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MOFFETT FIELD
SSIC NO. 5090.3

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, Ca. 94105-3901

February 20, 1992

Stephen Chao
Naval Facilities Engineering Command
P.O. Box 727
San Bruno, CA 94066

Dear Mr. Chao:

The U.S. Environmental Protection Agency has reviewed the Draft Operable Unit 4 Technology Screening Report, dated December 20, 1991. Our comments on this report are attached. If you have any questions, please call me at (415) 744-2385.

Sincerely,

A handwritten signature in black ink that reads "Roberta Blank".

Roberta Blank
Remedial Project Manager

Attachment

cc: Cyrus Shabahari, DTSC
Wilfred Bruhns, RWQCB

1329
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EXN 41

EPA REVIEW COMMENTS ON THE
DRAFT OU4 TECHNOLOGY SCREENING REPORT

1. Because the RI for OU4 is currently incomplete, the evaluation of treatment technologies for both saturated soil and groundwater is based generally on two contaminant groups (fuel and VOCs) rather than specific contaminants of concern (COCs). Therefore, the evaluation is insensitive with respect to the environmental behavior of individual contaminants, especially the acutely toxic and extremely mobile ones which often limit the effectiveness of treatment technologies. The evaluation is also insensitive to uncertainties relating to other potential sources of groundwater contamination (i.e. contaminant migration from the MEW site).

Also, the potentially viable technologies and process options cannot be adequately evaluated on the basis of effectiveness, cost, and implementability until cleanup goals have been established.

After the RI is complete, the technology screening evaluation should be revisited to address the above concerns before the screening of remedial alternatives.

2. The boundaries of OU4 can only be roughly defined by the description given on page 6. If contamination originating on the Navy's property extends further, it will need to be addressed as part of OU4. Thus, the statement about the NASA facility not being part of OU4 is not necessarily true. If ground water contamination originating on Moffett is migrating onto NASA, the Navy is responsible for addressing it.

3. It was indicated on page 13 of the report that contamination is limited to the A1 and A2 permeable zones; however, certain VOCs were occasionally detected in the B2, B3, and C zones. Whether the occasionally detected VOCs are a reflection of uncontaminated deeper zones or an incomplete site characterization needs to be determined. Nevertheless, since the federal MCL is 5 ppb and the state MCL is 0.5 ppb for 1,2-DCA, even the detected levels could be of concern.

4. There is no discussion of heavy-metals contamination in the Site 9 Area on page 14. Building 29 and Site No. 9 field investigation reports (PRC, 1991) showed that inorganic compounds, such as aluminum, arsenic, barium, beryllium, chromium, lead, nickel and thallium exceeded EPA and California MCLs in ground water samples. Without recognizing the heavy-metals contamination, the technology selected may not be adequate.

5. On Page 15, Inferred Source Areas 8 and 9, the report should not refer to concentrations up to 1000 ppb as "minor" levels, or to 1000-5000 ppb as "low to moderate." These levels are well in excess of the MCLs for contaminants of concern. Levels below and greater than the MCLs would be a better distinction, if one needs to be made.

6. Numerical values of applicable or relevant and appropriate requirements should be presented for individual contaminants under both chemical- and action-specific categories when possible in Tables 4 and 6. To be considered criteria should also be presented.

It appears that the citation in Table 5 regarding discharge into the storm drainage system should refer to Section 402 of the Clean Water Act. Section 404 would be an ARAR for discharge of dredge or fill material into waters of the U.S., including wetlands. Also, the NPDES citation in Table 6 should be 40 CFR 122, instead of 40 CFR 112.

In Table 6 and on page 35, it appears that the report is missing information on California requirements for discharges to both surface water and ground water. The Regional Water Quality Control Board should be able to provide additional information.

Determination of ARARS is an iterative process and ARARS are not "frozen" until the Record of Decision. We will further comment on the ARARS analysis in subsequent reports on this Operable Unit.

7. Several of the assumptions on pages 41 and 42 require further explanation or correction:

- Assumption #1 - please see comment #3 above.

- Assumption #2 may not be correct. If fuels and other spent solvents were disposed of at different times and locations, the TCE plume may not be representative of all contaminants in groundwater.

- Assumption #3 will lead to an underestimate of contaminated volume that needs treatment if the 1,000 ppb TCE concentration contour is used. Since the MCLs for the contaminants of concern will need to be met, volumes based on these levels will be closer to the amount that needs to be addressed.

- Assumption #5 appears to underestimate the volumes of groundwater to be remediated in the A1 and A2 zones due to undercalculating 1) the thickness of the aquifer material, and 2) the vertical projection of the plume in these zones. Tables 2 and 3 of the PRC Building 29 Area report (PRC, 1991) showed that A1

zone thickness around the area of Building 29 varies from 0.4 feet to 21 feet. The average thickness of the A1 zone in this area is 9.3 feet (calculated from 33 CPT boreholes), as opposed to 5.5 feet. Table 3 (PRC, 1991) showed the average A2 zone thickness was 13.7 feet (calculated from borehole data), as opposed to 8.5 feet.

- Assumption #6 - what was the criteria for selecting five for calculating the total remediated aquifer pore volume? Based on PRC's assumption of a 1,000 ug/L concentration for the areal extent of the TCE plume and an A1 and A2 zone thickness of 5.5 feet and 8.5 feet, respectively, the pore volume appears to be underestimated. The total amount of groundwater was also underestimated.

8. The assumption on page 43 that saturated soils will be addressed by ground water extraction is a valid one. Due to the lack of cleanup goal definition, the report is uncertain regarding whether or not the hot spots in the saturated soil need direct remediation. The criteria (e.g., presence of DNAPL or highly contaminated impermeable materials in saturated soils) on which cleanup decisions will be based should be presented. Also, please state how the unsaturated soils in this OU will be addressed.

9. The applicability and limitations of each remedial technology should be included in the description and effectiveness columns in Table 7 and Table 8. These two items are necessary for a complete discussion of the selection process.

Waste volumes are also a key variable for selecting treatment technologies. For example, carbon adsorption is not an effective treatment if a large volume of liquid waste needs to be treated.

10. Table 7 on page 46 should be corrected to read that incineration is not applicable to treatment of groundwater. However, incineration could be employed as a secondary treatment technology (e.g., for treatment of contaminated carbon or air emission control).

Low temperature catalytic oxidation could potentially be applicable as an air emission control device and should be considered.

11. Section 2.5.2.3 should be revised. Solvent extraction and soil washing are not chemical treatment processes. They are physical separation processes.

12. On page 2, it states that "From the results of the detailed analysis, an OU4 remedial action alternative is recommended, completing the FS process." It should be noted that the recommended alternative is identified in the Proposed Plan and not in the Feasibility Study.

13. This report preceeds our review of the Remedial Investigation for this Operable Unit and, therefore, presents conclusions we are unable to fully review or concur on at this time. Our technical review of the RI will allow us to further evaluate the contaminant characterization conclusions and ARARS analyses that are presented in this report.