EPA	GUIDANCE ON CONDUCTING NON-TIME-CRITICAL REMOVAL ACTIONS UNDER CERCLA (EPA 540-R-93-057)	COMPENDIUM	GUID CERCLA REMOVAL TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM MISC EPA540/R-93/071 0004	000242	09/23/96 09/01/93	EPA-OSWER	DATA QUALITY OBJECTIVES PROCESS FOR SUPERFUND QUICK REFERENCE FACT SHEET REFER: PUBLICATION 9355.9-01 FS	COMPENDIUM	DQOP TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM MISC 9345.4-03FS 0008	000262	09/23/96 09/01/93	EPA OSWER	SITE ASSESSMENT: EVALUATING RISK AT SUPERFUND SITES QUICK REFERENCE FACT SHEET	COMPENDIUM	SA RISK CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EPA 540 G91009 0100	000401	04/05/96 09/01/93	EPA WASHINGTON	MANAGEMENT OF INVESIGATION DERIVED WASTES DURING SITE INSPECTIONS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0050	000404	04/05/96 09/15/93	BECHTEL NATIONAL INC	QUALITY ASSURANCE PROJECT PLAN	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0200	000317	05/12/95 10/01/93	DOD	BRAC CLEANUP PLAN (BCP) GUIDEBOOK: IMPLEMENTING PRESIDENT CLINTON'S DECISION TO PROMOTE EARLY REUSE OF CLOSING BASES BY EXPENDITING ENVIRONMENTAL CLEANUP	COMPENDIUM	BRAC TECH/GUID DOC.		NTC SAN DIEGO SALTON SEA
COMPDM GUID 000000000000000 0030	000224	12/22/94 11/01/93	EPA SAN FRANCISCO	REGION IX PRELIMINARY REMEDIATION GOALS (PRGs) FOURTH QUARTER 1993	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION

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COMPDM GUID 000000000000000 0150	000406	04/05/96 01/07/94	BECHTEL NATIONAL INC	PROGRAM HEALTH AND SAFETY PLAN	COMPENDIUM	H&SP GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0002	000051	11/28/94 03/01/94	EPA REGION IX	THE PROPOSED "NEW" SUPERFUND FASTER, FAIRER, MORE EFFICIENT	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0011	000223	12/22/94 04/19/94	EPA WASHINGTON DC	MILITARY BASE CLOSURES: GUIDANCE ON EPA CONCURRENCE IN THE IDENTIFICATION OF UNCONTAMINATED PARCELS UNDER CERCLA SECTION 120(h)	COMPENDIUM	GUID CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0004	000053	11/28/94 06/01/94	EPA REGION IX	ADDENDUM A FASTER, FAIRER, MORE EFFICIENT SUPERFUND ADVANCES IN CONGRESS	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID 000000000000000 0015	000307	05/12/95 06/01/94	DOD	FINDINGS OF SUITABILITY TO TRANSFER FOR BRAC PROPERTY	COMPENDIUM	POST TECH/GUID DOC.		NTC SAN DIEGO
COMPDM GUID 000000000000000 0009	000416	12/23/96 06/01/94	DOD	DEFENSE ENVIRONMENTAL CLEANUP PROGRAM FACT SHEET THE RELATIVE RISK SITE EVALUATION CONCEPT	COMPENDIUM	CLEANUP RISK EVALUATION TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM GUID EO94002PP 0200	000334	05/15/95 07/01/94	CAL EPA DTSC	PUBLIC PARTICIPATION POLICY AND PROCEDURES MANUAL	COMPENDIUM	TECH/GUID DOC.		SALTON SEA
COMPDM GUID 000000000000000 0047	000300	01/27/95 08/01/94	DTSC	CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT AT HAZARDOUS WASTE SITES AND PERMITTED FACIILITIES PARTS "A" & "B"	COMPENDIUM	TECH/GUID DOC.		SALTON SEA
COMPDM GUID 0100	000332	05/15/95 08/01/94	EPA	REGION IX PRELIMINARY REMEDIATION GOALS (PRG) SECOND HALF 1994	COMPENDIUM	PRG TECH/GUID DOC.		SALTON SEA
COMPDM GUID EPA QA/G4D 0100	000333	05/15/95 08/01/94	EPA	DATA QUALITY OBJECTIVES DECISION ERROR FEASIBILITY TRAILS (DQO/DEFT) USER'S GUIDE VERSION 4.0	COMPENDIUM	TECH/GUID DOC.		SALTON SEA

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COMPDM 000267 GUID 000000000000000 0051	12/27/94 09/07/94	DTSC SACRAMENTO	DRAFT GUIDANCE FOR ECOLOGICAL RISK ASSESSMENT AT HAZARDOUS WASTE SITES AND PERMITTED FACILITIES PART A: OVERVIEW AUGUST 1994 & PART B: SCOPING ASSESSMENT	COMPENDIUM	GUID HAZ WASTE TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000289 GUID 5090.1B 0450	01/04/95 11/01/94	DON	ENVIRONMENTAL AND NATURAL RESOURCES PROGRAM MANUAL OPNAVINST 5090.1B	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000112 GUID EPA 540R94083 0026	12/01/94 12/01/94	EPA WASHINGTON	LABORATORY DATA VALIDATION FUNCTIONAL GUIDLINES FOR EVALUATING INORGANICS ANALYSIS	COMPENDIUM	GUID DATA TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000357 GUID 000000000000000 0037	02/28/96 02/01/95	USEPA	USEPA REGION IX PRELIMINARY REMEDIATION GOALS	COMPENDIUM	CERCLA TECH/GUID DOC.		SOUTHWEST DIVISION NTC SAN DIEGO
COMPDM 000449 LTR 0007	04/24/97 10/13/95	DON	ENVIRONMENTAL REQUIREMENTS FOR FEDERAL AGENCY TO AGENCY PROPERTY TRANSFER AT BRAC INSTALLATIONS	ADMIN RECORD	GUID BRAC TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000409 GUID 000000000000000 0150	04/05/96 02/01/96	NFESC PORT HUNEMEN	NAVY INSTALLATION RESTORATION LABORATORY QUALITY ASSURANCE GUIDE ITERIM GUIDANCE DOCUMENT	COMPENDIUM	GUID TECH/GUID DOC.		SOUTHWEST DIVISION
COMPDM 000439 GUID 0200	04/24/97 07/01/96	DOD	RELATIVE RISK SITE EVALUATION PRIMER	ADMIN RECORD	GUID RISK SI TECH/GUID DOC.		SOUTHWEST DIVISION -
COMPDM 000440 LTR 0003	04/24/97 10/14/96	ERM-WEST, INC.	FACT SHEET DESCRIBING USEPA'S NEW CANCER RISK GUIDELINES AND THEIR POTENTIAL IMPACT ON SITE CLEANUPS	ADMIN RECORD	GUID CANCER CLEANUP TECH/GUID DOC.		SOUTHWEST DIVISION

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REPORT SPECIFICATION FOR: RPT440

TITLE: RELEVANT GUIDANCE DOCUMENTS-OU2A, SITE 24, SOIL CLEANUP, MCAS EL

FILE: COMBINED Key Info. with Activity File

SELECTION CRITERIA:
[01] Key Words CONTAINS "TECH/GUID DOC." & UIC.No. IS "COMPDM "

SORT CRITERIA:
01 Doc. Date

PAGE BREAK LEVEL:
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