

NAS MOFFETT FIELD ADDITIONAL TANK AND SUMP INVESTIGATION

**RESPONSE TO COMMENTS ON
DRAFT ADDITIONAL TANK AND SUMP FIELD
INVESTIGATION TECHNICAL MEMORANDUM**

SEPTEMBER 30, 1992

This report presents point-by-point responses to comments received from the U.S. Navy on the Draft Additional Tank and Sump Field Investigation Technical Memorandum prepared September 30, 1992 by PRC Environmental Management, Inc. (PRC) for Naval Air Station (NAS) Moffett Field, California. Comments were received from Mr. Don Chuck in a memorandum dated November 23, 1992.

SPECIFIC COMMENTS

Comment Number 1. Page 1, Paragraph 3, Last Sentence. The report should note that the number of operable units (OUs) at NAS Moffett Field have been reduced to five.

Response: *This paragraph has been modified to conform to the new definitions of OUs at NAS Moffett Field.*

Comment Number 2. Page 4, Paragraph 4. See comment 1. The paragraph needs to be amended to explain that OU4, the west side aquifers, has been removed from further consideration as ordered by the U.S. Environmental Protection Agency (EPA). The regional plume in this area is to be addressed by the Middlefield-Ellis-Whisman (MEW) record of decision (ROD). There will be no OU4 remedial investigation (RI) as described in the paragraph. The information on the former OU4 investigations will be published in another format.

Response: *This paragraph now explains in more detail EPA's elimination of OU4 from the group of NAS Moffett Field OUs and the relationship of the west side aquifers to the MEW ROD.*

Comment Number 3. Figures 3, 4, and 5. Arrows indicating ground-water flow need to be added.

Response: *The interpreted direction of ground-water flow is now indicated on Figures 3, 4, and 5.*

Comment Number 4. Page 8, Paragraph 4, First Sentence. It is stated that all three soil borings were converted to monitoring wells. The field work plan called for the installation of two monitoring wells, one at the Tank 53 site and one at the Sump 60 site. The completion of the boring at Sump 91 as a monitoring well was optional, depending on field observations (see page 19, section 5.4.1 of that plan). Since soil boring SBS91-1 was completed as well W91-1(A1), the field observations that necessitated the additional well should be included in the report.

Response: *Section 3.2.3 has been modified to include the field observations that supported the decision to convert boring SBS91-1 into monitoring well W91-1(A1).*

Comment Number 5. Page 28, Paragraph 2, Last Sentence. Total petroleum hydrocarbons (TPH) extracted as other petroleum components were noted in the ground water from well W91-1(A1) and Sump 91 contents. Do you have any speculations as to the sources of the components or what they may be? Are they related to the gasoline found in the soil samples from boring SBS91-1? The paragraph needs to be expanded to address these questions.

Response:

Preliminary analysis of the chromatograms of the well W91-1(A1) and Sump 91 water samples indicates the presence of a petroleum-related hydrocarbon, perhaps a moderate to heavy fuel oil or degraded diesel fuel. Because historical operations at Building 88 have included the use of a diesel fuel-fired boiler, spills of fuel or other petroleum-based lubricants within Building 88 may have been the source of the petroleum-related compounds. Tank 67 is a more remote potential source. The tank's crossgradient location from Sump 91 and the absence of significant evidence of leakages from Tank 67, however, make the likelihood of Tank 67 being the source relatively small. Because the hydrocarbons detected in the ground-water sample from well W91-1(A1) are similar to those found in the liquid sample from Sump 91, monitoring of the ground water in other wells in the vicinity of Sump 91 for extractable TPH components as a part of the quarterly sampling activities is recommended. Wells ERM-4(A1) and W9-37(A1) may be appropriate locations to investigate whether these hydrocarbons exist within the A1 zone at any significant distance from Sump 91 and well W91-1(A1).

The low level detections of TPH purgeable as gasoline in six soil samples from boring SBS91-1 are probably unrelated to the detections of the much heavier molecular weight hydrocarbons discussed in the preceding paragraph. Preliminary analysis of the chromatograms from these samples indicates laboratory contamination by toluene is the most probable cause of the very low (near or below the detection limit) TPH concentrations.

Section 4.1.3 has been modified to discuss the low levels of TPH purgeable as gasoline measured in six soil samples from boring SBS91-1. Section 4.2.2 has been expanded to discuss in greater detail the TPH extractable as other components detections in the water samples from well W91-1(A1) and Sump 91.

Comment Number 6.

Page 30, Paragraph 3. A figure containing the concentrations and plume map would be useful here. While the surface in this area may slope toward the drain mentioned in this paragraph, this does not mean that gasoline leaking from an underground tank would necessarily flow to that drain. It needs to be shown that the drain provides a subsurface conduit for contaminant flow, especially since the drain appears to be upgradient of the tank excavation.

Response:

Figure 7 has been added to Section 4.3.2 to present the TPH purgeable as gasoline concentrations. Figure 7 indicates the distribution of TPH purgeable as gasoline concentrations in 13 laboratory-analyzed Geoprobe® soil samples, three soil samples from boring SBT53-1, two soil samples from the well W53-1(A1) boring, and four soil samples from the enlarged Tank 53 excavation. However, because concentrations vary widely across short distances in the Tank 53 area, chemical concentration contours would be only marginally useful.

Because Tank 53 was installed only slightly above the local ground-water table, it is unlikely that gasoline leaking from the bottom or sides of the tank would migrate laterally through the unsaturated zone to the golf course maintenance yard drain. However, leaks from the top of the tank and, more probably, surface spills caused by tank overfilling or during vehicle fueling operations could have followed the local topography toward the drain (either on the surface or through permeable pathways in the unsaturated zone). In addition, decreasing TPH concentrations detected with increasing depth at location T53-23 suggest the vertical infiltration of gasoline (1,160 milligrams per kilogram [mg/kg] at 2.5 feet below land surface [BLS] decreasing to 568 mg/kg at 4.0 feet BLS). The text of Section 4.3.2 has been modified to further explain this hypothesis.

Comment Number 7. Page 35, Paragraph 1, Last Sentence. Reference to the OU4 feasibility study (FS) should be removed (see comment 2). Additional activities for Sump 60 should be addressed in the replacement publication for OU4 or a separate report.

Response: *References to OU-related activities throughout Section 5.0 have been modified to be consistent with the current understanding of the OUs at NAS Moffett Field.*

Comment Number 8. Page 35, Paragraph 2. While Sump 91 is not considered a source, some explanation for the presence of TPH components found at the site needs to be put forth. Were these related to Building 88 operations? Also, see comments 2 and 7 concerning the OU4 FS.

Response: *Section 5.4 has been expanded to discuss the potential source of petroleum-related contaminants found in Sump 91. References to OU-related activities throughout Section 5.0 have been modified to be consistent with the current understanding of the OUs at NAS Moffett Field.*