M60050.000814 MCAS EL TORO SSIC # 5090.3	PROJECT NOTE NO. PN-0145-83 CLE-C01-01F145-I2-0060	PROJECT NO. 01-F145-H6

CONFIRMATION OF:	CONFERENCE		DATE HELD	10-11 May 1993
	TELECOM	X	DATE ISSUED	9 June 1993
	OTHER		RECORDED BY	J. Dolegowski/CH2M HILL
			PLACE	Santa Ana

SUBJECT: Contract Task Order (CTO) No. 145
DQO Meeting Held on 10-11 May 1993

PARTICIPANTS: (* DENOTES PART-TIME ATTENDANCE) *Attended 10 May only.

A. Antipas - CH2M HILL/SEA
J. Broderick - RWQCB/Region 8
S. Diehl - CH2M HILL/SAC
C. Elliott - CH2M HILL/SAC
J. Hamill - EPA
L. Miesner - CH2M HILL/SFO
B. Peterson - CH2M HILL/SEA
D. Richards - CH2M HILL/CVO
*D. Stralka - EPA
L. Vitale - RWQCB/Region 8
M. Arends - CH2M HILL/SCO
Y. Chuang - CH2M HILL/SDO
J. Dolegowski - CH2M HILL/SCO
I. Findikaki - Bechtel
W. Mayer - Bechtel
H. Nezafati - CH2M HILL/SCO
A. Piszkin - Code 1842.AP
*D. Robinson - Naval Postgraduate School
S. Tindall - Bechtel
J. Zarnoch - DTSC/Region 4

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The first meeting on Data Quality Objectives (DQO) for the Marine Corps Air Station (MCAS) El Toro Remedial Investigation/Feasibility Study (RI/FS) was held at Bechtel Corporation, San Francisco, CA. on 10-11 May 1993. Representatives of the U.S. Environmental Protection Agency (EPA), California Department of Toxic Substances - Region 4 (DTSC), California Regional Water Quality Control Board - Region 8 (RWQCB), Navy SOUTHWESTDIV, Bechtel Corporation (EPA's contractor), and CH2M HILL attended the meeting. These meeting notes summarize the decisions reached, the action items, outstanding issues, and the discussions of the meeting.

Decisions Reached

- The Navy will use the guidance document on tentatively identified compounds (TICs) provided by the EPA.
- EPA agreed with the use of sample-specific risk assessment methodology.
- The regulatory agencies accepted the procedure of comparisons against background concentrations data in the selection of inorganic chemicals to be further investigated during Phase II.
- The selection of minimum detectable relative difference (MDRDs) will be made on a site-specific basis.
- The regulatory agencies tentatively accepted the use of the VLEACH model for vadose zone transport modeling. EPA and DTSC will continue to evaluate the model's appropriateness for MCAS El Toro.
- The modeler's meeting date was changed from 07 June to 08 June.

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- The Technical Review Committee (TRC) meeting was changed from 24 June to 30 June at MCAS El Toro. A Managers' meeting will be held on 23-24 June at MCAS El Toro.
- The 09-10 June DQO Meeting will be held at CH2M HILL's Santa Ana Office.

Action Items

- The Navy will present to EPA's counsel the team's position on a focused approach to the Operable Unit (OU)-1 Feasibility Study (4 May 1993 memorandum from CH2M HILL to Navy SOUTHWESTDIV).
- The Navy will provide information on construction depths of residential, commercial, and industrial developments in the area of MCAS El Toro to determine the cutoff depth between surface and subsurface soils. Different depths may be evaluated for risk-based and remediation objectives. The Navy is scheduled to work with Station land use/zoning staff.
- The Navy will respond to DTSC's request that the state of California's cancer potency factors be used in the baseline risk assessment at MCAS El Toro.
- The Navy/CH2M HILL will develop an approach to determine cutpoints for total fuel hydrocarbons (TFH) and total petroleum hydrocarbons (TPH). The paper will discuss the possible use of physical tests such as column tests and extraction/leaching tests.
- The Navy/CH2M HILL will update the list of criteria to be used in determining cutpoints for COPC's and prepare a position paper.
- EPA will clarify its position with regard to the common metals (e.g., calcium, sodium) that are excluded from risk calculations under Risk Assessment Guidance for Superfund (RAGS), and whether they should instead be screened against background soil samples.
- EPA will evaluate use of VLEACH for vadose zone transport modeling. Other EPA Remedial Project Managers are familiar with the model.
- EPA/Bechtel will provide review comments on the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) by the week of 17 May.
- Bechtel will assist the team in identifying Best Available Technologies (BATs) for the DQO process for specified COPC's.
- DTSC will also evaluate use of VLEACH for vadose zone transport modeling.

Outstanding Issues

- The Navy and regulatory agencies need to reach consensus on the content of the 09 August 1993 FFA deliverable. The topic will be discussed in future Managers' conference calls and meetings. EPA has strongly suggested that the Navy submit a letter to ask formally for an extension detailing the impact (if any) of submittal of only the Work Plan on the overall FFA schedule.

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- The Navy will continue discussions with the regulatory agencies on issues concerning pesticides and herbicides. The major issues are: what levels constitute background, do agricultural exemptions apply, how to show proof of legal application rates, and what concentrations would be considered above acceptable risk levels.

- The Navy does not foresee the need for an OU-4. Based on the available information, any Area of Concern/Solid Waste Management Unit (AOC/SWMU) recommended for further investigation can be added as an additional stratum to existing RI/FS site. DTSC has requested additional discussion on this issue. The results and recommendations of the RFA will be an agenda item for the 25-26 May Managers' Meeting.

- The team did not reach consensus on whether confidence and power should be set globally for MCAS El Toro, or on a site-/stratum-specific basis. Consensus should be reached by the second DQO meeting on 9-10 June.

- The team did not agree on whether a fourth DQO meeting should be scheduled. The Navy/CH2M HILL supported having the additional meeting sometime in August.

- The location of the 21-22 July Managers' Meeting has not been decided. The EPA has requested it be held in San Francisco. The RWQCB and the Navy prefer the meeting be held in CH2M HILL's Santa Ana office.

Partnering Issues

Various topics were discussed prior to the start of formal discussions on DQO issues. They are summarized below:

- Andy Piszkin/Navy SOUTHWESTDIV said that the telephone conferences between meetings have been useful. He would like to see the practice continue in the future.

- Phase II field work is scheduled to start on 08 March 1994. John Hamill/EPA and Sebastian Tindall/Bechtel expressed concerns that the procurement of funds would not begin in a timely manner.

- J. Hamill praised Davi Richards'/CH2M HILL efforts on initiating the OU-1 FS position paper. He cited the collaborative effort as a prime example of teamwork. D. Richards indicated that the position paper has been revised based on comments received, including those provided by Rex Calloway/SOUTHWESTDIV. The original position that only one remedial alternative (i.e., pump and treat using the OCWD Irvine Desalter) might be carried through for detailed analysis was revised to state at least one additional alternative would be considered. J. Hamill indicated that Karen Goldberg/EPA, would not have any problems with the revised version. However, due to a mixup, not all team members had received the revised position paper. Arrangements were made to have it sent by facsimile and distributed during the meeting. (This was done.)

- A. Piszkin had, by telephone, requested EPA's position on TICs. He indicated that J. Hamill had provided the Navy a copy of EPA's guidance on TICs. J.

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Hamill in turn asked John Dolegowski/CH2M HILL what his experiences were on TICs. J. Dolegowski offered that most projects do not analyze for them. Possible actions depend on whether the TICs were identified by their unknown class of compounds, or just simply as "unknowns". It is possible to aggregate all such "unknown" compounds and report their cumulative concentrations. Artemis Antipas/CH2M HILL is reviewing the TICs against possible laboratory contamination, and will report her findings and recommendations.

o A review of action items from the last Managers' Meeting:

- A risk assessment meeting was held on 30 April 1993 with Liz Miesner/CH2M HILL, Dan Stralka/EPA, John Christopher/DTSC, Alta Turner/Ch2M HILL, Harry Olindorf/CH2M HILL, Joe Zarnoch/DTSC (by phone), and Jan Corbet/SOUTHWESTDIV in attendance to discuss the technical approach used for the Phase I preliminary baseline risk assessment, and the baseline risk assessment for OU-1.

- A. Piszkin stated the Navy will be sending out a request to the State for a list of Applicable and Relevant and Appropriate Regulations (ARARs). John Broderick/RWQCB stated that action-specific ARARs for OU-1 cannot be provided with only one round of groundwater sampling. Joe Zarnoch/DTSC concurred with J. Broderick.

- J. Hamill requested an overall schedule of the RI/FS, with enforceable and nonenforceable dates, in order to help the remedial project managers (RPMs) to monitor project progress. A. Piszkin stated that the previously negotiated schedule is still valid, and inquired as to what else would be needed. As an example of the need to have this schedule, S. Tindall cited a submittal delay of portions of the RFA report. Mike Arends/CH2M HILL stated that all elements of the RFA report were submitted on a previously agreed schedule. Both J. Hamill and J. Broderick agreed with M. Arends. J. Dolegowski expressed concerns on strict adherence to the secondary (nonenforceable) dates. He felt the sharing of such deadlines is unnecessary and may be counterproductive. It is the Navy's position that only the enforceable deadlines are of importance.

Introduction to DQO Process

Chuck Elliott/CH2M HILL kicked off the DQO discussions by presenting an overview of the DQO process, offering team expectations, and presenting a schedule for completing the DQO process with dates of other scheduled meetings and report submittals from May to December 1993.

S. Tindall recounted the Barstow DQO experience as positive. Although the Navy (at Barstow) did not have regular DQO working sessions, an intensive 3-day meeting was held prior to the findings and recommendations were presented for agency approval. C. Elliott indicated that the Navy (at MCAS El Toro) does not have the same luxury due to the tight schedule; consensus on all issues will have to be reached throughout the DQO process. He distributed a handout on five important issues in which consensus has to be reached soon (by the 09-10 June Managers' Meeting) in order to keep the DQO process on track.

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Upon review of the schedule, two changes were made. J. Hamill suggested changing the Modeler's Meeting from 7 June to 8 June, and changing the Technical Review Committee (TRC) Meeting from 23-24 June to 29-30 June. Roy Herndon/OCWD will be notified about the change in date of the first meeting. Recognition of the need for a fourth DQO Meeting did not result in a date selection as discussion turned to the differences in the requirements of the Work Plan (WP) deliverable due 09 August.

As stipulated in the FFA, the Navy is required to submit the WP for Phase II on 9 August. Much of the discussions centered on the content of the WP, the Sampling and Analysis Plan (SAP), and the Quality Assurance Project Plan (QAPP). The Navy and EPA have different expectations on what information these documents should contain. These differences were apparently unresolved as of the last Managers' Meeting. The Navy expects to submit a WP which will follow the RI/FS Work Plan presented in Table 2-3 of the EPA Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA (October 1988). The draft SAP (which includes the QAPP and Site Safety and Health Plan (SSHP) will be submitted on 11 October 1993. However, EPA expects the Navy to submit the SAP, QAPP, and SSHP. Based on the current schedule, it is impossible for the Navy to submit complete documents which require the DQOs.

C. Elliott proposed that the WP and the SAP each be submitted without the section detailing the DQOs. J. Dolegowski expressed reservations on submitting a SAP without specifics from the DQO process. S. Tindall termed the submittal of a document without DQOs to be just a "paper exercise."

Discussions then turned to the apparent delay in funding of the DQOs, and its potential adverse impact on the overall FFA schedule. J. Broderick indicated the predicament is a direct result of the Navy's inability to procure funds in a timely manner. J. Hamill agreed with J. Broderick, and asked that the Navy submit a letter to ask formally for an extension detailing the impact (if any) of submittal of only the WP on the overall FFA schedule. A. Piszkin stated that the Navy will have to check on the requirements as stipulated in the FFA, but it is the Navy's position that submittal of the WP is all that is required. J. Broderick closed the discussions by stating that the regulatory agencies can "disapprove" the Navy's decisions.

Media Boundaries

Surface Soil versus Subsurface Soil

It is the Navy's position that 10 feet be used as the cutoff depth between surface and subsurface soils.

Liz Miesner/CH2M HILL stated that DTSC guidance listed 10 feet as a cutoff depth for a residential scenario. S. Tindall indicated that Barstow has four soil zones, and is using 20 feet (commercial scenario). J. Broderick stated that the reason for the 20-foot depth is based on the excavation limit of backhoes. He inquired as to the ultimate land use plan for MCAS El Toro. A. Piszkin replied that a new plan has not been developed because of the fairly recent base closure announcement. J. Zarnoch indicated it is important not to average risk factors for contaminants that are mostly at the surface. J. Broderick thought the 10-foot and 20-foot depths represent two different objectives, risk assessment and remediation, respectively. A. Piszkin reiterated the Navy's position to adopt the residential scenario for risk and, therefore,

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the 10-foot cutoff applies. However, the 10-foot to 20-foot zone may be evaluated from a remediation standpoint (prevent contamination of groundwater). J. Broderick indicated that EPA policy does not specify remediation below 20 feet; Norton Air Force Base (AFB) is currently using a cutoff depth of 20 feet. S. Tindall defended the need to go to 20 feet because, depending on future use scenarios, it is conceivable that excavation may occur to that depth. J. Hamill wanted to postpone the final decision until Dan Stralka/EPA can provide some guidance. J. Zarnoch agreed with J. Hamill. He suggested a cutoff depth of at least 10 feet and were sampling at the surface than at 10 feet.

D. Stralka joined the meeting at J. Hamill's request. He summarized the DTSC guidance for the depth of soils used for risk assessment as a "suggestion" for this part of the country. A better procedure is to research the County planning documents, and determine the typical land use in the area and the associated typical depths of excavation. Such site-specific research should be the basis for setting the cutoff depth. L. Miesner inquired what to do if the research yields different depths for residential versus commercial excavations. D. Stralka replied that a judgment will have to be made from the findings: if there are two potential uses (e.g., residential and commercial) and the difference in depths of excavation is minimal, then one depth (generally most protective) can be selected; however, if the difference is great (e.g., 10 feet and 20 feet), then separate criteria may be assigned to each zone. A. Piszkin said the Navy will coordinate with Station Planning Department to start the zoning/land use research process. The Navy may employ CH2M HILL's assistance for the task. D. Stralka discouraged the concept of having a default scenario, and encouraged the use of "the most protective of health" criterion. J. Zarnoch did not want the use of averaging of values for the entire 10 feet; he suggested calling out the maximum values since surface soils may be very different from the rest of the soil zone. L. Miesner argued that averaging is reasonable because during excavation, the soils are spread out and therefore concentrations tend to be "averaged out." J. Hamill closed the discussions by recommending that the Navy completes its research, prepare a position, and present the recommendations at the next DQO meeting.

Second Round of Groundwater Monitoring

J. Broderick expressed serious concerns that only one round of groundwater samples is available for planning Phase II work. He felt the Navy is at risk to spend funds with the scarcity of groundwater data, and the source area(s) not specifically identified. C. Elliott countered that necessary revisions will be made based on the second round of groundwater sampling. Furthermore, historic data collected by the OCWD and James M. Montgomery Consulting Engineers (JMM) are available. A. Piszkin stated that the Navy is considering the use of soil gas surveys to pinpoint the source area(s). J. Hamill indicated that the delay in funding of the second round of sampling was just another contract award delay the project has experienced. A. Piszkin indicated the delays are out of his control and suggested the EPA communicate directly with Captain Crane of the Navy. J. Dolegowski stated that the results of the second round of sampling, knowing the current schedule, realistically would not be available for inclusion into the Phase II WP. S. Tindall inquired whether the agencies could have available for review the groundwater data within 60 days of collection. Revisions to the data base can be made at a later date. J. Broderick suggested that Phase II should be delayed until two to three rounds of groundwater sampling have been conducted. J. Dolegowski offered that the data quality is high for the Phase I analyses, and the values are consistent with OCWD data. Since the hydraulic conductivity values are

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generally low, he does not see much potential for change in groundwater data. J. Hamill reiterated that the major problem is Navy contracting. The funding delays may create problems with the technical quality of the WP.

Need for OU-4

It is the Navy's position that an OU-4 is not necessary based on the findings of the RFA.

A. Piszkin stated that the only site requiring further investigation, AOC/SWMU 194 (Incinerator Site), can be investigated as part of Site 3 (Original Landfill) of the RI/FS. J. Hamill indicated that the EPA's views will depend on the final comments on the RFA report to be provided by Bechtel. J. Zarnoch indicated that another possible site is AOC/SWMU 131 (Engine Test Cell); it should be added to OU-3. This issue will be discussed further at the 26-27 May Managers' Meeting.

Chemicals of Potential Concern

The Navy/CH2M HILL proposed that the selection of potential inorganics, pesticides and herbicides of concern be based on comparisons against background concentrations. The data also would be screened against risk-based concentrations (RBCs) which are similar to EPA's Preliminary Risk-Based Goals (PRGs). The Navy/CH2M HILL also proposed that petroleum hydrocarbon levels be compared against California Leaking Underground Fuel Tank (CA LUFT) Field Manual guidance criteria.

J. Broderick indicated that DDT was an issue at MCAS Tustin. Although legal application of DDT was determined, he urged that criteria other than background should be considered for pesticides and herbicides. J. Zarnoch supported J. Broderick, and further suggested addressing pesticides and herbicides separately. J. Broderick and J. Hamill stressed that legal application of pesticides, not herbicides, for agricultural use is exempt. However, determination of legal application will be difficult. J. Zarnoch encouraged comparisons against PRGs when screening pesticides/herbicides data. General discussion ensued on whether it is fair to have MCAS El Toro clean up to levels below those found in the general area of the Station. The Navy will pursue additional discussion with the agencies on pesticides and herbicides.

There was discussion on comparison of organics data against risk-based concentrations. J. Zarnoch expressed concerns that EPA's PRGs only dealt with the ingestion pathway. J. Hamill stated the PRGs were meant to be used for screening to prioritize work, not to eliminate sites from further investigation. L. Miesner explained that PRGs were not used for risk evaluation, but rather RBCs were; RBCs took into account all possible pathways. J. Hamill wanted to know how the values were derived. S. Tindall suggested that D. Stralka review and approve the methodology used. J. Zarnoch expressed the need to meet the California guidance, and conceded the concerns about inappropriate application of the PRGs were irrelevant. J. Hamill summarized that the Navy/CH2M HILL should proceed as proposed. However, he cautioned against the use of PRGs and risk-based concentrations to completely eliminate sites from further investigation.

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The regulatory agencies agreed that inorganics data can be compared against background data. There was general discussion on the natural occurrence of metals in nature, and therefore background soil. Bruce Peterson/CH2M HILL explained that the statistical methodology (upper tolerance limit) will be essentially the same one used to screen out waste management samples. S. Tindall objected to the automatic elimination of common metals such as calcium and sodium. L. Miesner countered that "essential nutrients" and common water quality parameters are routinely excluded from risk evaluation. J. Zarnoch cited the DTSC guidance on "essential nutrients" and common water quality parameters, then indicated the Navy should flag these chemicals if they exceed background levels significantly; he suggested they be eliminated as chemicals of potential concern only after a risk evaluation. Both J. Dolegowski and A. Piszkin argued this would set an unwarranted precedent. In the end, with the exception of the metals in question, it was agreed background metal concentrations will be used to determine metals of potential concern. The EPA will notify the Navy of its position on these constituents.

J. Broderick indicated that the RWQCB-Region 8 (not the entire RWQCB) is working on new guidance for petroleum hydrocarbon cleanup; the Region is favoring cleanup levels that are "goal-oriented." He stated that the primary concern is the gasoline fraction, in particular benzene, toluene, ethylbenzene, and xylenes (BTEX) levels. The other components of common fuel products are of secondary concern. Cleanup should concentrate on remediating BTEX and the gasoline compounds; the remaining fractions can be left in place. J. Zarnoch indicated that one of the sites he worked on finally left in place soils containing 47,000 to 50,000 parts-per-million (ppm) of total petroleum hydrocarbons (TPH). However, he deferred issues on petroleum hydrocarbons to the RWQCB. Both J. Broderick and Larry Vitale/RWQCB suggested the use of physical tests (i.e., leaching/extraction tests, soil column tests, or a combination) to provide experimental data. The tests should be calibrated against different soil types which exist on the Station. They want physical proof that the other fractions will not show up in groundwater. A. Piszkin warned that another round of contracting will be necessary if treatability studies are needed. He offered testing of existing samples (e.g., archived samples, drummed samples) as a way to expedite matters. J. Broderick expressed concerns that those samples would not be representative of the more volatile fractions any more. The Navy/CH2M HILL will propose a position on petroleum hydrocarbons by the next DQO Meeting.

J. Hamill expressed concerns that very few of the soil samples showed any volatile organic compounds (VOCs). He suggested the use of field screening. C. Elliott stated that the Navy/CH2M HILL is considering the use of soil gas surveys during Phase II. S. Tindall felt the use of a field gas chromatograph/mass spectrometer (GC/MS) would be desirable, and described the Navy's success elsewhere using the field GC/MS. A. Antipas cautioned that the protocols of the field GC/MS should be evaluated before being used for field screening. She indicated that GC/MS is also not readily available and other alternatives should be evaluated. Y. Chuang supported A. Antipas and indicated "second column (GC) confirmation" is more often used in the field. In the end, it was agreed that soil gas surveys should be used during Phase II.

Criteria

D. Richards presented draft tables of cleanup criteria and standards compiled from Federal and state regulations, and calculated from risk evaluations. She distributed

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preliminary tables of criteria and standards, and urged that they not be used until reviewed and revised.

J. Broderick stated MCAS El Toro needs to address surface water requirements (California Plan for Bays and Estuaries) because the drainage channels discharge to San Diego Creek which, in turn, discharges to Newport Bay. In reply to A. Piszkin, he further indicated the Station's Storm Water Discharge Permit would contain the effluent limitations.

J. Zarnoch inquired about the basis for the risk-based concentrations. L. Miesner replied that they were EPA's. J. Zarnoch wanted the State's cancer potency factors included as criteria when they are more stringent than EPA's. D. Stralka indicated there are six different factors, and only three factors are listed by the State but not EPA. A. Piszkin stated the Navy's position is to use only Federal, and not State, cancer potency factors. S. Tindall felt the Navy is justified in their stance but indicated the additional effort may not be substantial. In replying to the Navy/CH2M HILL, D. Stralka indicated, despite DTSC requirements, EPA has used their own factors. But he offered that the differences did not change the conclusions significantly. He also added that this issue will be settled in court, and the State is scheduled to release cancer potency factors for an additional 140 (or more) chemicals. For MCAS El Toro, the only differences are factors for chloroform, tetrachloroethylene, trichloroethylene, and benzene (one order of magnitude more stringent). J. Broderick cited the FFA as stating the need to account for State criteria. He indicated the RWQCB management can always be notified of the Navy's decision not to use the State's criteria. D. Stralka indicated the lead agency (Navy) can exercise the right to decide on cleanup criteria, but it is also the State's prerogative to set more stringent criteria.

L. Miesner recounted the highlights of the risk assessment meeting held on 30 April. During the meeting, consensus was reached on the use of sample-specific assessment methodology. D. Stralka indicated that the methodology is not inconsistent with EPA's methodology. However, he felt MCAS El Toro was not complex enough to warrant use of such an approach.

A. Piszkin inquired whether a risk assessment for OU-1 would be necessary. D. Stralka replied that the cleanup levels may well default to Maximum Contaminant Levels (MCLs). Apparently, OCWD will be legally held to clean up to MCLs only; however, the agency is apparently under the assumption it will need to clean up to best practicable technology (BPT) levels. S. Tindall indicated that the OCWD has never stated that they would treat to risk-based standards.

Vadose Zone Contaminants

It is the Navy/CH2M HILL's position that contamination below 10 feet (cutoff between surface and subsurface soils) is a concern only if groundwater is impacted. Yueh Chuang/CH2M HILL presented the use of VLEACH as the choice for modeling chemical transport in the vadose zone; VLEACH is simple to use yet considers the geology, and the physical and chemical characteristics of the contaminants.

C. Elliott reminded the team that the model will be used only as a screening tool to estimate cutpoints for subsurface soils. Y. Chuang supported C. Elliott and stated the objective is to evaluate whether groundwater would be impacted, not to model the system. J. Zarnoch observed that a model may not be necessary since there are very

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few samples showing contamination in the subsurface. He indicated that the State is developing a vadose zone model, CALTOX. J. Broderick reiterated the RWQCB's desire to see leaching/extraction and column testing rather than just modeling. He expressed concerns that the model cannot account for interbedded geology and preferential flow paths. The Navy is in favor of conducting physical tests; however, procurement of funding and the lack of time are concerns. The agencies tentatively accepted the use of VLEACH. Y. Chuang suggested J. Hamill confer with other EPA RPMs (i.e., Jeff Rosenbloom and Dan Opalski) who are familiar with VLEACH. The EPA and DTSC will study the use of the model and come back with recommendations.

Statistical Issues

Statistical analysis provides a consistent and defensible approach to the decisions made at MCAS El Toro. B. Peterson presented an overview of important concepts to be used in the proposed statistical analysis, including power, confidence, MDRD, and the number of samples to collect (N). Once three of the four parameters are set, the fourth can be calculated. All four parameters are related, and the setting of MDRD and N may be an iterative process.

J. Broderick expressed concerns that the Navy would be the sole party to set MDRDs. J. Hamill expressed similar concerns, and indicated the effort should be done jointly. B. Peterson countered that it would be in the Navy's own interests to set the optimal MDRDs as there is a cost incentive to do so. It was agreed that the MDRDs would be set on a site-by-site basis. The Navy/CH2M HILL will propose MDRDs and present them in the meetings.

A. Piszkin indicated the Navy/CH2M HILL will propose power and confidence values on a site-specific, if not stratum-specific, basis. J. Hamill stated that EPA guidance set the minimum values for power and confidence at 90 and 80 percent&&, respectively; the agencies do not have much leeway on such guidance. After additional discussion, no consensus was reached on whether power and confidence values will be set on a site- or stratum-specific basis.

Nonparticipant Distribution

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MEMORANDUM

TO: Andy Piszkin - Code 1812.AP
Desire Chandler - Code 1812.DC

DATE: 15 February 1993

FROM: John Dolegowski - CH2M HILL
Davi Richards - CH2M HILL/CVO

SUBJECT: **Definition of Operable Units (OUs) 1, 2, 3, and 4 for Marine Corps Air Station (MCAS) El Toro**

Proposed Definitions

The following proposed definitions are more explicit and extensive than those in previous documents, but are not substantially changed:

- **OU-1**: OU-1 includes groundwater on- and off-Station that is contaminated with constituents that have migrated from sites at MCAS El Toro. No other environmental media are included in OU-1.

- **OU-2**: The following five sites constitute OU-2: the Magazine Road Landfill (Site 2), the Original Landfill (Site 3), the Perimeter Road Landfill (Site 5), the Petroleum Disposal Area (Site 10), and the Communication Station Landfill (Site 17). This OU includes all environmental and deposited media at these sites other than air: surface soil, subsurface soil, landfill solids and liquids, sediment, surface water, groundwater, and any liquid or solid contaminants that may have entered the soil or groundwater.

  Note: The delineation of which groundwater is in OU-1 and which is in OU-2 will be made on the basis of actual data from Phase 1, during step 4 of the DQO process, which requires that the boundaries of each site be defined. Possible criteria for this definition might be 1) by concentration gradient, or 2) by capture zone for a well (or wells) proposed for source control downgradient from an OU-2 site.

- **OU-3**: The remaining 16 sites identified under the Navy Assessment and Control of Installation Pollutants (NACIP) program constitute OU-3: Sites 1, 4, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 19, 20, 21, and 22. This OU includes all environmental and deposited media at these sites other than air and groundwater: surface soil, subsurface soil, sediment, surface water, and any liquid or solid contaminants which may have entered the soil.

- **OU-4**: Sites at MCAS El Toro that are identified during the current Resource Conservation and Recovery Act (RCRA) Facility Assessment as requiring further investigation will constitute OU-4. OU-4 will include all environmental media (other than air) present at the identified sites.

Figure 1 is a graphic summary of the OUs.

Continuing Reevaluation

As new data becomes available, the proposed definitions of the OUs will be reevaluated and refined, as appropriate, to respond to actual site conditions in a coherent, logical approach both technically and administratively. The definitions of the OUs can be modified at any time by agreement among the parties to the Federal Facilities Agreement (FFA). For instance:

- **New Source Areas.** If localized areas of groundwater were found to be contaminated at high concentrations ("hot spots"), which could serve as continuing sources to the wider plume area, they would probably be addressed by OU-2. For instance, if Site 7, presently in OU-3, were found to have a concentrated source of trichloroethane (TCE), it would more logical to move it to OU-2 so that it could be addressed in the same Feasibility Study (FS) with the other areas that are potential sources of contamination to groundwater.

- **New Plume.** If a new plume of low level groundwater contamination was found that was not clearly associated with a source area, it would probably be most logical to evaluate it as part of OU-1.

- **Contamination Intermediate Between OUs.** If contamination were discovered at some intermediate distance from a present OU-2 site and were not clearly associated with one of the OU-2 sites, a case by case decision would be made on the basis of the actual data and local hydrogeology.

Rationale for Definitions

The following criteria are relevant to defining the OUs.

- **Control of Migration vs. Source Control**

  OU-1 will deal with contamination which has already migrated into the regional groundwater system from its original source(s). OUs-2 and 3 (and presumably 4) will deal primarily with contamination that is still at or near the source of the release. These differences will require that different issues (i.e., control of migration vs. source control) be considered during investigation, evaluation, and remediation, making it logical to consider them in separate OUs.

- **Schedule**

  If the DQO for OU-1, which is to be performed on the basis of Phase I data, indicates that a Phase II Remedial Investigation (RI) is not required for OU-1, the proposed definitions of OUs-1 and 2 will allow OU-1 to proceed to a Record of Decision (ROD) more quickly than OU-2, which is more likely to need additional data collection during Phase II.

- **Environmental Media Intereffects**

  Including groundwater, contamination in the immediate vicinity of the individual OU-2 sites with the other environmental media found there will allow for a more realistic evaluation of potential remedial alternatives. For instance, coordination of the evaluations might be difficult if highly concentrated groundwater at an OU-2 site were being evaluated in OU-1, while the contaminated surface soils and vadose zone soils immediately above them were being evaluated in OU-2.

- **Similarity of Media**

  Although the environmental media contaminated at OU-2 sites vary, the sites are similar in size; four of them are landfills, and they may be able to be grouped for some purposes during FS activities. Similarly, OU-3 sites are smaller and are primarily sites of surface soil contamination. By contrast, OU-1 deals only with large-scale groundwater issues.

- **Manageability**

  The primary purpose for separating a site into OUs is to divide an unmanageably large task into more manageable pieces. Regional groundwater contamination (OU-1) and localized source control measures (OU-2 and OU-3) both represent potentially large problems which warrant separate though coordinated evaluations.

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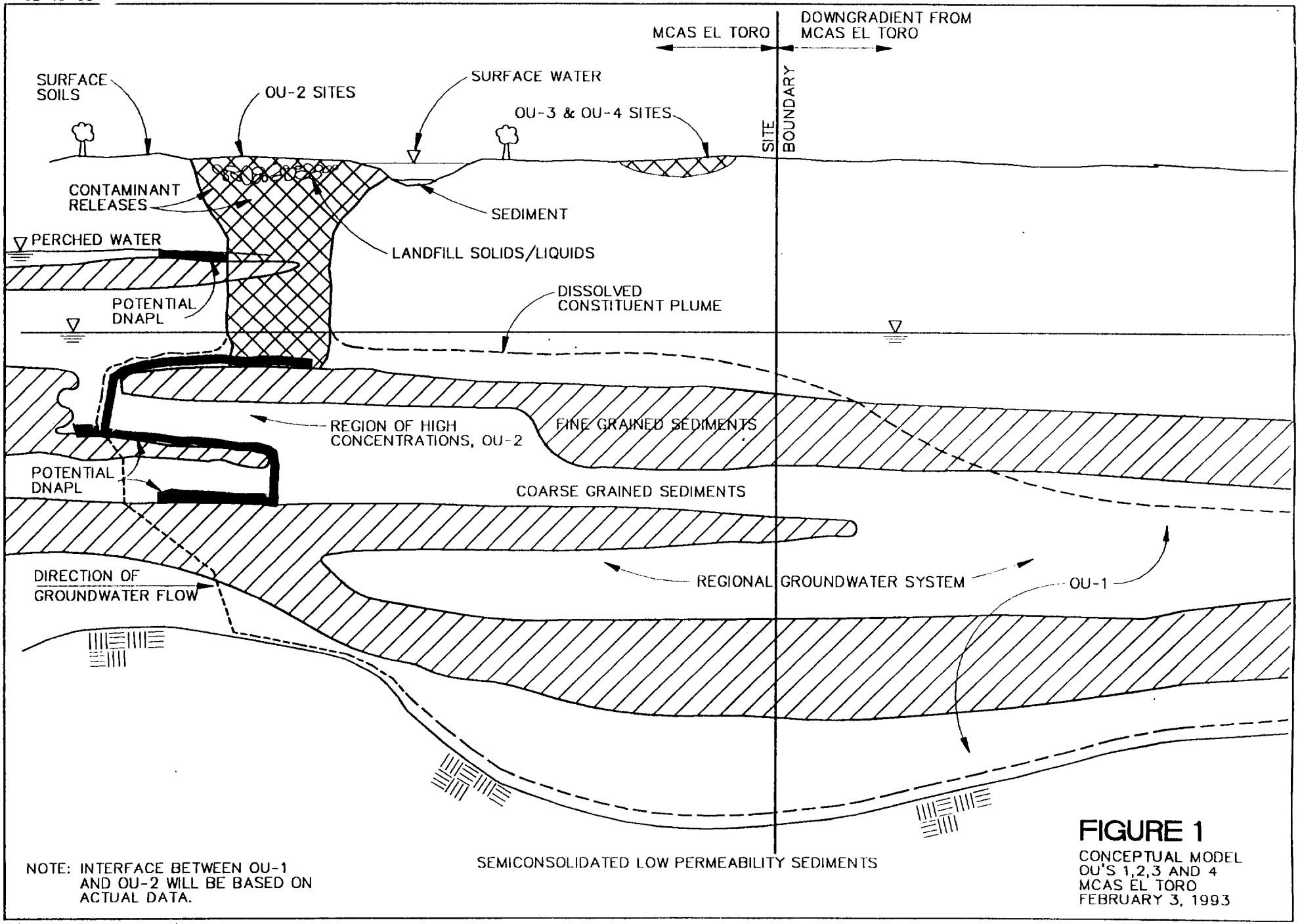

NOTE: INTERFACE BETWEEN OU-1 AND OU-2 WILL BE BASED ON ACTUAL DATA.

FIGURE 1

CONCEPTUAL MODEL
OU'S 1,2,3 AND 4
MCAS EL TORO
FEBRUARY 3, 1993

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