



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

August 14, 2001

BRAC Environmental Coordinator
Base Realignment and Closure, Environmental Division
Attn: Mr. Dean Gould
P.O. Box 51718
Irvine, CA 92619-1718

RE: Draft Site Closure Report, Vadose Zone Remediation, IRP Site 24, Marine Corps Air Station, El Toro, dated August, 2001

Dear Mr. Gould:

EPA has reviewed the above-referenced document in which the Navy describes remediation activities at Site 24 and subsequently recommends closure of the vadose zone at the site. In general we find the report to be thorough and well-written, however we have enclosed comments requesting clarification on several issues.

EPA's major concern is the time lag between the cessation of the SVE system and startup of the groundwater treatment system. We look forward to the Navy's evaluation of operating both the SVE system and groundwater system together before decommissioning the SVE system. We request that the Navy initiate working meetings to discuss the contents of such an evaluation.

If you have any questions, please call me at (415) 744-2366.

Sincerely,

A handwritten signature in cursive script that reads "Nicole G. Moutoux".

Nicole G. Moutoux
Project Manager
Federal Facilities Cleanup Branch

cc: Lynn Hornecker, SWDIV
Triss Chesney, DTSC
Patricia Hannon, RWQCB
Greg Hurley, RAB Community Co-Chair
Marcia Rudolph, RAB Subcommittee Chair

received
8/21/01

**Review of the Draft Site Closure Report, Vadose Zone Remediation
IRP Site 24, Volatile Organic Compounds Source Area
Marine Corps Air Station, El Toro, California**

GENERAL COMMENTS

1. As mentioned in our cover letter, EPA has some reservations about closing out the vadose zone at Site 24 without an operational groundwater system in place; particularly in light of the Navy's observation on page 3-3 of the report that levels of TCE in the groundwater remain above levels at which off-gassing could result in soil gas TCE concentrations above 27 micrograms/l. We suggest that the BCT have working meetings to discuss the contents of the proposed Navy evaluation of the benefits of operating the SVE system in tandem with the groundwater system.
2. The Introduction states that remediation was implemented in accordance with the Draft Final Interim Record of Decision (ROD) for Operable Unit (OU) 2A. The Report also states that the groundwater remedy for Site 24 is not addressed by this remedial effort, and will be addressed in the final ROD for Sites 18/24. It is unclear whether both soil and groundwater for Site 24 will be addressed in the ROD for sites 18/24 as well as why the ROD for Site 24 was interim. Please provide more information on the history of Site 24 and how it fits into the upcoming ROD for sites 18/24.
3. Since the Navy intends to use this document to close out Site 24 vadose zone, it should be a stand-alone document which does not require that the reader refer to too many other reports in order to have a complete understanding of why closure is warranted. Specific comments below address this concern as well.

SPECIFIC COMMENTS

1. **Section 1.1, Page 1-1:** The second paragraph states that past site activities have contributed to the VOCs found in the soil and groundwater, but these activities are not described. Please provide a brief description of the site activities which contributed to the contamination.
2. **Figure 1-4, Page 1-11:** The flow chart refers to Figure 1-6 for closure verification sampling; however, Figure 1-6 does not address closure verification sampling. Please revise the Report to include closure verification sampling in the flow chart in Figure 1-6 or revise the reference on Figure 1-4.
3. **Section 1-6, Page 1-15:** The Report indicates that the effective radius of influence (EROI) or each well was to be calculated during Phase I in order to determine if additional extraction wells were required to complete coverage gaps. The Report states that EROI coverage and plume boundaries were presented in the November monthly Progress Report; however, the results are not included in the Report. Please revise the Report to describe the results of the evaluation of EROI coverage and/or show the results

on a figure, and explain how the locations of the 14 additional extraction wells were selected.

4. **Section 1-6, page 1-15:** The Report refers to Figure 1-6 for a summary of the closure strategy; however, Figure 1-6 does not include the system-wide shutdown and closure sampling in the flowchart. Please revise Figure 1-6 to include all elements of the closure strategy.
5. **Section 2.2, Page 2-1:** The Report states that samples were collected from each active well where baseline concentrations were above the soil cleanup threshold; however, the Report does not state which wells were sampled. Please revise the Report to list the wells which were sampled.
6. **Section 2.3, Page 2-2:** This section describes sampling of the Central Treatment System (CTS); however, the CTS is not described. Please revise the Report to include a general description of the CTS.
7. **Section 2.3, Page 2-2:** The Report discusses sampling of the CTS; however, sampling and analysis procedures are not described. Please revise the Report to describe sampling and analysis procedures or provide a reference for this information.
8. **Section 2.3, Page 2-2:** This section provides the reasons for scheduled shutdowns of the CTS, but the durations of the shutdowns are not provided. Please revise the Report to indicate the duration of each shutdown.
9. **Section 2.3, Page 2-2:** The report lists TCE, PCE, Freon, and 1,1-DCE as the principle contaminants for evaluation of the operation of the CTS. Since carbon tetrachloride was listed in the ROD as a contaminant of concern (Table 1-1 of this Report), it appears that it should be included in the list of principle contaminants. Please revise the Report to clarify the omission of carbon tetrachloride from the contaminants used to evaluate the CTS.
10. **Figure 2-4, Page 2-9:** In order to better interpret the influent soil vapor concentrations shown on this figure, please revise the figure to indicate when the system was shut down.
11. **Table 2-1, Page 2-13:** This table indicates that pilot scale testing was conducted from 4/95 to 5/98 and portable SVE units were operated from 6/98 to 12/98; however, these activities are not described in the Report. For completeness, please revise the report to include descriptions of all previous removal actions or investigations at Site 24, including the above-listed activities.
12. **Section 3.1.1, page 3-1:** The Report describes the depth interval designations for SVE well design; however, it is not clear how the depth intervals were selected. For clarity Please revise the Report to explain the criteria used for selected SVE depth intervals.
13. **Section 3.1.2, Page 3-2:** The second paragraph on this page uses the acronyms EROI and

ROI and refers to Table 3-1 for a summary of the calculated ROI and EROI for each well. However, the distinction between EROI and ROI is not clear and ROI values are not included in the Table. Please revise the Report to clarify the definition of the ROI as opposed to the EROI and include ROI values in Table 3-1 or delete references to ROI from this Section.

14. **Section 3.2, Page 3-4:** This section indicates that the system-wide shutdown lasted 7 months; however, it is not clear how this shutdown duration was selected. Please revise the Report to indicate how a 7 month shut-down period was selected.
15. **Section 3.2, page 3-4:** The Report refers to Table 3-3 for closure sampling analytical results for TCE and PCE; however, PCE results are not included in the table. Please revise the Report to include PCE closure sampling results in Table 3-3.
16. **Section 3.2, Page 3-4:** The Report states that target analyte baseline samples exceeded their respective soil gas threshold concentrations in 23 of 79 wells; however, according to the information presented in Section 2.1 of the Report, only 37 wells were installed. If all of the multiple completions are counted, the total is 70. Please revise the Report to clarify the total number of wells (or completions) installed and clarify whether the 23 wells included in the closure sampling are wells or individual completions.
17. **Section 3.2, Page 3-4:** The Report states that closure sampling results demonstrate that TCE and PCE concentrations had been reduced to below the threshold concentrations established in the ROD; however, the Report does not indicate whether the other contaminants of concern (carbon tetrachloride, 1,1-DCE, and Freon 113) were below the threshold concentrations. It is also not clear whether PCE and TCE were the only analytes included in the closure sampling analysis. Please revise the Report to clarify which analytes were included in the closure sampling analysis. If carbon tetrachloride, 1,1-DCE and Freon 113 were not included, please revise the Report to clarify how it was demonstrated that all contaminants of concern identified in the ROD are below threshold concentrations.
18. **Section 4.1, Page 4-1:** The Report states that the initial shutdown was after three consecutive samples were below threshold concentrations at each well; however, the Report does not discuss the collection of three consecutive samples below threshold concentrations at each well. Please revise the Report to describe the dates these samples were collected at each well and clearly indicate where the results are presented in the Report.