STATE OF CALIFORNIA

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August 12, 1997
File No. 2199.6189 (GK)

Mr. Ernesto Galang
Department of the Navy
Engineering Field Activity WEST
900 Commodore Drive
San Bruno, California 94066

SUBJECT: CAL-EPA's (DTSC & RWQCB) COMMENTS' on the DRAFT BENCH SCALE SOIL BIOREMEDIATION TREATABILITY STUDY REPORT, dated July 8, 1997

Dear Mr. Galang:

The following are comments based on the San Francisco Bay Regional Water Quality Control Board's (RWQCB) and Department of Toxic Substances Control (DTSC) review of the above referenced document.

General Comments

1. The bioremediation treatability study did not meet one of the original goals, which was to test the effectiveness of the process on representative contaminants, including motor oil, BTEX and polynuclear aromatic hydrocarbons. The report lacks an explanation of why additional soil samples were not obtained to meet this objective. Please provide explanation. (DTSC)

2. Besides the decreasing concentrations of TPH, from the results of this treatability study, what is a good indicator that bioremediation is occurring. (RWQCB)

3. Alameda Naval Air Station (ANAS)presented the results of their treatability study for bioremediation, conducted by UC Berkeley, to interested parties on August 11, 1997. The Navy should share this information among the different bases. ANAS identified good indicators for bioremediation at their sites. (RWQCB)

Specific Comments

4. Introduction: The report should include a discussion of the proposed end use of the treated soil. What are the effects of the commercial product on potential end use(s)? Please also include the rationale for selecting this specific product X-19. (DTSC)

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5. Section 1.3, Soil Types: Please explain why additional samples containing the desired contaminants were not obtained. (DTSC)

6. Section 2.1,Test Objectives and Rationale: There are five primary objectives listed in this section, it in unclear whether the study addressed all of the objectives. (RWQCB)

   (A) Evaluate whether bioremediation may effectively remediate hydrocarbon contaminated soils at NAVSTA TI sites

   - Do we have enough data to assume bioremediation will work at all the TPH contaminated sites?
   - Maybe motor oil and/or PAHs will be the drivers for cleanup, will follow up studies be performed to determine if those constituents will bioremediate using X19 and N/P.

   (B) Determine the ability of the bioremedation process to attain site target performance goal.

   - Is intrinsic (natural) bioremediation an option in obtaining the cleanup goals? If so, what are the biodegradation rates for intrinsic bioremediation?

   (C) Evaluate the change in chemical concentration of the contaminants to determine which constituents are most difficult to degrade.

   - This was not discussed in this document, please elaborate

   (D) Evaluate whether reductions in contaminant concentrations in NAVSTA TI soils are caused by biodegradation rather than abiotic processes such as volatization.

   - Please elaborate on this point as well

   (E) Obtain design information required for the next level of testing if screening evaluation is successful.

   - What are the data gaps and next steps associated with this treatability study?

7. Section 2.2.1, Experimental Design: Please include a description of the commercial products - its physical characteristics, effects on moisture content, claims made by vendor, etc. Does the product increase bulk? If so, by how much? (DTSC)

8. Section 2.6, Deviations from the workplan: Please include an explanation of why a functioning PID instrument could not be obtained. (DTSC)

9. Section 3.2, Results: Please explain the apparent increases in TPH-d toward the end of the experiment. (DTSC)

10. Section 4.1, Summary: Please address the role of volatilization (see Objectives, page 5). (DTSC)

If you have any questions or concerns please contact me at the San Francisco Bay Regional Water Quality Control Board at (510) 286-4267 or Mary Rose Cassa, DTSC at (510) 540-3769.

Sincerely,

Gina Kathuria, P.E.
Remedial Project Manager

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