



June 15, 2003

321

Mr. Barney Chan  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, CA 94502

SUBJECT: CHEMICAL OXIDATION WORKPLAN ADDENDUM  
Former Shell Service Station  
726 Harrison Street  
Oakland, California

Dear Mr. Chan:

By now, you have received Aqua Science Engineers, Inc. (ASE's) workplan for a Chemical Oxidation Pilot Study at the subject site, dated May 23, 2003. Inadvertently, we neglected to supply you with one portion of the information you requested in your letter to our client dated March 23, 2003.

You requested a cost analysis of site remediation by chemical oxidation versus the previously proposed scenario of overexcavation, dewatering and ORC placement. Please be aware, the proposed chemical oxidation process has been broken into two separate phases (a) a pilot study of approximately 20% of the needed injection points, and (b) the remaining 80% of injection points to complete the remediation of the site. The estimated costs for both are listed below along with the estimated costs for the previously proposed overexcavation process.

Chemical Oxidation Bench Test,  
20% Pilot Study, ASE Project Management  
and Field Labor, Confirmation  
Geoprobe Soil Borings, Soil and  
Groundwater Analyses, Report of  
Methods and Findings

(20% \$70,000 to \$80,000

Remaining 80% Chemical Oxidation  
of Entire Site, ASE Project Management  
and Field Labor, Confirmation  
Geoprobe Soil Borings, Soil and  
Groundwater Analyses, Report of  
Methods and Findings

\$155,000 to \$170,000

Total

\$225,000 to \$250,000

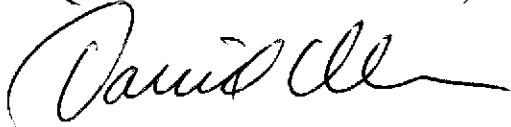
Previously Proposed Overexcavation Estimated Costs

Building Demolition, Shoring, Excavation and Stockpiling, Dewatering, Backfilling and Material, Contaminated Soil Loading, ORC, Resurfacing	\$360,000
Contaminated Soil and Groundwater Trucking and Disposal	\$52,000
Permits, ASE Project Management and Field Labor, Confirmation Geoprobe Soil Borings, Soil and Groundwater Analyses, Report of Methods and Findings	\$25,000
Total	\$437,000

Assuming the bench test shows favorable results, ASE will commence with the pilot study, injecting 20% of the necessary chemicals to remediate the entire site. Should confirmation soil borings prove that the pilot study was successful, ASE will commence with the remaining injection points, injecting the remaining 80% of chemicals to remediate the entire site. If you require additional information, please call me at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



David Allen, R.E.A.  
Senior Project Manager

