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Alameda County
Environmental Health

August 15, 2011

Ms. Barbara Jakub
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Work Plan

Dear Ms. Jakub:

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,

Jimmy Koo

Enclosure: Work Plan

ICES
Innovative & Creative Environmental Solutions

August 8, 2011 ICES 7016

Ms. Barbara Jakub
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Work Plan
Sunny Piedmont Cleaners
Oakland, California

Dear Barbara:

Enclosed is the Work Plan for the proposed soil remedial activities at the Sunny Piedmont Cleaners located at 4364 Piedmont Avenue in Oakland, California ("the Site").

The purpose of the soil remedial activities is to remove soil containing elevated concentrations of tetrachlorethene which were identified in a previous site investigation.

If you have any questions or comments concerning this Work Plan, please do not hesitate to contact Derek Wong or me.

Sincerely,

Peng Leong, P.E.
Principal Engineer

Enclosure

cc: Mr. Jimmy Koo, Sunny Piedmont Cleaners

Tel (510) 652-3222
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3300 Powell Street
Suite #109
Emeryville, CA
94608

WORK PLAN

SUNNY PIEDMONT CLEANERS
OAKLAND, CALIFORNIA

August 8, 2011

ICES 7016

Prepared for

Mr. Jimmy Koo
Sunny Piedmont Cleaners
4364 Piedmont Avenue
Oakland, California 94611

Innovative & Creative Environmental Solutions

3300 Powell Street, Suite #109 Emeryville CA 94608
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WORK PLAN

SUNNY PIEDMONT CLEANERS
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

At the request of Mr. Jimmy Koo of Sunny Piedmont Cleaners ("the Client"), Innovative and Creative Environmental Solutions (ICES) has prepared this Work Plan for the proposed soil remedial activities at the Sunny Piedmont Cleaners located at 4364 Piedmont Avenue in Oakland, California ("the Site"; Figure 1).

Remedial activities will be implemented to remove soil containing elevated concentrations of tetrachloroethene (PCE) which were identified in a previous site investigation. The soil remedial cleanup level for the Site is a PCE concentration of 0.70 mg/kg (Table 1). Alameda County Environmental Health (ACEH) will provide oversight for the soil remedial activities.

2.0 SITE DESCRIPTION

The Site is located on the west side of Piedmont Avenue, between Brandon Street and Gleneden Avenue, within the city limits of Oakland in a residential and commercial/industrial area of Alameda County, California. The Site is sandwiched between Verozin Wireless to the west and Honey Baked Ham and a packaging store to the east within a rectangular building. An asphalt-paved parking area adjoins the Site to the south. Sunny Piedmont Cleaners, a dry cleaner, is the current tenant at the Site.

3.0 BACKGROUND

Nova Consulting Group, Inc. (Nova) of San Francisco, California completed a Phase I Environmental Site Assessment (ESA) at the Site in April 2009. The ESA reported that dry cleaning operations using PCE and petroleum based cleaners had been conducted at

the Site since 1984, a period of approximately 26 years.

A Phase II Site Investigation was conducted by Nova in June 2009. The objective of the investigation activities was to evaluate the shallow soil at the Site for the potential presence of contamination associated with the on-site dry cleaning operations. Five soil samples were collected from five soil boring locations at depths ranging from 4 to 20 feet below the existing ground surface (bgs) using a hand auger and geoprobe. The soil samples were analyzed for total petroleum hydrocarbons (TPH) as mineral spirits (TPHms) and volatile organic compounds (VOCs). Analysis of the soil samples indicated TPHms and VOC concentrations were generally below the Regional Water Quality Control Board's Environmental Screening Levels (ESLs, where groundwater is a current or potential source of drinking water) for commercial/industrial landuse with the exception of PCE. The PCE concentration contained in sample HAB-2 collected at a depth of approximately 4 feet bgs (located adjacent to the dry cleaning machine at the northern portion of the Site) of 11 mg/kg exceeded the commercial/industrial ESL of 0.70 mg/kg. The four remaining soil samples contained PCE concentrations below the commercial/industrial ESL. Based on the findings of the investigation, it appeared that a very localized dry cleaning solvent release to the subsurface sediments beneath the northern portion of the Site had occurred.

ICES conducted a supplementary site characterization in June/July 2010. The purpose of the supplementary site characterization activities was to establish the lateral and vertical extent of VOCs encountered in the surficial soil at the Site that were identified from the previous site investigation. Soil samples were collected from three onsite borings (B-1 through B-3). A grab groundwater sample was also collected from boring B-3. Boring B-1 was located adjacent to the dry cleaning machines at the northern portion of the Site (in the immediate vicinity of boring HAB-2); boring B-2 was located adjacent to the sanitary sewer line and floor drain at the northern portion of the building, west of the dry cleaning machines; and boring B-3 was located along the western perimeter of the building. An angled boring was drilled at boring B-3 to gain access to the groundwater beneath the dry cleaning machines. Laboratory analytical results of the soil samples indicated VOC concentrations below their respective commercial/industrial ESLs. VOC concentrations contained in the grab groundwater sample collected from boring B-3 were below their respective ESLs.

Based on the laboratory analytical results of the Phase II Site Investigation and supplementary site characterization activities, it appeared that the underlying sediments containing PCE levels exceeding the ESL was confined to the immediate vicinity of the dry cleaning machines and extended to a maximum depth of approximately 5 feet bgs.

4.0 CONDUIT STUDY

At the request of ACEH, a conduit study and well survey was completed for the Site in July/August 2011. Cruz Brothers of Scotts Valley and Underground Services Alert were contacted to assist in identifying and locating subsurface utilities within the Site, the sidewalk area along Piedmont Avenue (north of and adjacent to the Site), and in Piedmont Avenue. Figure 2 presents the findings of the utility survey showing the approximate location of utilities.

Review of the City of Oakland Sanitary Sewer maps and a visual inspection of the sanitary sewer alignment within the site and in the adjacent street (Piedmont Avenue) indicated that the sanitary sewer runs south to north within the building to a tie-in at Piedmont Avenue, to the north. Water, gas, and electrical lines were aboveground and overhead within the building.

A review of the State of California Department of Water Resources (DWR) database and the Alameda County Public Works Agency database indicated that there are two wells located within a 1,000-foot radius of the Site, five wells located just over 1,500 feet from the Site; and 56 wells located over 2,000 feet from the Site. A summary of the well survey is included in Appendix A.

5.0 SUPPLEMENTARY ASSESSMENT AND INVESTIGATION

A supplementary assessment and investigation in the vicinity of the sanitary sewer alignment will be conducted to assess the potential migration of PCE. Soil samples will be collected from boring, B-4, which will be located along the sanitary sewer alignment at the northern portion of the Site and approximately 35 feet north of boring B-2 (Figure 2).

Soil samples will be collected from boring B-4 starting at a depth of approximately 1 foot below the sanitary sewer line (approximately 4 feet bgs) and at a depth of approximately 10 feet bgs. Soil samples will also be collected at lithologic changes and at areas of soil contamination from the boring. The soil samples will be screened using a portable photoionization detector. A limited access direct push rig will be used to collect the soil samples from the boring.

The soil samples will be stored in a chilled cooler containing crushed ice for delivery to the laboratory. Strict chain-of-custody protocols will be followed in all phases of sample handling. All equipment used during the investigation which comes into contact with affected material will be thoroughly decontaminated before and after each use. This will be accomplished by washing with Alconox (a laboratory-grade detergent) and rinsing with deionized, distilled, or fresh water. The borehole will be

backfilled with neat cement grout upon completion of the soil sampling activities. The neat cement will be tremied from the bottom of the borehole to the top of the borehole.

The soil samples will be sent to a state-certified laboratory and selectively analyzed for VOCs using EPA Method 8260B on a normal one-week turnaround basis. At a minimum, soil samples collected from boring B-4 at a depth of approximately 5 feet bgs and at areas of obvious contamination zones will be analyzed for VOCs. In the event the soil sample collected at 5 feet bgs from boring B-4 contains detectable VOC compounds, the corresponding deeper sample will be analyzed.

6.0 REMEDIAL ACTIVITIES

The remedial activities are focused on removing the impacted soil encountered at boring HAB-2 which contained elevated concentrations of PCE. The proposed remedial activities at the Site will consist of the following tasks:

Task 1: Site Health and Safety Plan
Task 2: Dust Control Measures
Task 3: Site Preparation
Task 4: Soil Removal
Task 5: Soil Disposal
Task 6: Soil Vapor Survey
Task 7: Laboratory Analyses
Task 8: Remedial Report

These tasks are described in detail below:

6.1 Site Health and Safety Plan (HSP)

In accordance with Occupational Safety and Health Administration guidelines, the ICES Health and Safety Officer will develop a HSP. The HSP will include an analysis of potential hazards encountered by onsite workers conducting the proposed work, precautions to mitigate the identified hazards, and procedures to reduce the potential for offsite migration of contaminants during remedial activities.

The health and safety measures presented in the HSP will be implemented during remedial activities.

6.2 Dust Control Measures

The area to be excavated will initially be moisture-conditioned. The work area will

also be lightly sprinkled during excavation activities (if required) to minimize airborne dust. Dust control measures will be increased (more frequent wetting and sprinkling) during the movement of dry materials and/or observation of visible dust. The remedial activities at the Site will be temporarily halted in the event soil wetting is not effective in minimizing airborne dust.

6.3 Site Preparation

Site preparation will include marking the approximate limits of the PCE-affected soil (Figure 2) and prewetting the excavation area.

The PCE-affected soil will be profiled with an appropriate licensed disposal facility using laboratory results of the previous soil samples. Profiling and acceptance of the PCE-affected soil prior to excavation activities are necessary to expedite soil removal.

6.4 Soil Removal

Soil removal will be performed manually using shovels and wheel barrows. The excavated soil will be placed in a covered roll-off bin or 55-gallon drums for offsite disposal.

When the excavation approaches the marked limits, excavation sidewall and floor samples will be collected. One sidewall sample will be collected at approximately every 10-linear foot interval. One floor sample will be collected at approximately every 100 square feet of excavation floor area (equivalent to a square measuring approximately 10 feet by 10 feet). At a minimum approximately 5 confirmation samples: 4 sidewall samples and one floor sample will be collected from the excavation. Soil sampling procedures presented in Appendix B will be followed.

Excavation activities will cease when soil samples collected from the sidewalls and floor of the excavation contain residual PCE concentrations below the remedial goal. Additional excavation and resampling will be performed at locations where PCE concentrations exceed the remedial goal.

6.5 Soil Disposal

The PCE-affected soil will be transported to a licensed disposal facility. A waste manifest will be prepared for the disposal of the PCE-affected soil.

6.6 Soil Vapor Survey

The purpose of the soil vapor sampling will be to assess the effectiveness of the soil

remedial activities and to evaluate the potential for vapor intrusion into the work space within the Site. A sub-slab soil vapor sample will be collected from one onsite boring (SV-1) located at the eastern portion of the Site using a power probe (Figure 3). Once inserted to the desired depth, the probe will be retracted slightly, which opens the tip and exposes the vapor sampling port. Soil vapor will be withdrawn from the 1/8 inch nylaflow tubing, located down the center of the probe, using a small calibrated syringe connected via an on-off valve.

The soil gas sample will be collected in a 1-liter SUMMA canister provided by McCampbell Analytical Inc. (McCampbell) of Pittsburg, California, a state-certified laboratory. McCampbell will subject the canister to a rigorous chemical cleaning and electropolishing process to render the interior inactive to organic compounds prior to delivery. The SUMMA canister will be fitted with a stainless steel flow controller, which McCampbell will calibrate to maintain a flow rate of no more than 200 milliliters per minute.

The soil probe will be allowed to equilibrate for at least 45 minutes after installation prior to sampling. After equilibration, the sampling end of the tubing will be fitted to the SUMMA canister sampling port and the port valve will be opened, allowing air to enter the sample container due to the pressure differential. The port valve will be closed upon the collection of a sufficient sample. The SUMMA canister will be labeled for identification and stored away from direct sunlight prior to analysis.

All equipment used during this investigation which comes into contact with the affected material will be thoroughly decontaminated before and after each use. This will be accomplished by washing with Alconox (a laboratory-grade detergent) and rinsing with deionized, distilled, or fresh water.

The borehole will be backfilled with neat cement grout upon completion of soil vapor sampling activities. The neat cement will be tremied from the bottom of the borehole to the ground surface.

6.7 Laboratory Analyses

The soil and soil vapor samples will be sent to McCampbell and analyzed for VOCs using EPA Method 8260/TO-15. The samples will be analyzed on a normal one-week turnaround basis.

6.8 Remedial Report

This task will include evaluating the field and laboratory analytical data. A written report will be prepared following completion of the remedial activities. The Remedial Report will present:

1. field activities associated with excavation and disposal of the PCE-affected soil;
2. sample collection;
3. soil and soil vapor sample results;
4. documentation of sample transfer under chain-of-custody protocol, and soil transportation and disposal; and
5. conclusions regarding the remedial activities.

This report will be submitted to ACEH approximately 30 days following completion of the field activities and receipt of laboratory analytical results.

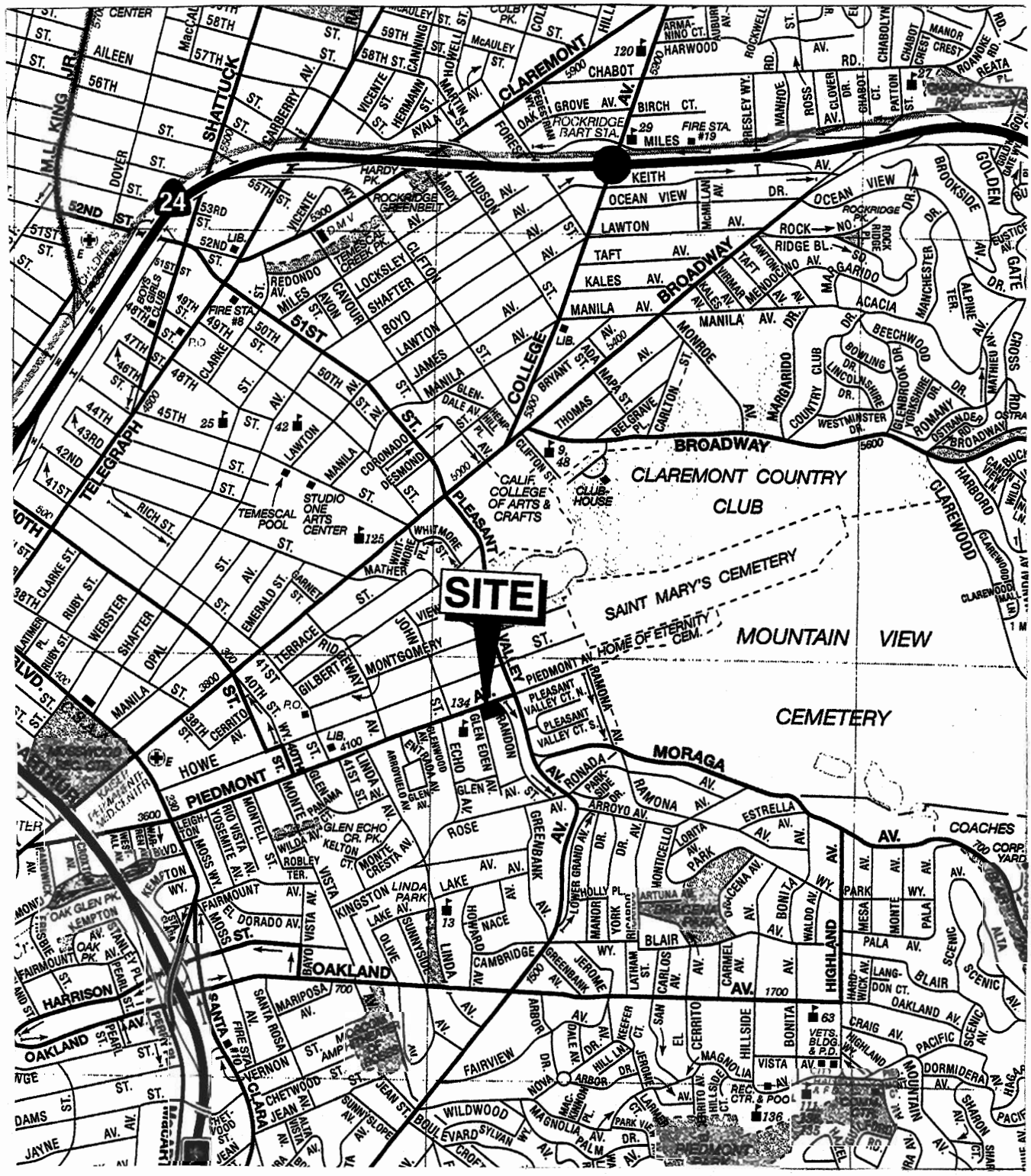
TABLE 1

REMEDIAL GOALS

Sunny Piedmont Cleaners
Oakland, California

Analyte	Soil (mg/kg)
PCE	0.70 (1)

Note:
1. Soil remedial goal is based on RWQCB's commercial/industrial ESL where groundwater is a current or potential source of drinking water.



MAP SOURCE : AAA

Scale: 1" : 1100'	August 2011

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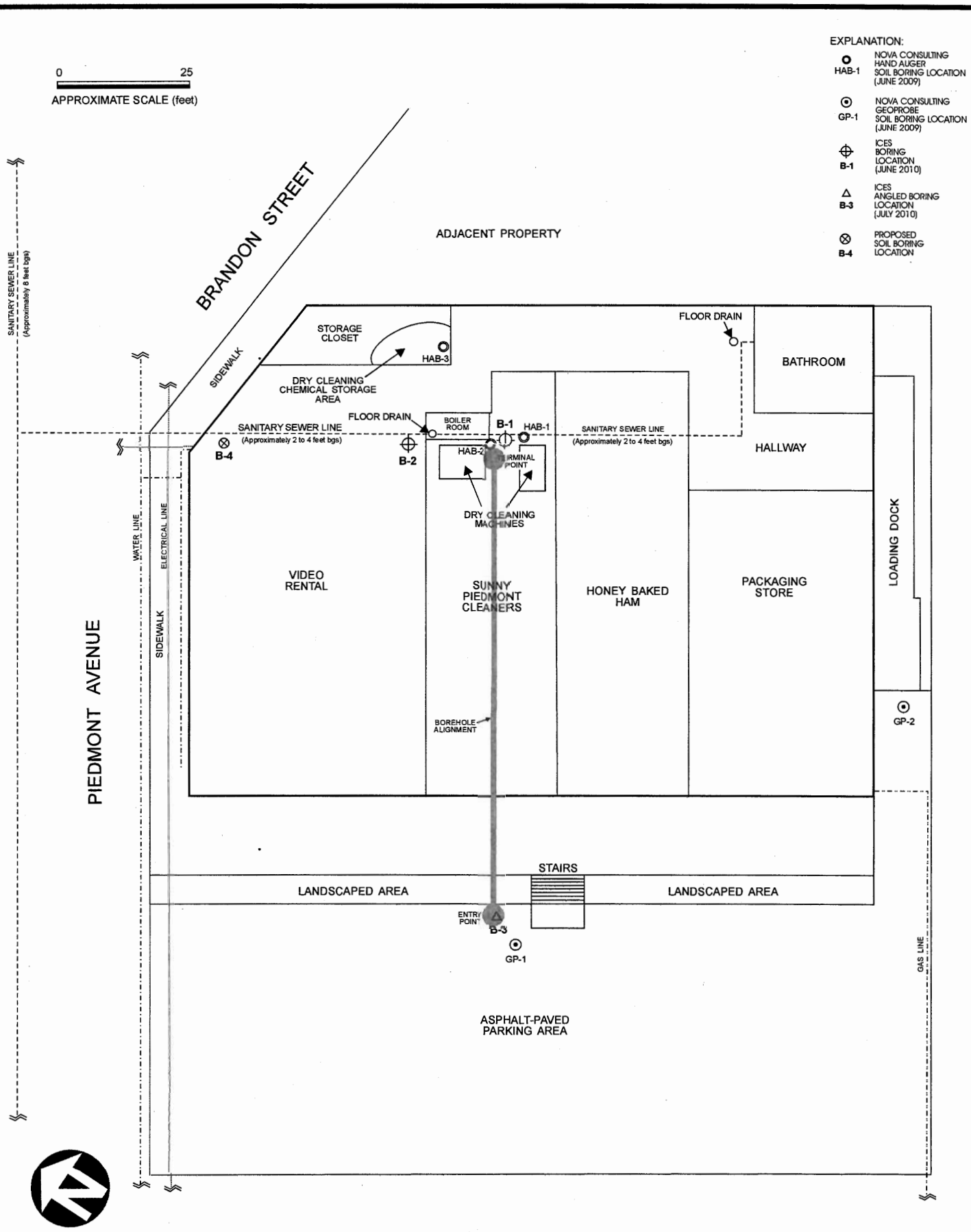
SITE LOCATION

Sunny Piedmont Cleaners
Oakland, California

Figure 1

Project 7016



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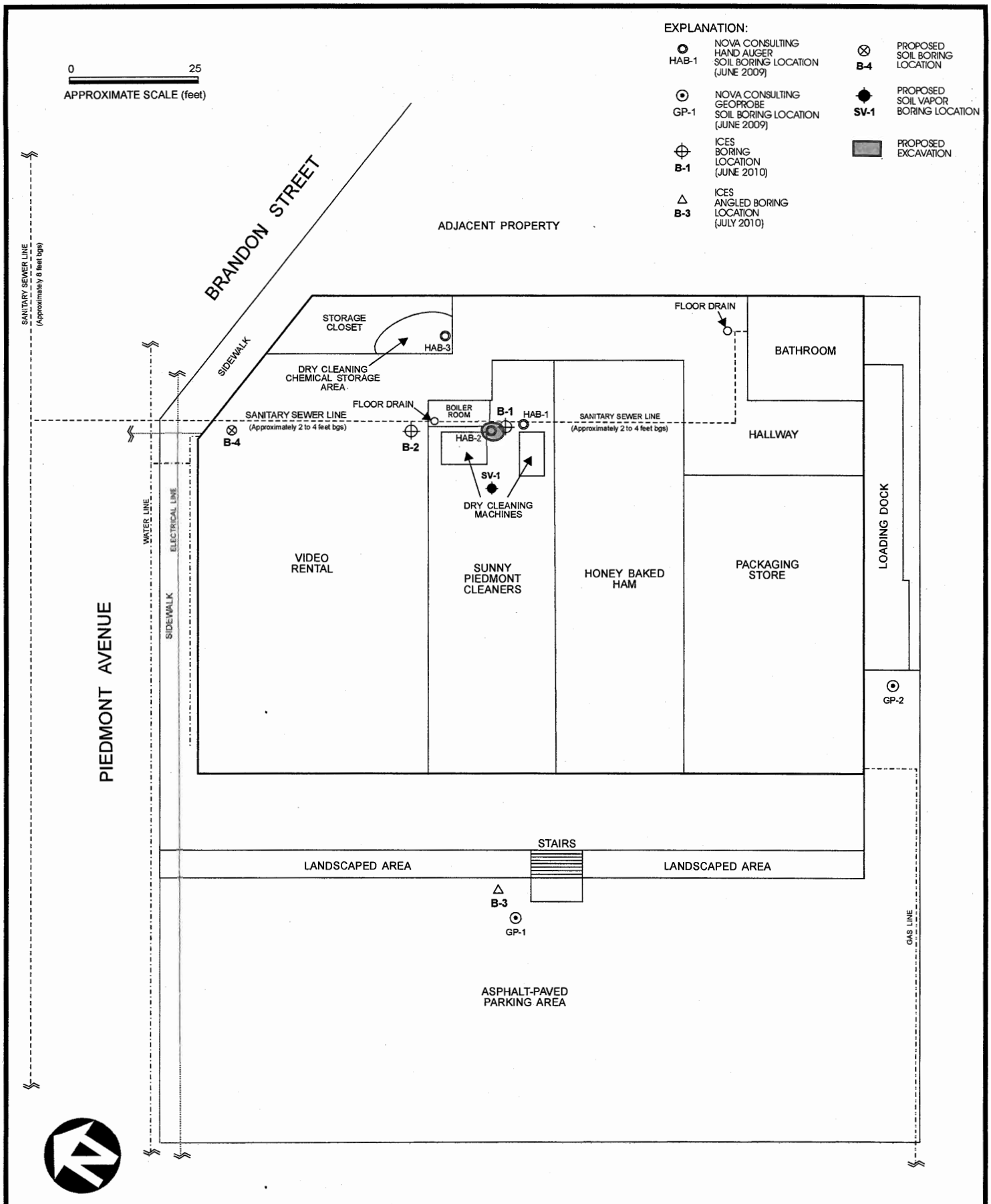
SITE PLAN

Sunny Piedmont Cleaners
Oakland, California

Figure 2

Project 7016



August 2011

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PROPOSED EXCAVATION

Sunny Piedmont Cleaners
Oakland, California

Figure 3

Project 7016

APPENDIX A

WELL SURVEY SUMMARY

WELL SURVEY SUMMARY
Sunny Piedmont Cleaners
Oakland, California

Site Location	# of Wells	Distance From Site (feet)	Direction from Site
Kaiser Hospital (East Broadway)	6	>2,000	SW
3505 Broadway	6	>2,000	SW
3701 Broadway	4	>2,000	SW
3785 Broadway	1	>2,000	SW
3810 Broadway	2	>2,000	SW
3943 Broadway	13	>2,000	SW
5175 Broadway	5	>2,000	NW
411 W. MacArthur Boulevard	6	>2,000	S
230 MacArthur Boulevard	4	>2,000	S
3701 MacArthur Boulevard	2	>2,000	SE
49th Street/Webster Street	1	>2,000	NW
Moutell Street/Robley Terrace	1	>2,000	NE
125 Hillside Avenue	1	>2,000	NE
Ricardo Avenue/Artuna Avenue	2	>2,000	E
Grand Avenue/Holly Place	2	>2,000	E
175 41st Street	3	>1,500	SW
14 Glen Avenue	1	>1,500	SW
4082 Piedmont Avenue	1	>1,500	SW
5000 Piedmont Avenue	2	1,000	N

APPENDIX B

SAMPLING PROCEDURES

ICES

SAMPLING PROCEDURES

SUNNY PIEDMONT CLEANERS
OAKLAND, CALIFORNIA

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

Soil Sampling

Soil 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. 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 at a temperature of 4°C or lower using crushed ice during delivery to the laboratory and prior to analysis by the laboratory. Samples will be analyzed at the laboratory within specific holding times.

Documentation

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

- project name and number
- sampler's name
- time and date of sampling
- sampling location
- sampling method
- sample number
- 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 COC 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. Crushed ice used in the coolers will be sealed in a plastic bag other than the one in which it was purchased.
- Seal a copy of the COC 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.

DECONTAMINATION PROCEDURES

Equipment Decontamination

All equipment used for collecting samples during this investigation which might come into contact with contaminated material will be properly decontaminated before and after each use, and before initial use at the Site. This will be accomplished by washing with Alconox (a laboratory-grade detergent) and triple 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 a licensed recycling facility. 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 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 COC 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, and preservative used.

Field Log of Daily Activities

A field log will be used to record daily field activities. The project manager 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;
- date and time data is 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 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 duplicate form, and will accompany, every shipment of samples to the respective analytical laboratories.

One copy will accompany the samples to the analytical laboratory. The second copy is kept in the ICES QA/QC file. 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;
- 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; and
- address of analytical laboratory.