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ENVIRONMENTAL DIVISION  
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MCAS EL TORO  
SSIC # 5090.3

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Ser 18/946  
August 21, 1995

Ms. Julie Anderson  
U. S. Environmental Protection Agency  
Region IX  
Code H-9-2  
75 Hawthorne Street  
San Francisco, CA 94105

Dear Ms. Anderson:

The purpose of this letter is to clarify major issues among the Department of the Navy (DON) and the other signatories to the Federal Facility Agreement (FFA) for Marine Corps Air Station (MCAS), El Toro regarding DON's approach to investigation and remediation of regional Volatile Organic Compound (VOC) groundwater contamination in MCAS El Toro's Operable Unit (OU) #1 Interim Action Feasibility Study (IAFS). More specifically, DON is seeking consensus regarding the following points:

- a. The scope of the interim remedial action for OU#1 and related remedial action goals and objectives.
- b. Certain groundwater remediation "applicable or relevant and appropriate requirements" (ARARs).
- c. The scope of the IAFS cost analysis as it relates to utilization of extracted groundwater by water purveyors following VOC remediation.

Given the amount of time and money invested in investigations, and to be invested in remediation and the increasing scarcity of federal remediation funding, it is DON's intent to maximize the scope and finality of the interim remedial action for OU#1 within the legitimate constraints of the law and available information. This letter has sought to reiterate and, where necessary, clarify our position regarding the scope of the interim-action for OU#1. We prefer to resolve any serious issues now, rather than have them addressed by our regulatory partners on the revised draft IAFS that will be submitted on October 15, 1995. This would minimize the potential for project delays.

## **Definition and Scope**

### Operable Units (OUs)

Our approach to OU#1 is consistent with the February 15, 1993, position paper titled "Definition of Operable Units (OUs) 1, 2, 3, and 4 for Marine Corps Air Station (MCAS) El Toro." OU#1 includes groundwater on- and off-Station that is contaminated with

constituents that have migrated from sites at MCAS El Toro. OU#2 includes areas [sites] that are potential sources of contaminated groundwater.

The initial OU#1 investigation covered all groundwater under and downgradient of MCAS El Toro; this area is shown in enclosure (1) as the "area of regional groundwater contamination investigation." From this investigation area, the regional groundwater system is defined as the groundwater that is not a site-associated problem at El Toro. The regional VOC groundwater plume is groundwater contaminated mainly with trichloroethylene (TCE) that originated from El Toro operations and has migrated significantly from source area(s) and downgradient beyond the Station boundary. This plume is the interim-action area of concern (AOC) for OU#1 and is geographically defined in enclosure (1).

In our December 14, 1994, remedial project managers meeting, OU#2 was split into 2A, 2B, and 2C in order to support team cleanup and funding priorities. OU#2A includes Site 24 (Potential VOC Source Area) and Site 25 (Major Drainages). Site 24 is believed to be, in whole or in part, the source of the Regional VOC groundwater plume that has migrated into the regional groundwater system. OU#2B and OU#2C include the four Station landfills under investigation. The Station landfills are not sources of the regional VOC groundwater plume. OU#3 includes all other sites that may contain contaminants in media other than groundwater.

#### Boundary between OU#1 and OU#2A's Site 24

OU#1 actions deal with contamination which has already migrated into the regional groundwater system from its sources, and OU#2 sites deal primarily with contamination that is still at, or near, the source of a release. With regard to the scope of the interim-action for OU#1, the separation of groundwater between the interim-action AOC for OU#1 and its source area is based on actual data from the Phase I remedial investigation. For the southwestern portion of El Toro, and specifically for Site 24, the two possible criteria for splitting the groundwater between the interim-action AOC for OU#1 and Site 24 are: 1) concentration gradient(s), and 2) capture zone for wells proposed for source control and remediation. The primary purpose for separating any given area or media into OUs is to divide an unmanageably large task into more manageable pieces. Regional groundwater contamination and localized source control measures represent potentially large problems which warrant separate (though coordinated) evaluations and actions.

As shown in enclosure (2), the concentration gradient used to separate the interim-action AOC for OU#1 and Site 24 is the 5 ug/L TCE concentration contour in the southwestern portion of the Station. This gradient is consistent with the proposed extraction well capture zones of the remedial alternatives discussed at our OU#1 IAFS progress meetings. The line is near the grouping of potential source areas of VOC contamination in Site 24. The highest concentrations of TCE are at and near CERCLA

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Site 24. A similar 1 ug/L benzene concentration contour defines the line between the interim-action AOC for OU#1 and the Underground Storage Tank (UST) site at and near Fuel Farm #2. Both benzene and TCE are by far the two pronounced VOC chemicals of concern in this upper portion of the regional groundwater system. Again, enclosure (1) shows the geographical extent of the interim-action for OU#1, the focus of this letter. Enclosure (3) shows the relationship and boundary between the interim-action AOC for OU#1 and Site 24 which coincides with the upgradient point of compliance for the interim-action AOC for OU#1.

#### Groundwater Constituents

Constituents discussed in the interim-action for OU#1 are VOCs, total dissolved solids (TDS) and nitrates. While the IAFS and Interim ROD will address VOC remediation within the interim-action AOC, the specific non-VOC constituents will be included in the Interim Remedial Investigation report for OU#1 because these constituents are associated with actions planned by other governmental agents in the same vicinity as our VOC remedial action. This list of constituents is derived from the complex history and institutional background of this project.

Prior to the listing of MCAS El Toro on the CERCLA National Priorities List (NPL), OCWD and the Irvine Ranch Water District (IRWD) were in the process of planning a local water supply project which ultimately became known as the Irvine Desalter Project (IDP). This local project was in part prompted by the fact that a 1984 regional groundwater study identified the migration of non-VOC constituents, mainly total dissolved solids (TDS) and nitrates, from the Irvine Sub-basin towards the main groundwater basin of Santa Ana. This study, known as the Banks report, equated these non-VOC constituents with the natural geology in the area and with agricultural practices that are prevalent in the region. OCWD and IRWD initiated their local IDP program to remediate significant TDS and nitrate plumes which overlap the VOC plume addressed by OU#1. In follow-up investigations prompted by the 1984 study, OCWD detected TCE in the groundwater.

As MCAS El Toro was being placed on the NPL and the FFA was being negotiated, OCWD and IRWD moved forward with planning the IDP. The IDP was modified to not only address the original purposes of TDS/nitrate plume capture and remediation and water supply development, but also to address VOC remediation. It is DON's position that certain aspects of OCWD/IRWD's local program associated with TDS/nitrate plume capture and remediation and water supply development are outside the scope of DON's CERCLA remedial action for this site. On August 10, 1995, we submitted for agency review an addendum to the Interim Remedial Investigation report for OU#1. The addendum rationalizes that TDS/nitrate concentrations found in the regional groundwater system in the vicinity of MCAS El Toro are due to natural sources and agricultural practices and not the result of Station operations.

## Relationship of the Interim-Action for OU#1 and the Final Station-wide ROD

Non-VOC constituents that are not addressed by the interim remedial action will be addressed in final OU#1 reports. These final OU#1 reports will coincide with MCAS El Toro's Final Station-wide CERCLA Record of Decision. Enclosure (4) was used to clarify this approach at our April 13, 1995, remedial project managers meeting. The simplified flow diagram relates regional (OU#1) and site-associated (OU#2) groundwater problems with the Final Station-wide ROD.

### Remedial Investigation (RI)

The draft [Interim] Remedial Investigation (RI) report for OU#1 submitted on July 1, 1994, included information associated with all constituents in groundwater emanating from MCAS El Toro operations. The report is interim because it includes data from two rounds of groundwater sampling, and additional groundwater data will be collected under Phase II remedial investigations. This additional information will be used to support El Toro's Final Station-wide ROD.

### Risk Assessment (RA)

As with the Interim RI, the draft [Interim] Baseline Human Health Risk Assessment (HHRA) report for OU#1 submitted on July 1, 1994, included information associated with all constituents emanating from MCAS El Toro operations. The information presented, though it included information related to site-associated groundwater, allows the risk assessors to evaluate, on an interim basis, the overall risk if humans were to be exposed to any groundwater underlying the Station. Like the RI report, the Final OU#1 (groundwater) Baseline HHRA will incorporate groundwater data collected under groundwater monitoring plan(s) and other investigations. The information will be used to support El Toro's Final Station-wide ROD.

Figure (1) below is a graphic presentation of the Interim vs. Final approach to OU#1.

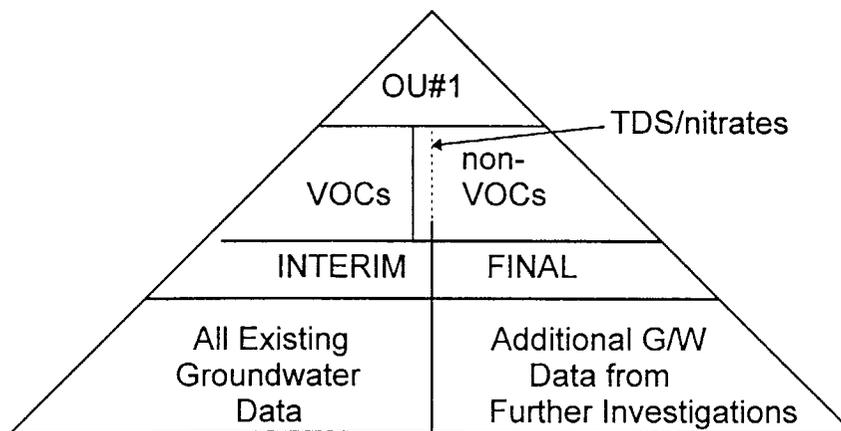


Figure 1.

## Remedial Action Objectives (RAOs)

The primary objectives of the interim remedial actions for OU#1 are: 1) to expedite response to the off-site release of VOCs from MCAS El Toro into the regional groundwater system through containment (preventing further migration) of the highest concentrations of the VOC plume (which will be fully addressed with Site 24) and 2) to remediate (cleanup) the VOC plume downgradient of Site 24 and Fuel Farm #2 (source areas) while other site investigations are ongoing. The boundaries between Site 24 and Fuel Farm #2 and OU#1 have been described earlier in this letter. Sufficient data exists to support a remedy selection decision to address this VOC plume area. The VOC plume containment and aquifer remediation systems (pump and treat) are intended to be final actions for the OU#1 VOC plume. Separate, though coordinated, remedial actions will address source areas (e.g. the vicinity of Site 24 and Fuel Farm #2). In support of cleanup actions at and near the source areas, the shallow VOC-contaminated groundwater emanating from the source areas in the southwestern portion of MCAS El Toro will be contained pending further remedial actions specific to those source area requirements.

The specific RAOs are:

- a. Reduce concentrations of VOCs in the area of concern (AOC) in the shallow groundwater and in the Principal Aquifer downgradient of the source areas to federal or state cleanup levels.
- b. Contain migration of VOCs above cleanup levels in the Principal Aquifer within the AOC.
- c. Prevent use of groundwater containing VOCs above cleanup levels for domestic use.

Under EPA policy, RODs may include both interim actions and final actions (OSWER Publication 9355.3-02FS-3, p. 3). Our objectives are not intended to address VOC source area remediation or remediation of any releases of VOCs from source areas outside the southwestern portion of the Station and releases of non-VOC hazardous substances into groundwater from any sources at MCAS El Toro. If such releases are found to exist, they would be addressed in Site 24 or in other El Toro RODs. Possible responses could range from No Further Action (NFA) to additional remedial actions. For these reasons, the ROD for OU#1 is considered an Interim ROD.

### Point of Compliance

The upgradient boundary of the regional groundwater system, as defined earlier, constitutes the point of compliance (POC) for the interim-action AOC for OU#1. The POC for Site 24 will be established when addressing OU#2A data from the Phase II

remedial investigation and feasibility study. Phase II field work takes place this summer. Any groundwater cleanup standards that may be required upgradient of the POC of the interim-action AOC for OU#1 (downgradient of Site 24 POC) will be discussed and resolved during the OU#2A Phase II RI/FS process, and not as part of the interim-action for OU#1. Enclosure (2) shows the boundary between the interim-action AOC for OU#1 and Site 24.

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

Under the NCP and USEPA policy, there is sufficient flexibility for the lead Federal agency to exercise discretion and establish groundwater cleanup level ARARs for specific chemicals in an Interim ROD as noted below without "freezing" ARARs for other chemicals:

a. ARARs must be identified in an interim action groundwater ROD; however, only ARARs specific to the scope and objectives of the interim action should be addressed (OSWER Publication 9355.3-02FS-3, p. 4; and ROD Checklist for Interim Ground Water Actions) .

b. EPA policy acknowledges that MCLs may be identified as ARARs for "interim actions" addressing groundwater contamination (OSWER Publication 9234.2-25, Section 2.2.2, p. 5). This approach has been accepted by USEPA Region IX for the MCB Camp Pendleton Interim ROD for OU#1.

c. The NCP at 40 CFR Section 300.430(f)(1)(ii) provides that "On-site remedial actions selected in a ROD must attain those ARARs that are identified at the time of ROD signature..." and that such ARARs are "frozen" upon ROD issuance. However, if the language of an Interim ROD is clear that the Interim ROD only addresses certain VOC releases in a specifically defined geographic area, potential ARARs for future remedial actions addressing other contaminants or other geographic areas (e.g., OU#2A, 2B, 2C) would not be frozen because they would be outside the scope of the remedial action. The Interim ROD can include language making this clear.

Consistent with the above policy and objectives, the interim ROD for OU#1 for MCAS El Toro (VOC remediation) will address the following categories of ARARs relating to groundwater contamination water quality issues, the specifics depending, of course, on the remedial alternative(s) selected:

a. Aquifer Cleanup Levels:

1. ARARs establishing final VOC aquifer cleanup levels for the VOC plume, as defined earlier in this letter, downgradient of the POC for the interim-action AOC for OU#1 (e.g., Title 22 CCR Section 66264.94 and MCLs).

2. Identification of POC for aquifer cleanup levels for VOCs (downgradient of probable source area(s) in southwestern portion of MCAS El Toro).

b. Reinjection and Surface Water Discharge Alternatives:

- ARARs relating to discharge water quality .

c. Water Supply Remedial Alternatives:

- Under these alternatives, DON will identify Federal and State MCLs for VOCs as ARARs for extracted groundwater and will commit to comply with them. Local groundwater stripped of VOCs only is considered "raw" water. DON would make such treated "raw" water available to local water districts and/or water purveyors. If local districts/purveyors elect to accept such "raw" water, they are required to comply with any additional drinking water standards which apply prior to delivery to the drinking water public. This will ensure that the public will not be exposed to any additional contaminants which might be attributed to MCAS El Toro sources at a later date.

### **IAFS Cost Analysis**

The IAFS cost analysis will not directly include TDS/nitrate treatment (desalinization) costs for the following reasons discussed below. However, these non-VOC associated costs (treatment, distribution, and revenue value) will be addressed in an appendix to the IAFS to ensure the public has access to all information relating to water supply alternatives.

a. The VOC plume is a release of CERCLA hazardous substances requiring remedial action; the scope of remedial action does not go beyond VOC remediation.

b. Desalinization costs are associated with a local water development project (IDP) independently designed and partially constructed by local water districts/purveyors (OCWD/IRWD) for the primary purposes of interception and treatment of TDS and nitrate plumes and local water supply development. Any decision to accept and treat "raw" water is local water purveyor's decision.

c. TDS/nitrates are not CERCLA hazardous substances.

d. DON has no authority to respond to TDS from natural sources (Section 104(a)(3)(A) of CERCLA); routine application of fertilizers (nitrates) are exempt from the definition of release in Section 101(22)(D) of CERCLA.

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e. MCAS El Toro operations are not the source of TDS/nitrate plume(s) according to results of groundwater sampling and historical data obtained from OCWD, IRWD, and other sources.

f. For reinjection alternatives, the Santa Ana Regional Water Quality Control Board has taken the position that Basin Plan water quality objectives for TDS do not require DON to treat TDS from agricultural and natural sources prior to reinjection.

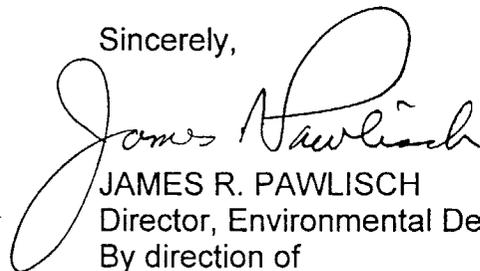
g. For water supply alternatives, OCWD's proposed reverse osmosis facility is considered off-site and, therefore, ARARs do not apply (such as in the case of the San Fernando and San Gabriel RODs). Even though ARARs do not apply, water purveyors are regulated under SDWA and equivalent State laws, ensuring adequate protection of human health. Costs associated with TDS/nitrate capture/treatment are "severable" from costs associated with VOC capture/treatment. In addition, costs associated with non-VOC water quality requirements and potable water distribution are offset in part or in whole by revenues generated from the local water users. Again, this analysis will be included in an appendix to the IAFS.

## Conclusion

In conclusion, it is our position that sufficient information has been developed through ongoing RI/FS work at MCAS El Toro, as well as extensive monitoring by local governmental units (e.g., OCWD) to characterize VOC contamination in the AOC identified for the interim-action for OU#1. We believe that this letter clarifies in detail an effective CERCLA approach to MCAS El Toro's regional groundwater. The approach we are taking is consistent with the intent of our FFA and within the flexible framework of the NCP and USEPA policy.

If you have any questions regarding this letter of clarification, please contact our staff. For technical issues, you may reach Mr. Andy Piszkin at (619) 532-2635, and for legal concerns, you may reach Mr. Rex Callaway at (619) 532-1162.

Sincerely,



JAMES R. PAWLISCH  
Director, Environmental Department  
By direction of  
the Commanding Officer

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Encl:

- (1) Geographical Extent of the Interim-Action Area Of Concern for OU#1
- (2) TCE Concentrations in Groundwater
- (3) Conceptual Site Model
- (4) Groundwater Decision Diagram

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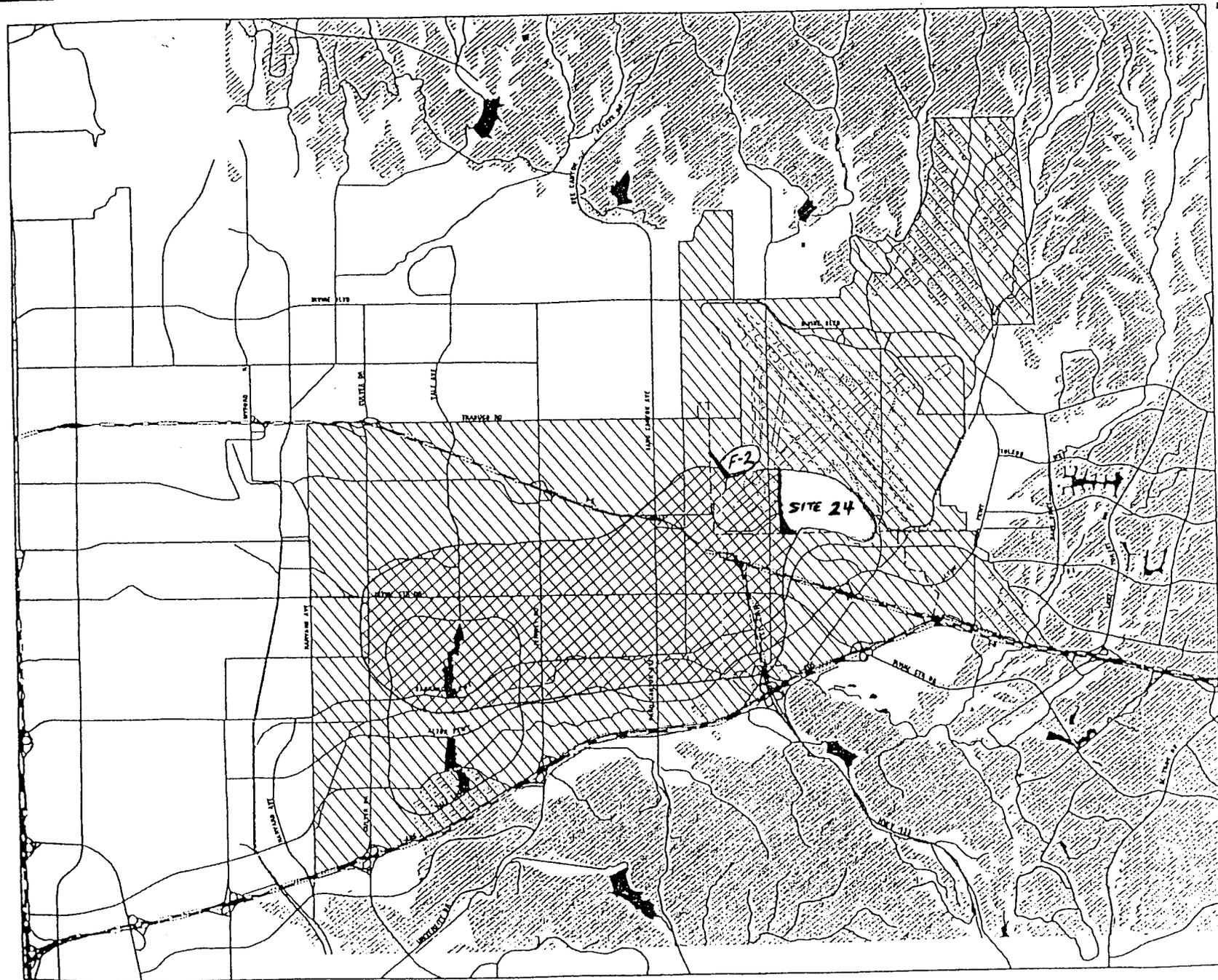
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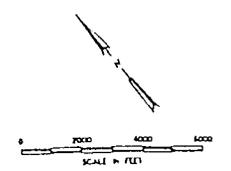
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- FEATURES:
- BEDROCK
  - LAKE OR RESERVOIR
  - AREA OF REGIONAL GROUNDWATER CONTAMINATION INVESTIGATION
  - AREA OF CONCERN FOR THE INTERIM-ACTION FS AND ROD
  - FREEWAY
  - ROAD
  - MCAS EL TORO BOUNDARY
  - WASH OR STREAM
- F-2 : FUEL FARM #2  
(BENZENE SOURCE)



GEOGRAPHICAL EXTENT  
OF INTERIM-ACTION  
AREA OF CONCERN

MCAS EL TORO  
OU-1 INTERIM-ACTION FS

ENCLOSURE (1)



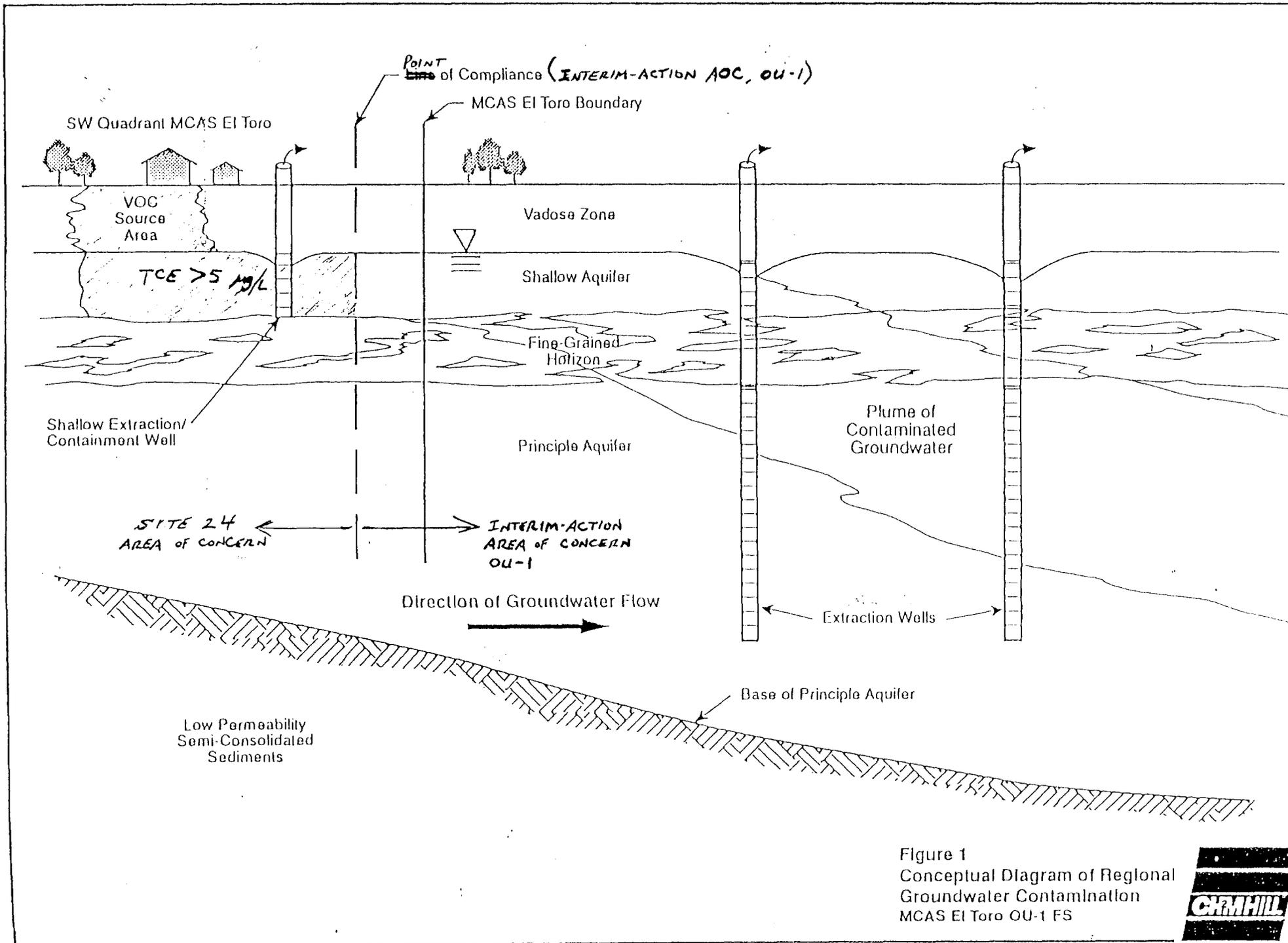


Figure 1  
 Conceptual Diagram of Regional  
 Groundwater Contamination  
 MCAS EI Toro OU-1 FS



REGIONAL PROBLEMS  
OU-1

SITE-ASSOCIATED PROBLEMS  
OU-2

