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CAMBRIA

ENVIRONMENTAL PROTECTION
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April 14, 2000

Barney Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Additional Subsurface Investigation Work Plan**
Former Shell-branded Service Station
2101 Park Boulevard
Oakland, California 94606
Incident # 97088251
Cambria Project # 242-0865

Mr. Chan,

In response to your letter to Equiva Services LLC (Equiva) dated March 14, 2000, Cambria Environmental Technology, Inc. (Cambria) is submitting this additional subsurface investigation work plan. As requested in your letter, Cambria proposes to install additional soil borings to delineate soil and groundwater contamination in the down-gradient direction from the site. This purpose of this investigation is to obtain analytical data on the subsurface conditions which, in conjunction with Cambria's January 19, 2000 RBCA analysis, may be used to obtain environmental case closure for the site. The proposed scope of work is presented below.

PROPOSED SCOPE OF WORK

To better define the horizontal and vertical extent of hydrocarbons and MTBE in soil and groundwater at the subject facility, Cambria proposes advancing two soil borings, one on-site and one off-site in the down-gradient direction from the previously identified source area (Figure 1). The proposed soil borings are located down-gradient from well S-3 and former soil sample location S-1, in an area that remains undefined with respect to potential petroleum hydrocarbon contamination. Soil samples will be collected from the on-site boring at five-foot intervals and at lithologic changes for chemical analysis. Soil samples will not be collected from the offsite boring. Both soil borings will be advanced to the depth of groundwater in order to collect a grab groundwater sample from each soil boring before each borehole is grouted to the surface. The soil borings will be completed as described in our Standard Field Procedures for Soil Borings (included as Attachment A). All samples collected will be submitted to Columbia Analytical of San Jose, California for analyses. Results of this investigation will be used to determine the lateral and vertical extent of petroleum hydrocarbons and MTBE in soil and groundwater in the down-gradient direction at the site.

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Sonoma CA
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Upon ACHCSA approval of this work plan, Cambria will complete the following tasks:

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

Site Health and Safety Plan: We will prepare a comprehensive site safety plan to protect site workers. The plan will be kept onsite during field activities and signed by each site worker.

Permits: We will obtain necessary drilling permits for installation of soil borings as well as any encroachment or excavation permits necessary for working in the public right of way.

Soil Borings and Sampling Activities: Using a Geoprobe™ drill rig, Cambria will advance two soil borings to the depth of groundwater. During field activities, we will collect soil samples from the onsite soil boring at five-foot intervals and at significant lithologic changes. We will select soil samples for chemical analysis based on observations of staining and odor or on the results of field screening with a photo-ionization detector (PID). Grab groundwater samples will be collected from the borings before they are grouted to the surface.

Laboratory Analyses: Selected soil samples and water samples from each boring will be analyzed for:

- TPHg by EPA Method 8015/8020,
- BTEX and MTBE by EPA Method 8020, and
- Any MTBE detected in soil or ground water will be confirmed using EPA Method 8260.

Subsurface Investigation Report: After the analytical results are received, Cambria will prepare a report that, at a minimum, will contain:

- A summary of the site background and history,
- Descriptions of drilling and sampling activities,
- Boring logs,
- Tabulated analytical results,
- A figure presenting boring locations,
- Analytical reports and chain-of-custody forms, and
- A discussion of the hydrocarbon and MTBE distribution in soil and groundwater

CLOSING

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

Sincerely,
Cambria Environmental Technology, Inc.

Troy A. Buggle
Project Scientist

Diane Lundquist, P.E.
Principal Engineer

Figures: 1 – Proposed Soil Boring Locations

Attachment: A - Standard Field Procedures for Soil Borings

Cc: Karen Petryna, Equiva Services LLC, P.O. Box 7869, Burbank, California 91510-7869
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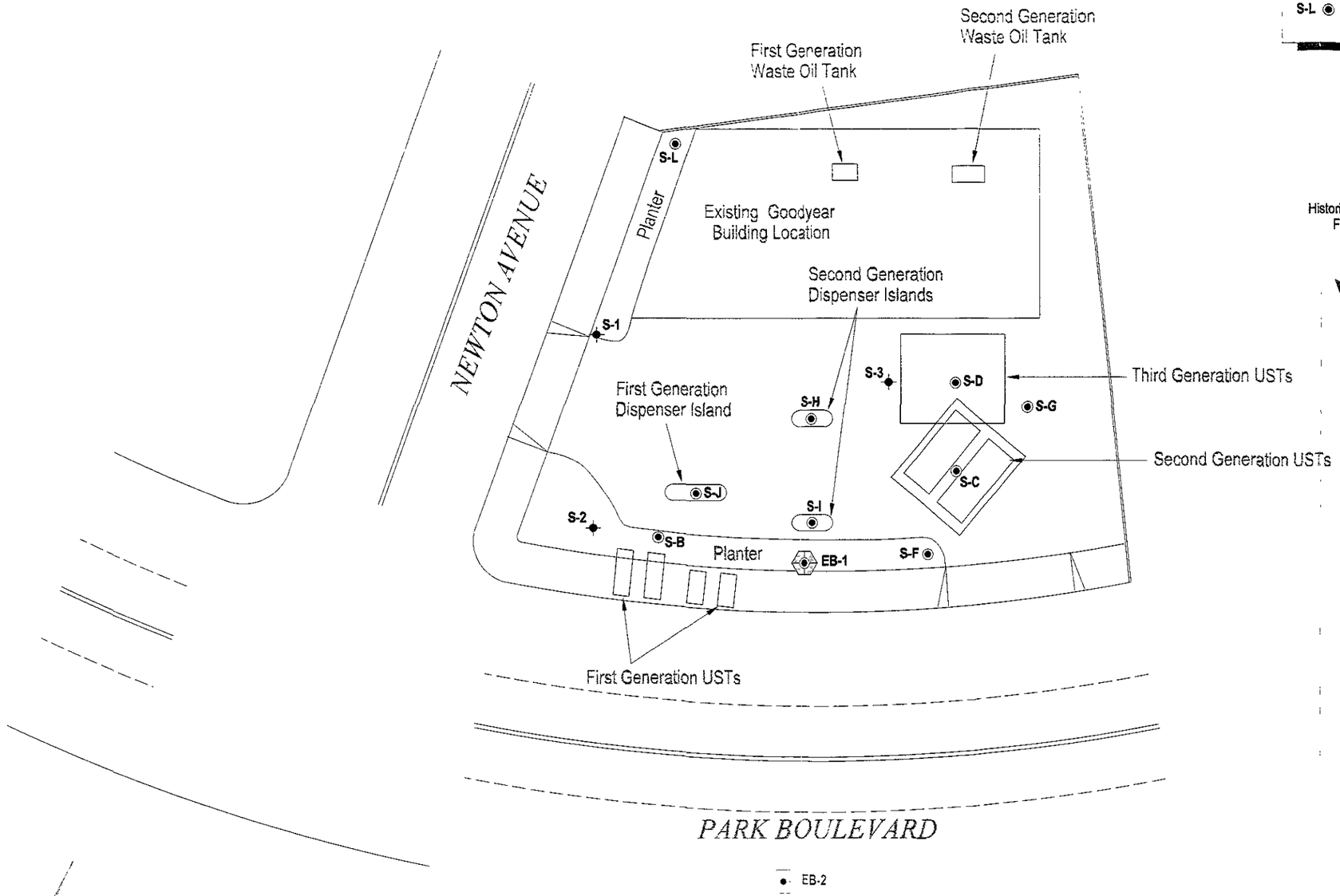
Proposed Soil Boring Locations

EXPLANATION

- Proposed soil boring location
- S-1 — Monitoring well location (Installed June 15, 1995)
- S-L — Soil boring location (Installed May 16, 1995)



FIGURE

1

Former Shell Service Station
2101 Park Boulevard
Oakland, California
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ATTACHMENT A

Standard Field Procedures for Soil Borings

CAMBRIA

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Cambria Environmental Technology's standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with a sodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licenced waste haulers and disposed in secure, licenced facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licenced waste treatment disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.