



# California Regional Water Quality Control Board

## Santa Ana Region

M60050\_003521  
MCAS EL TORO  
SSIC NO. 5090.3.A



**n H. Hickox**  
Secretary for  
Environmental  
Protection

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December 16, 2002

Mr. Andy Piszkin  
BRAC Environmental Coordinator  
MCAS El Toro  
P.O. Box 51718  
Irvine, California 92619-1718

### COMMENTS ON DRAFT FINAL SITE CLOSURE REPORT, VADOSE ZONE REMEDATION IRP SITE 24, VOLATILE ORGANIC COMPOUNDS SOURCE AREA, FORMER MARINE CORPS AIR STATION, EL TORO

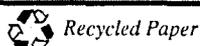
Dear Mr. Piszkin:

We have completed our review of the above referenced document, dated June 2002, which we received on June 10, 2002. We have the following comments on this report:

Your first Remedial Action Objective (Section 1.3) is to reduce volatile organic compound (VOC) concentrations in the soil within the contaminant source area, and thereby prevent further degradation of the shallow groundwater quality. The entire focus of this report is the evaluation of the soil vapor extraction (SVE) system and VOC concentrations measured in vapor extraction wells. This is an appropriate step; However, the closure report has no discussion or presentation concerning the effectiveness of this remedial action on VOC concentrations in groundwater beneath the source area. The purpose of applying this remedial action to contaminated soils at depths two feet below ground surface is to achieve the contaminant-specific cleanup standards (i.e., the standards for VOC removal that have been specified for this site) in the underlying groundwater. In order to gauge the effectiveness of this SVE system, you must discuss its effect on groundwater quality.

Based on our review of your groundwater monitoring reports for sampling events prior to and after operation of this SVE system, it appears that there has been some reduction of contaminant concentrations in groundwater as a result of this remedial action. However, it also appears that there has been insufficient sampling at individual monitoring wells to allow a trend analysis or statistical evaluation of the contaminant concentrations. We normally require three types of information for SVE remedies when evaluating a site for closure: (1) system operation data; (2) analytical results indicating the contaminant concentrations in

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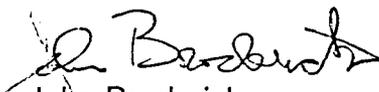
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groundwater; and (3) confirmation soil sampling and analytical results. Prior to implementation of this SVE system, the Navy requested that the regulatory agencies agree to waive the requirement for confirmation borings. The Navy also requested regulatory concurrence on the target cleanup levels for soil vapor concentrations at the site. When an SVE system does not meet the expected mass removal and contaminant concentration reduction goals, the system should be evaluated for effectiveness. It is possible that the SVE system, as currently configured, may no longer be optimal for this site. Specific soil horizons or geological characteristics may not respond to the technology as anticipated. Fine-grained horizons or variations in moisture content may impede, or cause irregularities in, vapor flow patterns in the subsurface. In such cases, it is commonly necessary to reconfigure the vapor extraction locations and restart the system. Considering the capital expense involved in constructing this system, the size of the contaminant source area, and the depth to groundwater, it is advisable to ensure that the system has removed all available contaminants before dismantling it.

In summary, this report should be revised to include an analysis of the changes in groundwater quality that have resulted from operation of the SVE system. It may also be necessary for the Navy to evaluate the contaminant source area at Site 24 to determine if some soil horizons will require continued system operation. At a minimum, the revised report should include an evaluation of groundwater data and other possible soil data. This information is necessary to allow Board staff to consider your recommendation to discontinue remediation of the vadose zone at Site 24.

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. Environmental Protection Agency, Region IX  
Ms. Triss Chesney, Department of Toxic Substances Control, OMF  
Mr. Jerry Werner, RAB Co-Chair, MCAS El Toro  
Ms. Lynn Hornecker, Naval Facilities Engineering Command, SWDIV