



ENVIRONMENTAL
PROTECTION

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May 2, 1995

Juliet Shin
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

RE: Addendum to Corrective Action Plan
2425 Encinal, Alameda, California

Dear Ms. Shin:

Enclosed please find an Addendum to the Corrective Action Plan, issued by ACC Environmental Consultants Inc. (ACC) on March 29, 1995, for the subject property located at 2425 Encinal Avenue, Alameda, California.

Modifications have been made to page 11 which is enclosed. Specifically, you requested testing to confirm the capture radii before system start-up and changes in total depth of vapor extraction wells.

The total depth of the vapor extraction well was correct. By screening the vapor extraction well from approximately 5-14 feet below ground surface (bgs), ACC hopes to increase the effectiveness of the well. The radius of influence of the well should increase, especially in the subsurface zone of interest, and the problem of "short-circuiting"; that is, soil vapors taking the course of least resistance directly down in the area of the vapor well, should decrease.

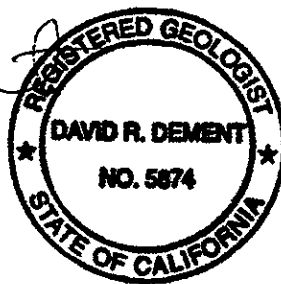
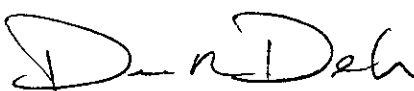
In addition, this screen interval is premised on the fact that the vapor extraction well will be installed approximately 30 feet from the proposed groundwater extraction well. If drawdown in the extraction well is approximately 50% of the total amount available, and the gradient of the cone of depression approximates 0.28 foot/foot, the entire screened portion of the vapor extraction well would be in unsaturated soil (see attached Figure). Since much of the volume of impacted soil is below the current groundwater table, drawdown by the extraction well is a necessity. Lowering the groundwater table will increase the effectiveness of the soil vapor extraction system. In combination, soil vapor extraction should remediate the majority of soil impacted by hydrocarbons and water extraction should provide the hydraulic control necessary to minimize the migration of hydrocarbons in the groundwater.

The vapor extraction wells installed at the ARCO Service Station on Park are screened at approximately the same interval as we have proposed.

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If you should have any questions regarding this Addendum, please contact me at (510) 522-8188.

Sincerely,



DAVID R. DEMENT
NO. 5874
REGISTERED GEOLOGIST
STATE OF CALIFORNIA

David R. DeMent, RG
Senior Project Geologist

Attachment

cc: Mr. Steve Chrissanthos, Alameda Cellars
Misty C. Kaltreider, ACC

4.0 CONCLUSIONS

At this time, to remediate the relatively thin layer of hydrocarbon-impacted soil beneath the site and control migration of the dissolved hydrocarbon plume, a combination (dual) vapor extraction and groundwater extraction system should be installed at the site. Dual extraction would effectively remediate hydrocarbons from the capillary fringe and control offsite plume migration. Vapor and water extracted from the wells would be separated and treated; water and soil vapor would be cost-effectively treated by carbon adsorption. Well placement and expected radius of influence for groundwater and vapor extraction is illustrated in Figure 6.

4.1 Scope of Work

Develop workplan, site safety plan, permits and system design to incorporate the following work items: (1) installation of one 6-inch diameter groundwater extraction well and one 4-inch diameter vapor extraction well in locations illustrated on Figure 5; (2) piping necessary to treat extracted soil vapors and groundwater on the surface using activated carbon; (3) sample ports placed to sample influent, midpoint, and effluent vapors and groundwater; (4) conduct appropriate testing to confirm the capture radii of the newly installed soil vapor and groundwater extraction systems, and, (5) develop a written plan, prior to start-up of the systems, to monitor, operate and maintain systems at regular intervals for a minimum period of one year, and incorporate any concerns of the Alameda County Health Agency, Division of Environmental Protection, Department of Environmental Health.

Item 1: Six-inch diameter PVC well to 25 feet below ground surface (bgs), 2-foot silt trap, 0.020 continuous wrap screen from 5-23 feet bgs, No. 2/12 sand from 4-25 feet, bentonite seal from 3-4 feet bgs, and neat cement to grade.

Four-inch diameter PVC well to 14 feet bgs, 0.020 continuous wrap screen from 5-14 feet bgs, No. 2/12 sand from 4.5-14 feet, bentonite seal from 3.5-4.5 feet bgs, and neat cement to grade. Appropriate steps should be taken to avoid "short-circuiting" of subsurface vapors through the planter area, such as paving or placing 20-mil polyethylene sheeting.

Item 2: Standard groundwater extraction system including: submersible total fluids pump; totalizer; surge tank; feed pump; filter; flowmeter; influent, effluent and midpoint sampling ports, twin carbon adsorption vessels; and discharge piping.

Standard soil vapor extraction system including: water separator; filter; vacuum blower; silencer; influent, effluent and midpoint sampling ports; twin carbon adsorption vessels; and discharge piping.

Item 5: System to be monitored weekly for one month, monthly for six months, evaluated at six months and quarterly thereafter. The monitoring plan shall cover expected contingencies and include customary safeguards for normal operation. Information supplied in Appendices A and B may be used to aid in system design.

Calculation Sheet

Title _____ Location _____ Department _____

Prepared by _____ Date ____/____/____ Project Number _____ Page No. ____ of ____

