

R0289



January 24, 2005

Mr. Amir Gholami  
Alameda County Health Care Services  
Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Alameda County  
JAN 23 2005  
Environmental Health

Subject: Proposed Work Plan to Complete a Focused Geoprobe Investigation at  
Owens-Brockway Glass Container – Oakland, CA

Dear Mr. Gholami:

Attached is a work plan for additional investigative studies of ground water prepared by  
CKG Environmental. If there are questions regarding its content, please give Chris  
Kennedy a call at 707-967-8080.

Sincerely,

Robert C. Neal, P.E.  
Environmental Administrator

363-5740

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January 20, 2005

Mr. Amir Gholami  
Alameda County Health Care Services  
Environmental Health Services  
1131 Harbor Bay Parkway  
Alameda, CA 94502-6577

Alameda County  
Environmental Health Services  
JAN 20 2005

**Subject: WORK PLAN TO COMPLETE A FOCUSED GEOPROBE INVESTIGATION, OWENS-BROCKWAY GLASS CONTAINER FACILITY, OAKLAND, CALIFORNIA.**

Dear Mr. Gholami:

CKG Environmental, Inc. (CKG) is pleased to provide this work plan to complete a focused Geoprobe™ investigation to understand the type and distribution of petroleum hydrocarbons in groundwater immediately downgradient of the Owens-Brockway Glass Container facility in Oakland, California (Plate 1).

### PROJECT UNDERSTANDING

Two underground fuel storage tank (UST) areas exist or formerly existed at the Oakland plant. One UST site is located on the west side of the plant and included two former USTs, which were used to store fuel oil. At the time these USTs were removed it was discovered that they had leaked, and fuel oil product was released to the subsurface. The second UST area is located toward the middle of the plant near the entrance, and is presently used to store gasoline. This present system is a replacement for an older system from which there had been a gasoline release.

Owens-Brockway excavated impacted soil at the time the USTs were replaced. Floating product associated with the fuel oil release exists and past efforts to remove it have been unsuccessful. This lack of success is mainly due to the clay rich nature of the subsurface and the viscosity of the product. Groundwater monitoring has been ongoing for the last 18 years.

CKG and Owens-Brockway met with the Alameda County Health Agency to discuss the possibility of closing the site as "Low Risk". To close the site as Low Risk it was necessary to install one more downgradient well off site and to compile all the data to date. In May 2003, CKG compiled all the historic data for the site; completed a Cone Penetration Test (CPT) subsurface investigation and installed and sampled one offsite monitoring well.

The historic data compilation showed that the petroleum hydrocarbon plumes at the site are stable and have attenuated substantially over time. The CPT investigation and well installation showed that there are releases of stoddard solvent and kerosene offsite and downgradient of the Owens-Brockway property that are not associated with operations at the property. The fuel oil release appears to extend only slightly off site.

In CKG's meeting with Amir Gholami of the Alameda County Health Agency on June 23, 2004 Mr. Gholami stated that although there was some merit to the argument that offsite contamination may occur, there was not sufficient evidence to demonstrate that the glass plant was not the source of the stoddard solvent and the kerosene detected downgradient. One of the reasons for this is that the visible soil impact observed in the new offsite well was approximately 12 feet below grade, which is within the capillary fringe soil area, suggesting that the source of the impact was not necessarily nearby. In addition, Mr. Gholami requested that more detailed cross-sections using all the borings installed at the site be prepared at both UST areas.

CKG obtained and reviewed the original soil borings and monitoring well logs from the 1986/87 investigations. The borings and well logs for the gasoline UST area were not available. The boring logs and data from the fuel oil area were available but at the time the investigation was performed the samples were not analyzed for total petroleum hydrocarbons as fuel oil/diesel or any other mid range petroleum hydrocarbon compound. As a result it was not possible to directly compare the older data with newer data and produce a meaningful TPH distribution map. Also it was not possible to distinguish any difference between fuel types and whether or not kerosene or stoddard solvent may have originated off site or on site. In addition, the visual observations made at the time the old borings were installed showed a generalized occurrence of petroleum hydrocarbons through the area at a depth of approximately 12- 13 feet below grade except in the former UST locations where shallower impacts were observed.

## **OBJECTIVE**

The objective of this scope of work is to collect data specific to answer the following questions:

1. What is the distribution of different petroleum hydrocarbon types in the area immediately downgradient of the fuel oil UST release?
2. Can soil impacts be observed at different elevations suggesting a source area other than the glass plant?

To address the above questions CKG proposes to install eight to ten soil borings using a Geoprobe™ rig. The Geoprobe™ rig will allow continuous sampling so that a detailed soil profile can be observed. The depth of petroleum hydrocarbon impact also will be measured and observed. Soil and groundwater samples will be collected from each location and analyzed for TPH as heavy range compounds, midrange compounds, gasoline range compounds and benzene, toluene, ethylbenzene, and xylenes (BTEX). The laboratory will perform a silica gel clean up on all the samples so that only petroleum hydrocarbon related materials are detected. This data will then be used to provide a detailed horizontal and vertical distribution of the different petroleum hydrocarbons occurring in the offsite area. For comparison purposes one boring will be placed on site in an area known to be affected by fuel oil originating from the site.

## **SCOPE OF WORK**

CKG will complete the following scope of work to meet the above objective.

## **Task 1 – Obtain Access to Offsite Boring Locations, and Prepare Drilling Permit**

CKG contacted the City of Oakland to inquire about their requirements to install Geoprobe™ borings on City property. The City provided a detailed list of Encroachment Permit Application requirements as well as a written procedure for borings. The following lists the elements required to obtain access to City of Oakland property:

1. Write a letter requesting access (letter must be from the property owner)
2. An 8½ by 11 site plan showing the well location, street name, and pertinent site features
3. Permit fee
4. Certificate of insurance
5. Copy of the Grant Deed of the property

Once the Encroachment permit has been issued then an excavation permit must be obtained by applying for it at the City of Oakland Engineering Information Counter.

CKG will prepare the encroachment permit documentation for Owens-Brockway and submit it on their behalf. The letters however will have to be submitted with Owens-Brockway's letterhead and signature.

A boring permit will be obtained from Alameda County Public Works Agency. Although a permit application is required there are no fees and no inspection required. CKG will complete and submit the permit application.

## **Task 2 - Subsurface Utility Survey**

CKG will subcontract with Subtronic Corporation. to survey the proposed boring locations. CKG also will contact Underground Services Alert to mark utilities in the public right-of-way.

## **Task 4 – Geoprobe™ Investigation**

CKG will contract Gregg Drilling to use a Geoprobe™ rig to install the soil borings and collect groundwater samples (approximately 10-15 feet below surface). The probe is approximately 1½ inch in diameter. Gregg estimates that they can complete 8-10 holes in one day. The probe holes will be filled with cement grout when they are completed. The proposed boring locations are shown on Plate 2, however, actual locations may be modified in the field based on subsurface utilities or other obstructions. Field sampling will be completed in accordance with CKG's standard field protocol as presented in Appendix A.

## **Task 5 – Chemical Analyses**

CKG will collect and submit from 2-3 soil samples and one groundwater sample from each boring for a total of 24-38 samples. Each sample will be submitted for analysis of Total Petroleum Hydrocarbons quantified as motor oil (TPHmo), diesel (TPHd), and gasoline (TPHg) by EPA Method 8015 with a silica gel cleanup. Samples also will be analyzed for benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020. CKG will work with the analytical laboratory to make sure that they examine chromatograms closely so that specific fuel types may be identified. CKG will request the

laboratory to compare chromatograms to those created by Stoddard solvent, kerosene, fuel oil, gasoline, and diesel.

### **Task 6– Focused Soil and Groundwater Investigation Report**

CKG will prepare a Focused Soil and Groundwater Investigation report that includes the following:

- Site background, including physical characteristics, and history
- Field work including tables and plates
- Detailed cross-sections utilizing all the site data to the extent possible
- Compilation of all monitoring data to date
- Conclusions
- Case closure summary and request

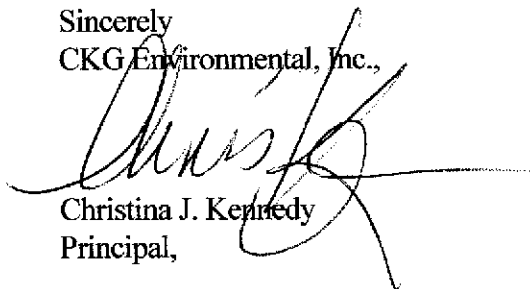
A case closure summary will be made for both UST areas of the site. CKG has tried to locate the well logs for the gasoline UST area within Owens-Brockway sources with no luck. If the Alameda County Health Agency does not have copies of the logs CKG will discuss options for how to proceed with a closure request for the gasoline UST with the Agency.

### **LIMITATIONS**

CKG will perform the scope of work in a manner consistent with the standards of care and skill normally exercised by members of the profession practicing under similar conditions in the geographic vicinity and at the time the services will be performed. No warranty or guarantee expressed or implied is part of the services offered in this proposal.

CKG is pleased to prepare this work plan and we look forward to working with you. If you need further information or would like more details regarding this work plan please feel free to call me at (707) 967-8080, or Mr. Bob Neal of Owens-Brockway at (510) 436-2174.

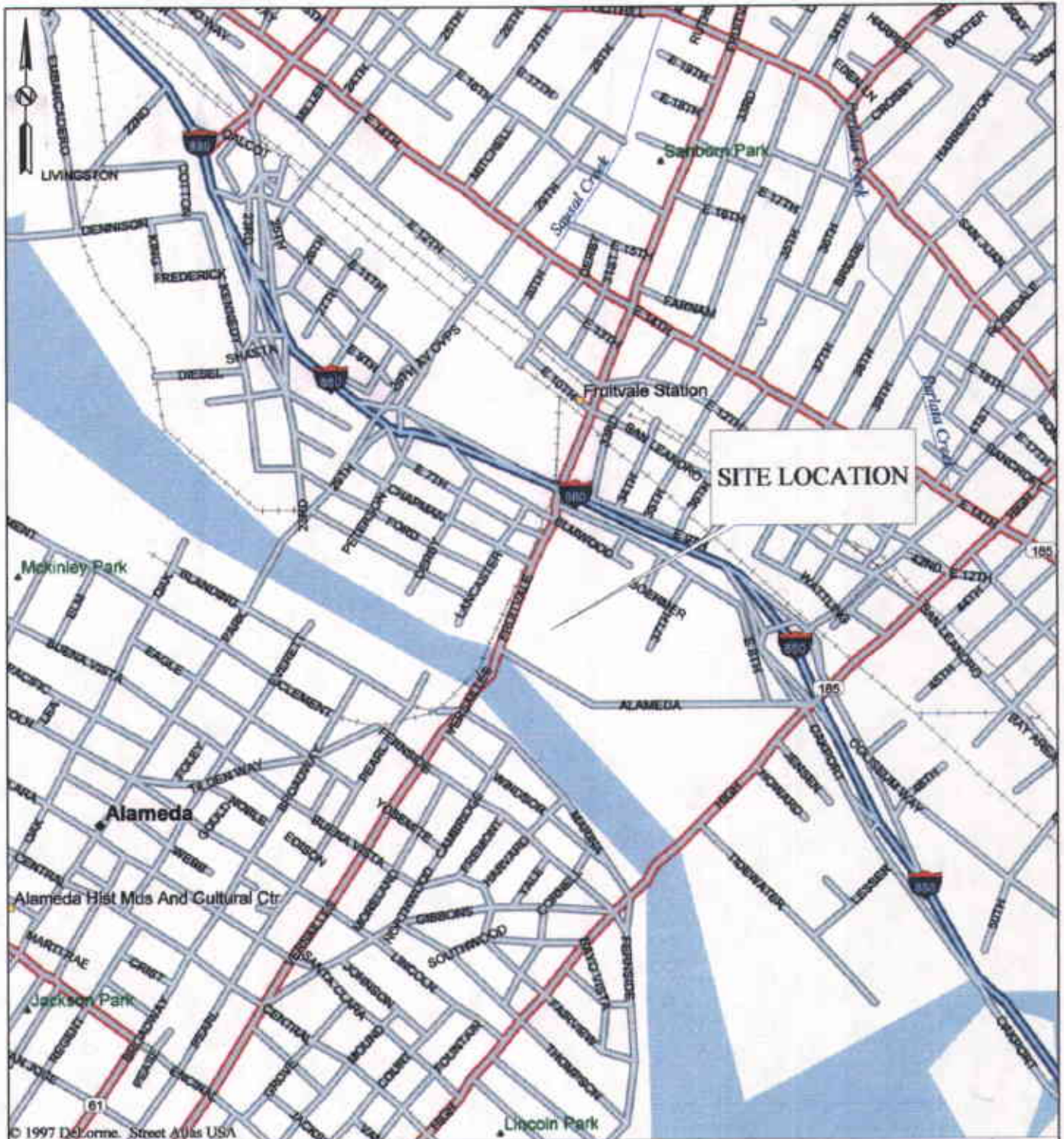
Sincerely  
CKG Environmental, Inc.,



Christina J. Kennedy  
Principal,

cc Mark Tussing – Owens-Brockway, Toledo  
Bob Neal – Owens-Brockway, Oakland

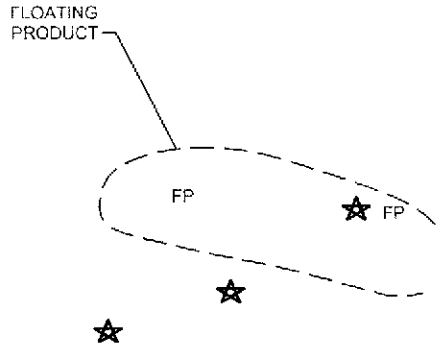
Plate 1 – Site Location Map  
Plate 2 – Proposed Geoprobe™ Location Map  
Appendix A – CKG Field Protocol







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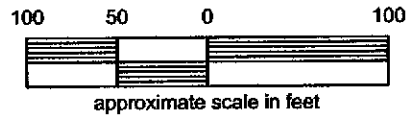
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 1000 Feet

<p>CKG Environmental Inc.</p> <p>PROJECT NO. 123-04      DATE    JAN 2005</p>		<p><b>SITE LOCATION MAP</b></p> <p>Owens Brockway        Glass Container, Inc.        Oakland, California</p>	<p>PLATE        1</p>
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**EXPLANATION**

-  Existing Monitoring Wells
-  CPT Locations
-  Kennedy Jenks 1999 Geoprobe Locations
-  Proposed Geoprobe Location (subject to change based on subsurface utilities)
- FP Floating Product



CKG Environmental Inc.

PROJECT NO. 123-04      DATE JAN 2005

**PROPOSED GEOPROBE  
LOCATION MAP**  
Owens Brockway  
Glass Container, Inc.  
Oakland, California

PLATE

2

## **APPENDIX A CKG ENVIRONMENTAL FIELD PROTOCOL**

### **A-1 FIELD PREPARATION**

Before performing work in the field, environmental staff review the scope of work, prepare a health and safety plan, coordinate the work to be done with their supervisor, assemble the necessary sample containers, and check, calibrate and clean equipment to be used in the field. When underground utilities may exist at a site where subsurface soil samples are being collected, USA Underground is contacted with the boring locations and the scheduled date of drilling, or a utility locating firm is employed to check the boring locations. Proper traffic control measures are carried out during roadwork.

### **A-2 SUBSURFACE SAMPLING**

#### **A-2.1 Geoprobe™ Sampling**

Subsurface soil samples will be collected from soil borings. Soil borings will be advanced using a truck-mounted Geoprobe™ sampler. The Geoprobe™ sampler uses a direct push technology to advance a 1-½ inch sampler into the ground. The 4 foot long sampler is lined with clear acetate tubing to allow for continuous logging. A geologist registered with the State of California will log samples.

#### **A-2.2 Equipment Decontamination**

To reduce the potential for cross-contamination, samplers and associated equipment will be cleaned with a trisodium phosphate wash and rinsed with distilled water prior to collecting each soil sample.

#### **A-2.3 Soil Sample Collection**

The geologist will collect samples for quantitative analysis by cutting a six-inch long length of tubing at selected depths. The ends of the tube will be covered with Teflon and sealed with tight-fitting plastic caps.

After the samples are collected they will be individually labeled. The label will include CKG Environmental's name, job number, the date and time the sample was collected, the employee's name and a unique sample identifier.

#### **A-2.4 Groundwater Sample Collection**

The driller will install a Hydropunch™ sampler at the bottom of each boring so that a groundwater sample can be collected. The Hydropunch™ sampler consists of a 1-½ inch diameter PVC screen with a stainless steel tip on the end. The sampler is pushed approximately two feet beyond the bottom of the hole and water is allowed to fill it. Groundwater will be recovered using a small bailer and placed in laboratory prepared jars.



### **A-2.5 Sample Handling**

After labeling, the sample is immediately stored in an iced cooler for transport to the analytical laboratory. A laboratory chain-of-custody form is attached to the cooler. The chain-of-custody form includes CKG Environmental's name, address and telephone number, the name of the individual who performed the sampling, the sample numbers, the date and time the samples were collected, the number of containers each sample occupies, and the analyses for which the samples are being submitted, if any. Each person who handles the samples, including all CKG employees and the receiving employee of the analytical laboratory when the samples are delivered, signs the chain-of-custody form.

### **A-2.7 Soil Boring Closure and Soil Cutting Disposal**

Soil borings are closed immediately after the collection and logging of soil samples. Closure is accomplished by grouting the boring with a cement/bentonite slurry or as otherwise required. Drill cuttings will be properly disposed by Owens-Brockway as part of their ongoing waste stream.