



Cal/EPA

May 4, 1998

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Control*

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*Pete Wilson  
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Secretary for  
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Protection*

DRAFT FEASIBILITY STUDY, NAVAL AUXILIARY LANDING FIELD,  
CROWS LANDING, CALIFORNIA

Dear Mr Chan:

The Department of Toxic Substances Control (DTSC) has reviewed the December, 1997, Draft Feasibility Study Report for Installation Restoration Program Sites 11 and 17, Naval Auxiliary Landing Field, Crows Landing, California. DTSC comments are enclosed as Appendix A.

If you have any questions regarding this issue or any other issue for the remediation at Crows Landing, please call me at (916) 255-3712.

Sincerely,

Raymond Leclerc, PE  
Base Closure Unit  
Northern California Operations  
Office of Military Facilities

cc: see next page



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APPENDIX A

COMMENTS ON THE DRAFT FEASIBILITY STUDY

CROWS LANDING DECEMBER 1997

**GENERAL COMMENTS**

1. The Report should avoid qualitative words such as low or high when referring to concentrations of chemicals to avoid confusion. In addition, the use of random should be restricted to situations when data is truly random and not simply where lack of data make interpretation difficult.

2. At Site 11, Beryllium is referred to as ubiquitous and unrelated to site activities. Additional explanation is necessary before this chemical is eliminated from consideration. If the levels of Beryllium found at the site are associated with background, then this needs to be stated and documented.

3. At Site 17 Carbon Tetrachloride (CT) was found in the vadose zone above groundwater. There seems to be three possible explanations:

1) There is a source of CT in the deeper vadose zone associated with an old vadose zone discharge;

2) It is volatilizing from the contaminated groundwater, as stated in the Report or;

3) The vadose zone is contaminated from groundwater as the water table has dropped over time (smear).

The Report should consider all three possibilities unless there is strong evidence to eliminate alternate possibilities. In any case, the potential for the contamination to impact present and future remediated groundwater should be considered.

4. Evaluation of contamination and hydraulic gradients in the deeper aquifer zone will be necessary before a remedial design could be completed at Site 17.

5. Groundwater elevation contour maps should be provided at Site 17. In addition, estimated groundwater flow maps are needed for each alternative.

COMMENTS ON THE DRAFT FEASIBILITY STUDY  
CROWS LANDING DECEMBER 1997

6. This site is not listed as a NPL Site under Federal Superfund. As such, the site remediation must meet both state and local requirements.

7. The evaluation of remedial alternatives should include a discussion of the track record for each treatment technology. This should include: how widespread the use of the technology is for site conditions and a description of successes and failures. In addition, references should be included for discussions of innovative technologies.

8. Air Sparging in the deep saturated zone is a very innovative technology at this time. The Report should describe that addition pilot testing may be required before this remedy could be selected as a final remedial action for Site 17.

**SPECIFIC COMMENTS**

SITE 17 PILOT TEST

AIR SPARGING

1. The general and specific goals of the test should be included in the introduction of this section including individual design parameters sought. Additionally, the introduction section should describe where this technology is being used successfully and under what conditions it has failed to achieve desired results.

2. A conclusion section is needed and should include an estimation of important design parameters and how the test compared to other sites that have used air sparging in similar conditions. Effectiveness of this treatment in the deeper aquifer should be discussed in detail.

3. Section 4.1.2 should describe the dissolved oxygen results in more detail, including conclusions, if any. Was mounding significant in any of the tests?

4. The figures should illustrate which sections of the aquifer are considered A, B, C, and D.

5. Was the vadose zone monitored to determine the area influenced by volatilization of the deeper sparging? This will impact the area capture the Soil Vapor Extraction (SVE) system must achieve.

COMMENTS ON THE DRAFT FEASIBILITY STUDY  
CROWS LANDING DECEMBER 1997

6. Isopressure maps might be useful in analyzing subsurface heterogeneity.

AQUIFER TESTS

8. The estimated zone of capture should be determined for this test.

SPRAY IRRIGATION TEST

9. The Section on spray irrigation failed to discuss one of the most important factors in this type of technology: seasonal and daily weather variations.

10. The effectiveness of groundwater treatment should be compared to remediation goals as defined by state requirements.

11. What does sampling point 17-SF-01 represent?

SITE CLEANUP OBJECTIVES

12. Land use restrictions should be discussed in this section.

13. Chapter 6.8 of the California Health and Safety Code should be cited here as the law that governs remediation of hazardous waste sites.

14. Preliminary Remediation Goals published by Region IX of the Federal Environmental Protection Agency should be described in this section.

DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

15. The alternative called "Institution Controls" should be retained for further analysis. It was screened from consideration in the Report because it did not comply with State Regulations. This alternative may meet State Regulations under some limited conditions.

16. On page 6-3, the Report states that Site 11 contaminants are not leaching into the groundwater. The data supporting this conclusion should be included in the site characterization section.

COMMENTS ON THE DRAFT FEASIBILITY STUDY  
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17. On page 6-9 the Report states that injected air was well distributed throughout the aquifer. This statement should be supported by data included in the pilot test section.

18. On page 6-10 the Report states that biodegradation appears to be occurring naturally at the site. This statement should be supported by data included in the site characterization section.

DETAILED ANALYSIS OF ALTERNATIVES

19. A detailed matrix should be developed to summarize this section.

20. The cost for Alternative 2 at Site 11 should include the likelihood that groundwater monitoring will occur less frequently over time and include less analytes.

21. On page 7-21, an estimated design flow rate for SVE is used in describing Alternative 1. Design parameters supporting this estimate should have been summarized in the pilot test section.

22. Specific time estimates for remedial actions should be included for the alternatives at Site 17.

23. The limitations for seasonal and daily weather variation should be described in detail for Alternative 3B. Alternative treatment or storage should be included in this alternative.

COMPARATIVE ANALYSIS

24. The uncertainty of each technology to achieve remedial goals in a reasonable time periods should be included in this comparison.

25. On page 7-35 Alternatives 1 and 2 are described as favorable for long term effectiveness and permanence. This needs to be supported by site specific data or specific reference.

COMMENTS ON THE DRAFT FEASIBILITY STUDY  
CROWS LANDING DECEMBER 1997

APPENDIX B

26. Site 11, Alternative 2

The analytical suite should be described for quarterly monitoring. Is the 30 year monitoring considered as a present worth value?