Cathedral Gardens Oakland, L.P.
2169 East Francisco Boulevard, Suite EAH
San Rafael, CA 94901
(415) 295-8857

June 13, 2014

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN CERTIFICATION
RO 0003138
Cathedral Gardens
638 21st Street
Oakland, California

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc. for the subject site.

- Subsurface Investigation Work Plan dated June 13, 2014 (document 0553.W4).

I declare, under penalty of perjury, that the information and/or recommendations contained in the above-mentioned work plan for the subject site is true and correct to the best of my knowledge.

Please don't hesitate to call me if you have any questions.

Sincerely,

Benny Kwong
EAH, Inc. for
Cathedral Gardens Oakland, L.P.

0553.L6

P&D ENVIRONMENTAL, INC.

55 Santa Clara Avenue, Suite 240
Oakland, CA 94610
(510) 658-6916

June 13, 2014
Work Plan 0553.W4

Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Parkway, Suite 250
Alameda, CA 94502

SUBJECT: SUBSURFACE INVESTIGATION WORK PLAN
RO 0003138
Cathedral Gardens Site
638 21st Street
Oakland, California

Dear Mr. Wickham:

P&D Environmental, Inc. (P&D) has prepared this work plan to evaluate the presence and extent of petroleum hydrocarbons in soil, groundwater, and soil gas at and near the subject site. This work plan has been prepared in accordance with a telephone call to the Alameda County Department of Environmental Health (ACDEH) requesting that a case be opened following verification of a release from a heating oil Underground Storage Tank (UST) that was discovered at the site in May, 2014.

The work scope includes one borehole located adjacent to the former UST pit for collection of a depth-discrete groundwater sample to define the vertical extent of impact to groundwater (B6), five boreholes for collection of groundwater grab samples from first-encountered groundwater to define the horizontal extent of impact to groundwater (B7 through B11), four soil borings in the vicinity of the former UST pit to evaluate the horizontal and vertical extent of impacted soil that was identified beneath the UST at the time of UST removal (B12 through B15), and installation of one permanent soil gas well between the former UST pit and the adjacent building to evaluate the presence of petroleum hydrocarbons in soil gas (SG1).

A Site Location Map is attached as Figure 1, a Site Location Map Detail showing groundwater flow directions in the vicinity of the site is attached as Figure 2, a Site Vicinity Aerial Photograph showing proposed groundwater grab sample collection locations is attached as Figure 3, and a Site Plan Detail showing the former UST, UST removal sample collection locations, proposed soil boring locations in the vicinity of the UST, and a proposed soil gas well location is attached as Figure 4. All work will be performed under the direct supervision of a California professional geologist.

BACKGROUND

Review of a Limited Phase II Environmental Site Assessment report dated June 27, 2011 prepared by Basics Environmental, Inc. of Oakland, California identified the historical use of the property as a church consisting of a cathedral and separate school building beginning in 1880 with demolition of the church in 1993. From 1993 until the time of site development for public housing in mid-2012 a small portable building and the former school building were present at the site.

Review of a Limited Phase II Environmental Site Sampling Report dated June 27, 2011 prepared by Basics documented the collection and analysis of soil samples from boreholes B1 through B5 and G3. The report concluded that an elevated arsenic concentration was detected in one of the soil samples, and recommended that the report be reviewed by a regulatory agency.

In mid-2012 development of the site began for a public housing project that included retaining the original school building as part of the project. In preparation for the development project, chlordane-impacted soil and lead-impacted soil were removed from the site. Documentation of the soil disposal is provided in P&D's December 20, 2012 Soil Disposal Documentation Report (document 0553.R3).

During excavation in September 2012 for an underground parking structure for the housing project an UST filled with oily water and low viscosity heating oil was discovered in the central portion of the property at a depth of approximately three feet below the pre-construction ground surface. No pipes were observed to be connected to the UST. Based on the results of soil samples collected following removal of the UST, the City of Oakland Fire Department Hazmat Division did not require further action related to the UST. The area where the UST was discovered was subsequently excavated for completion of the construction of the underground parking structure. Documentation of the UST removal and sample collection are provided in P&D's December 21, 2012 UST Removal Report (document 0553.R2).

On May 15, 2014 during excavation near the 21st Street sidewalk for property perimeter fence columns a second UST that was partially filled with petroleum hydrocarbon liquid was discovered at a depth of approximately 4.5 feet below the pre-construction ground surface elevation. The fluid in the UST was subsequently determined to be oily water with low viscosity heating oil-range fuel. The fluid was pumped from the UST and the UST was removed from the site on May 20, 2014. Petroleum hydrocarbons were detected in soil samples collected from beneath the UST. On May 23, 2014 a borehole was hand augered through the bottom of the UST pit to first-encountered groundwater at a depth of 15 feet bgs. Sheen and petroleum hydrocarbon odor were present in the water sample collected from the borehole. The laboratory analytical results for soil and water samples collected from beneath the UST (see Figure 4) are summarized in Tables 1 and 2, respectively. Documentation of the UST removal and associated sample results are provided in P&D's UST Removal Report dated June 2, 2014 (document 0553.R4).

Figure 2 shows the locations of fuel release sites in the immediate vicinity of the subject site where the historical groundwater flow direction has been identified based on measurements of water levels in groundwater monitoring wells. Based on the groundwater flow directions at the nearby sites, the subject site is located in the immediate vicinity of a groundwater divide where the groundwater flow direction for sites located to the east of the subject site is easterly and the groundwater flow direction for sites located to the west of the subject site is westerly. Review of available groundwater flow direction information for the Greyhound Lines Terminal (Greyhound) site located at 2103 San Pablo Avenue (location # 1 on Figure 2, approximately 180 feet to the west of the subject site) shows that the groundwater flow direction during one of the well sampling events was to the east, suggesting that the location of the groundwater divide may change seasonally. The groundwater divide is suspected to generally be located approximately beneath the subject site.

Geologic cross sections obtained from a December 21, 2011 Revised Site Conceptual Model for the Greyhound site at 2103 San Pablo Avenue are attached with this work plan as Appendix A. Review of the cross sections shows that sand bodies ranging in thickness from 10 to greater than 25 feet in thickness are identified at the Greyhound site. The subsurface materials encountered in and beneath the UST pit at the subject site consisted of sandy silt to a depth of approximately 12.5 feet below the ground surface (bgs), beneath which fine sand was encountered to the total depth explored of 15.5 feet bgs. Groundwater was encountered at a depth of approximately 15 feet bgs.

SCOPE OF WORK

To evaluate the extent of petroleum hydrocarbons at and near the subject site, P&D proposes to perform the following activities.

- Obtain City street obstruction and excavation permits and County drilling permits.
- Prepare a health and safety plan and mark drilling locations for Underground Service Alert.
- Oversee dual tube continuous coring at one location near the former UST pit (B6) to evaluate subsurface conditions and collect a depth-discrete groundwater grab sample with a Hydropunch in an effort to define the vertical extent of impact to groundwater
- Oversee continuous coring and groundwater grab sample collection from first-encountered groundwater at five locations (B7 through B11) in an effort to define the horizontal extent of impact to groundwater,
- Oversee continuous coring and soil sample collection at four locations (B12 through B15) in an effort to define the horizontal and vertical extent of petroleum hydrocarbons in soil in the vicinity of the former UST pit,
- Oversee installation and sampling of one permanent soil gas well between the former UST pit and the adjacent building to evaluate the presence of petroleum hydrocarbons in soil gas.

- Arrange for sample analysis.
- Prepare a subsurface investigation report.

Each of these is discussed below.

Permitting and Health and Safety Plan Preparation

Obstruction and excavation permits will be obtained for work in the public right-of-way from the City of Oakland, and permits will be obtained from the Alameda County Public Works Agency for borehole drilling. All necessary permit-related notifications will be made prior to drilling. A health and safety plan will be prepared for the scope of work identified in this work plan. In addition, the drilling locations will be marked with white paint and Underground Service Alert will be notified for underground utility location. No traffic control plans will be required for boreholes drilled in the street because they will be drilled in parking lanes.

Soil Coring and Sample Collection

All of the boreholes will be continuously cored by Vironex, Inc. of Concord, California (Vironex) using Geoprobe direct-push technology to drive a 2.5-inch outside diameter Geoprobe macrocore barrel sampler lined with transparent PVC sleeves. One borehole will be continuously cored using Geoprobe dual tube drilling methods adjacent to the former UST pit at location B6 (see Figures 3 and 4) to a depth of 50 feet bgs to evaluate the vertical extent of petroleum-impacted groundwater. The soil from the boring 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 Photoionization Detector (PID) equipped with a 10.6 eV bulb and calibrated using a 100 ppm isobutylene standard.

Following review of the borehole log, one depth-discrete groundwater sample will be collected with a Hydropunch from a location immediately adjacent to the continuously cored borehole to evaluate the vertical extent of petroleum in groundwater. After pushing the Hydropunch rods to the desired sample collection depth the interior of the Hydropunch rods will be evaluated with an electric water level indicator to verify that groundwater has not leaked into the Hydropunch rods. The Hydropunch exterior rod will then be retracted to expose a 4-foot long section of Hydropunch screen. A groundwater sample will be collected from the Hydropunch using polyethylene tubing and a peristaltic pump. The groundwater sample will be transferred to 40-millileter VOA bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler with ice pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling. The dual tube drilling rods will not be removed from the ground until after the Hydropunch groundwater sample has been collected.

Groundwater grab samples will be collected from boreholes that are continuously cored using Geoprobe Macrocore barrel samplers to first-encountered groundwater at locations

B7 through B11 (see Figure 3) to evaluate the horizontal extent of petroleum in first-encountered groundwater. Groundwater is anticipated to be encountered at a depth of approximately 15 feet bgs, and the boreholes are anticipated to be drilled to a depth of approximately three feet below first encountered groundwater. The boreholes will be logged using methods described above. Groundwater samples will be collected by placing a 1-inch diameter temporary slotted PVC pipe in each borehole and collecting the groundwater sample at each location using polyethylene tubing and a peristaltic pump. The groundwater samples will be transferred directly from the discharge tubing to 40-millileter VOA bottles, all of which will be supplied by the laboratory and contain hydrochloric acid preservative. The sample bottles will be labeled and placed in a cooler with ice pending delivery to the laboratory. Chain of custody procedures will be observed for all sample handling.

Boreholes will be continuously cored to depths of 20 feet bgs at locations B12 through B15 (see Figure 4) using Geopprobe macrocore barrel samplers as described above in an effort to evaluate the horizontal and vertical extent of petroleum hydrocarbons in soil in the vicinity of the former UST pit. Soil samples will be retained at depths of 10, 15 and 20 feet bgs for laboratory analysis by selecting the interval to be sampled and cutting a 6-inch section of the liner corresponding to the sample collection depth. In addition, soil samples will be collected where evidence of contamination is encountered based on odors, PID values, staining, and discoloration. The ends of the tubes will be sequentially capped with aluminum foil and plastic endcaps. The samples will then be labeled and stored in a cooler with ice pending delivery to a State-accredited hazardous waste testing laboratory. Chain of custody procedures will be observed for all sample handling. One soil sample will also be retained from one of boreholes B12 through B15 at a depth of 3 feet bgs for purposes of evaluating Low Threat Closure Policy direct contract and outdoor air exposure.

All drilling and sampling equipment will be cleaned by steam cleaning with an Alconox solution followed by a clean water rinse prior to use in each borehole. Following completion of logging and sample collection activities, the boreholes will be filled with neat cement grout. All soil and water generated during subsurface investigation will be stored in 55-gallon drums at the site and labeled pending characterization and proper disposal.

Soil Gas Sample Collection

One permanent soil gas well will be constructed at location SG1 (see Figure 4) to evaluate the presence of petroleum soil vapor concentrations and oxygen in the suspected vicinity of the former UST. 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:

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

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

Permanent soil gas well SG1 (see Figure 4) will be constructed by Vironex by driving a hollow 1.5-inch outside diameter drilling rod with an expendable tip to a depth of 5 feet bgs at each soil gas well location. The expendable tip will be dislodged and #2/16 Lonestar sack sand will be poured into the borehole to fill the lowermost 6 inches of the borehole with sand as the drilling rod is withdrawn from the ground. A 0.250-inch outside diameter (0.187-inch inside diameter) Teflon tube with a HDPE filter at the bottom of the tube will be inserted to the top of the 6-inch thick sand layer (a depth of 6 inches above the bottom of the borehole), and additional #2/16 Lonestar sack sand will be poured into the borehole to one foot above the bottom of the borehole (the lowermost one foot of the borehole will be filled with sand with the filter at the end of the tube in the middle of the sand interval).

Granular bentonite (measuring approximately 1 to 2 millimeters in diameter) will be placed in the annular space above the sand to 6 inches above the sand, and the remaining borehole will be filled with hydrated bentonite slurry. The tubing length will be 6.5 feet for the borehole. The top of the soil gas well will be enclosed in a well box with a lid that is secured with bolts.

Following construction, the soil gas well will not be sampled for a minimum of 48 hours. 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.

A soil gas sampling manifold with a 1-liter Summa canister as the sampling canister (see Figure 5) 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, 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 5). No purge testing for purge volume determination will be performed because the samples will be collected using Summa canisters. Following successful verification of the manifold shut-in test, a default of three purge volumes will be extracted prior to sample collection. The purge volume will be calculated based on the void space surrounding the HDPE filter and the volume of the tube. The purge time will be calculated using a nominal flow rate provided by the flow controller of 150 cubic centimeters per minute. In addition, a dish containing 2-Propanol will be placed in the shroud to be used as a tracer gas for EPA Method TO-17 sample analysis.

Following completion of the purging of three volumes, 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 5) 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 1-liter Summa canister using a stainless steel sampling tee for the Summa canisters. 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.

In addition to collection of Summa canister samples as described above, sorbent tube samples will be collected as follows. The manifold will be equipped with a tee located downstream from the flow controller. At the time that the manifold is assembled (prior to the shut-in test), a sorbent tube will be connected inside the shroud to the tee that is located downstream from the flow controller with a valve located between the sorbent tube and the tee. The downstream side of the sorbent tube will be connected with a polyethylene tube to a flow meter and a vacuum pump. Following Summa canister sample collection, the Summa canister will be isolated from the manifold with a valve, and the valve between the manifold and the sorbent tube will be opened. A vacuum pump will be used to apply a vacuum to the sorbent tube and a flow meter will be used to measure the soil gas flow rate at a nominal flow rate of 150 cubic centimeters per minute for collection of a 200 cubic centimeter sample. One replicate sample will be collected. Following collection of each sorbent tube soil gas sample the ends of the sorbent tube will be sealed. Before and after connection of the sorbent tube to the manifold the sorbent tube will be stored in a cooler with ice.

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 a Soil Gas Sampling Data Sheet.

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 a new HDPE filter will be used for soil gas well construction. Clean, unused vacuum gages

and stainless steel sampling manifolds will be used for soil gas sample collection. 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.

Sample Analysis

All of the soil and groundwater samples will be analyzed at McCampbell Analytical, Inc. (McCampbell) in Pittsburg, California. The groundwater samples will be analyzed for Total Petroleum Hydrocarbons as Gasoline (TPH-G), using EPA Method 5030B in conjunction with EPA Method 8021B and modified EPA Method 8015B, for TPH-D and Total Petroleum Hydrocarbons as Motor Oil (TPH-MO) by EPA Method 3510 in conjunction with EPA Method 8015B: and for the Volatile Organic Compounds (VOCs) MTBE and BTEX, by EPA Method 8260B (including naphthalene).

All of the soil samples will be analyzed at McCampbell for TPH-G using EPA Method 5030B in conjunction with EPA Method 8021B and/or modified EPA Method 8015B, for TPH-D and TPH-MO using EPA Method 3550B in conjunction with EPA Method 8015B, and for the VOCs MTBE and BTEX using EPA Method 8260B (including naphthalene).

All of the Summa canister and sorbent tube soil gas samples will be analyzed at Air Toxics Limited of Folsom California (Air Toxics). The samples collected in Summa canisters will be analyzed for TPH-G, MTBE, BTEX, and DFA (the tracer gas) using EPA Method TO-15, and for oxygen, methane and carbon dioxide using method ASTM D-1946. The samples collected on sorbent tubes will be analyzed for naphthalene, TPH-D and 2-Propanol (the tracer gas) using EPA Method TO-17. 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).

All of the Tedlar bag shroud samples will be analyzed at Air Toxics using EPA Method 8260B for the tracer gases DFA for Summa canister samples collected for TO-15 analysis and 2-Propanol for sorbent tube samples collected for TO-17 analysis.

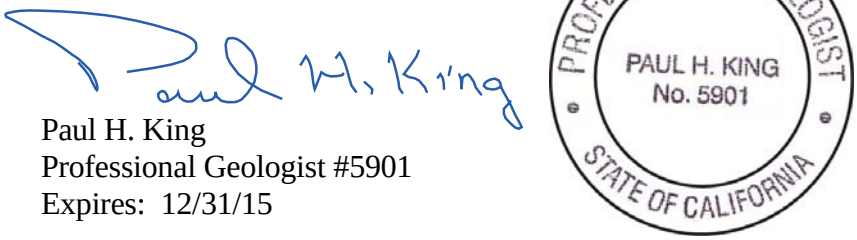
Report Preparation

Upon receipt of the laboratory analytical results, a report will be prepared. The report will document the results of the groundwater, soil and soil gas sample collection procedures and sample results. The report will include maps showing the sample collection locations, 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 the County ftp site and to GeoTracker.

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 UST Pit Soil Sample Laboratory Analytical Results
Table 2 - Summary of UST Pit Groundwater Sample Laboratory Analytical Results

Figure 1 - Site Location Map
Figure 2 - Site Location Map Detail
Figure 3 - Site Vicinity Aerial Photograph Showing Proposed Groundwater Grab Sample Collection Locations
Figure 4 - Site Plan Detail Showing Former UST and Proposed Sample Collection Locations
Figure 5 - Typical Soil Gas Sample Collection Manifold

Appendix A - 2103 San Pablo Avenue Geologic Cross Sections

Cc: Mr. Benny Kwong, EAH, Inc.

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TABLES

TABLE 1
SUMMARY OF UST PIT BOTTOM SOIL SAMPLE LABORATORY ANALYTICAL RESULTS

Sample ID	Sample Date	Sample Depth (Feet)	TPH-G	TPH-SS	TPH-K	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Other VOCs by EPA 8260B
T1-9.5	5/20/2014	9.5	24, a	51, a	**570, b**	**790, b**	**810, b**	**290, b**	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except
														n-Butyl benzene = 0.012,
														sec-Butyl benzene = 0.11,
														4-Isopropyl toluene = 0.0064,
														n-Propyl benzene = 0.0066
T2-9.5	5/20/2014	9.5	21, a	47, a	**970, b**	**1,100, b**	**1,100, b**	**470, b**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	All ND, except
														sec-Butyl benzene = 0.15
T2-11.5	5/20/2014	11.5	20, a	41, a	790, b	1,100, b	1,100, b	380, b	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	All ND, except
														sec-Butyl benzene = 0.15,
														4-Isopropyl toluene = 0.015
ESL[1]			100	100	100	100	100	100	0.023	0.044	2.9	3.3	2.3	n-Butyl benzene = No Value,
														sec-Butyl benzene = No Value,
														4-Isopropyl toluene = No Value,
														n-Propyl benzene = No Value
ESL[2]			500	500	110	110	500	500	0.023	0.044	2.9	3.3	2.3	n-Butyl benzene = No Value,
														sec-Butyl benzene = No Value,
														4-Isopropyl toluene = No Value,
														n-Propyl benzene = No Value

NOTES

TPH-G = Total Petroleum Hydrocarbons as Gasoline.
TPH-SS = Total Petroleum Hydrocarbons as Stoddard solvent.
TPH-K = Total Petroleum Hydrocarbons as Kerosene.
TPH-D = Total Petroleum Hydrocarbons as Diesel.
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil.
TPH-MO = Total Petroleum Hydrocarbons as Motor Oil.
MTBE = Methyl-tert-Butyl Ether.
ND = Not Detected.
a = Laboratory Analytical Note: strongly aged gasoline or diesel range compounds are significant in the TPH-G chromatogram.
b = Laboratory Analytical Note: unmodified or weakly modified diesel is significant.
of drinking water. Residential land use.
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,Groundwater is a current or potential source
of drinking water. Residential land use.
ESL[2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board , updated December 2013, from Table C-1 – Deep Soil Screening Levels,Groundwater is a current or potential source
of drinking water. Residential land use.
Values in bold exceed their respective ESL[1] values.
Underlined values exceed their respective ESL[2] values.
All results and ESLs reported in milligrams per kilogram (mg/kg) unless otherwise noted.

TABLE 2
SUMMARY OF UST PIT GROUNDWATER SAMPLE ANALYTICAL RESULTS

Sample ID	Sample Date	TPH-G	TPH-SS	TPH-K	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Other VOCs by EPA 8260B
UST Pit Water 1	5/23/2014	**110, a**	**130, a**	**3,300, b**	**4,600, b**	**4,700, b**	**1,700, b**	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	All ND, except Naphthalene = 1.0, sec-Butyl benzene = 2.7
ESL[1]		100	100	100	100	100	100	0.023	0.044	2.9	3.3	2.3	Naphthalene = 6.1, sec-Butyl benzene = No Value
ESL[2]		None	None	None	None	None	None	9,900	27	95,000	310	37,000	Naphthalene = 160, sec-Butyl benzene = No Value,

NOTES

TPH-G = Total Petroleum Hydrocarbons as Gasoline.

TPH-SS = Total Petroleum Hydrocarbons as Stoddard solvent.

TPH-K = Total Petroleum Hydrocarbons as Kerosene.

TPH-D = Total Petroleum Hydrocarbons as Diesel.

TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil.

TPH-MO = Total Petroleum Hydrocarbons as Motor Oil.

MTBE = Methyl-tert-Butyl Ether.

ND = Not Detected.

a = Laboratory Analytical Note: TPH pattern that does not appear to be derived from gasoline (Stoddard solvent/ mineral spirits?).

b = Laboratory Analytical Note: unmodified or weakly modified diesel is significant.

ESL[1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table F-1a – Groundwater Screening Levels, groundwater is a current or potential drinking water resource.

ESL[2] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion (Fine-Coarse Mix). Residential Land Use.

Values in bold exceed their respective ESL[1] values.

All results and ESLs reported in milligrams per kilogram (mg/kg) unless otherwise noted.

FIGURES

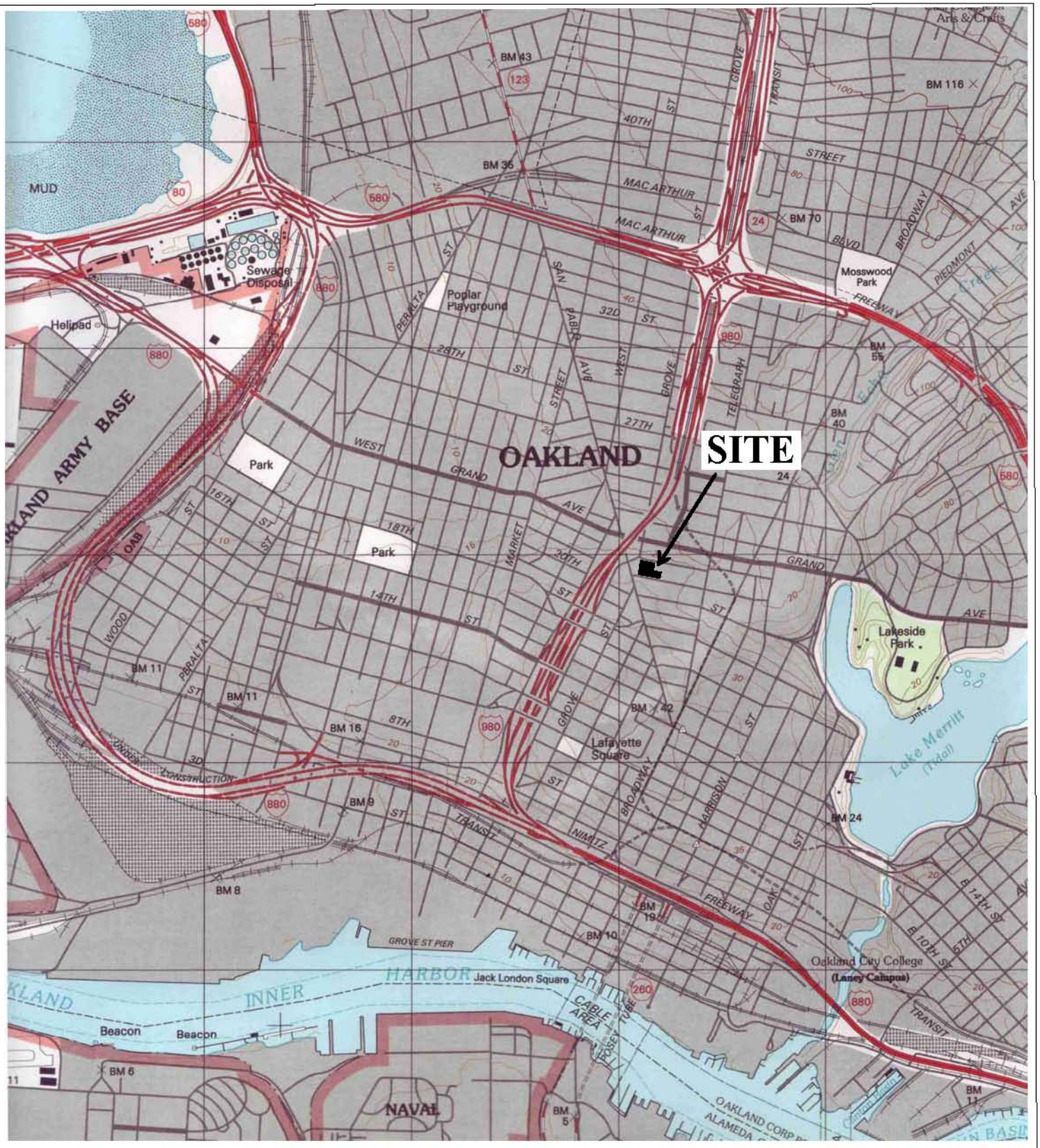


Figure 1
Site Location Map
Cathedral Gardens
638 21st Street
Oakland, California

Base Map From:
U.S. Geological Survey
Oakland West, California
7.5-Minute Quadrangle
Photorevised 1993

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

0 1,000 2,000
Approximate Scale In Feet

N

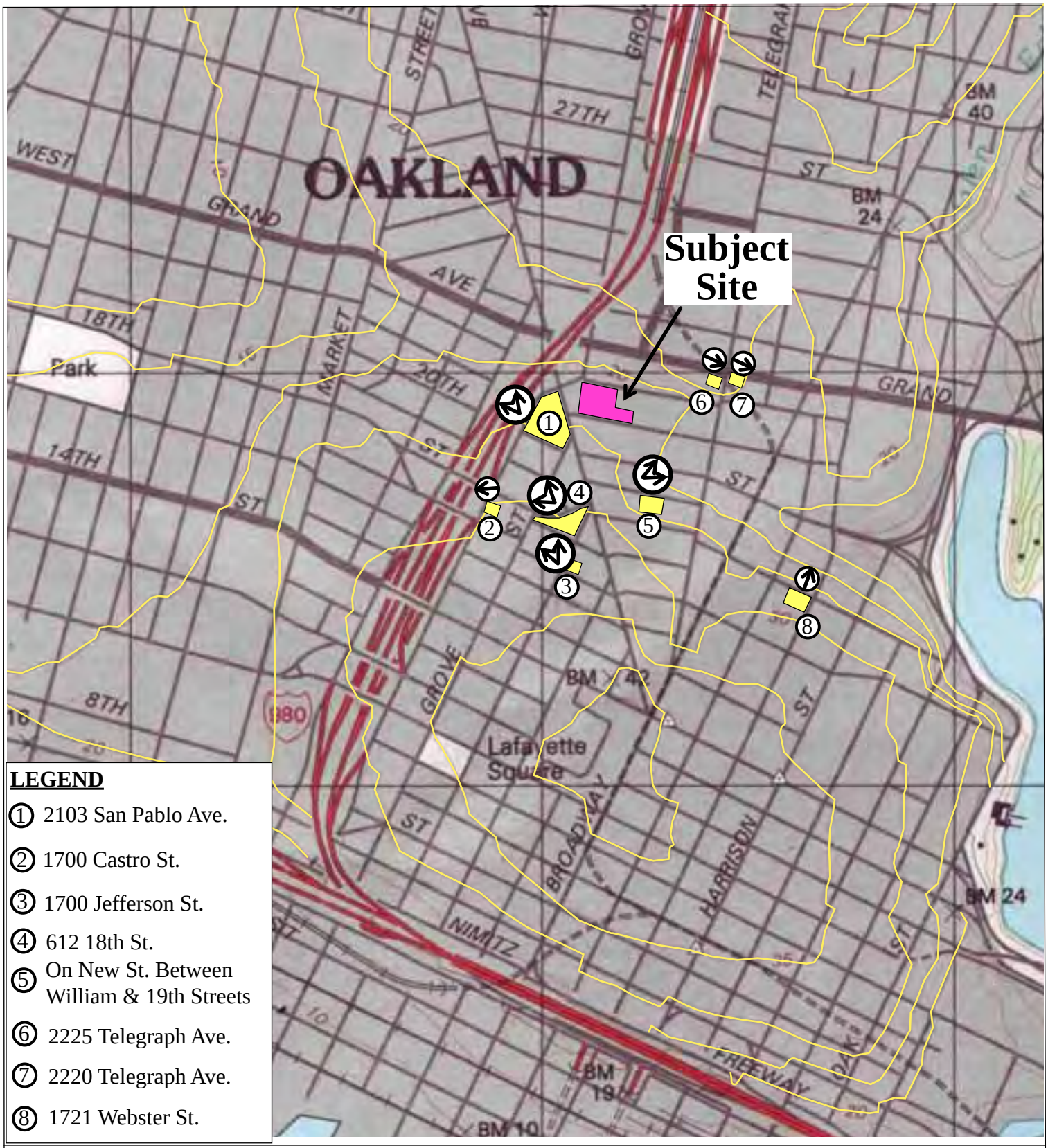


Figure 2
Site Location Map Detail
Cathedral Gardens
638 21st Street
Oakland, California

Base Map From:
U.S. Geological Survey
Oakland West, California
7.5-Minute Quadrangle
Photorevised 1993

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

0 500 1,000
Approximate Scale In Feet

N

Figure 3
Site Vicinity Aerial Photograph Showing Proposed Groundwater Grab Sample Collection Locations
Cathedral Gardens
638 21st Street
Oakland, California

Base Map From:
U.S. Geological Survey
Oakland West, California
7.5-Minute Quadrangle
Photorevised 1993

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

0 50 100
Approximate Scale In Feet

N

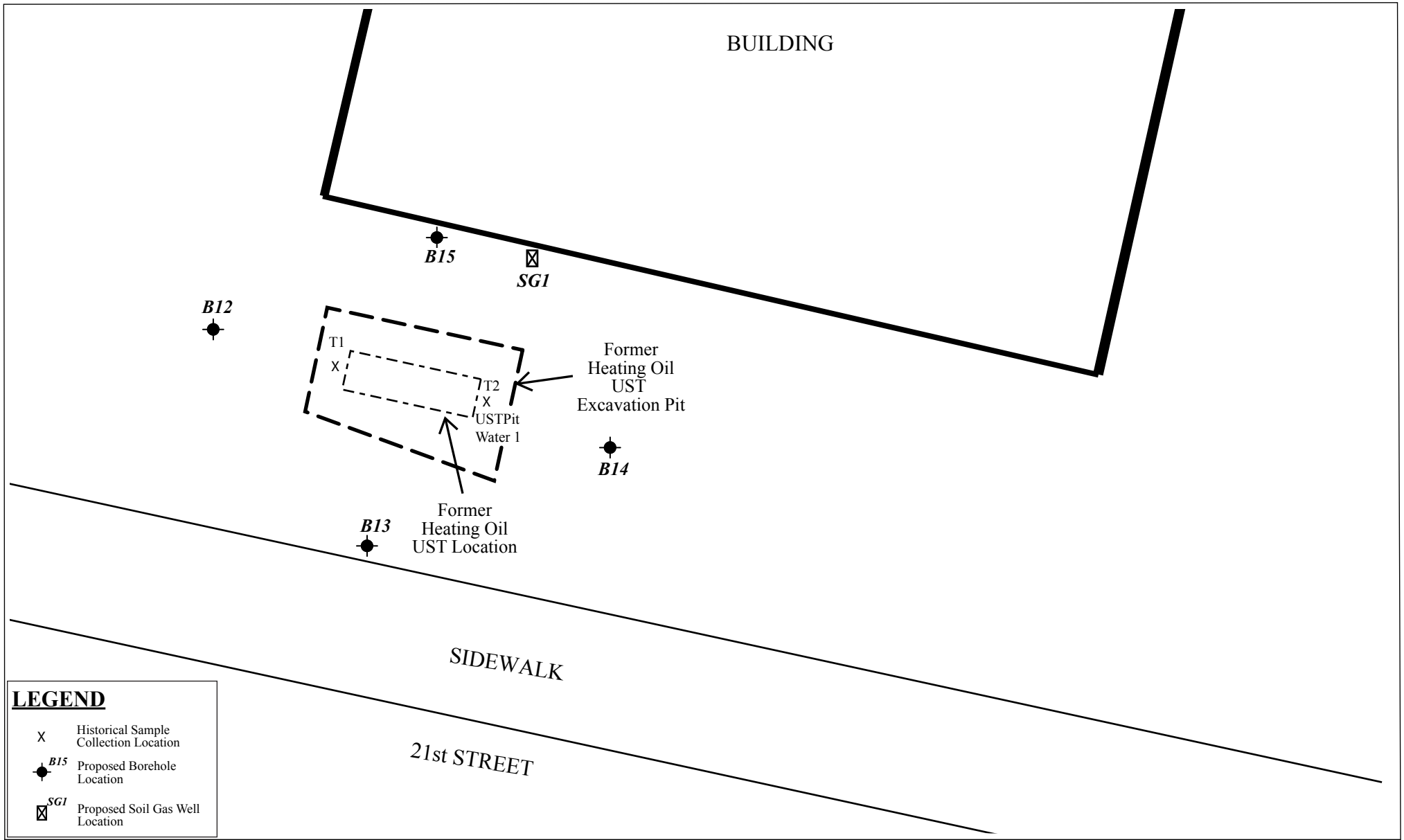


Figure 4
Site Plan Detail Showing Former UST and Proposed Sample Collection Locations
Cathedral Gardens
638 21st Street
Oakland, California

Base Map From:
Basics Environmental, Limited Phase II
Environmental Site Sampling Report,
dated June 27, 2011

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

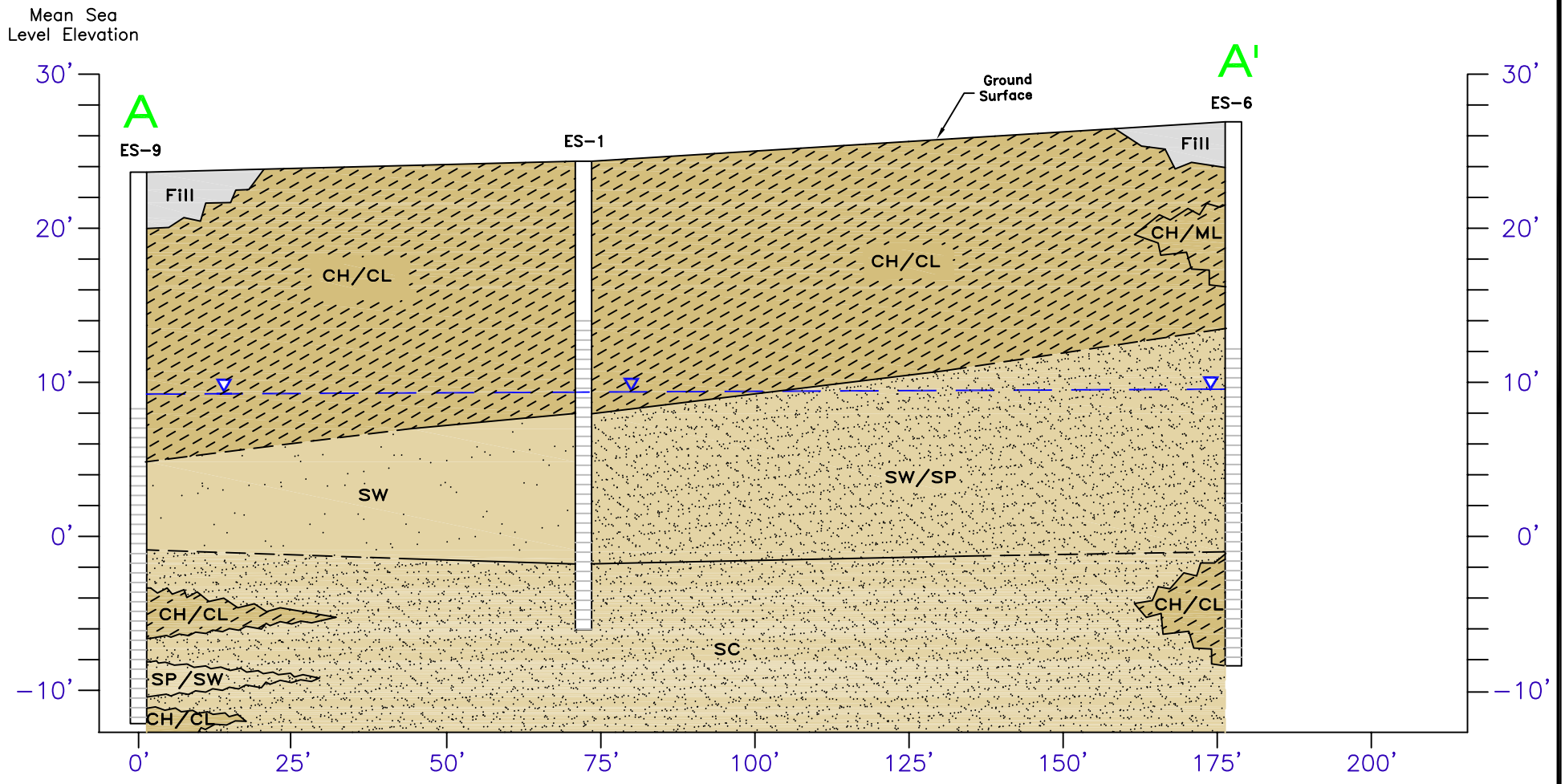
0 5 10
Approximate Scale In Feet

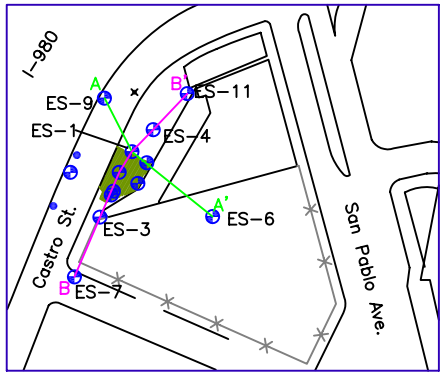
N

Figure 5
Typical Soil Gas Sampling Manifold
Cathedral Gardens
638 21st Street
Oakland, California

APPENDIX A

2103 San Pablo Avenue Geologic Cross Sections





1379 LBA 05/20/09

LEGEND

CH	High Plasticity Clays
CL	Low Plasticity Clays
ML	Clayey Silt
SC	Clayey Sand
SP	Poorly-Graded Sands
SW	Well-Graded Sands
▽	Groundwater Table

HORIZONTAL SCALE

0 12.5 25 FT.

VERTICAL SCALE

0 5 10 FT.

FIGURE 7

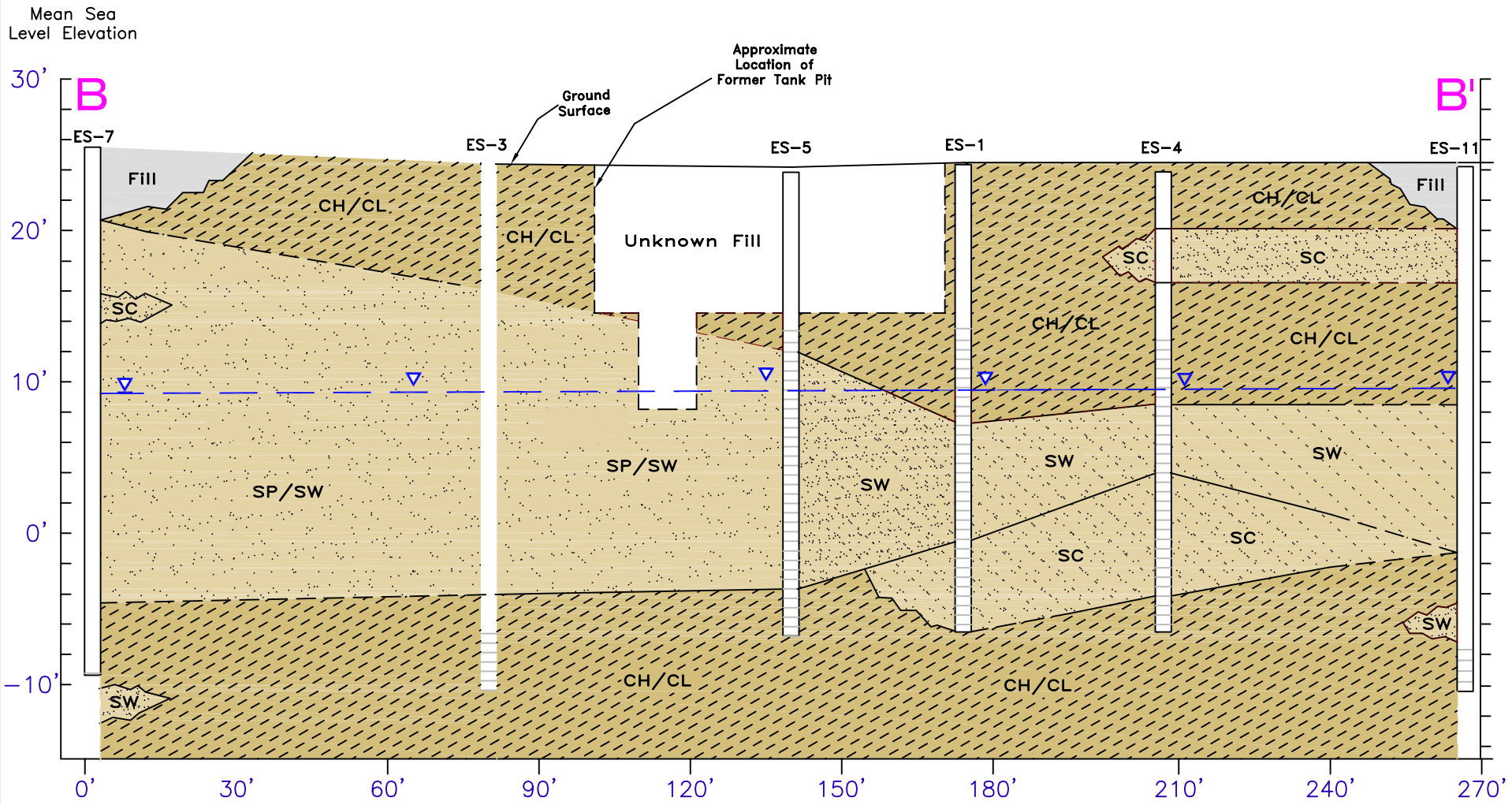
CROSS-SECTION A-A'

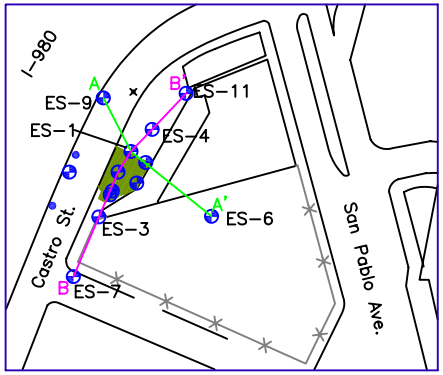
Greyhound Lines, Inc.
2103 San Pablo Avenue
Oakland, California

GREEN STAR ENVIRONMENTAL

Generated by:	*TDR*
Approved by:	*TDR*
Date:	*05/20/09*

PROJECT No. 09-1379





1379 LBA 05/20/09

LEGEND

CH	High Plasticity Clays
CL	Low Plasticity Clays
ML	Clayey Silt
SC	Clayey Sand
SP	Poorly-Graded Sands
SW	Well-Graded Sands
▽	Groundwater Table

HORIZONTAL SCALE

0 15 30 FT.

VERTICAL SCALE

0 5 10 FT.

FIGURE 8

CROSS-SECTION B-B'

Greyhound Lines, Inc
2103 San Pablo Avenue

GREEN STAR ENVIRONMENTAL

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Date:	05/20/09

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