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STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

Region 4  
245 West Broadway, Suite 425  
Long Beach, CA 90802-4444  
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M60050.001292  
MCAS EL TORO  
SSIC # 5090.3



CTC-0059/000174

May 23, 1995

Mr. Joseph Joyce  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
P. O. Box 95001  
Santa Ana, California 92709-5001

Dear Mr. Joyce:

**REVIEW COMMENTS ON THE REVISED DRAFT WORK PLAN, PHASE II, REMEDIAL INVESTIGATION / FEASIBILITY STUDY (WP), MARINE CORPS AIR STATION (MCAS) EL TORO**

The Department of Toxic Substances Control (DTSC) has completed its review of the above mentioned Work Plan. General and specific comments are enclosed. For this report the Regional Water Quality Control Board will send their comments directly to the Base Closure Team members.

Overall the plan is well written. There are a large number of manageable items which can be addressed either via a teleconference or in person meetings for the general comments. The Department will be available for a comment resolution meeting(s) either in person or via a telephone conference as necessary.

We look forward to working with you on these and other issues. Feel free to contact me at (310) 590-4919.

Sincerely,

  
Juan M. Jimenez  
Remedial Project Manager  
Region 4 - Base Closure Unit  
Office of Military Facilities

## Enclosures

cc: Ms. Bonnie Arthur  
U. S. Environmental Protection Agency  
Region IX  
Hazardous Waste Management Division, H-9-2  
75 Hawthorne Street

**DEPARTMENT OF TOXIC SUBSTANCES CONTROL**

Region 4  
245 West Broadway, Suite 425  
Long Beach, CA 90802-4444

**MEMORANDUM**

**TO:** Juan Jimenez  
Office of Military Facilities  
Base Closure Unit  
245 West Broadway, Suite 425  
Long Beach, California 90802

**FROM:** Geological Support Unit  
245 West Broadway, Suite 425  
Long Beach, California 90802

**DATE:** 24 May 1995

**SUBJECT:** ***COMMENTS ON REVISED DRAFT WORK PLAN PHASE II REMEDIAL INVESTIGATION/FEASIBILITY STUDY, MARINE CORPS AIR STATION EL TORO, SANTA ANA, CALIFORNIA***

***AND***

***DRAFT FIELD SAMPLING PLAN PHASE II REMEDIAL INVESTIGATION/FEASIBILITY STUDY, MARINE CORPS AIR STATION EL TORO, CALIFORNIA***

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**INTRODUCTION**

As requested, the Geological Support Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the documents entitled Revised Draft Work Plan Phase II Remedial Investigation/Feasibility Study, Marine Corps Air Station El Toro (MCAS), Santa Ana, California (*Revised Work Plan*) and Draft Field Sampling Plan Phase II Remedial Investigation/Feasibility Study, MCAS El Toro, California (*FSP*), both dated March 1995. These documents were prepared by Southwest Division, Naval Facilities Engineering Command (Navy), in conjunction with Bechtel National, Inc. (Bechtel).

The following comments consists of four sections: I) General Impression, II) General and Specific Comments, III) Work Plan Specific Comments, and IV) FSP Specific Comments. Site specific comments on Landfills, the Potential Volatile Organic Compounds Source Area and OU-3 Sites will be issued as an addendum, 2 June 1995. In

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general, minor grammatical or typographical errors that do not affect interpretation have not been noted. However, these should be corrected in the final version of the *Revised Work Plan* and *FSP*.

GSU requests that upon approval of the work plan the Navy provide base passes to regulatory representatives prior to the initiation of, and for the duration of the fieldwork.

Bechtel's Standard Operation Procedures (SOP's) have been reviewed by the GSU and are enclosed as an attachment. For general information, the comments for all SOP's submitted to DTSC are included.

GSU recommends that the Navy submit revised documents with a master list of the revisions indicating the changes that were made from the draft editions based on comments received. The master list of revisions should clearly indicate the nature of each change and identify each change by section (or table or figure) and page number.

The finalized work plan and field sampling plan should be a comprehensive document and not an addendum as discussed at previous meetings.

#### *Response Summary - A Brief Note*

GSU considered only the "Revised Draft Work Plan" responses (CLEAN II) while reviewing the *Revised Work Plan* and *FSP*, therefore, disregarding the "Draft Work Plan" responses (CLEAN I).

With regard to the future "response summary" for the *Revised Work Plan*, GSU recommends that Navy consultants provide the BCT with thorough responses, in addition to identifying the location (section and page number) in the RI/FS where a particular comment is addressed. Satisfying this request will expedite the review of the finalized work plan.

#### **I. GENERAL IMPRESSIONS:**

Generally, the approach outlined in this *Revised Work Plan* and *FSP* adequately addresses the objective of the study, however before field work begins there are some issues that require further discussion. In particular, the issues surrounding the use of screening techniques such as immunoassay kits and XRF. These screening techniques may have limited application, if none at all, based on the preference for residential PRG's especially with regard to classifying a sites as no further action. Please note, as suggested at a recent technical meeting (25 April 1995), the BCT may want to consider evaluated sites using the industrial PRG's in addition to the residential PRG's.

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Because of the limited discussion presented in the documents concerning pilot testing, it is recommended to submit work plans or expand the discussion in the *Work Plan* and *FSP* considerably in the finalized version. This should be completed prior to the commencement of these type of field activities.

## II. GENERAL AND SPECIFIC COMMENTS:

### 1. Signature Page

Please provide a signature page signed and stamped by a California Registered Geologist or Professional Civil Engineer at the beginning of all future submittals that include information and interpretations regarding geology, hydrogeology, and vadose zone investigations.

### 2. Acronym List

Please provide a comprehensive acronym list. There are acronyms in the document that are not defined such as MDRD and MDD.

### 3. Summary Section

Provide a brief discussion in the Summary section of the *Revised Work Plan* describing the transition between CLEAN I and CLEAN II. This description will supply the public with an understanding as to why there is a revised work plan and why the investigative approach presented in the *Revised Work Plan* differs from the MCAS El Toro, IRP Phase II RI/FS Study Draft Work Plan (*Draft Work Plan*).

### 4. Site or Unit Reclassification

Any site or individual unit within a site that is reclassified as a NFA or transferred to the RAC program should remain in future submittals of the RI documents. The inclusion of these sites in the RI documents may only be just a short narrative explaining the status of the site. Including these sites in the RI documents will keep future reviewers and the public apprised of the rationale regarding the remedial track of past and present sites.

### 5. Comprehensive Sampling Matrix

To maximize sampling efforts, include a matrix of all sampling events of all CTO fieldwork. This will enable the BCT to optimize field activities.

6. Incorporating existing data within the RI/ES

In the attempt to avoid duplication and to expedite the completion of the *Revised Work Plan* and associated companion documents the BCT agreed to minimize the amount of existing data within the documents. Although it is not necessary to include all previous data, to expedite the review process of the finalized work plan, some data summary tables should be provided. Also, whenever data is cited in the *Revised Work Plan* and associated companion documents, for example providing minimum and maximum concentration ranges, provide the sample identification number, depth of sample, and location.

7. Tables and Figures

After changes have been finalized, please thoroughly review tables and figures for consistency. Check that cross-referencing between text, tables, and figures is accurate within each RI document and that cross-referencing between RI documents is accurate. Discrepancies were noted in the draft document.

8. Field Investigation Meetings to Provide Technical Direction

Because such a large portion of the RI depends on the dynamic work plan approach it is suggested that a section in the final work plan describe and outline the procedures that will be followed to insure collaborative decision making between all BCT members. The BCT may also want to consider including the minutes from these meetings in the final report.

9. Replacing Risk Based Concentrations (RBC's) with Preliminary Remediation Goals (PRG's)

Based on discussions at previous meetings, it is assumed by the GSU that PRG's will be used instead of RBC's for screening tools and initial cleanup goals. Therefore, please change all appropriate text, tables, and figures throughout the finalized work plan. Clearly identify in the finalized document if the sampling strategy or preliminary remedial action changes at a particular site or unit as a result of the change in screening values.

10. Establishing PAH's Background for Soils

Based on the discussion at previous meetings GSU assumes the BCT has agreed to establish PAH background concentrations for soils. It is suggested to calculate the background concentrations base on 11 samples as was done with the inorganic

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and pesticide background concentrations. Since PAH's tend to bind with organic matter, samples should be collected from the land surface to two foot soil horizon interval in non-impacted areas. Because low quantitation limits are required, it is recommended to run USEPA Method 8310 and request low level preparation procedures by the laboratory. After background is established then the appropriate analytical method for site evaluation can be chosen (USEPA Method 8310 or 8270).

Include a section which identifies these locations and propose an expedited sampling, analysis, and data interpretation schedule. This effort should be conducted before the main Phase II field activities begin. This approach would substantially improve field screening and the final decision making by providing ambient levels of PAH's, rather than PRG's which are likely to be lower.

11. Abandon Wells

The final work plan should include a map showing the location of all abandoned wells relative to the RI sites, similar to Figure 1-3 or W-2. A table should be provided outlining information such as well construction, length of time the well was in use, if the well was abandoned adequately, location, and any other miscellaneous information pertinent to the RI investigation.

12. CLEAN I -vs- CLEAN II Base-Wide Maps

Because the nature of the RI/FS lends to continual cross-referencing within the *Revised Work Plan* and *FSP* and with previous documents, primarily the *Draft Work Plan* and the *Soil Gas Report*, consistency between figures must be maintained. Unless the basewide maps from the previous work plans and reports are inaccurate, please reconcile inconsistencies by correcting the basewide maps presented in the *Revised Work Plan* and *FSP*. Examples include misnumbered buildings, missing buildings, and incorrect building locations.

13. Storm Drains

Include a section in the work plan that addresses storm drains. Personnel interviews revealed that liquids were often poured into storm drains. Sodium dichromate was also reportedly used in boiler systems as corrosion inhibitors. Site 22 is of particular interest because it has been reported that solvents were pored in the storm drains and ran out to a wash.

Provide in a basewide map showing storm drains.

14. Aerial Photograph Information

Throughout DTSC comments for the *Draft Work Plan* there are requests that anomalies from aerial photographs are shown on site-specific figures, yet these anomalies are not shown on the figures in the *Revised Work Plan*. Please review DTSC's *Draft Work Plan* comments and identify aerial photograph anomalies on figures in the final *Revised Work Plan*.

15. Integration of OU-3 Sites and VOC Source Area Study

The *Revised Work Plan* and *FSP* present the OU-3 sites and the VOC Source Area as two independent studies. Whenever possible combine field data collection efforts (e.g., Soil Gas Survey).

16. Mud-Rotary Drilling Technique

As discussed at previous technical meetings GSU does not recommend the use of mud-rotary drilling techniques to drill borings. If the goal is to characterize stratigraphy beneath the site, combining CPT and lithologic logging would be preferable. Mud-rotary drilling not only can be very costly but also may generate a large volume of investigative derived waste. There is also a possibility that field crews may have to use Level B personal protection equipment (PPE) while drilling. Mud-rotary drilling in Level B PPE not only is cumbersome but also can be more hazardous than other alternative drilling techniques.

17. Interpretation of Soil Gas Results

Since part of the rationale for field investigations, and NFA and Removal Action reclassification, presented in the RI depend on soil gas data, GSU recommends providing an explanation as to why there are two 1,1-DCE values reported in the MCAS El Toro, Final Soil Gas Survey Technical Memorandum, Sites 24 and 25, dated 31 October 1994 (Table C-1, Concentrations in Soil Gas). There is often up to an order of magnitude difference between the reported ECD and FID values. Please provide reasoning as to how reported 1,1-DCE soil gas values in the site-specific sections of the *Revised Work Plan* and *FSP* were chosen.

18. Matrix Interferences

The following comment was included in DTSC original comments for the RI/FS *Draft Work Plan* but was not adequately (General Comment 31) addressed.

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All analytical results for each site should be reviewed and, when necessary, evaluated for matrix interferences in the site-specific section. DTSC Site-Specific comments from the Phase II RI/FS Draft Work Plan indicate several instances where it appears petroleum hydrocarbon contamination interfered (elevated detection limits) with other results, such as those for PAHs. A failure to properly evaluate analytical interferences could result in an underestimation of human health and/or ecological risk.

The Revised Draft Work Plan response "reponse summary" was "Measures will be taken during sample analyses to account and minimize the adverse impact to matrix interference problems. The goal will be to provide the lowest detection limits that can reasonably be obtained."

Please elaborate in the finalized version of the work plan, in addition to noting the location of this information in the "response summary".

19. Map of Above Ground Tank and Underground Storage Tanks (UST)

The following comment was included in DTSC's original comments for the RI/FS Draft Work Plan but was not adequately addressed (General Comment 33) addressed.

The document should include a map displaying the following: 1) an outline of MCAS El Toro, 2) the location of all RI sites including sites that may or are reclassified as Removal Actions, 3) the location of all tank farms and tanks both above ground and below ground containing petroleum hydrocarbons, including fuels, 4) the location of monitoring wells, and 5) contours of the groundwater plumes potentially associated with the USTs.

20. Groundwater Water Quality Sampling

Since a portion of the RI is guided by the groundwater analytical results, provide a schedule showing the order the groundwater samples will be collected relative to the other field activities.

21. Field Screening Methodologies

In terms of confirmation sampling what will be considered field screening methodologies. It should be clarified in the *Revise Work Plan* the difference between preliminary field sampling devices, preliminary field screening and the undefined field screening which follows but precedes off site analyses.

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22. RAC Contractor

Once a site goes to the RAC contractor how will the regulatory agencies fit into the Remediation process?

23. OU Identification

Identify which OU sites are associated with sites discussed within the appendices and attachments.

**III. WORK PLAN SPECIFIC COMMENTS:**

1. Section 1.3 - Work Plan Contents

Page 1-4, Figure 1-2, The figure should include the Remedial Investigation Report and Feasibility Study Report for OU-1.

2. Section 2.2.3 - Previous Investigations

Page 2-2, In paragraph two and four, clarify the location of TIC 45, it is unclear from the text if the well is located 3,000 feet or 4 miles from the station.

3. Section 2.4.3.2 - Superfund Accelerated Cleanup Model

Page 2-44, State in the text that an EE/CA is only part of the process for the implementation of non-time critical removal actions.

4. Section 3.1 Types and Volumes of Waste Present

Page 3-5, Table 3-2, Were TRPH and TPH specified as COPCs because there were levels of concern at individual sites or simply because the analyses for TRPH and TPH happened to be conducted in Phase I and values above detection levels were reported? The reasons for the analysis of soil samples for both TRPH (USEPA Method 418.1) and TPH (USEPA Method 8015M) should be identified. It is not cost effective to specify both analyses without justification.

5. Section 3.3 - Preliminary Identification of Operable Units

Page 3-14, The text should note that Site 24 includes Sites 8, 9, 10, 11, 17, and 22.

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6. Section 4.2.1.3 - Estimated Risk

Page 4-4, The text should specify if the risk for consideration was for cumulative, excess lifetime cancer risk alone or non-carcinogenic risk was also included.

7. Section 2.2 Step 2 - Identify the Decisions

Page 4-4, Rewrite decision number 3. As written the statement implies that soil sampling alone can determine if groundwater beneath a site is contaminated. Groundwater sampling should be used for that purpose.

Page 4-5, Item 9b, Define "principal threat waste".

8. Section 4.2.3.5 - Tiered Sampling Programs

Page 4-17, As presented the text implies that the limited lists of analytes that will be examined using field analytical screening techniques and supported by offsite, fixed laboratory analysis for the Tier 1,2 and Tier 3 for the OU-3 sections are a function of cost only. The text should reflect that difference in cost is not the only distinction between Tier 1 and Tier 2.

9. Section 4.2.3.6 - Sampling Designs

Page 4-18, Reorganize the bullet list on the top of the page to correspond with the sequence of presentation of the topics which follows.

10. Section 4.2.3.8 - Analytical Methods

Page 4-21, Field Screening, See General Comment number 21.

Page 4-21, Confirm that CLP detection limits for all COPC are low enough to fulfil the risk assessment requirements.

Page 4-21, The text does not mention metals analyses in the field, however, XRF analyses and/or ICP analyses are part of a field program and are described elsewhere (DQOs by inference and explicitly in the QAPP). Clarification of the use of these analytical techniques is needed.

Page 4-23, Table 4-4, Benzene is not a halogenated volatile organic compound, please make the correction.

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The analytes listed under HVOCs-Method 8010 and VOCs-Method 8240 are not complete. Clarify with a footnote the reason, or correct the table and include all analytes provided by the method. Also note that TCE, PCE, carbon tetrachloride and benzene are absent from the listing under 8240.

The foot note should contain an explanation of the dash symbols which appear in the table.

List the "CAL-Modified PRG" for lead as was done for nickel.

Page 4-32, Confirmation Methods, Remove the term CLP from the paragraph. Provide a statement which explains that statistical comparison techniques may not be used if the number of samples collected are insufficient to conduct the comparison tests. Under these conditions, qualitative comparisons would be necessary.

11. Section 4.2.3.9 - Fate and Transport Models

Page 4-32, The discussion of groundwater models clearly states the MODFLOW, MT3D, AND MODPATH will be used for some applications. However, the vadose zone modeling discussion does not specify which of the models presented will be used. The text should clarify this.

12. Section 5.3.1.5 - Soil Gas

Page 5-5, The third paragraph states that the soil gas investigations will "generally follow" the "Requirements for Active Soil Gas Investigation" for the CRWQCB, Los Angeles Region. Please outline either in the QAPP or in the Soil Gas section the variations from the above stated document.

13. Section 5.3.1.8 - Geophysics

Page 5-6, See General Comment number 16.

IV. FIELD SAMPLING PLAN SPECIFIC COMMENTS:

1. Table of Contents

Please carefully edit the Table of Contents so that it reflects the organization of the FSP. Also check that designated captions for the text section, maps, and tables are the same in the Table of Contents as they are in the body of the FSP. Most maps in Section 3 are misnumbered and often misnamed.

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2. Section 4.1.2 - Leachate Samples

Page 4-1, Discuss how lysimeter data will be collected, analyzed, and interpreted. Explain what criteria is used to establish a background lysimeter including the rationale how it will be located. Provide a Standard Operating Procedure (SOP) if available.

3. Section 4.1.3 - Surface Soil Samples and Section 4.1.4 - Subsurface Soil Samples

Previously the BCT has defined ground surface to 10 feet bgs as surface or surficial soil used to support the baseline risk assessment. This agreement should be reflected in not only in Section 4.1.3 but also in Section 4.1.4.

4. Section 5.2 - Field Screening

Page 5-1, See General Comment number 21.

5. Section 6.2.3 - Field Instrument Calibration

Page 6-7, At a minimum a one point calibration should be performed on the pH meter and electrical conductivity meter at every new monitoring well site. If historical data shows significant differences of these field parameters between the wells at cluster sites or between different depth interval for multi-port wells the field instruments should be re-checked between samples.

6. Section 6.3.3 - Soil Borings

Page 6-10, It is not necessary to place the entire drilling rig on plastic sheeting.

7. Section 6.3.3.1 - Hand Auger Borings

Page 6-11, GSU suggested using a hand auger to advance to the target sampling depth and then use a hand held hammer sampler equipped with the appropriate metal sleeve to collect the sample. It is not recommended to sample directly from the bucket of the auger.

8. Section 6.3.3.2 - Hollow-Stem Auger Borings

Page 6-11, If water is added to hollow-stem auger it should be documented in a field notebook and also flagged in the report final. The field geologist should note the amount of water that was used, the source of the water, and at what depth the water was introduced into the boring.

9. Section 6.3.3.3 - Air-Rotary Borings

Clarify in the first paragraph if the air-rotary drilling method will be used after unsuccessful attempts with the hollow-stem auger drilling method or if there will be a specific predetermined depth that will specify the drilling method before the commencement of field activities.

10. Section 6.3.3.5 - Backfilling of Boring

Page 6-14, The last sentence of the fourth paragraph states "The amount of grout used should be at least as much as the calculated boring volume." Clarify that the amount of grout that will be used is the amount of grout needed to fill the boring. Often more than the calculated boring volume is needed to fill the boring.

11. Section 6.4 - Installation of Monitoring and Extension Wells

This section only describes the installation of a typical hollow-stem auger drilled monitoring well. Please discuss and provide a figure for a typical air and mud-rotary drilled monitoring well.

Page 6-17, Figure 6-1

- a. Screen slot size and filter pack size cannot be determined until the completion of a sieve analysis.
- b. Indicate screen length.
- c. Indicate sump/sediment trap length.
- d. Add o-rings to the figure (see Section 6.4.1.1)

12. Section 6.4.2 - Air-Sparging Well Installation

Expand the discussion regarding the approach and rationale for air-sparging. GSU recommends adding air-sparging as an agenda item for the next technical meeting.

13. Section 6.4.2.2 - Filter Pack Installation

Page 6-23, The filter pack should extend at least two feet above the top of the well screen. In deep wells the filter pack may not compress when initially installed, consequently, when the annular and surface seals are placed on the filter

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pack the filter pack compresses sufficiently to allow grout into, or very close to, the screen. Consequently, filter packs may need to be installed as high as five above the screened interval in monitoring wells that are deep (greater than 150 feet).

14. Section 6.4.7.4 - Measurement of Turbidity

Water samples for analysis should not be collected until turbidity is about 5 NTUs.

15. Section 6.4.10 - Groundwater Sampling to Evaluate Water Quality

Page 6-35, first sentence, Purging should continue until measurement of temperature, pH, and specific conductivity have stabilized. The actual number of casing and filter pack volumes to be removed, and the rate that they should be removed should be determined on a well-by-well basis, depending on both the hydraulic properties of the monitoring zone and the hydraulic performance of the well. It is very likely in some monitoring wells that three casing volumes of water will not be sufficient.

Thank you for the opportunity to review and comment on this document. If you have any questions, please contact me at extension 5528.



Sherrill Beard, RG  
Hazardous Substances  
Engineering Geologist  
Geological Support Unit



Concur:

Karen Thomas Baker, CEG  
Unit Chief  
Geological Support Unit