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Geological and Environmental Consulting Services

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April 11, 2006

Alameda County Department of
Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Attention: Barney Chan

Subject: Workplan to Conduct Site Characterization Activities
Former Coast Sausage Company UST Site
1173 28th Street, Oakland, California

Ladies and Gentlemen:

Gribi Associates is pleased to submit this workplan to conduct site characterization activities at the former Coast Sausage Company underground storage tank (UST) site at 1173 28th Street in Oakland, California (see Figure 1 and Figure 2). Proposed site characterization activities will include: (1) The collection of soil and grab groundwater samples from approximately eight soil borings at the site; and (2) The collection and analysis of approximately eight shallow soil gas samples at the site. The goals of site characterization activities will be to assess hydrocarbon and chlorinated solvent impacts at the site and, ultimately, to obtain regulatory site closure for the planned Coast Lofts live/work residential development. All activities will be conducted in accordance with all applicable regulatory guidelines and statutes.

BACKGROUND

The site is located in a mixed commercial and residential area of west Oakland. Soils in the immediate site area generally consist of clays, with occasional thin interbedded silts and sands. Groundwater is encountered at a depth of about eight feet below surface grade. The planned site development, Coast Lofts, will include approximately 60 live/work condominiums and townhouses set on grade, with ground floor parking and minimal landscaping elements.

Gribi Associates reviewed cross phone directories and Sanborn Fire Insurance Maps at the Oakland Public Library. Historical site information obtained from these sources is included on Figure 2. Key information included in these documents includes: (1) Configuration of the entire Coast Sausage facility, prior to the fire in 1993; (2) The facility immediately south from the project site, in a possible upgradient groundwater flow direction, previously included Laher Spring & Electric Car Corporation and apparently included a machine shop immediately south of the site; and (3) A testing laboratory was apparently located immediately west from the project site at 2722 Adeline Street in the past.

Treadwell & Rollo Phase I and Phase II ESA

In December 2001, Treadwell & Rollo conducted a Phase I and Phase I Environmental Site Assessment (ESA) for Citizens Housing Corporation. Since this ESA was conducted as part of a potential private real estate transaction, the full report for this investigation is apparently not available; however, a summary memo was issued. Information reported in this summary memo is as follows:

- The site was apparently residential prior to 1920. From 1920 through 1935, the northwest portion of the site was occupied by Ambassador Laundry Company. The south side of the site was apparently occupied by an aluminum foundry from the 1930s to the 1950s. The north portion of the site was occupied by meat and sausage packing facilities beginning in about 1947, and this operation expanded to the south, to include the entire current site boundary, in the early 1960s. Coast Sausage apparently operated at the site from the 1960s until a fire destroyed the facility in 1993.

- Treadwell & Rollo drilled and sampled four soil borings, B-1 through B-4, at the site on December 6, 2001 (see Figure 3). Soil and groundwater samples from the borings were analyzed for metals, volatile organic compounds (VOCs), glycols, and ammonia. Soil and groundwater samples showed concentrations of metals, glycols, and ammonia that were apparently below regulatory concern. The highest level of lead in soil was 110 milligrams per kilogram (mg/kg) at 1.0 feet in depth in boring B-2; this result is below the residential screening level of 150 mg/kg. Soils apparently showed no detectable concentrations of VOCs. Detections of VOCs in groundwater samples reported in the summary memo are as follows:

  Boring B-1
  Toluene = 0.62 micrograms per liter (ug/l)
  1,1-Dichloroethane = 3.1 ug/l
  1,1-Dichloroethene = 17 ug/l
  1,1-Trichloroethane = 19 ug/l

  Boring B-2
  Cis-1,2-Dichloroethene = 990 ug/l
  Trichloroethene = 47 ug/l

  Boring B-3
  Toluene = 0.77 ug/l
  Xylenes = 1.0 ug/l
  Cis-1,2-Dichloroethene = 0.92 ug/l

Boring B-4

Toluene = 1.0 ug/l
Xylenes = 1.6 ug/l

Groundwater ESLs (Vapor Intrusion, Residential Land Use)

Toluene = 530,000 ug/l
Xylenes = 160,000 ug/l
1,1-Dichloroethane = 3,500 ug/l
1,1-Dichloroethene = 26,000 ug/l
1,1-Trichloroethane = Not listed
Cis-1,2-Dichloroethene = 19,000 ug/l
Trichloroethene = 2,000 ug/l

In June 2002, ERAS Environmental drilled and sampled five borings, SB-1 through SB-5, at the site (see Figure 3). Two of these borings, SB-1 and SB-2, were sited adjacent to previous Treadwell & Rollo boring B-2. Boring SB-3 was sited east (presumed upgradient) from the 500-gallon gasoline underground storage tank (UST) on Adeline Street, and boring SB-4 was sited west (presumed downgradient) from the 350-gallon UST on Magnolia Street. Boring SB-5 was sited northwest, in an expected downgradient groundwater flow direction, from the 500-gallon Adeline Street UST.

Shallow soil samples collected from borings SB-1 and SB-2 showed no detectable concentrations of halogenated volatile organic compounds, including cis-1,2-dichloroethene (c-1,2-DCE).

Hydrocarbon detections reported in the ERAS report are as follows:

Boring SB-3

Soil: TPH-G = 110 mg/kg
BTEX = Not detected (ND)
Water: TPH-G = 5,900 ug/l
Benzene (B) = 1.7 ug/l
Toluene (T) = ND (detection limit: 1.25 ug/l)
Ethylbenzene (E) = 4.1 ug/l
Xylenes (X) = ND (detection limit: 2.5 ug/l)

Boring SB-4

Water: TPH-G = ND (detection limit 50 ug/l)
Benzene (B) = 2.5 ug/l
Toluene (T) = 0.65 ug/l
Ethylbenzene (E) = ND (detection limit: 0.5 ug/l)
Xylenes (X) = ND (detection limit: 1.0 ug/l

Boring SB-5

Water: TPH-G = ND (detection limit 50 ug/l)
Benzene (B) = ND (detection limit: 0.5 ug/l)
Toluene (T) = ND (detection limit: 0.5 ug/l)
Ethylbenzene (E) = ND (detection limit: 0.5 ug/l)
Xylenes (X) = ND (detection limit: 1.0 ug/l

In January 2003, the two site USTs were removed by ERAS Environmental, with oversight by Mr. Leroy Griffith of the Oakland Fire Department. Two soil samples and one grab groundwater sample were collected from the 500-gallon Adeline Street UST excavation cavity, and one soil sample was collected from the 350-gallon Magnolia Street UST excavation cavity. Laboratory results from these samples are as follows:

Adeline Street UST

North Soil: TPH-G = ND (DL = 0.5 mg/kg)
BTEX = ND
Lead = 40.3 mg/kg

South Soil: TPH-G = ND (DL = 0.5 mg/kg)
BTEX = ND
Lead = 38.9 mg/kg

Water: TPH-G = 1,170 ug/l
Benzene (B) = 1.9 ug/l
Toluene (T) = 1.7 ug/l
Ethylbenzene (E) = 17.8 ug/l
Xylenes (X) = 4.4 ug/l
Lead = 1,600 ug/l

Magnolia Street UST

Soil: TPH-G = 18.7 mg/kg
Benzene (B) = 0.008 mg/kg
Toluene (T) = 0.134 mg/kg
Ethylbenzene (E) = 0.035 mg/kg
Xylenes (X) = 0.150 mg/kg
Lead = 42.8 mg/kg

Based on results of these investigations, the Alameda County Department of Environmental Health (ACDEH) issued a letter on May 2, 2005 requesting: (1) A copy of the December 2001 Treadwell & Rollo Phase I and 2 Environmental Site Assessment report; and (2) A workplan to conduct additional site characterization at the site. The two key areas of concern to be addressed in the workplan are: (1) The source and extent of HVOC impacts adjacent to Treadwell & Rollo

boring B-2; and (2) The nature and extent of hydrocarbon impacts adjacent to the former 500-gallon Adeline Street UST. The ACDEH letter states that the former 350-gallon Magnolia Street UST was adequately investigated. Note that we discussed the site and ACDEH letter requirements with Mr. Barney Chan of ACDEH. We made clear to Mr. Chan that the Treadwell & Rollo report was strictly a real estate due-diligence document prepared for a prospective purchaser and that, as such, was not available to either us or the County. Also, we discussed possible investigative requirements, and Mr. Chan indicated that a soil boring investigation, rather that installation of permanent groundwater monitoring wells, would be more appropriate for the site at this time.

PROJECT APPROACH

Base on our review of available site documents, it appears that: (1) Fuel hydrocarbon impacts at the site are fairly diffuse and would not seem to pose a significant risk relative to the planned Coast Lofts development; and (2) It seems likely that the chlorinated solvents (HVOC) groundwater impacts beneath the site originated from an offsite upgradient (east-southeast) source.

In order to move this site towards regulatory closure as expeditiously as possible, we recommend a project approach that includes not only soil and groundwater sampling to address specific ACDEH requirements, but also soil gas sampling to assess potential environmental risk associated with the planned Coast Lofts live/work development. If soil gas sampling results indicate no significant risk relative to the planned live/work development, then it may be easier to obtain regulatory site closure, regardless of the soil and groundwater results. The proposed investigation will be conducted using direct-push coring equipment, and soil gas samples will be analyzed using an onsite mobile laboratory.

PROPOSED SCOPE OF WORK

Based on the project approach summarized above, a subsurface soil, groundwater, and soil vapor investigation will be conducted. The purpose of the investigation will include the following:

1. characterize subsurface lithology
2. determine vertical and lateral extent of onsite soil, groundwater, and soil vapor impacts
3. attempt to determine whether or not groundwater HVOC impacts in Treadwell & Rollo boring B-2 originated from an offsite source
4. evaluate risk associated with possible indoor air impacts for the planned residential development.

Prefield Activities

Prior to implementing field activities, soil boring permits will be obtained from Alameda County Department of Public Works and notification will be given at least 72 hours prior to drilling.

Necessary encroachment permits will be obtained for those borings to be drilled on public right-of-ways. In addition, soil boring locations will be marked with white paint and USA will be notified. Finally, a site specific Health and Safety Plan will be issued to all site workers and a tailgate meeting conducted prior to beginning field work

Soil and Groundwater Sampling

Approximately eight soil borings will be drilled to a depth of about 12 feet below surface using direct-push coring equipment (see Figure 3). Four of the soil borings, GA-1 through GA-6, will be located adjacent to, and in an expected downgradient direction from, previous Treadwell & Rollo boring B-2 to assess HVOC groundwater sources and impacts. The remaining two borings, GA-7 and GA-8, will be sited in an expected downgradient (southwest and northwest, respectively) from the former 500-gallon gasoline UST. Each borehole will be logged by a qualified Gribi Associates field scientist in accordance with the Unified Soil Classification System.

At least one soil sample and one grab groundwater sample will be collected from each soil boring. Soil samples will be collected at approximately four-foot depth intervals, or when obviously contaminated soils are encountered. Grab groundwater samples will be collected after placing temporary well casing in the borings. Soil and grab groundwater samples will be collected in accordance with standard sampling protocols.

Prior to boring abandonment, groundwater elevations will be surveyed in the eight soil borings to determine groundwater flow direction. The borings will then be grouted to match existing surface grade using a cement slurry.

Soil Vapor Sampling

Soil vapor sampling will be conducted at eight locations, SG-1 through SG-8, to assess possible indoor air impacts relative to the planned residential development (see Figure 4). Samples SG-1 and SG-2 will be sited in the former Compressor Room, adjacent to Treadwell & Rollo boring B-2, to assess possible impacts from HVOC groundwater impacts. Samples SG-3 and SG-4 will be sited immediately adjacent to the former 500-gallon gasoline UST to assess possible gasoline vapor impacts. Samples SG-5, SG-6, and SG-7 will be sited within the planned residential buildings on the middle of the site, and sample SG-8 will be sited adjacent to the former 350-gallon gasoline UST on Magnolia Street.

Soil vapor sampling and analysis will be conducted by Transglobal Environmental Geochemistry (TEG) under the direction of a Gribi Associates. One soil vapor samples will be collected at each location at a depth of approximately three feet below surface grade. A specialized soil vapor probe will be advanced to the desire depth and then retracted several inches to open expose the subsurface for vapor sampling. A waiting period of approximately 30 minutes will be given to allow time for formational equilibrium. The soil vapor sample system will be purged of

approximately three times the volume of soil vapor prior to sample collection. Soil vapor samples will be collected in a syringe for direct injection and analysis using TEG's DHS certified mobile laboratory. During sampling, TEG will utilize a surrogate chemical to check for possible leaks in the sampling apparatus.

Laboratory Analysis

Approximately eight soil samples and eight grab groundwater samples will be analyzed for the following parameters:

USEPA 8015M Total Petroleum Hydrocarbons ad Gasoline (TPH-G)
USEPA 8020 Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)USEPA 8015M Total Petroleum Hydrocarbons ad Diesel (TPH-D)
USEPA 8260B Halogenated Volatile Organic Compounds (HVOCs)

All samples will be analyzed by a state-certified laboratory with standard turn around on laboratory results.

Soil gas samples will be analyzed by TEG's mobile laboratory for BTEX and HVOC constituents.

Data Evaluation and Reporting

Upon completion of the previously described activities, a summary report will be issued to ACDEH. The report will describe and document the results of the field investigations. The report will also include a site conceptual model (SCM) which will describe subsurface conditions and mechanisms to evaluate contaminant fate and transport, exposure pathway scenarios, and associated risk to potential environmental receptors.

PROJECT SCHEDULE

Subject to your authorization, Gribi Associates is prepared to begin project activities immediately, with completion of proposed field activities within approximately four weeks, and completion of the summary report within approximately six to eight weeks.

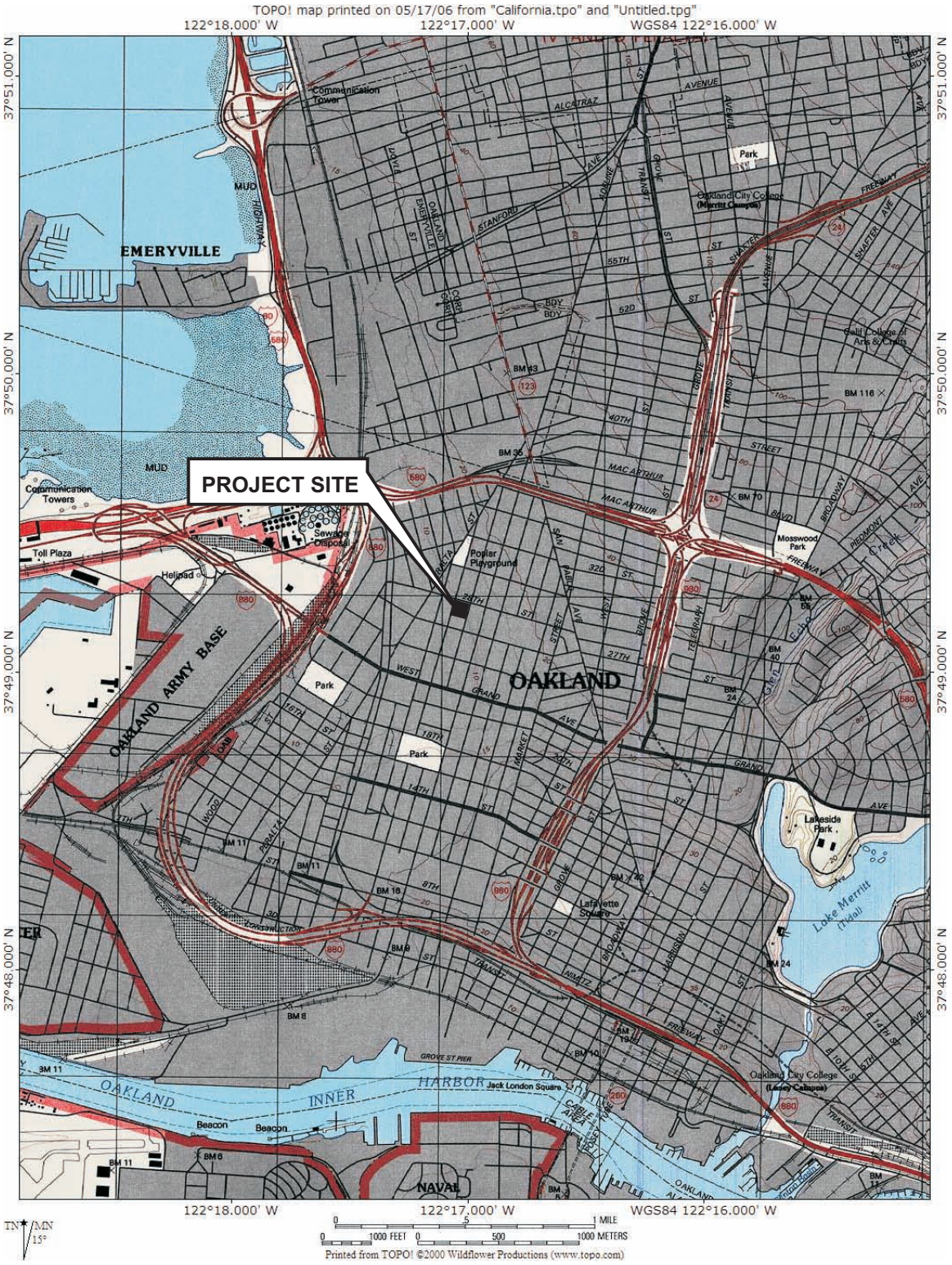
We appreciate the opportunity to present this workplan for your review. Please call if you have questions or require additional information. We look forward to working with you on this important project.

Very truly yours,

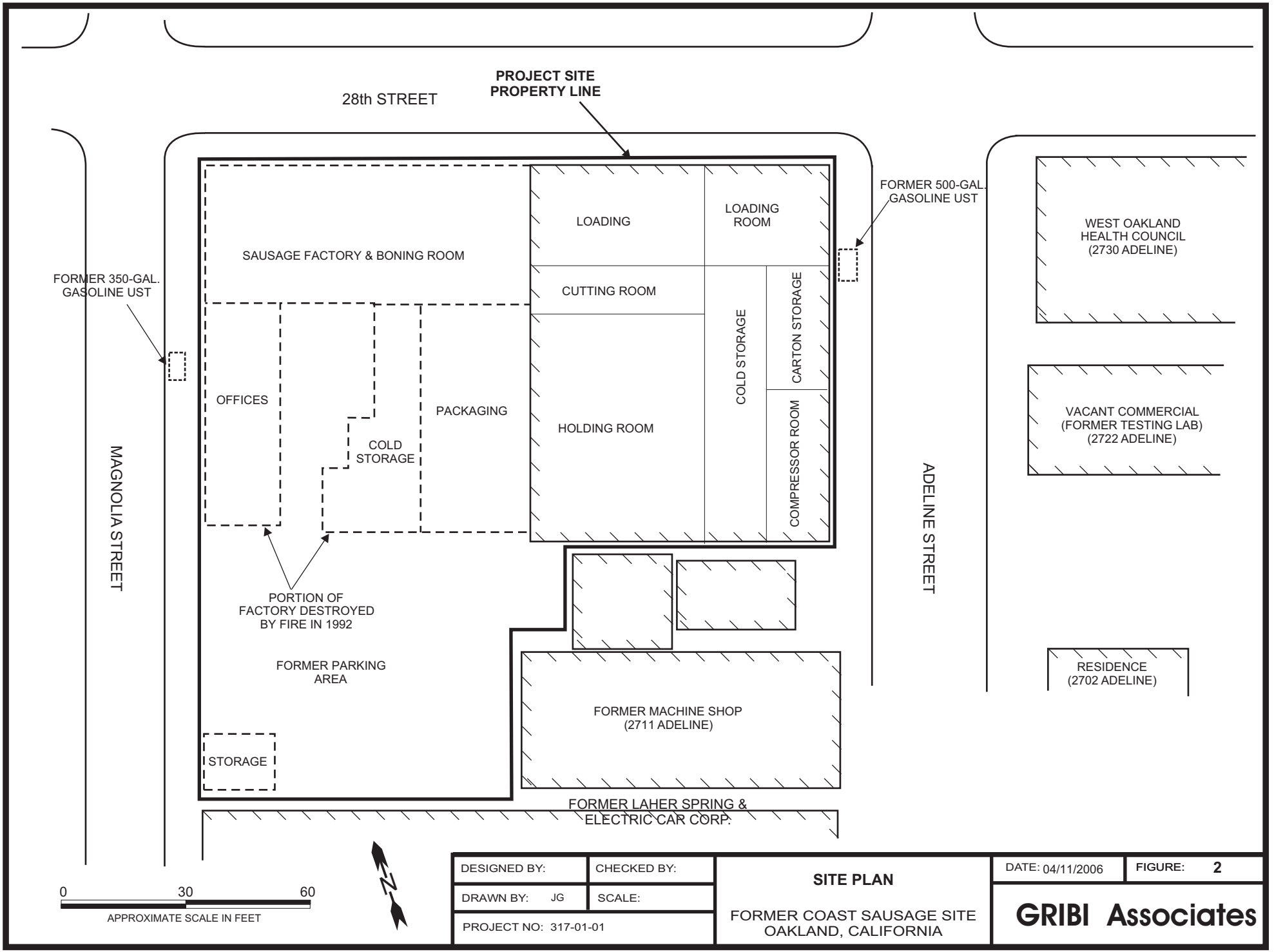
James E. Gribi
Registered Geologist
California No. 5843

JEG/ct
Enclosure

FIGURES



DESIGNED BY:	CHECKED BY:	**SITE VICINITY MAP**	DATE: 04/11/06	FIGURE: **1**
DRAWN BY: JG	SCALE:			
PROJECT NO: 317-01-01		FORMER COAST SAUSAGE SITE OAKLAND, CALIFORNIA	**GRIBI Associates**	



DESIGNED BY:	CHECKED BY:
DRAWN BY: JG	SCALE:
PROJECT NO: 317-01-01	

SITE PLAN

FORMER COAST SAUSAGE SITE
OAKLAND, CALIFORNIA

DATE: 04/11/2006 | FIGURE: 2

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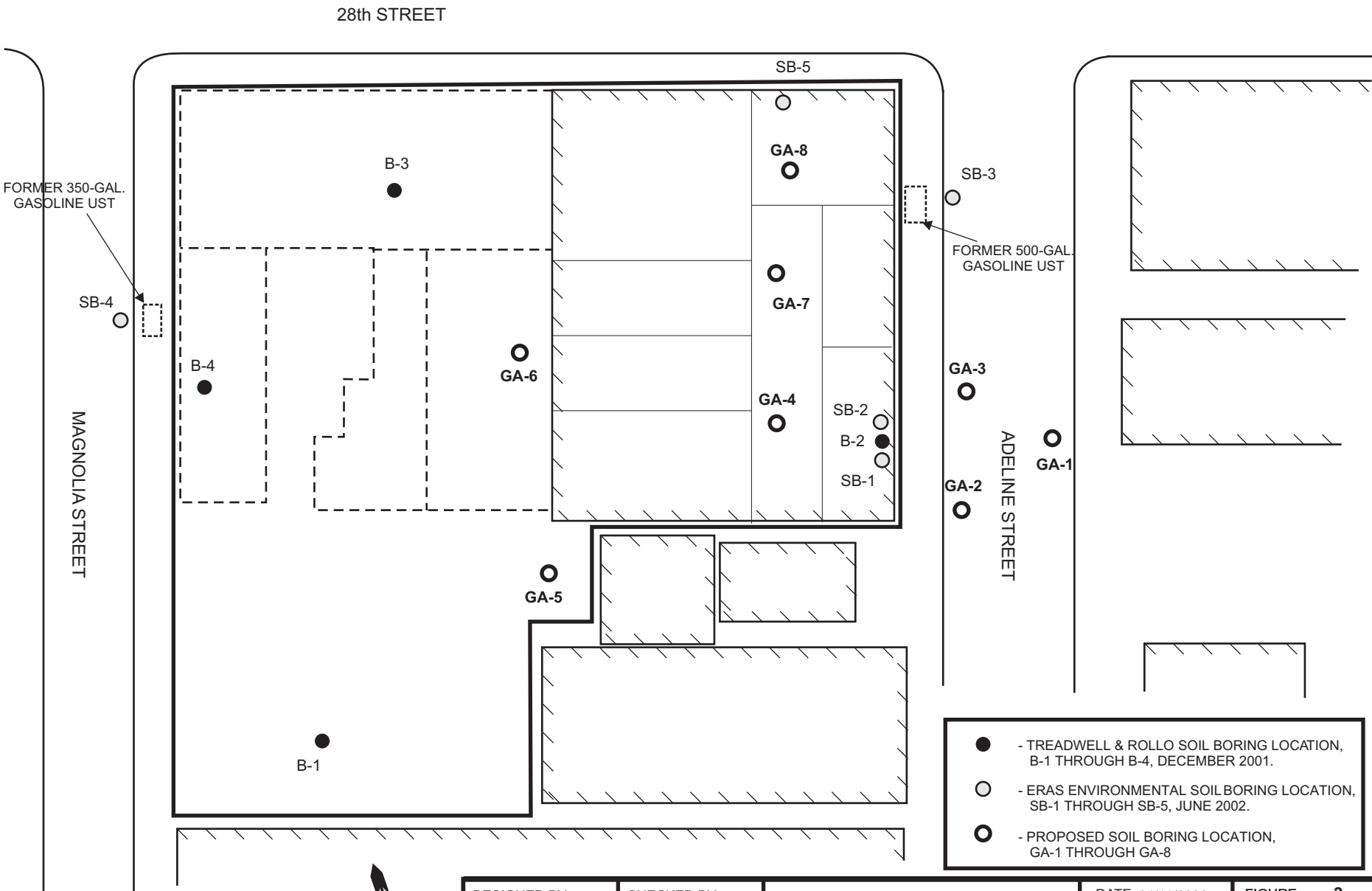

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PROJECT NO: 317-01-01	

PROPOSED SOIL BORING LOCATIONS

FORMER COAST SAUSAGE SITE
OAKLAND, CALIFORNIA

DATE: 04/11/2006 | FIGURE: 3

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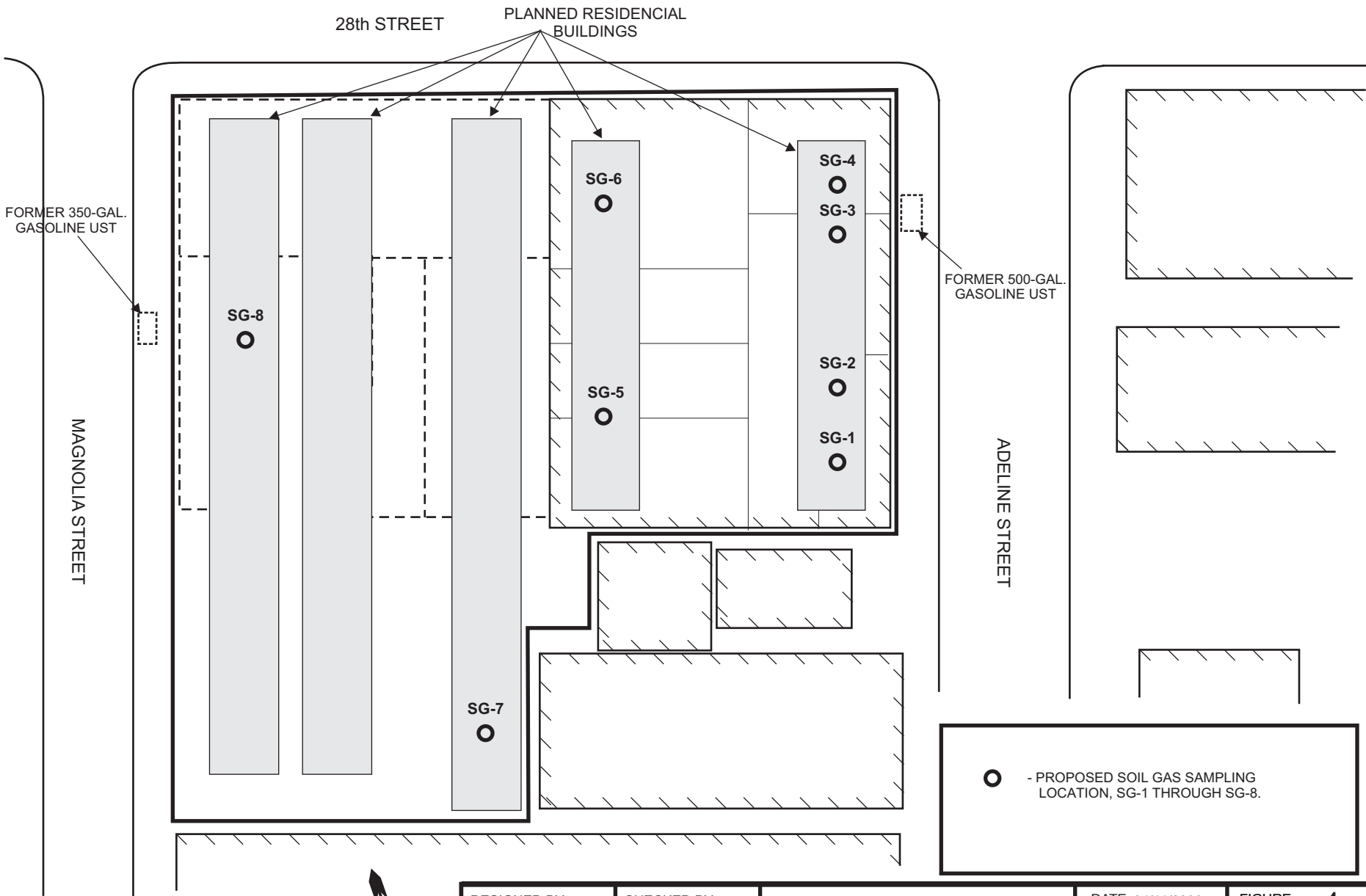

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DRAWN BY: JG	SCALE:
PROJECT NO: 317-01-01	

PROPOSED SOIL GAS SAMPLING LOCATIONS

FORMER COAST SAUSAGE SITE
OAKLAND, CALIFORNIA

DATE: 04/11/2006 | FIGURE: 4

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ATTACHMENT A

FIELD SAMPLING METHODS

Sampling Procedures

Soil and groundwater sampling will be conducted to provide data to evaluate the extent of chemicals in the subsurface at the Site. The samples will be used for chemical analysis. The methodology used for this sampling purpose is discussed in the following section.

Soils may be collected for chemical analysis by directly driving precleaned brass or stainless steel tubes into the soil to assess surface/subsurface level conditions. The samples must completely fill the tubes to minimize headspace and consequent loss of volatile contaminants, if present. These tubes shall be lined with aluminum foil or Teflon, capped with air-tight plastic lids, and taped around the caps to prevent possible moisture and chemical loss. Inert tape will be used to seal the caps of brass tubes containing the soil samples. Disturbed soil samples will be collected in 250-ml jars with taped, airtight lids. Each jar will be completely filled with soil to minimize headspace and consequent loss of volatile contaminants, if present. After being sealed and labeled, soil samples will be maintained placed in an ice chest containing dry ice at a temperature of 4^{o}C or lower.

Groundwater sample collection entails the extraction of the appropriate amount of groundwater from an open borehole or a temporary piezometer using a low production pre-cleaned pump or a hand bailer. The extracted groundwater will then be decanted into appropriate sampling containers depending on the type of analysis to be carried out. The groundwater must completely fill the containers to minimize headspace and consequent loss of volatile contaminants, if present

Both soil and water samples will be placed in an ice chest containing ice and maintained at a temperature of 4^{o}C during delivery to the laboratory and prior to analysis by the laboratory.

Sample Preservation Methods and Containers

Samples will be collected in pre-cleaned brass tubes or groundwater containers. Both tube ends will be lined with aluminum foil or Teflon, capped with air-tight plastic lids, and taped around the caps to prevent possible moisture and chemical loss. Groundwater containers will be sealed so as not to allow escape of any potential VOCs or cross migration. Samples will be placed in a chilled cooler and transported to the laboratory via hand or overnight delivery. The temperature of the samples will be noted on the chain-of-custody form upon receipt at the laboratory. Samples will be analyzed at the laboratory within 14 days.

Documentation

The following information will be entered on the sample collection data form at the time of sampling:

- project name and number
- site location
- sampler's name
- time and date of sampling
- sampling location
- sampling method
- sample number
- sample depth
- sample condition (disturbed/undisturbed)
- laboratory analyses requested

Each sample will be packaged and transported appropriately, as described in the following protocol.

- Collect samples in appropriately-sized and prepared containers
- Properly seal and package sample containers.
- Fill out field sample log and chain-of-custody and analyses request forms.
- Separate and place samples into coolers according to laboratory destination. Samples will be

packaged so that the potential for shipping damage is minimized.

- Chill samples to approximately 4° C or less. Regular dry ice used in the coolers will be sealed in a plastic bag other than the one in which it was purchased.
- Seal the top two copies of the chain-of-custody form inside a zip-lock bag. Use strapping tape to hold the packet on the inside of the cooler.
- Seal cooler with several strips of strapping tape.

Equipment Decontamination

All equipment used for collecting samples during this investigation which might come into contact with contaminated materials will be properly decontaminated before and after each use, and before initial use at the Site. This will be accomplished through steam-cleaning and/or washing with Alconox (a laboratory-grade detergent) and rinsing with deionized, distilled, or fresh water. Decontamination procedures will allow for disposal of cleaning fluids in the manner described below.

Disposal Procedures

The cleaning fluids will be collected and placed into appropriate containers to be analyzed and disposed by an appropriate and licensed firm. The non-hazardous waste, such as cardboard boxes, scrap paper, etc., will be disposed at a Class III landfill.

Sample Custody

In order to check and link each reported datum with its associated sample, sample custody and documentation procedures were established. Three separate, interlinking documentation and custody procedures--for field, office, and laboratory--can be described. The chain-of-custody (COC) forms, which are central to these procedures, are attached to all samples and their associated data throughout the tracking process.

Field Custody Procedures

Field documentation will include sample labels, daily field activities logbook, and chain-of-custody and analyses request forms. These documents will be filled out in indelible ink. Any corrections to the document will be made by drawing a line through the error and entering the correct value without obliterating the original entry. Persons correcting the original document will be expected to initial any changes made. The documents are as follows.

Sample Labels

Labels will be used to identify samples. The label is made of a waterproof material with a water-resistant adhesive. The sample label, to be filled out using waterproof ink, will contain at least the following information: sampler's name; sample number, date, time, location, depth; boring number; and preservative used.

Field Log of Daily Activities

A field log will be used to record daily field activities. The field geologist is responsible for making sure that a copy of the field log is sent to the project file as soon as each sampling round is completed. Field log entries will include the following:

- field worker's name;
- field log number;
- date and time data are entered;
- location of activity;
- personnel present on-site;
- sampling and measurement methods;

- total number of samples collected;
- sample numbers;
- sample distribution (laboratory);
- field observations, comments;
- sample preservation methods used, if any.

Chain-of-Custody (and Analysis Request) Form

The chain-of-custody (COC) form is filled out for groups of samples collected at a given location on a given day. The COC will be filled out in quadruplicate for, and will accompany, every shipment of samples to the respective analytical laboratories.

Two copies (white and green copies) accompany the samples to the analytical laboratory. The yellow copy is kept in the Applied Remedial Service's QA/QC file, while the pink copy is retained for the sampler's record. The COC makes provision for documenting sample integrity and the identity of any persons involved in sample transfer. Other information entered on the COC includes:

- project name and number;
- field logbook number;
- COC serial number;
- project location;
- sample number;
- sampler's/recorder's signature;
- date and time of collection;
- collection location;
- sample type;
- number of sample containers for each sample;
- analyses requested;
- results of laboratory's inspection of the condition of each sample and the presence of headspace, upon receipt by the laboratory;
- inclusive dates of possession;
- name of person receiving the sample;
- laboratory sample number;
- date of sample receipt;
- address of analytical laboratory; and
- temperature of sample upon receipt at laboratory.