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California Regional Water Quality Control Board

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October 8, 2002

Mr. Dean Gould
BRAC Environmental Coordinator
Base Realignment & Closure, Environmental Div.
P O Box 51718
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COMMENTS ON TANK 398 VADOSE ZONE CLOSURE REPORT AND LONG-TERM GROUNDWATER MONITORING PLAN, FORMER U. S. MARINE CORPS AIR STATION, EL TORO

Dear Mr. Gould:

We have completed our review of the above-referenced document, dated January 16, 2001, which we received on January 24, 2001. We have the following comments on this report:

1. **Section 2.3 Site Investigations, Page 2-3:** During the site investigations that were conducted from 1990 through 1993, monitoring wells were restricted to locations that would not interfere with military air mission operations. Placement of monitoring wells was not allowed within active runways or taxiways. After airport operations ceased, the Navy did not propose to install additional monitoring wells that would provide groundwater quality data in formerly restricted areas of the base. Please provide a work plan proposing installation of additional monitoring wells to complete the groundwater monitoring network in areas of the MCAS El Toro base where the groundwater contaminant plume underlies the runways and taxiways.
2. **Section 2.4.2 Extent of Free-Product Contamination, Page 2-3:** The estimated quantities and elevation of free-product in groundwater have not been determined since 1998, because the monitoring well screens are submerged. Therefore, the site and plume characterizations that were previously conducted are no longer representative of site conditions. Please submit a plan to install monitoring wells that will allow accurate determination of the extent of contaminants present in the groundwater.
3. **Section 2.4.3 Extent of Dissolved-Phase Contamination, Page 2-4:** This report makes no statement that the dissolved phase plume characterization is complete. In consideration of the fact that groundwater levels in the vicinity of Tank 398 are currently rising, and in conjunction with our Comment No. 1 (above), we believe the site characterization is incomplete. With the ongoing increase in groundwater elevation at

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this locality, we expect to observe fluctuations in the concentration of dissolved hydrocarbons in the groundwater. Additional hydrocarbons that were previously "stranded" in the vadose zone may also become mobilized, contributing further to the contaminant plume.

4. **Section 3.1 Remedial Goals, first bullet, Page 3-1:** The designated beneficial uses for the Irvine Forebay I Groundwater Subbasin are municipal and domestic supply,, agricultural supply, and industrial supply. California's approach for maintaining high quality of groundwater and protecting beneficial uses is through the protection of the designated beneficial uses for the entire subbasin, regardless of whether that local portion of the subbasin is currently used for municipal water or other water supply purposes.
5. **Section 3.1 Remedial Goals, third paragraph, Pages 3-2 & -3:** This site is not a "low risk" site. In addition to BTEX cleanup goals for free product release sites, a cleanup goal for total petroleum hydrocarbon (i.e. jet fuel) should be proposed for this site.
6. **Section 3.2.3 System Performance, Page 3-3:** The SVE system appears to have performed very poorly. Appendix B offers insufficient operational data and system description to support your conclusions that the SVE system has removed the volatile portion of the residual hydrocarbons.
7. **Section 3.3 Free-Product Recovery, Page 3-4:** Section 2655 of Title 23 California Code of Regulation requires that free-phase hydrocarbons be removed at underground storage tank (UST) release sites. We typically do not accept application of free-product skimming technology at UST release sites as a complete remedial effort for meeting the requirement of free-phase product removal. It appears that significant free-phase product is still present at the site and the characterization of free-product is no longer valid (see Comments 1 and 3, above).
8. **Section 3.4 Natural Attenuation of Groundwater:** The guidance referenced in this section has not been included as an Appendix. Typically, natural attenuation remedies require a specific study that includes a planned approach of monitoring of the free-phase and dissolved phase petroleum hydrocarbon plumes. The first requirement is to characterize both the free-phase and dissolved phase plumes. The next stage is monitoring the plumes over an extended period of time. This plan should include the measurement of numerous parameters (usually totalling 8 or 9 measurements over at least two years) to demonstrate that adequate degradation of the dissolved phase plume is occurring.
9. You have proposed to install wells to replace monitoring wells that no longer serve the intended purpose. This report does not include a discussion to demonstrate that installation and monitoring of the replacement wells will result in complete characterization of the free product and dissolved phase plumes.



10. **Section 4 Confirmatory Soil Sampling:** This section does not discuss site specific cleanup goals for soil. The most critical soil zones are the ones located above the groundwater table. The report's interpretation of the data is that "relatively high concentrations" of petroleum hydrocarbons are present below 90 feet. There is no analysis of potential threat to groundwater represented by these concentrations.

Based on the information provided, closure of the unsaturated zone soils associated with releases from the former UST 398 is not warranted at this time. Analysis of the potential threat to groundwater from petroleum concentrations identified at depths below 90 feet needs to be completed prior to closing the unsaturated soils or vadose zone at this release site.

We believe that the free-phase plume remedial effort is incomplete. We are not against implementation of a five-year study of "natural attenuation." The free-phase plume and dissolved phase plume characterization must be completed, and baseline conditions must be established, prior to implementation of a natural attenuation remedy. We do not concur that the requirement for removal of the free-phase plume has been properly satisfied with the application of product-skimming technology as the sole remedy for the contaminant release.

For any questions on this review or related matters, please call me at (909) 782-4494.

Sincerely,


John Broderick
SLIC/DoD/AGT Section

cc: Ms. Nicole Moutoux, U. S. EPA, Region IX
Ms. Triss Chesney, Dept. of Toxic Substances Control
Mr. Jerry Werner, RAB Co-Chair MCAS El Toro
Ms. Polin Modanlou, County of Orange
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