CAMBRIA

February 18, 2000

Mr. Larry Seto
Alameda County Health
Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

ENVIRONMENTAL PROTECTION
00 FEB 24 PM 2:59

Re: **Additional Subsurface Investigation Work Plan**
Shell-branded Service Station
610 Market Street
Oakland, California
Incident # 98995750
Cambria Project # 242-0594

Dear Mr. Seto:

In accordance with the Alameda County Health Care Services Agency (ACHCSA) correspondence dated January 21, 2000, Cambria Environmental Technology, Inc. (Cambria) is submitting this *Additional Subsurface Investigation Work Plan* on behalf of Equiva Services LLC (Equiva). The scope of work proposed involves the installation of two groundwater monitoring wells to further delineate the extent of petroleum hydrocarbons and methyl tertiary butyl ether (MTBE) in soil and groundwater at the above-referenced site. The site background and investigation results are presented below.

SITE BACKGROUND

Site Description: The site is a Shell-branded service station located on Market Street, between Sixth and Seventh Streets in Oakland, California. Currently, the site consists of a kiosk, three underground storage tanks (USTs), four dispenser islands and a drive through car wash facility. The area surrounding the site is primarily of commercial use (Figure 1).

Subsurface Conditions: The site is underlain primarily by silty sands to a total explored depth of 26 feet below grade (fbg). Groundwater depth onsite ranges from approximately 11 to 13 fbg.

1995 Site Renovation: In August 1995, Weiss Associates (Weiss) of Emeryville, California collected soil samples from beneath the gasoline dispensers and product piping locations during station renovation activities. The renovation activities included the replacement of the gasoline dispensers and some of the product piping. A total of approximately 48 cubic yards of soil were

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removed during the renovations, 15 cubic yards of which were over-excavated due to impact by petroleum hydrocarbons. The details and results of this investigation are summarized in the November 2, 1995 *Dispenser Replacement Sampling* report, prepared by Weiss.

1998 Site Upgrade: In March 1998, site upgrades were performed by Paradiso Mechanical of San Leandro, California (Paradiso). Paradiso added secondary containment to the turbine sumps in the USTs. Cambria inspected the turbine sumps and UST area and no field indications of petroleum hydrocarbons, such as staining or odor, were observed during the site visit. Based on the field observations, no soil sampling was performed during the site upgrade activities. The details of these activities are summarized in Cambria's *1998 Site Upgrade Inspection Report* dated March 30, 1998.

March 1998 Site Investigation: On March 31, 1998, Cambria conducted a subsurface investigation at the facility which included the installation of three soil borings onsite using a Geoprobe® direct push drill rig. Less than 2 ppm TPHg, BTEX, and MTBE were detected in analyzed soil samples from soil borings SB-A, SB-B, and SB-C. A maximum of 2,100 parts per billion (ppb) TPHg, 490 ppb benzene, and 14,000 ppb MTBE were detected in grab groundwater samples collected from soil borings SB-A and SB-B. Concentrations of TPHg, BTEX, and MTBE were below laboratory detection limits in the grab groundwater sample collected from soil boring SB-C. The details of this investigation are summarized in Cambria's *Subsurface Investigation Report*, dated July 1, 1998.

November 1998 Subsurface Investigation: On November 17, 1998, Cambria performed additional subsurface investigation activities which included the installation of three groundwater monitoring wells onsite (MW-1, MW-2, and MW-3). Up to 1, 700 ppm TPHg, 8.3 ppm benzene, and 16 ppm MTBE were detected in the soil sample collected from the capillary fringe at a depth 10.5 feet in MW-3. 8.3 ppm TPHg and 2.9 ppm MTBE were detected in the soil sample collected at a depth of 5.5 feet in MW-2. Concentrations of benzene were below laboratory detection limits in samples analyzed from MW-2. Concentrations of TPHg, BTEX, and MTBE were below laboratory detection limits in all samples analyzed from MW-1. The first groundwater samples collected from the monitoring wells were collected as part of the first quarterly monitoring event (fourth quarter 1998) by Blaine Tech Services (Blaine) of San Jose, California. The details of this investigation are summarized in Cambria's *Well Installation Report*, dated April 20, 1999.

Groundwater Monitoring: Quarterly groundwater monitoring has been ongoing at his site since the fourth quarter of 1998. During each quarterly monitoring event, performed by Blaine, the groundwater depth in each well is gauged prior to purging three well volumes and collecting groundwater samples from each monitoring well. Concentrations in MW-1 have ranged from

1,370 ppb to 6, 150 ppb TPHg, 20 ppb to 107 ppb benzene, and up to 89.1 ppb MTBE (by EPA method 8020). MW-2 has had concentrations ranging from below detection limits to 58.6 ppb TPHg, 0.569 ppb to 50.4 ppb benzene, and 3,440 ppb to 15,000 ppb MTBE (by EPA method 8020). MW-3 concentrations have ranged from 19,300 ppb to 44,500 ppb TPHg, 536 ppb to 890 ppb benzene, and 38,500 ppb to 186,000 ppb MTBE (confirmed by EPA method 8260). Presently, the extent of petroleum hydrocarbons in soil and groundwater is undefined at this site, particularly in the downgradient direction. The results of quarterly monitoring events are summarized in quarterly monitoring reports prepared by Cambria.

AGENCY RESPONSE

In response to the ACHCSA correspondence dated January 21, 2000 and based on the data from previous site assessments and the available quarterly monitoring data, Cambria recommends that the following actions be performed in order to begin developing a "site-conceptual model" for the subject facility:

- A receptor survey should be performed to identify any potential sensitive receptors which may be impacted by petroleum hydrocarbons migrating from the site. Cambria will perform a field search to identify utility conduit trenches as well as reviewing all available utility maps for locations and approximate depths of any existing utility trenches adjacent to the site. Cambria will also perform a survey to identify any existing wells within a ½-mile radius of the site. This will be performed by searching existing well records kept by the California Department of Water Resources (DWR) as well as a field search of the local vicinity.

- In order to better define the extent of contamination at the subject facility, Cambria recommends the installation of two additional groundwater monitoring wells in the down gradient direction offsite. The locations of the proposed monitoring wells, in the City of Oakland public right of way, are shown on Figure 1. Cambria will install 4-inch diameter monitoring wells. During the well installations, Cambria will collect soil samples at five-foot intervals and at major lithologic changes from above the saturated zone. All soil samples will be analyzed for TPHg, BTEX, and MTBE by EPA method 8020. Any detected MTBE (by EPA method 8020) will be confirmed using EPA method 8260. In addition, Cambria may collect soil samples to be analyzed for physical parameters to be used in a potential RBCA analysis in the future. Discreet grab groundwater samples will be collected at five-foot intervals during the well installations. The discreet groundwater samples will be analyzed for

TPHg, BTEX, and MTBE. Any detected MTBE by EPA method 8020 will be confirmed using EPA method 8260. Once installed, these wells will be sampled as part of the on-going quarterly monitoring events for this site and all samples will be analyzed for TPHg, BTEX, and MTBE (any MTBE detected in groundwater by EPA method 8020 will be confirmed by EPA method 8260).

- On an interim basis, well MW-3 will undergo weekly groundwater extraction via the use of a vacuum tank truck. In the event that MW-3 does not produce a significant volume of groundwater, MW-2 will also undergo groundwater extraction. The effectiveness of these measures will be re-evaluated based on the results of the next set of quarterly monitoring sample results. Cambria will present mass contaminant removal calculations with the second quarter 2000 quarterly monitoring report.

Upon approval of Cambria's recommendations by the ACHCSA, we will proceed with the activities described above.

CLOSING

Please call Troy Buggle at (510) 420-3333 if you have any questions.

Sincerely,

Cambria Environmental Technology, Inc.

Troy A. Buggle
Project Scientist

Ailsa Le May, R.G.
Senior Geologist

REGISTERED GEOLOGIST
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Figures: 1 – Site Plan

cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91501-7869

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Ronald L. & Cathy L. Labatt, P.O. Box 462, Kamiah, ID 83536

02/16/00

EXPLANATION

- MW-4 — Proposed Monitoring well location
- MW-1 — Monitoring well location
- SB-B — Soil Sample Location

MARKET STREET

INTERSTATE 880 OVERPASS

6th STREET

7th STREET

MW-5

MW-2

SB-B

driveway

sidewalk

driveway

sidewalk

planter

pump islands

kiosk

Historical Groundwater Flow Direction

driveway

sidewalk

planter

SB-A

MW-1

SB-C

MW-3

underground storage tanks

MW-4

carwash

sidewalk

planter

driveway

storage

trash

planter

planter

0 15 30 60

SCALE : 1" = 30 FEET

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Proposed Monitoring Well Locations

CAMBRIA

Shell-branded Service Station
610 Market Street
Oakland, California
Incident #98995750

FIGURE
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