

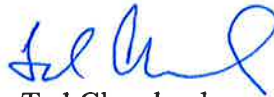
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By Alameda County Environmental Health 10:13 am, Oct 28, 2015

Perjury Statement

Subject: Fuel Lake Case No. Ro0002981 and Geotracker Global ID T1000000416, Red Hanger Cleaners, 6335-6339 College Ave., Oakland CA 94618

“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.”



Ted Cleveland
Vice President, Operations
EFI Global, Inc.

P&D ENVIRONMENTAL, INC.

55 Santa Clara Avenue, Suite 240

Oakland, CA 94610

(510) 658-6916

October 16, 2015

Work Plan 0461.W1

Mr. Keith Nowell

Alameda County Environmental Health

1131 Harbor Bay Parkway, Suite 250

Alameda, CA 94502

SUBJECT: SOIL GAS INVESTIGATION WORK PLAN
ACEH Case # RO2981
Red Hanger Kleeners
6235-6239 College Avenue
Oakland, CA

Dear Mr. Nowell:

P&D Environmental, Inc. (P&D) has prepared this soil gas investigation work plan on behalf of the property owner Ronald Elvidge and EFI Global, Inc. (EFI) in an effort to define the extent of former dry cleaning chemical-related Halogenated Volatile Organic Compound (HVOC) soil gas concentrations exceeding applicable screening levels; evaluate potential vapor intrusion at structures located near the subject site; and to gather information for development of a remedial solution to address vapor intrusion of HVOCs at the site. The work scope includes construction and sampling of eight permanent soil gas wells to a depth of 7 feet below the ground surface (bgs) and six permanent soil gas wells to a depth of 17 feet bgs.

A Site Location Map is attached as Figure 1, a Site Vicinity Aerial Photograph showing the subject site property boundary and the locations of nearby buildings is attached as Figure 2, a Site Vicinity Aerial Photograph Detail showing addresses for adjacent buildings is attached as Figure 3, and a Site Plan showing historical soil gas sample collection locations and proposed soil gas well locations is attached as Figure 6. All work will be performed under the direct supervision of a California professional geologist.

BACKGROUND

It is P&D's understanding that the former Red Hanger Kleeners store (also identified in various reports as Red Hanger Cleaners) occupied the ground floor of the subject site building at 6235–6239 College Avenue in Oakland, California from 1987 until 2015 (approximately 28 years), and that the Red Hanger Kleeners business vacated the premises in 2015. The second building to the north at 6251-6255 College Avenue (located at the corner of College Avenue and 63rd Street, see Figures 2 and 3) was reported to have been occupied by dry cleaner stores from 1953 to 1987 (approximately 34 years) with Red Hanger Kleeners identified at this location from either 1970 or 1982

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to 1987. It is unknown when the dry cleaning operations began utilizing tetrachloroethene (PCE) as the dry cleaning solvent. However, it is P&D's understanding that review of Hazardous Materials Business Plans for 6239 College Avenue from April 1991 through March 2007 identified the presence of PCE at the site as early as April 1991 and as late as March 2007.

Historical investigations at the subject site have detected PCE in soil, groundwater, soil gas, and indoor air. Trichloroethene (TCE) has only been detected in indoor air at the site. A complete discussion of the historical dry cleaner operations and historical investigations of the property is provided in the July 27, 2015 Youngdahl Consulting Group, Inc. (Youngdahl) Phase II Environmental Site Assessment Soil Gas Investigation Report for the subject site (identified in the report title as located at 6335-6339 College Avenue). A site conceptual model is also provided in the October 21, 2014 Youngdahl Phase II Environmental Site Assessment Soil Gas Investigation Work Plan for the subject site.

Historical site investigations involving sample collection are summarized as follows.

AEI Consultants 2005 – Drilled boreholes SB1 through SB4 on May 3, 2005 using Geoprobe technology and collected one soil sample from each borehole and one groundwater grab sample from borehole SB1. All of the boreholes were drilled to a depth of 12 feet bgs with the exception of SB1, which was drilled to a depth of 26 feet bgs. Groundwater was encountered during drilling at a depth of 17.5 feet bgs and was subsequently measured after 5 minutes at a depth of 15.8 feet bgs.

EFI 2006 – Drilled borehole SB-6 to a depth of 20 feet bgs on June 28, 2005 using Geoprobe technology and collected one groundwater grab sample. Groundwater was encountered at a depth of 16 feet bgs and stabilized at a depth of approximately 16 feet bgs.

P&D 2008 – Drilled boreholes B7 and B8 on August 14, 2008 using Geoprobe technology and collected one soil sample and one groundwater sample from each borehole. Each of the boreholes was drilled to a depth of 24 feet bgs, and groundwater was encountered at depths of 21.3 and 22.6 feet bgs, and was measured at depths of 22.3 and 21.2 feet bgs prior to groundwater sample collection.

ERM West, Inc. 2009 - Drilled boreholes A-1, AD-3 and AUST-6 on October 11 and borehole A-2 on December 5, 2009 using Geoprobe technology and collected soil samples from all of the boreholes and groundwater samples from boreholes A-1, AD-3 and AUST-6. Borehole AUST-6 was drilled to investigate reports of a former fuel UST at the site. All of the boreholes were drilled to a depth of 35 feet bgs with the exception of borehole A-2 which was drilled to a depth of 30 feet bgs. A Hydropunch was driven into the bottom of borehole A-2 to a depth of 35 feet bgs and the rods were then retracted to expose the Hydropunch screen to a depth of 31 feet bgs. Groundwater was reported in boreholes A-1, AD-3 and AUST-6 at a depth of 35 feet bgs, and was subsequently

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measured in these boreholes at a depth of approximately 22 feet bgs. Groundwater was not encountered in borehole A-2.

Youngdahl 2015 – Collected soil gas samples SV1 through SV11 at a depth of 4 or 5 feet bgs on March 11, 2015 from temporary soil gas sampling locations and sub-slab soil gas samples SS1 through SS3 on March 11, 2015. No groundwater was encountered in any of the boreholes. The sample results were provided in a July 27, 2015 report that was re-issued on August 25, 2015.

SCS Engineers 2015 – Collected air samples during an 8-hour period at five indoor locations and two locations outside of the building on May 29, 2015. The sample results were included as an Appendix of the Youngdahl July 27, 2015 report that was re-issued on August 25, 2015.

Historical soil sample results are summarized in Table 1, historical groundwater sample results are summarized in Table 2, historical soil gas and sub-slab soil gas sample results are summarized in Table 3, and historical air sample results are summarized in Table 4.

Historical soil sample results are shown in Figure 4, historical groundwater sample results are shown in Figure 5, and historical soil gas sample results are shown in Figure 6 along with proposed soil gas well locations. Floor plans showing approximate air sample collection locations are provided as Figures 7, 8, 9, and 10.

Review of boring logs for historical boreholes at the site shows that the subsurface materials beneath the west end of the Red Hanger Kleanners store where the dry cleaning machines were located consists predominantly of silty clay to a depth of approximately 12 to 14 feet bgs, beneath which the subsurface materials consist predominantly of clayey silt and silt with layers of gravelly silty sand or sandy gravelly silt of variable thickness to the total depth explored of 35 feet bgs. To the north of the Red Hanger Kleanners building the subsurface materials consist predominantly of layers of silty clay and silt, with layers of gravelly silty sand or sandy gravelly silt of variable thickness to the total depth explored of 35 feet bgs. At one borehole located immediately downgradient of the former Kay's Cleaners a gravelly silty sand layer measuring approximately 10 feet in thickness was encountered between the depths of approximately 12 and 22 feet bgs.

Groundwater was encountered at the site by AEI in May 2005 in borehole SB1 during drilling at a depth of 17.5 feet bgs and was subsequently measured after 5 minutes at a depth of 15.8 feet bgs; and by P&D in August 2008 in boreholes B7 and B8 at depths of 21.3 and 22.6 feet bgs, and was subsequently measured at depths of 22.3 and 21.2 feet bgs prior to groundwater sample collection. Groundwater was encountered at the site in October 2009 by ERM in boreholes A-1, AD-3 and AUST-6 during drilling at a depth of 35 feet bgs, and was subsequently measured in these boreholes at a depth of approximately 22 feet bgs. Groundwater was not encountered in borehole A-2.

Groundwater has historically been encountered at depths of approximately 22 feet bgs or greater with the exception of borehole SB1, where groundwater was encountered during

drilling at a depth of 17.5 feet bgs and was subsequently measured after 5 minutes at a depth of 15.8 feet bgs.

SCOPE OF WORK

The following activities will be performed for soil gas well installation and soil gas sample collection.

- Permitting, mark drilling locations for Underground Service Alert notification and prepare a health and safety plan.
- Oversee installation of permanent soil gas wells and collect soil gas samples at 8 locations to a depth of 7 feet bgs designated as SG1-7, SG2-7, SG4-7 through SG8-7, and SG10-7, and at 6 locations to a depth of 17 feet bgs designated as SG2-17, SG3-17, SG5-17, SG6-17, SG7-17 and SG9-17.
- Oversee Vapor Pin installation and collect soil a sub-slab soil gas sample at one location designated as VP1.
- Arrange for sample analysis.
- Report preparation.

Each of these is discussed below.

Permitting, Mark Drilling Locations, and Health and Safety Plan Preparation

Following oversight agency approval of this work plan, permits will be obtained for soil gas well installation from the Alameda County Public Works Department, site access will be scheduled with the property manager, and the driller will be scheduled for permanent soil gas well installation. The drilling locations will be marked with white paint and Underground Service Alert will be notified for underground utility location. A health and safety plan will be prepared for the scope of work identified in this work plan. Notification will be provided to the Alameda County Department of Environmental Health (ACDEH) of the scheduled dates of soil gas well installation and sampling.

Soil Gas Well Construction and Sample Collection

Permanent soil gas wells will be constructed at proposed locations SG1-7, SG2-7, SG4-7 through SG8-7, SG10-7, SG2-17, SG3-17, SG5-17, SG6-17, SG7-17 and SG9-17 (see Figure 6) to evaluate the extent and presence of HVOCs in soil gas. Soil gas wells will not be constructed to a depth of 7 feet at locations SG3 and SG9 based on the availability of shallow soil gas data at these locations. The soil gas wells will be constructed and the soil gas samples will be collected in accordance with procedures recommended in the December 2013 San Francisco Bay Regional Water Quality Control Board User's Guide: Derivation and Application of Environmental Screening Levels, and the following Department of Toxic Substances Control (DTSC) documents:

- July 2015 Advisory - Active Soil Gas Investigations,
- March 2013 – FAQ for the 2012 Active Soil Gas Investigations Advisory,

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- October 2011 – Vapor Intrusion Guidance,
- October 2011 – Vapor Intrusion Mitigation Advisory.

Based on low flow condition concerns associated with clay at the site, the permanent soil gas wells will be constructed in boreholes that will be drilled using truck-mounted 6-inch outside diameter hollow stem augers or a 6-inch outside diameter hand auger where limited access prevents truck-mounted drill rig access.

All of the boreholes will initially be hand augered to a depth of 7 feet bgs using a 2-inch or 3-inch outside diameter hand auger for utility clearance and borehole logging purposes. The boreholes for the wells that will be constructed to a depth of 17 feet bgs will subsequently be drilled with solid stem augers to a depth of 16 feet bgs and then hand augered to the remaining depth of 17 feet bgs for borehole logging purposes.

The soil from the borings will be logged in the field in accordance with standard geologic field techniques and the Unified Soil Classification System. All soil from the boreholes will be evaluated with a PID equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard. No soil samples will be retained for laboratory analysis.

The soil gas wells will be constructed by pouring #2/16 Lonestar sack sand into the borehole to fill the lowermost one foot of the borehole with sand. A ¾ inch diameter PVC pipe will then be used to place a 0.250-inch outside diameter (0.187-inch inside diameter) Teflon tube with a High Density Polyethylene (HDPE) filter at the bottom of the tube to the top of the one-foot thick sand layer (a depth of 1 foot above the bottom of the borehole), and additional #2/16 Lonestar sack sand will be poured into the borehole to two feet above the bottom of the borehole (the lowermost two feet of the borehole will be filled with sand with the filter at the end of the tube in the middle of the sand interval). The ¾-inch diameter PVC pipe will be withdrawn from the borehole as the sand is poured into the borehole while making sure that the HDPE filter stays in the center of the sand interval. Hydrated bentonite slurry will then be placed in the annular space above the sand to a depth of 1 foot bgs.

Each tubing length in the borehole will extend 2 feet above the ground surface, with total tubing lengths being 18 feet for the deeper soil gas wells and 9 feet for the shallow soil gas wells. The top of each soil gas well will be enclosed in a well box with a lid that is secured with bolts. Following construction, the soil gas wells will not be sampled for a minimum of 2 weeks. Soil gas samples will not be collected if more than ½ inch of precipitation has occurred during the five days prior to the scheduled sampling date.

Soil gas samples will be collected in the following manner. A soil gas sampling manifold with a 1-liter Summa canister as the sampling canister for each location (see Figure 11) will be assembled in a shroud consisting of a 35-gallon Rubbermaid bin that has been modified by cutting viewing ports into the sides of the shroud and covering the viewing ports with transparent polycarbonate sheets. A hole measuring approximately two inches square in the bottom of the shroud allows the shroud to cover the soil gas well while still allowing access to the temporary well through the bottom of the bin. At the time that the

sampling manifold is assembled, the vacuum for the sample canister will be verified with a vacuum gauge and recorded.

Prior to sampling the soil gas well, a 10 minute shut-in test of the sampling manifold will be performed by closing the valve located between the filter and the pressure gauge, opening the purge canister valve, and recording the manifold system vacuum (see Figure 11). No purge testing for purge volume determination will be performed in accordance with recommendations in the DTSC July 2015 Advisory for Active Soil Gas Investigations. Following successful verification of the manifold shut-in test, a total of 200 milliliters plus the tubing volume will be extracted prior to sample collection. The purge time will be calculated using a nominal flow rate provided by the flow controller of 150 cubic centimeters per minute.

Following completion of the purging, a lid will be placed onto the shroud and a tracer gas 1,1-Difluoroethane (DFA) will be sprayed into the shroud interior for one second through a tube connected to a hole in the side of the shroud. Gloves in the lid of the shroud will be used to open the sample canister valve. After verifying that low flow conditions are not present associated with the soil gas sample, an air sample will be collected from the shroud atmosphere to quantify the shroud tracer gas concentration while the soil gas sample is being collected. The shroud atmosphere sample will be collected into a Tedlar bag that is placed into a vacuum chamber with the Tedlar bag inlet connected to a new piece of Teflon or polyethylene tubing that is inserted into the shroud atmosphere through a hole in the side of the shroud.

Once the vacuum for the sample canister valve has decreased to 5 inches of mercury, the gloves in the lid of the bin will be used to close the sample canister valve. The pressure gage on the inlet side of the flow controller (see Figure 11) will be monitored during sample collection to ensure that the vacuum applied to the soil gas well does not exceed 100 inches of water.

One duplicate soil gas sample will be collected into a Summa canister from one of the soil gas wells for each 10 soil gas samples using a stainless steel sampling tee for the Summa canisters using methods described above. Following soil gas sample collection, a PID will be connected to the Teflon tubing to obtain a preliminary field value for the sample collection location. The soil gas Summa canisters will be stored in a box and promptly shipped to the laboratory for extraction and analysis.

Chain of custody procedures will be observed for all sample handling. Measurements of vacuums, purging and equilibration time intervals, and PID readings will be recorded on Soil Gas Sampling Data Sheets.

All soil gas well construction equipment will be cleaned with an Alconox solution wash followed by a clean water rinse prior to use at each location. New Teflon tubing and filters will be used at each sample collection location. Clean, unused vacuum gages and stainless steel sampling manifolds will be used at each sample collection location. All

soil and water generated during soil gas well construction will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Vapor Pin Installation and Sample Collection

A recessed Vapor Pin with a secure cover will be installed at the proposed location shown on Figure 6 in accordance with recommended manufacturer methods in the following manner. A rotohammer will be used to drill a 1.5-inch diameter hole to a depth of 1.75 inches into the concrete floor slab. A smaller 5/8-inch diameter hole will then be drilled through the remainder of the slab to two inches below the bottom of the concrete slab. Once the desired depth is reached the hole will be cleaned with a vacuum and a bottle brush prior to installation of the Vapor Pin. A plastic cap will be placed on the barb fitting and the hole then covered with a threaded stainless steel cover secured to the Vapor Pin.

The Vapor Pin will not be sampled for a minimum of 2 hours following installation. A sub-slab soil gas sample will be collected from the Vapor Pin using methods described above for soil gas well sample collection.

Sample Analysis

All of the samples will be analyzed at Eurofins Air Toxics Limited of Folsom California. The samples collected in Summa canisters will be analyzed for PCE and associated decomposition products and DFA (the tracer gas) using EPA Method TO-15. The analyses will be performed with detection limits that equal or are less than SFRWQCB December 2013 Table E-2 soil gas residential Environmental Screening Levels (ESLs) so as to be able to address potential vapor intrusion concerns for property perimeter residential structures. All of the Tedlar bags will be analyzed using EPA Method 8260B or TO-15 for the tracer gas DFA.

Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document the results of the soil gas well installation and sample collection procedures and sample results. The report will include a map showing the sample collection locations, a copy of the laboratory report, tables summarizing the sample results, recommendations based on the results, and the stamp of an appropriately registered professional. A copy of the report and associated laboratory and borehole information will be uploaded to GeoTracker and the county ftp site.

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Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.



Paul H. King
Professional Geologist #5901
Expires: 12/31/15



Attachments:

- Table 1 - Summary of Soil Sample Laboratory Analytical Results
- Table 2 - Summary of Groundwater Sample Laboratory Analytical Results
- Table 3 - Summary of Soil Gas Sample Laboratory Analytical Results
- Table 4 - Summary of Indoor and Ambient Air Sample Laboratory Analytical Results

- Figure 1 - Site Location Map
- Figure 2 - Site Vicinity Aerial Photograph
- Figure 3 - Site Vicinity Aerial Photograph Detail
- Figure 4 - Site Plan Showing PCE Concentrations in Soil
- Figure 5 - Site Plan Showing PCE Concentrations in Groundwater
- Figure 6 - Site Plan Showing PCE Concentrations in Soil Gas and Sub-Slab Soil Gas
- Figure 7 - Site Plan Showing Air Sample Collection Locations – First Floor
- Figure 8 - Site Plan Showing Air Sample Collection Locations – Second Floor
- Figure 9 - Site Plan Showing Air Sample Collection Locations – Third Floor
- Figure 10 - Site Plan Showing Air Sample Collection Locations – Roof
- Figure 11 - Typical Soil Gas Sampling Manifold

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TABLES

Table 1
Summary of Soil Sample Laboratory Analytical Results

Sample Location/ID	Sample Date	Depth (Feet)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Other VOCs by EPA 8260B
SB1-3.0	5/3/2005	3.0	0.17	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB2-3.0	5/3/2005	3.0	0.080	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB3-3.0	5/3/2005	3.0	0.19	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB4-4.0	5/3/2005	4.0	0.26	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	All ND
B7-3	8/14/2008	3.0	0.0078	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
B8-3	8/14/2008	3.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
A-1	10/11/2009	10.0	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	All ND, except Acetone = 0.214
A-1	10/11/2009	15.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.169
A-1	10/11/2009	20.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.155
A-1	10/11/2009	30.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.186
A-1	10/11/2009	35.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.154
A-2	12/5/2009	6.5	0.0106	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.0305
A-2	12/5/2009	10.0	0.0045	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	All ND, except Acetone = 0.0227
A-2	12/5/2009	15.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND
A-2	12/5/2009	20.0	0.0048	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.0759, Toluene = 0.0041
A-2	12/5/2009	25.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.0341, Toluene = 0.0016
A-2	12/5/2009	30.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.0262
AD-3	10/11/2009	15.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.0952
AD-3	10/11/2009	20.0	0.0043	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	ND<0.0049	All ND, except Acetone = 0.140
AD-3	10/11/2009	30.0	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except Acetone = 0.226
AUST-6	10/11/2009	30.5	NA	NA	NA	NA	NA	NA	All ND
ESL ¹			0.55	0.46	0.19	0.67	0.032	1.1	Acetone = 0.50, Toluene = 2.9
ESL ²			0.70	0.46	0.19	0.67	0.085	2.4	Acetone = 0.50, Toluene = 2.9
ESL ³			0.55	0.46	0.19	0.67	0.032	1.1	Acetone = 0.50, Toluene = 2.9
ESL ⁴			0.70	0.46	0.19	0.67	0.085	2.4	Acetone = 0.50, Toluene = 2.9
NOTES:									
PCE = Tetrachloroethene									
TCE = Trichloroethene									
cis-1,2-DCE = cis-1,2-Dichloroethene									
trans-1,2-DCE = trans-1,2-Dichloroethene									
VOCs = Volatile Organic Compounds									
ND = Not Detected.									
NA = Not Analyzed.									
ESL ¹ = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table A-1 - Shallow Soil Screening Levels for Residential Land Use.									
ESL ² = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table C-1 - Shallow Soil Screening Levels for Commercial/Industrial Land Use.									
ESL ³ = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table A-2 - Deep Soil Screening Levels for Residential Land Use.									
ESL ⁴ = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table C-2 - Deep Soil Screening Levels for Commercial/Industrial Land Use.									
Results and ESLs in milligrams per kilograms (mg/kg), unless otherwise noted.									

Table 2
Summary of Groundwater Sample Laboratory Analytical Results

Sample Location/ID	Sample Date	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Other VOCs by EPA 8260B
SB1-W	5/3/2005	48	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.83	All ND
SB-6	6/28/2005	15	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.83	All ND
B7-W	8/14/2008	12	ND<0.005	ND<0.005	ND<0.005	ND<0.005	1.6	All ND
B8-W	8/14/2008	7	ND<0.010	ND<0.010	ND<0.010	ND<0.010	0.98	All ND
A-1	10/11/2009	0.91	ND<0.005	ND<0.005	ND<0.005	ND<0.005	1.7	All ND
AD-1	10/11/2009	1.9	ND<0.005	ND<0.005	ND<0.005	ND<0.005	1.9	All ND
AUST-6	10/11/2009	NA	NA	NA	NA	NA	NA	All ND
ESL ¹		0.55	0.46	0.19	0.67	0.032	1.1	
NOTES:								
PCE = Tetrachloroethene								
TCE = Trichloroethene								
cis-1,2-DCE = cis-1,2-Dichloroethene								
trans-1,2-DCE = trans-1,2-Dichloroethene								
VOCs = Volatile Organic Compounds								
ND = Not Detected.								
NA = Not Analyzed.								
ESL ¹ = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table F1-a. Groundwater is a current or potential drinking water resource.								
Results and ESLs in micrograms per Liter (ug/L), unless otherwise noted.								

Table 3
Summary of Soil Gas Sample Laboratory Analytical Results

Sample ID	Land Use	Sample Date	Probe Depth (Feet bgs)	Benzene	Toluene	Ethyl-benzene	m,p-Xylenes	o-Xylenes	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	2-Propanol (tracer gas)
SS-1	Commercial	3/11/2015	Sub-Slab	ND<3.5	48	16	65	23	<u>610</u>	ND<6.0	ND<4.4	ND<4.4	ND<2.8	44
SS-2	Commercial	3/11/2015	Sub-Slab	ND<14	22	ND<20	21	ND<20	5200	ND<24	ND<18	ND<18	ND<12	3500
SS-3	Commercial	3/11/2015	Sub-Slab	ND<4.8	8.1	ND<6.5	10	ND<6.5	<u>1100</u>	ND<8.1	ND<6.0	ND<6.0	ND<3.8	1000
SV-1	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	2300	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-2	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	610	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-3	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	1400	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-4	Commercial	3/11/2015	4.0	ND<35	ND<200	ND<100	ND<200	ND<100	9100	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-5	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	5500	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-6	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	17000	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-7	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	6600	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-7 dup	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	6900	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-8	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	3800	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-9	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	24000	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-10	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	250	ND<100	ND<100	ND<100	ND<13	ND<10,000
SV-11	Commercial	3/11/2015	5.0	ND<35	ND<200	ND<100	ND<200	ND<100	1400	ND<100	ND<100	ND<100	ND<13	ND<10,000
ESL ¹				420	#####	4,900	Combined = 440,000		2,100	3,000	31,000	260,000	160	No Value
ESL ²				0.42	1,300	4.9	Combined = 440		2.1	3.0	31	260	0.16	No Value
20 x ESL ²				8.4	26,000	98	Combined = 8,800		42	60	620	5,200	3.2	--
NOTES:														
Feet bgs = Feet Below Ground Surface.														
MTBE = Methyl-tert-Butyl Ether.														
PCE = Tetrachloroethene.														
TCE = Trichloroethene.														
cis-1,2-TCE = cis-1,2-Dichloroethene.														
trans-1,2-TCE = trans-1,2-Dichloroethene.														
ND = Not Detected.														
ESL ¹ = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board , updated December 2013 from Table E-2.														
Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion for Commercial/Industrial Land Use.														
ESL ² = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board , updated December 2013 from Table E-3 – Ambient and Indoor Air Screening Levels for Commercial/Industrial Land Use.														
Results in BOLD exceed their respective ESL¹ value.														
Underlined results are for sub-slab samples that exceed their respective 20 x ESL ² value.														
Results and ESL values in micrograms per cubic meter (µg/m ³), unless otherwise indicated														

Table 1
Summary of Indoor and Ambient Air Sample Laboratory Analytical Results

Sample Location/ID	Sample Date	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Carbon Tetrachloride	Chloroform	Chloromethane	Dichlorofluoromethane (Freon 12)	1,2-DCA	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride
IA-1	5/29/2015	0.62	1.6	0.31	0.87	0.29	0.50	0.32	1.3	2.5	ND<0.13	3.5	ND<0.17	ND<0.12	ND<0.63	ND<0.040
IA-2	5/29/2015	0.61	1.7	0.37	1.2	0.46	0.54	0.34	1.2	2.6	ND<0.13	3.3	ND<0.17	ND<0.12	ND<0.62	ND<0.040
IA2 (1st Floor)	8/6/2015	0.38	1.2	0.22	0.67	0.23	0.54, a	0.28	0.89	2.1	ND<0.13	4.2	0.40	ND<0.13	ND<0.64	ND<0.041
IA-3	5/29/2015	ND<0.86	2.0	ND<0.47	ND<0.94	ND<0.47	ND<0.68	1.8	1.4	3.0	0.43, a	3.5	5.1	ND<0.43	ND<2.1	ND<0.14
IA-4*	5/29/2015	0.43	1.9	0.30	0.87	0.34	0.51	3.3	1.6	2.7	0.25	4.0	8.8	ND<0.13	ND<0.63	ND<0.041
IA4 (2nd Floor)	8/6/2015	0.42	2.4	0.41	1.0	0.46	0.52, a	5.4	1.0	2.2	0.24	3.6	8.1	ND<0.12	ND<0.63	ND<0.040
IA4 (Hallway)	8/13/2015	0.28	1.6	6.8	6.0	1.7	0.41	3.8	0.82	1.7	0.32	3.7	5.6	ND<0.10	ND<0.53	ND<0.034
IA4 (Hallway)	9/4/2015	0.432	3.19	1.24	2.07	0.765	0.634	4.17	1.12	2.82	0.365	7.15	8.09	ND<0.0397	ND<0.0396	ND<0.0256
IA4 Hallway	10/13/2015	ND<0.28	0.52	ND<0.15	0.33	ND<0.15	ND<0.22	0.70	1.1	2.4	ND<0.27	0.24	0.34	ND<0.14	ND<0.69	ND<0.045
IA-5*	5/29/2015	0.40	1.6	0.25	0.74	0.35	0.48	3.2	1.5	2.8	0.14	4.1	6.6	ND<0.12	ND<0.63	ND<0.040
IA5 Men's Room (3rd Floor)	8/6/2015	0.43	2.6	0.47	1.1	0.42	0.42, a	6.6	1.1	2.1	0.20	4.7	6.5	ND<0.13	ND<0.63	ND<0.041
IA5 (Men's Room)	8/13/2015	0.44	2.7	4.1	3.9	1.1	0.69	7.6	1.4	2.3	0.25	5.5	8.1	ND<0.13	ND<0.66	ND<0.042
IA5 Men's Room (3rd Floor)	9/4/2015	0.462	2.88	0.871	1.64	0.568	0.542	6.72	1.15	2.60	0.234	8.01	8.98	ND<0.0397	ND<0.0396	ND<0.0256
IA5 Men's Room (3rd Floor)	10/13/2015	0.32	1.1	0.24	0.67	0.26	ND<0.22	2.0	1.2	2.3	ND<0.14	0.80	0.27	ND<0.14	ND<0.69	ND<0.045
IA6 (201 Health Center)	8/13/2015	0.34	2.0	12	11	2.9	0.63	3.3	1.2	2.6	0.63	5.4	4.5	ND<0.13	ND<0.66	ND<0.043
IA6 DUP (201 Health Center)	8/13/2015	0.28	2.1	12	11	2.9	0.61	3.3	1.2	2.4	0.63	5.2	4.4	ND<0.13	ND<0.66	ND<0.042
IA7 (203 CPA)	8/13/2015	ND<0.69	2.4	2.8	2.7	1.0	ND<0.55	1.4	1.2	2.3	ND<0.35	3.3	1.9	ND<0.34	ND<1.7	ND<0.11
IA8 (Suite 204)	8/13/2015	ND<0.29	1.1	0.62	0.82	0.40	0.65	1.1	1.1	2.3	ND<0.15	1.3	1.6	ND<0.14	ND<0.73	ND<0.047
IA9 (301 Kumon)	8/13/2015	0.47	4.9	4.6	4.5	1.4	0.66	2.0	1.4	2.5	0.31	4.7	2.8	ND<0.18	ND<0.90	ND<0.058
IA10 (Suite 302)	8/13/2015	0.42	2.4	2.3	2.3	0.80	0.64	2.5	1.2	2.4	0.22	4.8	3.5	ND<0.14	ND<0.70	ND<0.045
IA11 (Suite 303)	8/13/2015	ND<0.26	1.0	0.70	0.73	0.26	0.66	0.69	1.1	2.5	0.63	0.96	0.90	ND<0.13	ND<0.66	ND<0.042
IA11 DUP (Suite 303)	8/13/2015	ND<0.25	0.95	0.62	0.70	0.27	0.57	0.61	1.2	2.4	0.59	0.89	0.85	ND<0.12	ND<0.62	ND<0.040
Elevator Pit	8/6/2015	0.50	1.4	0.24	0.79	0.29	0.55, a	0.98	0.89	2.0	ND<0.11	4.3	1.3	ND<0.11	ND<0.55	ND<0.036
1st Floor Exhaust	8/6/2015	ND<2.6	11	1.5	3.7	1.4	ND<2.0	ND<1.6	ND<1.7	2.7	ND<1.3	13	ND<1.7	ND<1.3	ND<6.4	ND<0.41
Sewer Vent	8/6/2015	ND<2.2	7.1	1.3	2.6	ND<1.2	ND<1.7	150	1.7	2.1	ND<1.1	19	2.3	ND<1.1	ND<5.5	ND<0.36
BG-1	5/29/2015	0.40	0.91	0.18	0.61	0.23	0.48	0.16	1.3	2.5	ND<0.13	ND<0.21	ND<0.17	ND<0.12	ND<0.62	ND<0.040
BG-2	5/29/2015	0.66	1.4	0.26	0.99	0.43	0.51	ND<0.15	1.3	2.5	ND<0.13	ND<0.21	ND<0.17	ND<0.12	ND<0.62	ND<0.040
BG-2 Ambient	8/6/2015	0.30	1.5	0.19	0.59	0.22	0.48, a	ND<0.15	0.91	2.3	ND<0.12	ND<0.21	ND<0.17	ND<0.12	ND<0.61	ND<0.040
BG-2 Ambient	8/13/2015	ND<0.25	0.68	0.14	0.37	0.21	0.60	ND<0.15	1.1	2.5	ND<0.13	ND<0.21	ND<0.17	ND<0.12	ND<0.62	ND<0.040
BG2 Ambient	9/4/2015	0.319	1.54	0.229	0.848	0.319	0.653	ND<0.0488	1.22	2.91	0.0596	0.213	ND<0.0537	ND<0.0397	ND<0.0396	ND<0.0256
BG2 Ambient	10/13/2015	0.98	3.0	0.59	2.0	0.72	0.39	0.27	1.1	2.3	ND<0.12	ND<0.20	ND<0.16	ND<0.12	ND<0.59	ND<0.038
ESL		0.42	1,300	4.9	440 Combined		0.29	2.3	390	No Value	0.58	2.1	3.0	31	260	0.16
NOTES:																
1,2-DCA = 1,2-Dichloroethane																
PCE = Tetrachloroethene																
TCE = Trichloroethene																
cis-1,2-DCE = cis-1,2-Dichloroethene																
trans-1,2-DCE = trans-1,2-Dichloroethene																
ND = Not Detected.																
a = Laboratory note: Estimated value.																
* = Results reported in revised lab report resissued on 08/13/2015.																
ESL = Environmental Screening Level, by San Francisco Bay Regional Water Quality Control Board, Updated December 2013, from Table E-3 - Ambient and Indoor Air Screening Levels for Commercial Industrial Land Use.																
Results in BOLD exceed their respective ESL value.																
Results and ESLs in micrograms per cubic meter (ug/m ³), unless otherwise noted.																

FIGURES

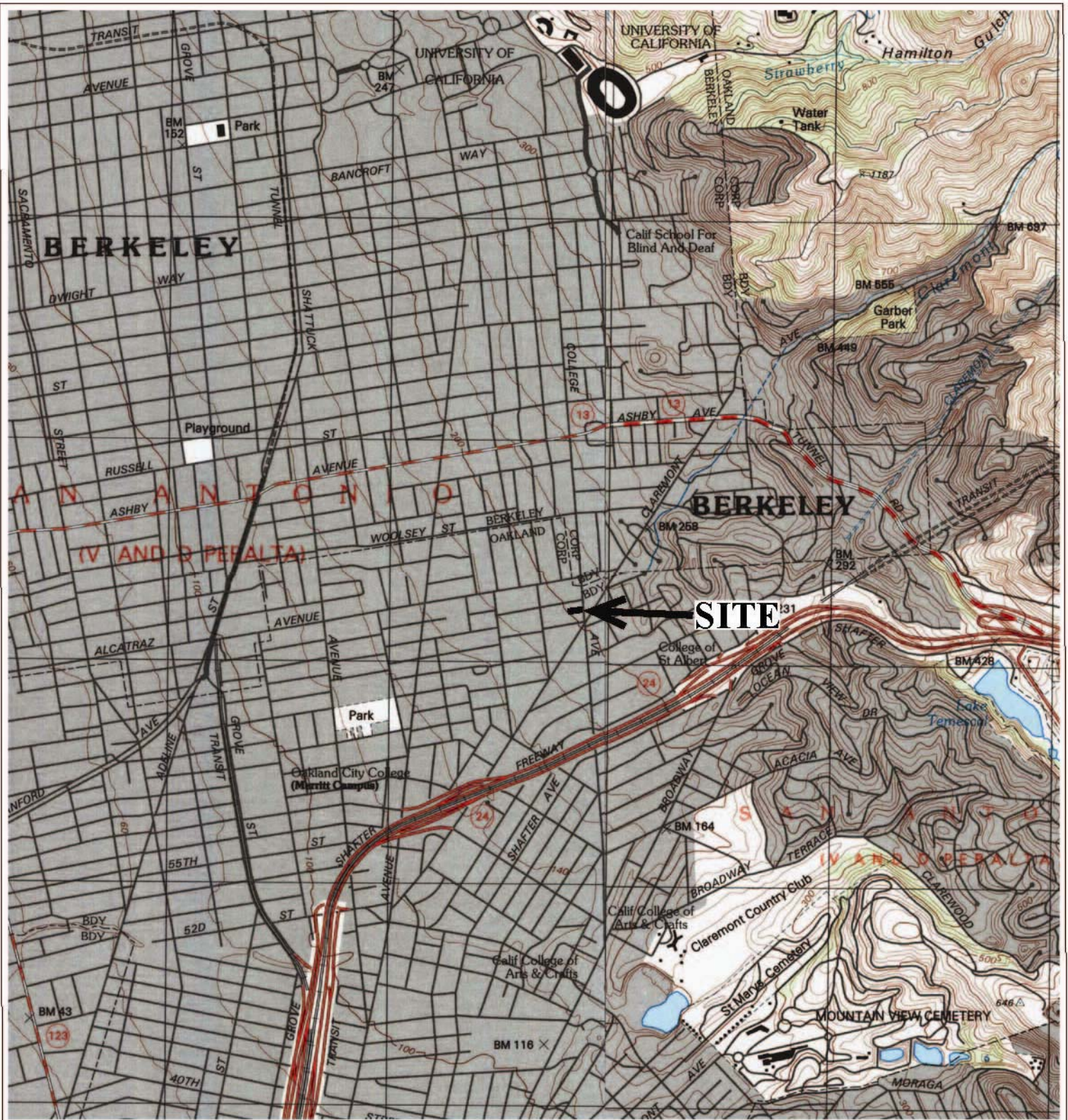
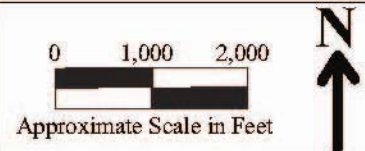


Figure 1
 Site Location Map
 Red Hanger Kleaners
 6239 College Avenue
 Oakland, California

Base Map From:
 U.S. Geologic Survey 7.5 Minute Quadrangles
 Oakland East, and Oakland West, both maps
 edited 1996.

P&D Environmental, Inc.
 55 Santa Clara Avenue, Suite 240
 Oakland CA 94610



Approximate Scale in Feet



**Building
Number**

Address

- | | |
|---|---|
| 1 | 6235-6239 College Avenue - 3 Story Commercial |
| 2 | 6241-6247 College Avenue - 2 Story Commercial |
| 3 | 6251-6255 College Avenue and 305 and 307 63rd Street - 3 Story Commercial |
| 4 | 309 63rd Street - 3 Story Commercial/Residential |
| 5 | 323 63rd Street - 2 Story Residential |
| 6 | 320 62nd Street - 4 Story Residential |
| 7 | 6201 College Avenue - 1 Story Commercial |

Figure 2
Site Vicinity Aerial Photograph
Red Hanger Kleaners
6239 College Avenue
Oakland, California

Base Map From:
Google Earth, 2015

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 40 80
Approximate Scale in Feet





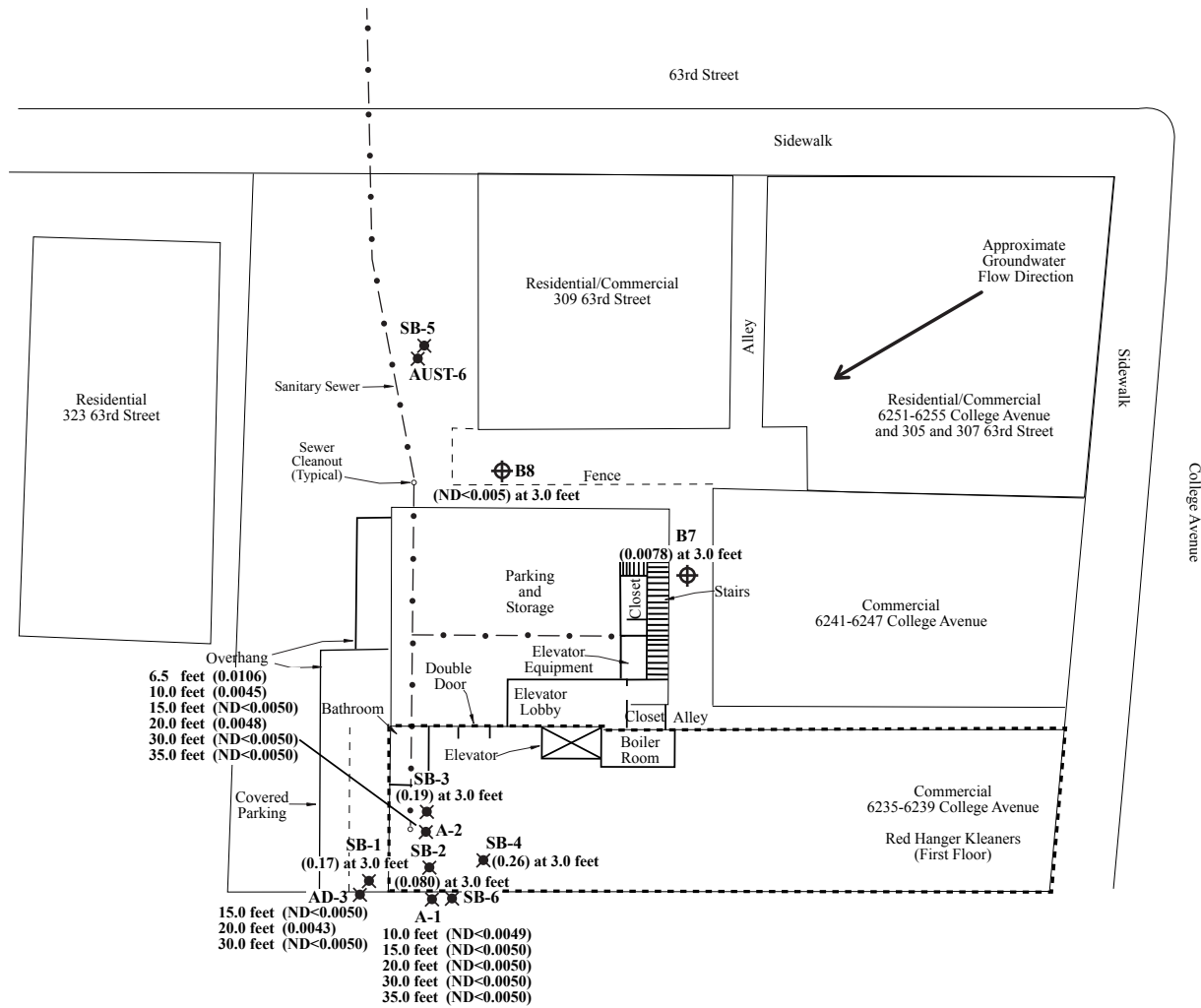
Figure 3
 Site Vicinity Aerial Photograph Detail
 Red Hanger Kleaners
 6239 College Avenue
 Oakland, California

Base Map From:
 Google Earth, 2015

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610

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 Approximate Scale in Feet





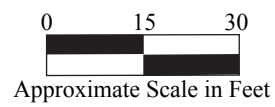
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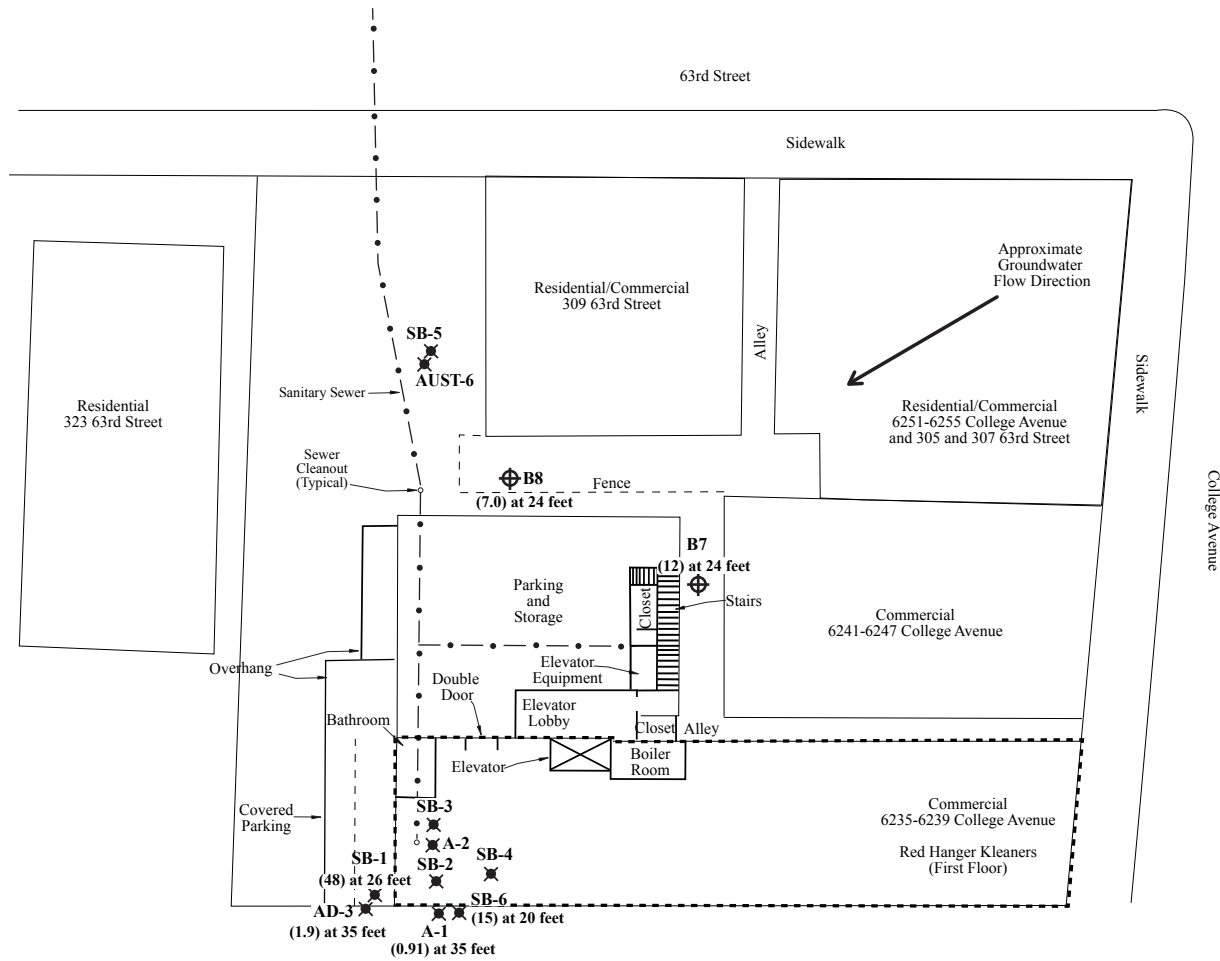
B8	Borehole Drilled by P&D
SB-6	Borehole Drilled by Others
(0.26)	PCE in Soil (mg/kg)

Figure 4
 Site Plan Showing PCE Concentrations in Soil
 Red Hanger Kleaners
 6239 College Avenue
 Oakland, California

Base Map from:
 Gordon Building, July 30, 2007, Alameda
 County Assessor's Map, Revised June 15, 1989,
 and Google Earth, 2015

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 Oakland, CA 94610





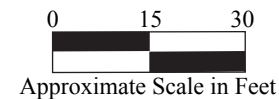
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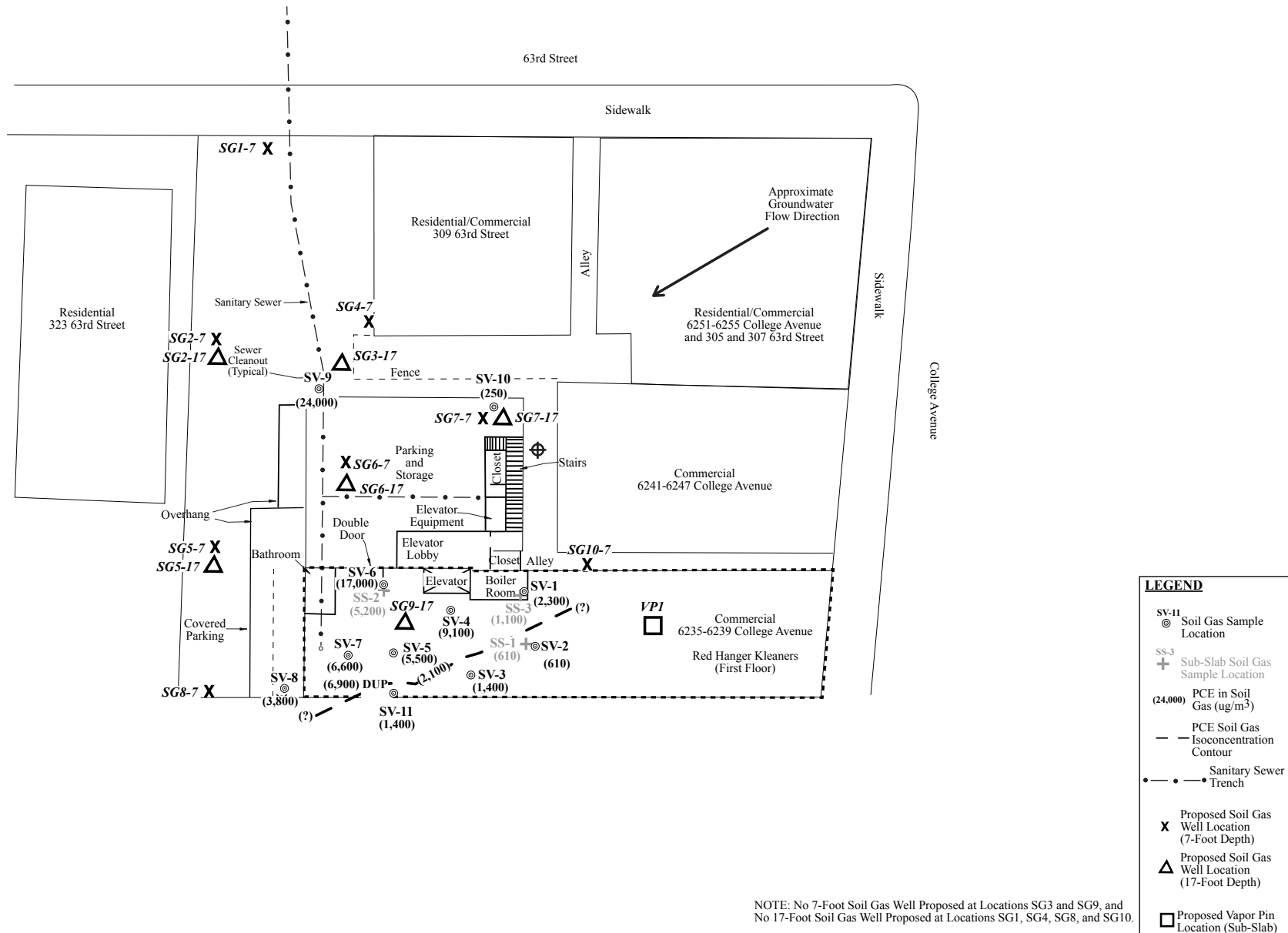
- B8** Borehole Drilled by P&D
- SB-6** Borehole Drilled by Others
- (48)** PCE in Groundwater (ug/L)

Figure 5
 Site Plan Showing PCE Concentrations in Groundwater
 Red Hanger Kleaners
 6239 College Avenue
 Oakland, California

Base Map from:
 Gordon Building, July 30, 2007, Alameda
 County Assessor's Map, Revised June 15, 1989,
 and Google Earth, 2015

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LEGEND

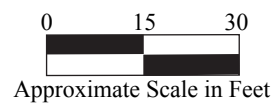
- ⊙ Soil Gas Sample Location
- ⊕ Sub-Slab Soil Gas Sample Location
- (24,000) PCE in Soil Gas ($\mu\text{g}/\text{m}^3$)
- - - PCE Soil Gas Isoconcentration Contour
- · - · - Sanitary Sewer Trench
- X Proposed Soil Gas Well Location (7-Foot Depth)
- Δ Proposed Soil Gas Well Location (17-Foot Depth)
- Proposed Vapor Pin Location (Sub-Slab)

NOTE: No 7-Foot Soil Gas Well Proposed at Locations SG3 and SG9, and No 17-Foot Soil Gas Well Proposed at Locations SG1, SG4, SG8, and SG10.

Figure 6
 Site Plan Showing PCE Concentrations in Soil Gas and Sub-Slab Soil Gas
 Red Hanger Kleaners
 6239 College Avenue
 Oakland, California

Base Map from:
 Gordon Building, July 30, 2007, Alameda
 County Assessor's Map, Revised June 15, 1989,
 and Google Earth, 2015

P&D Environmental, Inc.
 55 Santa Clara Ave., Suite 240
 Oakland, CA 94610



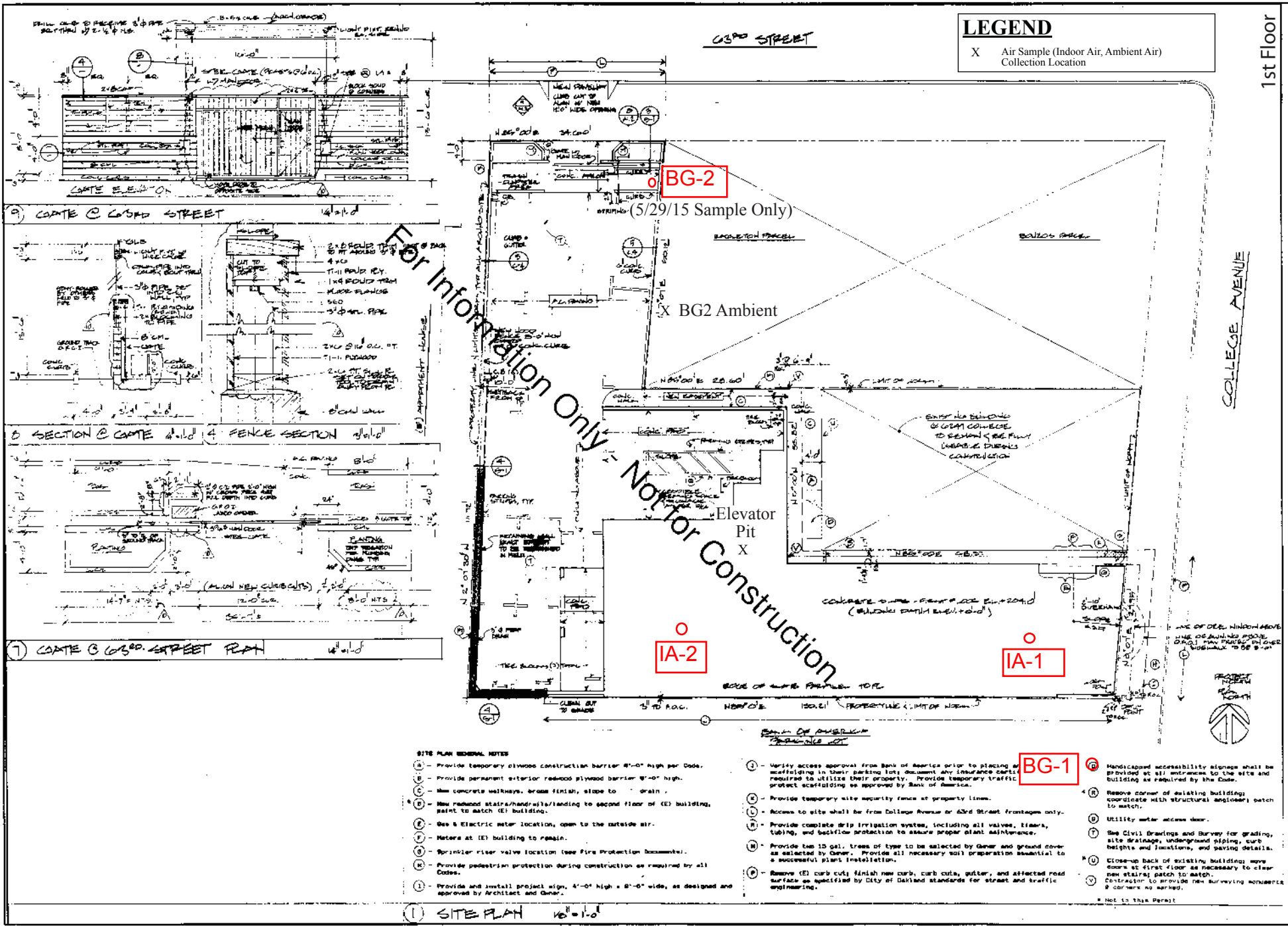


Figure 7
 Site Plan Showing Air Sample Locations - First Floor

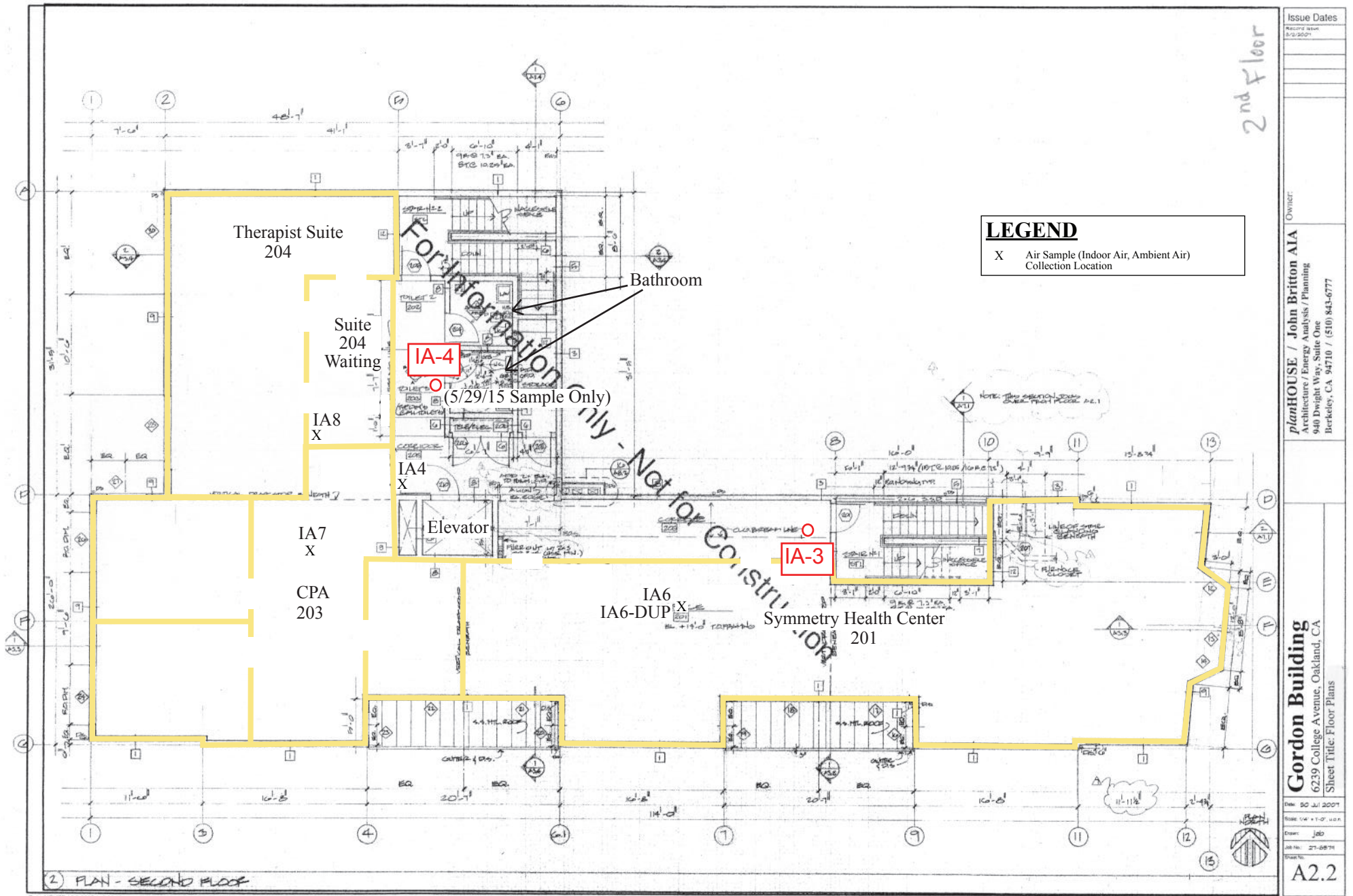
Issue Dates	

Owner:
planHOUSE / John Britton AIA
 Architecture / Energy Analysis / Planning
 940 Dwight Way, Suite One
 Berkeley, CA 94710 / 415-843-6777

Gordon Building
 6239 College Avenue, Oakland, CA
 Sheet Title: Site Plan

Scale: 1" = 10'-0"
 Date: 1/10/10
 Date: 1/10/10
 Date: 1/10/10
 Date: 1/10/10

A1.2



Issue Dates

Record date 8/2/2007

Owner: planHOUSE / John Britton AIA
 Architecture / Energy Analysis / Planning
 940 Dwight Way, Suite One
 Berkeley, CA 94710 / (510) 843-6777

Gordon Building
 6239 College Avenue, Oakland, CA
 Sheet Title: Floor Plans

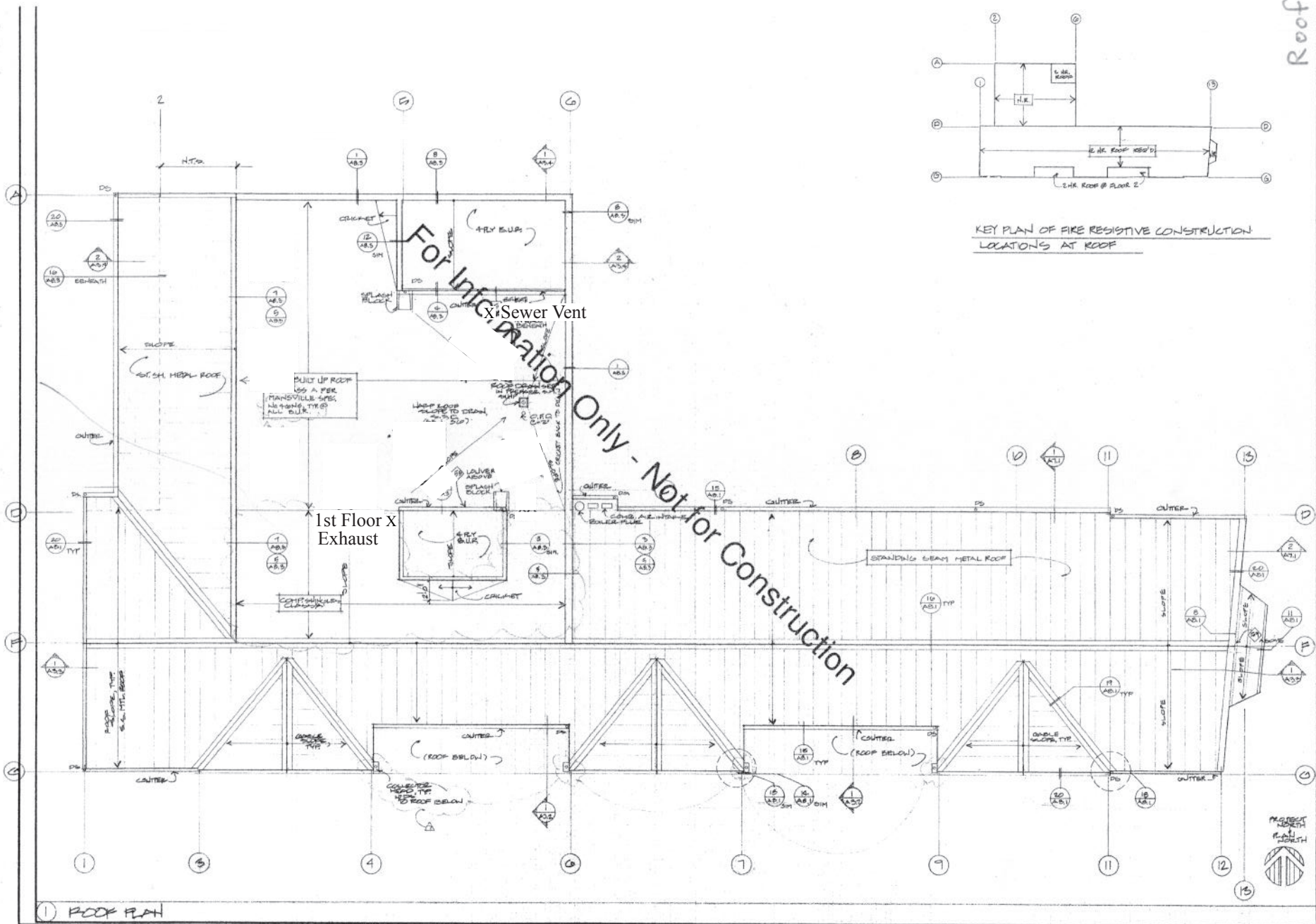
Rev: 00 Jul 2007
 Scale: 1/4" = 1'-0", A0/A
 Date: job
 Job No.: 27-0874
 Revision:

A2.2

Figure 8
 Site Plan Showing Air Sample Locations - Second Floor

LEGEND

X Air Sample (Indoor Air, Ambient Air) Collection Location



Issue Dates	
Record Issue	6/2/2007
Owner:	planHOUSE / John Britton AIA Architecture / Energy Analysis / Planning 940 Dwight Way, Suite One Berkeley, CA 94710 / (510) 843-6777
Project:	Gordon Building 6239 College Avenue, Oakland, CA
Sheet Title:	Roof Plan
Date:	20 JUL 2007
Scale:	1/4" = 1'-0"
Drawn:	JBD
App No.:	27-2574
Sheet No.:	A2.4

Figure 10
Site Plan Showing Air Sample Locations - Roof



Figure 11
Typical Soil Gas Sampling Manifold
Red Hanger Kleaners
6239 College Avenue
Oakland, California

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610