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RE: Contamination Site NP32 - Crows Landing Naval Auxiliary Landing Field, Crows Landing, CA

The Hazardous Materials Division has reviewed the report of your consultant, PRC Environmental Management, Inc. / Versar, Inc. (12/17/1992, received 2/16/1993), on a subsurface investigation to evaluate the petroleum releases from a 1,000 gallon diesel / JP - 5 jet fuel underground storage tank (UST 109) and from a 1,200 gallon gasoline underground storage tank (UST 117).

Groundwater was calculated to occur at an elevation of approximately 95 to 96 feet at both sites. Groundwater at the UST 109 site was calculated to flow to the southwest at a gentle gradient. An apparent groundwater divide is present in between the two sites southwest of PRC12-MW-01.

Soil contamination at the site 109 (JP-5 jet fuel) was detected in the 25 and 30 foot samples in two of the exploratory borings (BH-E and BH-F), both located approximately 35 feet from the former location of the underground storage tank. Previous investigations had identified soil contamination extending to the water table and laterally at and above 30 feet below ground surface within a 30 foot radius of the underground storage tank excavation.

Although the presence of a continuous clay extending across the Naval Air Station appears to be doubtful, it appears that there has been local stratigraphic control of the distribution of the contamination above a hydrologic barrier at about 30 feet in depth. A confining layer that could limit the downward migration of the groundwater contamination plume was not identified in the study. The basal strata in the exploratory borings is logged as a medium to fine grained sand with silt.

Free product has been recognized in well ERM-2 during earlier investigations. Low concentrations of contaminants were detected in groundwater samples from well 109-6 down gradient from the underground storage tank excavation. A groundwater plume is present in the vicinity of the underground storage tank excavation.

Soil contamination extending to 35 feet in depth in an area approximately 70 feet in diameter around the former location of tank 117 was documented in samples taken in an earlier investigation. Low concentrations of soil contamination probably associated with the groundwater plume were detected at depths of 35 to 45 feet below grade. Up gradient sources of petroleum hydrocarbons associated with the auto maintenance shop (site 12) and underground storage tanks (cluster 1) are present to the southwest of the former tank 117 location. The groundwater plume is defined to the north, west, and west of the tank location.

A continuous confining layer that could limit the downward migration of the groundwater contamination plume was not identified in the study. The basal strata in the exploratory borings is logged as a medium to fine grained sand with silt in wells 117-2, 117-3, 117-5, 117-6, and 117-8, the northwest portion of the area covered by the groundwater contamination plume.

We have the following comments on the report:

1) Lithologic contacts illustrated on the cross sections are not recorded on the logs of the exploratory borings. The cross sections do not agree (tie) at the point of intersection.

2) The report states that soil contamination was detected in one soil sample at site 109. The geologic logs indicate that diesel odors were detected in four of the soil borings.

3) A site map of the infrastructure located on the east of the landing strip including all buildings, tank cluster 1, the location of all former underground storage tanks, site 12 (auto maintenance shop), and site 16 (pesticide mixing area). The location of all exploratory borings and monitoring wells should be posted on the map.

4) The head space readings by PID appear to be invalid. Very low to no readings are recorded from the instrument for soil samples at the capillary fringe in borings with high concentrations of groundwater contamination.

5) Several potential remedial strategies for the contaminated soil and groundwater are reviewed in the report. Insitu bioremediation or leaching of contaminants would require that the groundwater contamination plume be hydraulically controlled to prevent plume migration. The no action alternative is not an acceptable clean up option. At a minimum quarterly monitoring of all wells would be required until contaminant levels had decreased.

6) The report was not signed and stamped by the registered professional who is responsible for the work as required by the Business and Professions Code.

Revised accurate cross sections and a signature page containing the signature and stamp of the registered professional who is responsible for the work as required by the business and Professions Code must be submitted as an addendum to the report.

Please call me at (209) 525-4150 if you have any questions.

ROBERT FOURT
GEOLOGIST
Hazardous Materials Division

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cc: Mr. S. R. Bond
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