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July 19, 1991
Project 4983

Alameda County Health Agency
Department of Environmental Health
80 Swan way, room 200
Oakland, California 94621

Attention: Pamela J. Evans

Subject: Work Plan for Monitoring Well Installation and Testing for Fuel Leak Follow-up Investigation
Clark Home and Garden Center
23040 Clawiter Road
Hayward, California

91 JUL 22 PM 2:43

Dear Ms. Evans:

The following presents our proposed Work Plan for the installation and sampling of a ground water monitoring well at Clark Home and Garden Center in Hayward. This investigation has been required by the Alameda County Health Agency (ACHA) as follow-up to a fuel leak discovered when two diesel storage tanks were removed from the site in 1988. The issue is discussed in ACHA letters to Mr. Chester D. Clark (subject property owner), dated December 3, 1990 and February 27, 1991.

SCOPE OF WORK

Subject to the requirements outlined in ACHA letters, our discussion with you, and our review of regulatory files on local fuel leak cases, we propose the following scope for our first phase of work:

1. Maintain contact with the ACHA, and work with you to receive approval for the Work Plan. Approval of the Work Plan will be sought before proceeding with on-site work.

2. Obtain the necessary well construction permit from the Alameda Zone 7 Water District.

3. Observe and provide professional guidance to our client's drilling contractor (West Tek Drilling of San Jose) during drilling, soil sampling and well construction activities.

   The well will be strategically located within 10 feet west of the former tank excavation. Based on information gathered in our regulatory records review (for sites located nearby on Clawiter Road and Saklan Road), the ground water gradient direction is towards the west.

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The well be installed approximately 10 feet into the first ground water encountered beneath the site, and constructed of 2-inch diameter PVC casing. The well will be constructed and sealed according to Regional Water Quality Control Board (RWQCB) guidelines, with a locking protective vault, and traffic-rated Christy box installed slightly above the ground surface to inhibit inflow of surface runoff.

After placing the annular sand pack, and before placing the sanitary seal, the well will be developed using a stainless steel surge block and Teflon bailer to remove silt and clay from the screened interval.

All drilling and sampling equipment will be cleaned prior to use to minimize the risk of introducing or spreading contamination. An environmental geologist from our staff will be on site to provide professional guidance to the drilling crew, handle the soil samples, and prepare an as-built sketch of the monitoring well. The geologist will also prepare a drill log which will include a description of the depths and types of soil encountered, along with any notes on indications of contamination. The Unified Soil Classification with visual-manual procedures (ASTM D 2488-84) will be used for soil description.

Soil samples will be collected at five-foot minimum vertical intervals starting at a depth of five feet and continuing until ground water is encountered. Samples will be obtained using an 18-inch long split-spoon sampler containing 2-inch diameter brass liners.

The ends of the liners retained for consideration for subsequent laboratory analysis will be sealed with aluminum foil and taped end caps. The liners will then be individually labelled and placed on ice or refrigerated for preservation until delivery to the analytical laboratory.

Extra samples collected will be screened in the field for the presence of volatile organic constituents using a portable photoionization detector (PID) with a 10.6 eV lamp. The PID will be calibrated at the beginning of the field day with ambient air as "zero" gas, and 100 parts per million by volume (ppmv) isobutylene in air as the span gas.

4. According to ACHA, collect one sample from roughly one foot into native soil beneath the former fuel dispenser.

5. Submit the soil samples to a State-certified hazardous materials testing laboratory for individual analysis. Assuming the depth to ground water beneath the site is approximately 15 feet, we anticipate submitting three soil samples from the monitoring well boring, and one from beneath the former fuel dispenser (a total of four samples) for analysis.

According to ACHA, the laboratory will be instructed to analyze the samples for total petroleum hydrocarbons (TPH) as gasoline, TPH as diesel, and the specific fuel constituents - benzene, toluene, ethylbenzene and xylenes (BTEX), using California Regional Water Quality Control Board approved testing procedures.

Standard chain of custody procedures will be followed to document sample collection, handling, and analytical requests.

6. Following a minimum 24-hour well stabilization period, we will sample the well using a pre-cleaned Teflon bailer. Temperature, pH and conductivity measurements will be conducted during purging until stable (within 10%) readings are obtained after at least four, but not more than ten, well volumes are removed. If a well bails dry, it will be allowed to recover at least 80% before sampling.

   The ground water sample will be carefully transferred into containers supplied by the laboratory for the required analyses. The containers will then be individually labeled and placed on ice for preservation.

7. Submit the ground water sample to a State-certified hazardous materials testing laboratory for analysis for TPH as gasoline, TPH as diesel, and BTEX, using California Regional Water Quality Control Board approved testing procedures.

   Standard chain of custody procedures will be followed to document sample collection, handling, and analytical requests.

8. Following our receipt of typed laboratory analysis results, we will prepare a report summarizing the findings, and presenting our opinions and comments, including recommendations for any additional investigation/well installation, if necessary. The report will include a scaled site plan, drill hole log, as-built well diagram, tabulated analytical results, and a copy of the certified laboratory report and chain of custody record.

9. Following completion of our first phase report, and review and comment from ACHA, we will follow-up with two consecutive monthly ground water sampling rounds, and then four quarterly sampling rounds for one year. Following the receipt of each round of analytical results, we will prepare a brief letter-report summarizing analytical results.

Spoils from the drilling operation, and water from well development and sampling activities, will be contained in closed-top 55-gallon drums and left on site pending the outcome of laboratory analyses.

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As we discussed, well installation activities are planned for the first week in August. According to ACHA requirements, we will provide you with at least 48-hours notification prior to our drilling/sampling activities.

If you have any questions regarding the scope of work described herein, please call me.

Sincerely,

TERRATECH, INC.

Shiela M. Chrisley
Project Environmental Geologist

smc/erl

cc: Mr. Chester Clark