



California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair



Terry Tamminen
Secretary for
Environmental
Protection

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18 March 2004

Mr. Michael Bloom
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29 JANUARY 2004, *THIRD ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT, FALL 2002 THROUGH SUMMER 2003, NASA CROWS LANDING FLIGHT FACILITY, CROWS LANDING, STANISLAUS COUNTY*

We have reviewed the *Third Annual Basewide Groundwater Verification Sampling and Analysis Report*, which was dated 29 January 2004 and prepared by your consultant Shaw Environmental, Inc. (Shaw). The report summarizes four quarterly groundwater-sampling events that occurred from August 2002 through August 2003.

The report concluded that current and historical data indicates that, in general, the concentrations of compounds in groundwater are decreasing and the plume lengths from the source area are stable or decreasing over time. Decreases in concentrations not due to active remediation were attributed to a combination of dispersion, dilution, sorption, volatilization, and biodegradation. Appendix C of the report presented a statistical analysis of data in support of biodegradation occurring at the site, particularly in the petroleum hydrocarbon groundwater plumes where concentrations of dissolved oxygen, nitrates, and pH are likely to be lower and alkalinity concentrations are likely to be higher, which are indicators biodegradation is occurring. The data indicated that conditions in areas impacted by carbon tetrachloride do not appear sufficiently anaerobic for the degradation (reductive dechlorination) of carbon tetrachloride to be occurring. However, those areas where carbon tetrachloride and petroleum hydrocarbons are commingled, the higher concentrations of chloride may suggest that anaerobic conditions due to the presence of petroleum hydrocarbons may result in the degradation of carbon tetrachloride to chloride.

Because, in general, the concentrations of compounds in groundwater have decreased and plume lengths have been stable or decreasing over time, Shaw recommended that the frequency of sampling events be reduced from quarterly to semiannually. The semiannual sampling events would occur in the summer (July or August) and the winter (January or February).

Based on the data presented in the report, it does appear contaminant concentrations in groundwater have shown a general decreasing trend and plume lengths appear to have stabilized or have decreased over

time. As such, the Regional Water Quality Control Board concurs with the recommendation to alter the water sampling frequency from quarterly to semiannually.

If you have any questions, please contact Greg Issinghoff at (559) 488-4390.



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