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PROTECTION

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11:28 am, Apr 16, 2009

Alameda County  
Environmental Health

January 2, 1997

Mr. Scott Seery  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway  
Alameda, California 94502

Re: **Investigation Work Plan**  
Shell Service Station  
4226 First Street  
Pleasanton, California  
WIC # 204-6138-0303

Dear Mr. Seery:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this work plan for a subsurface soil and water investigation at the site referenced above, as requested by your July 31, 1996 letter. The objective of this investigation is to determine whether ground water has been affected by the apparent releases from the former underground storage tank complex. A site summary and our proposed scope of work for this investigation are presented below.

#### SITE SUMMARY

The site is an active service station with three 10,000-gallon double-walled fiberglass gasoline underground storage tanks (USTs) and one used oil tank. The tanks were installed in 1986 after the removal of four gasoline USTs and one used oil tank.

In 1985, before the tanks were removed, Emcon Associates of San Jose, California installed soil borings between 20 and 30 ft deep near the tanks and collected soil samples. One soil boring was converted into a monitoring well of 30 ft depth. Soil samples from these borings contained up to 1300 parts per million (ppm) at 15 ft depth. No ground water was ever encountered in the monitoring well. After the removal of the gasoline USTs in 1986, Blaine Technologies of San Jose, California collected soil samples from the excavation at each end of each tank and analyzed the samples for total petroleum hydrocarbons as gasoline (TPHg) and for benzene, toluene, ethylbenzene, and xylenes (BTEX). The concentrations of TPHg in the samples ranged from 240 ppm to below detection limits. A soil sample was also collected from the used oil tank excavation; no oil was detected in this sample.

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TECHNOLOGY, INC.

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In March 1990, Hart Crowser, Inc. of San Francisco, California drilled three soil borings between 30 and 50 ft deep in the vicinity of the former gasoline tanks and collected soil samples. They also abandoned the monitoring well at the site by drilling it out, and they continued drilling past the depth of the monitoring well to 45 ft below the surface. Soil samples were also collected from the well abandonment boring. The soil samples from all four borings were analyzed for TPHg and BTEX. Concentrations of 380 ppm and 290 ppm TPHg were detected in the samples from the well abandonment boring at 30 and 35 ft depths, respectively. TPHg concentrations in the other soil samples were only as high as 18 ppm. In April 1990, Hart Crowser, Inc. drilled two more soil borings at the site to 51.5 ft depth and collected soil samples. In one of the borings, no TPHg was detected in any of the soil samples. In the other boring, the soil sample from 35 ft contained 820 ppm TPHg and 65 ppm benzene, and the samples from 40 ft and 50 ft had no TPHg or BTEX detected. A small amount of ground water was present at 49.5 ft in this boring. The reports from previous consultants indicate that the ground water is estimated to be between 50 and 100 ft deep in the site area.

#### PROPOSED SCOPE OF WORK

To determine if ground water beneath the former USTs has been impacted by petroleum hydrocarbons, we propose installing one boring in the former tank area and collecting soil samples and a grab water sample. If there is evidence of petroleum hydrocarbons in the ground water or within 15 ft of the water table, we will convert the boring into a permanent monitoring well. Our scope of work for this investigation includes the following tasks:

*Utility Location:* Cambria will notify Underground Service Alert (USA) of our drilling activities. USA will have the utilities in the site vicinity identified.

*Site Health and Safety Plan:* We will prepare a site safety plan to protect site workers. The plan will be kept on site at all times and signed by all site workers.

*Permits:* We will obtain any necessary permits for the installation of the boring/well.

*Soil Boring/Well Installation:* Cambria will drill one boring in the center of the former tank area. The boring will be drilled 10 ft into the water table (approximately 60 to 110 ft depth). Since the soil in this area has been well characterized between 0 and 40 ft depth, we will not collect soil samples for screening from this range. Beginning at 40 ft depth, we will collect soil samples approximately every five ft, at lithologic changes, and immediately above the water table. We will select soil samples for chemical analysis based on observations of staining and odor and on the results of field screening with a portable vapor analyzer. We will also collect a grab ground water sample from the open borehole. If there is no evidence of hydrocarbons within 15 ft of the water table, and if there is no evidence of hydrocarbons in the grab water sample, we will grout the boring. If hydrocarbons are observed in soil within 15 ft of the water table or in the grab water sample, we will install a two-

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inch monitoring well screened 5 ft above and 15 ft into the water table. If a well is installed, we will develop the well using surge agitation and bailer evacuation and sample the well.

**Chemical Analysis:** Selected soil samples and the ground water sample will be analyzed for TPHg by modified EPA Method 8015 and for BTEX and methyl-tert-butyl-ether (MTBE) by EPA Method 8020.

**Reporting:** After we receive the analytic results, we will prepare a subsurface investigation report that, at a minimum, will contain:


- A summary of the site background and history;
- Descriptions of the drilling and soil sampling methods;
- Boring logs;
- Tabulated soil and ground water analytic results;
- Analytic reports and chain-of-custody forms;
- Soil and water disposal methods; and
- A discussion of the hydrocarbon distribution in soil and ground water.

## SCHEDULE

Upon receiving written approval of our work plan from the Alameda County Health Care Services Agency, Cambria will submit a cost pre-approval request form to the California UST Cleanup Fund for approval. After pre-approval by the Fund, Cambria will obtain any necessary permits and commence drilling. We will submit our investigation report about four to six weeks after completing the field work.

Please call if you have any questions or comments.

Sincerely,  
Cambria Environmental Technology, Inc.

  
Bob Clark-Riddell, P.E.  
Principal Engineer

Attachments: A - Standard Field Procedures

cc: Mr. R. Jeff Granberry, Shell Oil Products Company

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