LIBITZKY
PROPERTY
COMPANIES

RECEIVED
By Alameda County Environmental Health 3:46 pm, Aug 04, 2015

July 27, 2015

Ms. Karel Detterman
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

SUBJECT: REQUEST FOR FUEL UST NO FURTHER ACTION CONCURRENCE CERTIFICATION
County File # RO 2991
Acts Full Gospel Church & Industrial Properties
8410 Amelia Street
Oakland, California

Dear Ms. Detterman:

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

- Request for Fuel UST No Further Action Concurrence dated July 27, 2015 (document 0453.R2).

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

Should you have any questions, please do not hesitate to contact me at 510-652-4950.

Sincerely,

Amelia Street Partners, LLC

Kevin Perkins

Attachment

0453.L5

P&D ENVIRONMENTAL, INC.

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

July 27, 2015
Report 0453.R2

Mr. Kevin Perkins
Amelia Street Partners, LLC
1475 Powell Street, Suite 201
Emeryville, California 94608

SUBJECT: REQUEST FOR FUEL UST NO FURTHER ACTION CONCURRENCE
County File # RO 2991
Acts Full Gospel Church & Industrial Properties
8410 Amelia Street
Oakland, California

Dear Mr. Perkins:

P&D Environmental, Inc. (P&D) has prepared this request for fuel UST no further action concurrence as a follow up to recommendations set forth in P&D's UST In-Place Closure Report (document 0453.R1) dated July 15, 2013. During conversations with Alameda County Environmental Health (ACEH), it was requested that we provide supporting documentation for Low Threat Closure Policy (LTCP) closure eligibility, including a site history, a site conceptual model, and comparison with all of the criteria for LTCP closure. The case is currently open as a Site Cleanup Program case, and not as a fuel release case. A Site Location Map is attached as Figure 1 and a site vicinity map showing historical borehole locations and the location of the UST that was closed in-place is attached as Figure 2.

BACKGROUND

A detailed discussion of the site background is provided in the Basics Environmental, Inc. (Basics) February 29, 2008 Phase I Environmental Site Assessment Report and P&D's October 12, 2011 Conduit Study and Work Plan Addendum (document 0453.W2).

Documentation of historical investigations and sample collection at the site is provided in the following reports.

- February 29, 2008 Phase I Environmental Site Assessment Report prepared by Basics Environmental, Inc. (Basics),
- May 7, 2008 Limited Phase II Environmental Site Sampling Report prepared by Basics,
- August 9, 2010 Soil Gas Investigation Work Plan prepared by P&D Environmental, Inc. (P&D),
- October 12, 2011 Conduit Study and Work Plan Addendum prepared by P&D,
- March 26, 2012 Air Sampling Work Plan prepared by P&D,
- July 15, 2013 UST In-Place Closure Report prepared by P&D,

Review of the Basics Phase I Environmental Site Assessment Report dated February 29, 2008 shows that site historical information was obtained from a review of Sanborn Fire Insurance Maps, United States Geological Survey (U.S.G.S.) Topographic Maps, aerial photographs, and Polk and Haines City Directories. Basics reviewed Sanborn maps dated from 1889 to 1969, a topographic map dated 1993, and city directories dated from 1969 to 2002 were reviewed in February 2008, within the libraries maintained by the University of California in Berkeley, California (UCB) and City of Oakland, California. The aerial photographs were provided by UCB, GlobeXplorer, Terra Server USA, and Google Earth. Historical addresses associated with the subject site include 8300, 8410, 8428, 8442, and 8450 Amelia Street; 865 85th Avenue (formerly Highland Avenue); and 8301 through 8435 G Street (formerly Peralta Avenue).

In the Oakland Sanborn Fire Insurance Maps of 1889, 1903, and 1912, the subject site fell beyond the area of coverage and no site-specific maps were available. However, the index map of 1912 depicted Amelia Street, G Street, 83rd Avenue, and 85th Avenue in their current locations. In the Sanborn Map of 1925, the subject site appeared to be developed with three residential dwellings (8301 G Street, and 8428 and 8448 Amelia Street) and an auto garage. 84th Avenue ran east and west through the subject site. The adjacent properties consisted of undeveloped land and residential dwellings.

In the Sanborn Map of 1950, the subject site appeared to be developed with the Albrite Paint and Varnish Company (8410-8428 Amelia Street), which consisted of an office/warehouse building (Building C) (with a printing area), a paint factory building, a sash and door factory building (Building D), a lumber storage building (between the current Buildings C and D), three storage buildings, two lumber storage sheds, and a lumber materials yard. A 40-gallon chemical cart was noted onsite (the location of the cart is unclear). In addition, a residence with garage (8442 Amelia Street), and a room (865 85th Avenue) were depicted at the southwest corner of the subject site. Three residences addressed as 8301 and 8301 ½ G Street and 8300 Amelia Street appeared at the northern portion of the subject site. 84th Avenue continued to run east and west through the subject site. The adjacent properties consisted of undeveloped land and residences (across G Street), an office building (across 85th Avenue), American Pipe Construction Company (across Amelia Street), and Mother's Cake and Cookie Factory (across 83rd Avenue).

In the Sanborn Map of 1952, the subject site continued to be occupied by the Albrite Paint and Varnish Company. A dry kiln and plywood warehouse was added to the west side of the subject site; a storage structure was demolished and constructed in another area of the subject site; two storage sheds and a garage were removed; two dwellings (8301 and 8301 ½ G Street) (north side of the subject site) were converted to storage buildings and a building material storage yard. The residence at the northwest corner of the subject site (8300 Amelia Avenue) remained unchanged. 84th Avenue was depicted as "Not Open." No significant changes appeared at the adjacent properties.

In the Sanborn Map of 1959, the subject site continued to be occupied by the Albrite Paint and Varnish Company. The two building at the north side of the subject site (8301 and 8301 ½ G Street), were demolished and railroad spurs were constructed along the east side of the subject site (along G Street) and northeast side of the subject (in the location of the former buildings). An auto garage was added to the dwelling at the northwest side of the subject site (8300 Amelia

Street). Building B (addressed as 8410 Amelia Street) appeared to be developed at the center of the subject site, replacing the former dry kiln, plywood warehouse, paint factory, and storage sheds. The plywood warehouse (Building D) and office/warehouse building (Building C) at the east and west sides of the subject site remained unchanged, except the current loading dock/ramp was added to the east side of the subject site. Building E (addressed as 8428 Amelia Street) was developed in its current location as a plywood warehouse. An addition was constructed at the dwelling at the southwest portion of the subject site (8448 Amelia Street). A burner was depicted at the west side of the subject site, north of 8448 Amelia Street. The residence at the south side of the subject site (865 85th Avenue) was demolished and a new dwelling was constructed at the southwest corner of the subject site (8450 Amelia Street). 84th Avenue was no longer depicted through the subject site. The adjacent property at 8310 Amelia Street was developed with the current building. The adjacent properties consist of warehouses to the north, undeveloped land to the east, residences and a pipe shop to the south, and undeveloped land to the west.

In the Sanborn Map of 1960, the subject site continued to be occupied by the Albrite Paint and Varnish Company. The residences at the northwest corner of the subject site (8300 Amelia Street) were demolished. Building B remained unchanged. The office/warehouse building (Buildings C), plywood warehouse and factory (Building D), lumber storage building (between the current Buildings C and D), and plywood warehouse (Building E) remained unchanged. The residence at the southwestern portion of the subject site (8448 Amelia Street) was demolished. The burner remained unchanged. The residence at the southwestern corner of the subject site (8450 Amelia Street) was converted to a restaurant. No significant changes appeared at the adjacent properties.

In the Sanborn Map of 1961, the subject site continued to be occupied by the Albrite Paint and Varnish Company. No significant changes appeared at the subject site, except the residence at the southwestern corner of the subject site (8450 Amelia Street) was converted to a store. No significant changes appeared at the adjacent properties.

In the Sanborn Map of 1965, no significant changes appeared at the subject site, except an addition was constructed at Building D, the burner was no longer depicted, and the subject site was occupied by Weyerhaeuser Company. The buildings appeared to be utilized for the same purposes. In addition, the chemical cart was no longer depicted at the west side of the subject site but was still noted to be onsite. No significant changes appeared at the adjacent properties.

In the Sanborn Map of 1968, no significant changes appeared at the subject site. The adjacent property to the east of the subject site appeared to be developed with the current apartment complex. No other significant changes appeared at the adjacent properties. In the aerial photograph of 1968, the subject site and adjacent properties appeared to be developed as noted in the 1968 Sanborn Map.

In the city directory of 1969, the subject site was listed as being occupied by Weyerhaeuser (wood products) (8410 Amelia Street) and Mount Olive Baptist Church (8450 Amelia Street). No other listings were found for the subject site addresses. In the Sanborn Map of 1969, the subject site appeared to be occupied by Corrobilt Container Company. Building C was depicted as a commercial building. Building D was depicted as a manufacturing building. Buildings B

(8410 Amelia Street) and E (8428 Amelia Street) appeared as warehouses. The lumber storage building between Building C and D was no longer used to store lumber (the usage of the building was not indicated). The store at the southwest corner of the subject site (8450 Amelia Street) remained unchanged. In addition, the chemical cart was no longer noted at the subject site and Building C was not yet developed with its southern addition. No significant changes appeared at the adjacent properties.

In the city directory of 1973, the subject site was listed as being occupied by Corrobilt Containers (8410 Amelia Street) and Brooks Samuel A. and Mount Olive Baptist Church (8450 Amelia Street). No other listings were found for the subject site addresses.

In the city directories of 1977 and 1982, the subject site was listed as being occupied by Corrobilt Containers (8410 Amelia Street) and as vacant (8450 Amelia Street). No other listings were found for the subject site addresses.

In the city directory of 1987, the subject site was listed as being vacant (8300 Amelia Street); occupied by Center Truck Body, Crosby & Overton Construction, Inc., and Liuita USA, Inc. (8410 Amelia Street); and as vacant (8450 Amelia Street). No other listings were found for the subject site addresses.

In the city directory of 1992, the subject site was listed as being occupied by Puccetti Wood Products (8402 Amelia Street), Creative Enclosures (8410 Amelia Street), Crosby & Overton Construction, Inc. (8430 Amelia Street). 8300 and 8450 Amelia Street were listed as being vacant. No other listings were found for the subject site addresses.

In the aerial photograph of 1993, the subject site and adjacent properties appeared to be developed with the current buildings. In the topographic map of 1993, the subject site and adjacent properties appeared to be located in a shaded region designated as urban development.

In the city directory of 1997, the subject site was listed as being occupied by Puccetti Wood Products (8402 Amelia Street) and Crosby & Overton Construction, Inc. (8430 Amelia Street). 8300, 8410, and 8450 Amelia Street were listed as being vacant. No other listings were found for the subject site addresses.

In the aerial photograph of 2002, the subject site and adjacent properties appeared to be developed with the current buildings. In the city directory of 2002, the subject site was listed as being occupied by Puccetti Wood Products (8402 Amelia Street), Recycling Works, Inc. (8410 Amelia Street), Crosby & Overton Construction, Inc. and Quality Furniture Manufacturing (8430 Amelia Street). 8450 Amelia Street was listed as being vacant. No other listings were found for the subject site addresses.

In the city directory of 2007, the subject site was listed as being occupied by Allied Poly Manufacturing, Inc., D&J International, Inc. and Shred Works (8410 Amelia Street). 8402 and 8430 Amelia Street were listed as being vacant No other listings were found for the subject site addresses. In the aerial photograph of 2007, the subject site and adjacent properties appeared to be developed with the current buildings.

A May 7, 2008 Limited Phase II Environmental Site Sampling Report prepared by Basics documented the results of soil and groundwater samples collected from a total of six boreholes that were drilled at various locations throughout the site. The only chemical of concern detected in any of the samples was Trichloroethene (TCE) in two of the six borehole groundwater samples (SB3 and SB6) at concentrations of 30 and 100 micrograms per Liter (ug/L), respectively.

Additionally arsenic was detected in all of the soil borehole samples collected from boreholes SB1 through SB6 at concentrations ranging from 3.6 to 12 milligrams per kilogram (mg/kg). The subject property is located in Oakland, California where arsenic is a naturally occurring metal in the soil. In accordance with the December 2011 document 'Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region' an upper estimate for background arsenic concentrations within undifferentiated urbanized flatland soils in the San Francisco Bay Area was determined to be 11 mg/kg. This evaluation was conducted at the suggestion of the San Francisco Bay Area Regional Water Quality Control Board (RWQCB) in collaboration with the San Francisco State University. In accordance with the March 2008 'Determination of a Southern California Regional Background Arsenic Concentration in Soil' document produced by the California Department of Toxic Substances Control (DTSC), the upper-bound concentration of 12 mg/kg was established for arsenic in southern California. The DTSC currently uses this value for both Northern and Southern California. Although detected arsenic concentrations at the site exceed SFRWQCB ESL Table A-2 shallow soil screening values, all of the detected arsenic concentrations are considered to be representative of background concentrations.

P&D's October 12, 2011 Conduit Study and Work Plan documented a magnetometer survey associated with a former fuel dispenser pedestal followed by exploratory excavation in September 2011 which identified a former gasoline UST on the east side of the property adjacent to G Street. Based on information obtained during the exploratory excavating in September 2011 the UST diameter was determined to be 4 feet with the depth of burial identified as between the depths of 5.5 and 9.5 feet below the ground surface (bgs). In addition, the work plan documented collection and analysis of a water sample from the UST, which identified the UST as a former leaded gasoline UST. On March 27, 2013 the UST piping and the top of the UST were exposed by IMX, Inc. (IMX) of Oakland, California using a backhoe. Following inspection by City of Oakland Fire Department Assistant Fire Marshal Leroy Griffin on March 28, 2013 the UST piping was removed, the UST was filled, and soil and groundwater samples were collected under the supervision of inspector Griffin. At the time of in-place UST closure in 2013 it was determined that the UST was oriented perpendicular to the orientation identified in the September 2011 investigation.

Approximately 7.3 tons of excavated soil was stockpiled and then disposed of at the Republic Services Vasco Road landfill in Livermore, California. In accordance with approval by Inspector Griffin, the UST piping was disposed of as scrap metal. As cement was pumped into the UST the displaced water was pumped from the UST into storage containers. A total of approximately 550 gallons of water was pumped from the UST. City of Oakland inspector Griffin was onsite to observe the removal of the water from the UST. The water was subsequently filtered through two 55-gallon carbon filtration vessels and the filtered water placed into storage totes.

On March 28, 2013 the piping located between the former dispenser island and the UST was inspected at the time of removal. Pipe trench soil samples P1 and P2 were collected from beneath

the UST piping at locations shown in Figure 3. One location was beneath the piping elbow, and the second location was four feet west of the piping elbow where corrosion was observed on the underside of the piping. The samples were collected at depths of 0.7 and 1.0 feet below the bottom of the piping, respectively. No additional soil samples were collected from beneath the UST piping because no corrosion holes were observed at any other locations in the piping and no evidence of staining, discoloration, odor, or detectable PID values were encountered along the length of the pipe trench.

Following removal of the concrete dispenser pedestal one soil sample designated as D1 was collected at a depth of 1.0 foot below the bottom of the UST piping that was located beneath the dispenser pedestal.

Soil samples were collected from the ends of the UST on March 28, 2013 by hand augering to a depth of 6.0 feet bgs at each end of the UST The soil samples collected at the west and east ends of the UST were designated as T1-6.0 and T2-6.0, respectively. Based on the absence of groundwater in boreholes T1 and T2 at the time of soil sample collection, borehole T1 (located at the west end of UST, see Figure 3) was extended with the hand auger on March 28, 2013 until groundwater was encountered at a depth of 10.0 feet bgs. The measured depth to groundwater in borehole T1 prior to groundwater sample collection was 7.3 feet bgs, and groundwater sample Pit Water 1 was collected from borehole T1.

The only chemical of concern detected in the soil samples was lead in shallow soil samples P1, P2, and D1 (collected at depths of 0.7, 1.0, and 1.0 feet bgs, respectively) at concentrations of 80, 160, and 280 mg/kg, respectively. Total Petroleum Hydrocarbons as Gasoline (TPH-G), Total Petroleum Hydrocarbons as Diesel (TPH-D), Total Petroleum Hydrocarbons as Bunker Oil (TPH-BO), Total Petroleum Hydrocarbons as Motor Oil (TPH-MO), and benzene were detected in sample Pit Water 1 at concentrations of 9,600, 4,300, 6,000, 1,100, and 8.5 µg/L, respectively. Figures 2 and 3 show features and sampling locations associated with the closing of the UST in-place.

SITE CONCEPTUAL MODEL

The contaminants of potential concern, their fate and transport and extent, the site geology and hydrogeology, and evaluation of sensitive receptors are discussed in the site conceptual model. This report only addresses the petroleum hydrocarbons as related to the UST in-place closure and discussions regarding TCE at the subject site is addressed under different cover.

Contaminants of Potential Concern

Historical UST in-place closure soil sample results are summarized in Table 1, UST in-place closure groundwater sample results are summarized in Table 2, historical borehole soil sample results are summarized in tables 3A and 3B, and the historical borehole groundwater sample results are summarized in Table 4. The sample depth for samples collected at depths of less than 5.0 feet below the ground surface are hi-lited in Tables 1 and 3A. The borehole groundwater results are considered to be representative of water quality at the site.

Review of Tables 1, 2, and 4 shows that the Chemicals of Potential Concern (COPCs) are TPH-G, TPH-D, TPH-BO, TPH-MO, Methyl tertiary-butyl ether (MTBE), and benzene, toluene, ethylbenzene, and total benzene. Review of Tables 1 and 2 shows that compounds detected in the analysis for TPH-Bunker Oil (TPH-BO) are identified by the laboratory as consisting of gasoline-range, oil range, and diesel-range compounds with no recognizable pattern.

Non-petroleum hydrocarbon EPA Method 8260 compounds that were detected in groundwater samples at the site are not included in the COPCs listed above. These additional non-petroleum hydrocarbon compounds were detected at low concentrations and are assumed to be associated with historical industrial activities in the vicinity of the subject site and are not related to the recently closed in-place UST.

Contaminant Extent

Soil sample collection locations for the in-place closure of the gasoline UST located on the east side of the subject site for the sample results summarized in Table 1 were collected in 2013 when the UST was exposed and filled with concrete. Review of Table 1 shows that none of the detected contaminants exceed their respective LTCP Table 1 Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Additionally, none of the Table 3A historical borehole soil sample values exceed their respective RWQCB December 2013 Table A-2 Environmental Screening Level (ESL) soil values for commercial land use where groundwater is a current or potential drinking water source. Review of Tables 1 and 3A also show that MTBE was not detected in any of the soil samples, and that with only a few exceptions, BTEX compounds were not detected in any of the soil samples, and review of Table 3A also shows the only analyte detected in any of the historical borehole soil samples (besides metals) was TPH-BO in soil sample SB5-4.5 at a concentration of 4.2 mg/kg.

Review of Figure 3 and Table 1 shows that soil samples P1, P2, and D1, collected at depths of 0.7, 1.0, and 1.0 ft bgs, are located between approximately 25 and 30 feet south of the closed in-place UST, and that no analytes were detected at locations T1-6.0 and T2-6.0 which are located on either side of the closed in-place UST pit. Additionally, review of Figure 3 and Table 3A shows that no analytes were detected in historical borehole soil samples collected from borehole SB6, which is approximately 42 feet west of the closed in-place UST, and borehole SB1, which is approximately 30 feet south of the closed in-place UST. Based on the absence of elevated TPH-G concentrations in boreholes SB1 and SB6, and in soil samples T1-6.0 and T2-6.0, the petroleum hydrocarbons encountered at borehole P1, P2, and D1 appear to be limited in horizontal and vertical extent.

Review of Table 2 shows that the groundwater sample results for the UST in-place closure UST end borehole groundwater sample (Pit Water 1) collected from the borehole augered at the southwest end of the UST on March 28, 2013 exceed RWQCB December 2013 Table F-1a groundwater ESLs for TPH gasolines (TPH-G), TPH middle distillates (TPH-D), TPH residual fuels (TPH-BO and TPH-MO) of 100 ug/L, and the RWQCB December 2013 Table F-1a groundwater ESL benzene of 1.0 ug/L. Review of Table 2 also shows that the detected benzene concentration of 8.5 ug/L does not exceed either the RWQCB December 2013 Table E-1 Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion ESL for benzene of

270 ug/L, or the LTCP Groundwater Specific Criteria benzene values for scenarios 2 and 4 of 3,000 and 1,000 ug/L, respectively. Review of Table 4 shows that petroleum hydrocarbons were not historically detected in groundwater samples collected from boreholes SB1 through SB6, and that the only other detections exceeding RWQCB December 2013 Table F-1a groundwater ESLs are 30 ug/L and 100 ug/L TCE in boreholes SB3 and SB6; both which do not exceed the RWQCB December 2013 Table E-1 ESL for TCE of 1,300 ug/L. No other detected concentrations of VOCs, including MTBE, in boreholes SB1 through SB6 or in Pit Water 1 (except benzene mentioned above) exceed either the respective Table F-1 or Table E-1 ESLs, or the LTCP Groundwater Specific Criteria MTBE values for scenarios 2 and 4 of 1,000 ug/L.

The only detected analyte concentrations of concern were in groundwater sample Pit Water 1, which is located on the southwest side of the closed in-place gasoline storage tank. Based on the lack of concentrations of TPH-G, TPH-D, TPH-BO, TPH-MO, or MTBE and BTEX encountered in borehole groundwater samples collected from boreholes SB1 through SB6, the elevated TPH and benzene concentration in sample Pit Water 1 appears to be related to the closed in-place gasoline UST at the site. The TPH and benzene concentrations related to the former gasoline UST pit appear to be limited in extent to the immediate vicinity of the former UST pit (see Figure 3).

Contaminant Fate and Transport

The physical and chemical characteristics associated with the migration of the COPCs are summarized in Table 5. The values provided in Table 5 were obtained from the DTSC Johnson & Ettinger screening-level model for groundwater contamination VLOOKUP chemical properties lookup table (last updated December, 2014 by DTSC/HERD), with the exceptions of TPH gasolines and TPH middle distillates which were obtained from the RWQCB ESL Table J-1-Physical-Chemical Values .

In accordance with December 2013 RWQCB "Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater" Table J-1, chemicals are considered to be "volatile" if the Henry's Law constant as expressed in atm m3/mole is greater than 0.00001 and the molecular weight is less than 200. For comparison with Table 4 Physical-Chemical data, 0.00001 is 1.0E-05. Review of Table 5 shows that based on Henry's Law constants and molecular weights, all of the COPCs are considered to be volatile. Similarly, review of Table 5 shows that based on solubility, all of the compounds are considered soluble. Based on the volatility these compounds can potentially migrate in soil vapor to indoor air, and based on their solubility all of these compounds can migrate in groundwater.

Based on the detected presence of COPCs in groundwater at the site, the COPCs appear to have migrated at the site in groundwater, with the extent of Petroleum Hydrocarbons and benzene appearing to be limited primarily to the gasoline UST that was closed in place.

The vapor intrusion pathway was evaluated by comparing detected groundwater COPC concentrations in Table 4 with the RWQCB December 2013 Table E-1 vapor intrusion hazard concern screening levels for the COPCs for commercial land use. Review of Table 4 shows that none of the COPCs exceed their respective December 2013 Table E-1 ESL values.

Geology and Hydrogeology

Based on review of regional geologic maps from U. S. Geological Survey Professional Paper 943, "Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning," by E. J. Helley and K. R. Lajoie, 1979, the subject site is underlain by Fine-Grained Alluvium (Qhaf). The Fine-Grained Alluvium is described as unconsolidated plastic moderately to poorly sorted carbonaceous silt and clay.

Review of the City of Oakland Museum East Creek Watershed Map shows that a tributary to the Elmhurst Creek is located in an underground culvert located beneath 83rd Avenue and also beneath G Street immediately to the north and south of the subject site, respectively. The tributary connects to an underground channelized reach of the Elmhurst Creek at a location that is approximately 650 feet to the west of subject site, and the Elmhurst Creek daylights approximately 2,100 feet to the west of the subject site, continues west-southwest, and drains to San Leandro Bay which is located approximately 6,400 feet to the southwest of the subject site.

Review of available information from case closure documents at the Alameda County Department of Environmental Health's website for groundwater flow direction information in the vicinity of the subject site identified several nearby sites which state that groundwater flow direction is westerly to southwesterly towards San Leandro Bay.

Review of P&D's Conduit Study and Work Plan Addendum dated October 12, 2011 (document 0453.W2) shows that water was encountered in a hand excavation at the UST at a depth of 4.5 feet bgs, and review of P&D's UST In-place Closure Report dated July 15, 2013 (document 0453.R1) shows that water was encountered in the UST pit at during closure activities at a depth of approximately 6-feet bgs. Also review of Basics' Limited Phase II Environmental Site Sampling Report dated May 7, 2008 shows that groundwater was encountered in boreholes SB1, SB2, SB3, SB4, SB5, and SB6 at depths of 14, 15, 15, 16, 14, and 15-feet bgs, respectively, and the water level in these boreholes was later measured at 4.8, 4.6, 4.3, 5.3, 7.3, and 7.6 feet bgs. Based on these findings as well as information found for nearby closed sites on the ACDEH Local Oversight Program's (LOP) website, the depth to groundwater at the site is between 4.5 and 8 feet bgs

Sensitive Receptor Survey

Review of case closure documents for a nearby site located at 966 89th Avenue (approximately 1,300-feet south-southwest of subject site) shows that one irrigation well was located within ¼-mile downgradient of that location and determined to not be a likely receptor. Additionally, case closure documents for a nearby site located at 900-910 81st Avenue (approximately 600-feet north-northwest of subject site) shows that one irrigation well was located approximately 1,900-feet north/upgradient of that location and determined to not be a likely receptor.

In an e-mail dated January 28, 2015 the ACEH requested that a well survey be performed for a 1,500 foot radius for the subject site, and that a summary table and a map be provided to the ACEH of the survey results. At the request of the ACEH, P&D provided the ACEH via e-mail the requested summary table and map on February 26, 2015 with the results of the information

obtained from the California Department of Water Resources and the Alameda County Public Works Agency for wells (other than groundwater monitoring wells associated with environmental investigations) that were identified as located within a 1,500 foot radius of the subject site (document 0453.R5). A total of three wells were identified, with the wells being located 1,150 feet north-northwest, 1,080 feet due north (this well was identified as destroyed), and 660 feet south-southeast of the subject site.

Based on the concentrations of petroleum hydrocarbons in soil and water at the subject site and the distances to nearby wells and surface water bodies as described above, surface water bodies and wells identified above are considered to be impacted by petroleum hydrocarbons detected in soil and groundwater at the former UST pit at the subject site.

Conduit Study

P&D prepared a Conduit Study and Work Plan Addendum dated October 12, 2011 (document 0453.W2) that identified onsite underground utilities and also identified the offsite source for TCE detected at the site.

COMPARISON OF SITE DATA TO LTCP CRITERIA

LTCP general criteria for the site and media-specific criteria for groundwater, vapor intrusion, and soil are discussed below.

General Criteria

The LCTP addresses general criteria as follows:

(a) The unauthorized release is located within the service area of a public water system;
(b) The unauthorized release consists only of petroleum;
(c) The unauthorized release from the UST system has been stopped;
(d) Free Product has been removed to the maximum extent practicable;
(e) A conceptual site model that assesses the nature, extent, and mobility of the release has been developed;
(f) Secondary source removal has been removed to the extent practicable;
(g) Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15; and
(h) Nuisance as defined by Water Code section 13050 does not exist at the site.

The subject site is located within the municipal water supply service area of EBMUD, the releases consist only of petroleum and have been stopped (UST closed in-place), and free product has never been observed at the site. Additionally, there have been adequate sampling and characterization activities to address the nature, extent, and mobility of the release, soil and groundwater have been tested for MTBE, and a nuisance as defined by Water Code section 13050 does not exist at the site.

Media-Specific Criteria

The LTCP also addresses three media-specific criteria: 1) groundwater, 2) vapor intrusion to indoor air, and 3) direct contact and outdoor air exposure. The LTCP states that candidate sites must satisfy all three of these media-specific criteria to be eligible for case closure.

Groundwater-Specific Criteria

Review of Table 2 shows that the borehole groundwater results for sample Pit Water 1 collected on March 28, 2013, for TPH-G, TPH-D, TPH-BO, TPH-MO, and benzene were detected at concentrations of 9,600, 4,300, 1,100, 6,000, and 8.5 µg/L, respectively, which exceed their corresponding December 2013 Table F-1a groundwater ESL values. The detected concentration of benzene does not exceed either the corresponding December 2013 Table E-1 ESL value of 270 µg/L, or the LTCP groundwater-specific criteria for scenarios 2 or 4 for benzene of 3,000 and 1,000 µg/L, respectively.

Review of Table 4 shows that the only analytes detected in historical (2008) borehole groundwater samples collected from boreholes SB1 through SB6 were MTBE, TCE, 1,1,1-TCA, 1,1-DCA, and 1,1-DCE. TPH and BTEX were not detected in any of these borehole groundwater samples. No other petroleum VOCs, including naphthalene, were detected in any of the borehole groundwater samples collected from boreholes SB1 through SB6. The detected concentrations of MTBE are well below the LTCP groundwater-specific criteria for scenarios 2 or 4 for MTBE of 1,000 µg/L, for both scenarios, and are also all below their RWQCB December 2013 Table F-1a groundwater ESL of 5.0 ug/L.

Review of Table 4 also shows that the only detections exceeding RWQCB December 2013 Table F-1a groundwater ESLs are 30 ug/L and 100 ug/L TCE in boreholes SB3 and SB6 (the TCE was identified as originating from an offiste source). These detected TCE concentrations do not exceed the RWQCB December 2013 Table E-1 ESL value for TCE of 1,300 µg/L for evaluation of potential vapor intrusion from groundwater for a fine-coarse mix.

As discussed above, the groundwater samples collected from the borehole in the end of the UST pit on March 28, 2013 exceed RWQCB December 2013 Table F-1a groundwater ESLs only for TPH gasolines (TPH-G), TPH middle distillates (TPH-D), TPH residual fuels (TPH-BO and TPH-MO), and benzene exceeding the groundwater ESL of 100 ug/L for TPH-G, TPH-D, TPH-BO, and TPH-MO, and the groundwater ESL of 1.0 ug/L for benzene. Compounds detected in the analysis for TPH-G are identified by the laboratory as having no recognizable pattern, and compounds detected in the analysis for TPH-D, TPH-BO, and TPH-MO are identified by the laboratory as consisting of oil, gasoline, and diesel range; with no recognizable pattern. The laboratory also noted what they call an immiscible sheen/product as being present, and in conversations with the lab they describe it only as a physical observation that an immeasurable amount of sheen was observed floating on the top of the sample. No free product has been observed at the site.

Based on the absence of TPH and BTEX analytes and the detected low concentrations of MTBE in groundwater at the site, the limited extent of impact to groundwater, and the distance to the nearest

surface water body of approximately 2,100 feet, the site should be considered either for Class 1, Class 2, Class 4, or Class 5 groundwater-specific criteria for LTCP case closure.

Petroleum Vapor Intrusion to Indoor Air

Comparison of site characteristics to the four potential exposure scenarios described in the LTCP shows that scenarios 1 through 3 require a bioattenuation zone of between 5 and 30 feet thick (depending on which scenario) and scenario 4 requires direct soil gas measurement at a sampling depth of 5-feet. The depth to water is approximately five to six feet bgs onsite which means that the bioattenuation zone, if present, is likely less than five feet thick and that soil gas sample collection at a five foot depth is not feasible. Also scenario 3 (without oxygen data or where oxygen is <4%) requires that TPH concentrations are less than 1,000 ug/L, in groundwater which Pit Water 1 exceeds.

Review of Tables 1 and 3A shows that MTBE, benzene, and ethylbenzene have not been detected in any of the soil samples. Also, petroleum compounds were almost all not detected in borehole soil samples collected from boreholes SB1 through SB6 with only TPH-BO detected at location SB5 at a concentration not exceeding the respective RWQCB December 2013 Table A-2 soil ESL value for TPH-BO of 2,500 mg/kg.

Review of Table 2 shows that benzene was detected at a concentration of 8.5 ug/L. The remaining BTEX were detected also, but at concentrations which are below their respective RWQCB December 2013 Table F-1a groundwater ESL values, and which also are below their respective RWQCB December 2013 Table E-1 groundwater ESL values for evaluation of potential vapor intrusion for a fine-coarse mix for commercial land use. Also, review of Table 4 shows that none of the other detected EPA Method 8260B VOCs, including MTBE, exceeded their respective December 2013 Table E-1 groundwater ESL values for evaluation of potential vapor intrusion for a fine-coarse mix for commercial land use.

All of the borehole soil and groundwater samples collected from boreholes SB1 through SB6 during the subsurface investigation on April 24, 2013 were analyzed for VOCs, including naphthalene, with no naphthalene detected in any of the samples. Based on the following information, potential vapor intrusion to indoor air in regards to the closed in-place UST is not considered to be a concern for the subject site.

- the complete absence of MTBE, benzene, and naphthalene in any of the historical borehole soil samples,
- the absence of naphthalene and benzene in any of the historical borehole groundwater samples,
- the low groundwater concentrations of benzene detected in the UST pit borehole groundwater sample Pit Water 1 (8.5 ug/L, see Table 2),
- the absence of MTBE, benzene, and ethylbenzene in soil samples associated with the UST in-place closure,
- the near-complete absence of any compounds in historical soil and groundwater samples at the site (except metals),

- the absence of VOCs detected in all groundwater samples at concentrations exceeding their respective December 2013 Table E-1 groundwater ESL values for evaluation of potential vapor intrusion for a fine-coarse mix for commercial land use.

Direct Contact and Outdoor Air Exposure

Review of Tables 1 and 3A show that benzene and ethylbenzene were not detected in any of the soil samples. Additionally, based on the highest TPH-D soil concentrations being detected in the shallow samples (0.7 to 1.0-feet bgs) collected under the closed in-place former piping and former dispenser at concentrations below the RWQCB December 2013 Table 1 soil ESL and not being detected in the UST end borehole soil samples collected at a depth of 6-feet bgs, and the absence of detectable concentrations of naphthalene in any of the historical borehole groundwater or soil samples, naphthalene is not considered to be a concern at the site.

Based on the absence of COPCs at concentrations exceeding LTCP Table 1 screening criteria and the absence of naphthalene as a concern at the site, direct soil contact and outdoor air exposure are not considered to be a concern for the site.

DISCUSSION AND RECOMMENDATIONS

Based on compliance with LTCP general criteria and media-specific criteria for low threat posed by historical releases from USTs at the subject site as described above, P&D recommends that the case be closed.

DISTRIBUTION

A copy of this report will be uploaded to the ACEH ftp site and to GeoTracker.

LIMITATIONS

This report was prepared solely for the use of the Amelia Street Partners, LLC. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

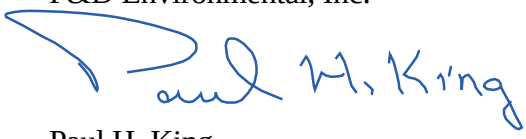
This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities which is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-4363.

Sincerely,

P&D Environmental, Inc.



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

Attachments:

Table 1 - Summary of UST Piping Trench, Former Dispenser, and UST End Borehole Soil Sample Results
Table 2 - Summary of UST Pit Borehole Groundwater Sample Results
Table 3A - Summary of Historical Borehole Soil Sample Results - Petroleum and VOCs
Table 3B - Summary of Historical Borehole Soil Sample Results - Metals
Table 4 - Summary of Historical Borehole Groundwater Sample Results
Table 5 - Physical-Chemical Characteristics For Chemicals of Potential Concern

Figure 1 - Site Location Map
Figure 2 - Site Vicinity Map
Figure 3 - Site Vicinity Map Detail

PHK/hd/sjc
0453.R2

TABLES

Table 1

Summary of UST Piping Trench, Former Dispenser, and UST End Borehole Soil Sample Results

Sample ID	Sample Date	Sample Location	Sample Depth (Ft bgs)	TPH-G	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total Lead	SVOCs by EPA 8270C
P1	3/28/2013	Piping Trench	0.7	3.3, a	42, c,d,e	290, c,d,e	270, c,d,e	ND<0.05	ND<0.005	ND<0.005	ND<0.005	0.013	80	NA
P2	3/28/2013	Piping Trench	1.0	ND<1.0	88, c,d	270,c,d	200, c,d	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005	160	NA
D1	3/28/2013	Under Former Dispenser	1.0	29, a,b	16, c,d,e	82, c,d,e	56, c,d,e	ND<0.05	ND<0.005	0.43	ND<0.005	0.073	280	NA
T1-6.0	3/28/2013	Southwest end of UST	6.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005	8.1	NA
T2-6.0	3/28/2013	Northeast end of UST	6.0	ND<1.0	ND<1.0	ND<5.0	ND<5.0	ND<0.05	ND<0.005	ND<0.005	ND<0.005	ND<0.005	11	NA
T1A-3.0	12/20/2013	Between T1-6.0 and eastern wall of building	3.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All ND
T1A-5.5	12/20/2013	Between T1-6.0 and eastern wall of building	5.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	All ND
LTCP								utility worker -	0-5' = 8.2 5-10' = 12 0-10' = 14	utility worker -	0-5' = 89 5-10' = 134 0-10' = 314			
ESL				*500*	*110*	*500*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*320*	*Various*

NOTES:
Ft bgs = Feet below ground surface
TPH-G = Total Petroleum Hydrocarbons as Gasoline
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 tertiary-butyl ether
SVOCs = Semi-Volatile Organic Compounds
ND = Not detected.
NA = Not analyzed.
a = Laboratory analytical note: strongly aged gasoline or diesel range compounds are significant in the TPH-G chromatogram
b = Laboratory analytical note: no recognizable pattern
c = Laboratory analytical note: oil range compounds are significant
d = Laboratory analytical note: diesel range compounds are significant; no recognizable pattern
e = Laboratory analytical note: gasoline range compounds are significant
LTCP = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Commercial/Industrial and utility worker scenarios
ESL = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table A-2 – Shallow Soil Screening Levels. Groundwater is a current or potential drinking water source. Commercial/Industrial Land Use.
Results, LTCP criteria, and ESLs in milligrams per kilogram (mg/kg) unless otherwise specified

Table 2
Summary of UST Pit Borehole Groundwater Sample Results

Sample ID	Sample Date	Sample Location	Sample Depth (Ft bgs)	TPH-G	TPH-D	TPH-BO	TPH-MO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Dissolved Lead
Pit Water 1	3/28/2013	Southwest end of UST	10.0	9,600, b,f	4,300, c,d,e,f	1,100, c,d,e,f	6,000, c,d,e,f	NA	8.5	15	ND<5.0	5.7	1.1
LTCP Groundwater-Specific Criteria	Scenario 2			None	None	None	None	1,000	3,000	None	None	None	None
	Scenario 4			None	None	None	None	1,000	1,000	None	None	None	None
ESL [1]				*100*	*100*	*100*	*100*	*5.0*	*1.0*	*40*	*30*	*20*	*2.5*
ESL [2]				*None*	*None*	*None*	*None*	*100,000*	*270*	*None*	*3,100*	*None*	*None*

NOTES:
Ft bgs = Feet below ground surface
TPH-G = Total Petroleum Hydrocarbons as Gasoline
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 tertiary-butyl ether
ND = Not detected.
b = Laboratory analytical note: no recognizable pattern.
c = Laboratory analytical note: oil range compounds are significant.
d = Laboratory analytical note: diesel range compounds are significant; no recognizable pattern.
e = Laboratory analytical note: gasoline range compounds are significant.
f = Laboratory analytical note: lighter than water immiscible sheen/product is present.
LTCP = Low Threat Closure Policy, developed by State Water Resources Control Board , effective August 17, 2012, from Groundwater Specific Criteria Scenarios 2 and 4.
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. Commercial/Industrial Land Use.
Values with underline exceed their respective ESL values.
Results, LTCP criteria, and ESLs in milligrams per kilogram (mg/kg) unless otherwise specified.

Table 3A
Summary of Historical Borehole Soil Sample Results - Petroleum and VOCs

Sample ID	Sample Date	Sample Depth (Ft bgs)	TPH-G	TPH-SS	TPH-D	TPH-K	TPH-BO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Other VOCs by EPA 8260
SB1-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB2-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB3-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB4-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB5-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0, c	ND<1.0	4.2	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
SB6-4.5	4/24/2008	4.5	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<2.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	All ND
LTCP									0-5' = 8.2 5-10' = 12 0-10' = 14		0-5' = 89 5-10' = 134 0-10' = 314		
ESL			*500*	*110*	*110*	*110*	*500*	*0.023*	*0.044*	*2.9*	*3.3*	*2.3*	*Various*

NOTES:
Ft bgs = Feet below ground surface
TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-SS = Total Petroleum Hydrocarbons as Stoddard solvent
TPH-D = Total Petroleum Hydrocarbons as Diesel
TPH-K = Total Petroleum Hydrocarbons as Kerosene
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oil
MTBE = Methyl tertiary-butyl ether
VOCs = Volatile Organic Compounds
ND = Not detected.
c = Laboratory Analytical Note: oil range compounds are significant.
LTCP = Low Threat Closure Policy, by State Water Resources Control Board, effective August 17, 2012, from Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health. Commercial/Industrial and utility worker scenarios.
ESL = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013 from Table A-2 – Shallow Soil Screening Levels, Groundwater is a current or potential drinking water source. Commercial/Industrial Land Use.
Results, LTCP criteria, and ESLs in milligrams per kilogram (mg/kg) unless otherwise specified.

Table 3B
Summary of Historical Borehole Soil Sample Results - Metals

Sample ID	Sample Date	Sample Depth (Ft bgs)	Sb	As	Ba	Be	Cd	Cr	Co	Cu	Pb	Hg	Mo	Ni	Se	Ag	Tl	V	Zn
SB1-4.5	4/24/2008	4.5	0.50	6.3	240	0.86	ND<0.25	79	9.0	38	11	ND<0.05	ND<0.5	60	ND<0.5	ND<0.5	ND<0.5	74	83
SB2-4.5	4/24/2008	4.5	0.52	12	330	0.75	ND<0.25	67	32	33	12	ND<0.05	ND<0.5	68	ND<0.5	ND<0.5	ND<0.5	70	72
SB3-4.5	4/24/2008	4.5	ND<0.5	5.4	290	0.79	ND<0.25	67	7.8	34	10	ND<0.05	ND<0.5	49	ND<0.5	ND<0.5	ND<0.5	60	74
SB4-4.5	4/24/2008	4.5	ND<0.5	6.0	290	0.78	ND<0.25	69	10	34	9.9	ND<0.05	ND<0.5	58	ND<0.5	ND<0.5	ND<0.5	63	75
SB5-4.5	4/24/2008	4.5	ND<0.5	4.5	190	0.63	ND<0.25	55	5.9	25	7.6	ND<0.05	ND<0.5	43	ND<0.5	ND<0.5	ND<0.5	57	59
SB6-4.5	4/24/2008	4.5	ND<0.5	3.6	270	0.82	ND<0.25	76	7.0	38	9.4	ND<0.05	ND<0.5	55	ND<0.5	ND<0.5	ND<0.5	67	76
ESL			*40*	*0.96*	*1,500*	*8.0*	*12*	*No Value*	*80*	*230*	*320*	*10*	*40*	*150*	*10*	*40*	*10*	*200*	*600*

NOTES:
Ft bgs = Feet below ground surface
Sb= Antimony; As = Arsenic; Ba = Barium; Be = Beryllium; Cd = Cadmium; Cr = Chromium; Co = Cobalt; Cu = Copper; Pb = Lead; Hg = Mercury; Mo = Molybdenum; Ni = Nickel;
Se = Selenium; Ag = Silver; Tl = Thalium; V = Vanadium; Zn = Zinc
ND = Not detected.
ESL = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated May 2013 from Table A-2 – Shallow Soil Screening Levels, Groundwate
is a current or potential drinking water source. Commercial/Industrial Land Use
Values with underline exceed their respective ESL values.
Results and ESLs in milligrams per kilogram (mg/kg) unless otherwise specified

Table 4
Summary of Historical Borehole Groundwater Sample Results

Sample ID	Sample Date	TPH-G	TPH-SS	TPH-D	TPH-BO	MTBE	Benzene	Toluene	Ethylbenzene	Total Xylenes	Other VOCs by EPA 8260B
						All by EPA Method 8021B					
SB1-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except MTBE = 2.2, TCE = 1.1, cis-1,2-DCE = 1.3
SB2-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except MTBE = 2.9, TCE = 2.6, cis-1,2-DCE = 0.68
SB3-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except MTBE = 1.4, TCE = 30, cis-1,2-DCE = 1.3
SB4-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except MTBE = 2.9
SB5-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except MTBE = 1.4, 1,1,1-TCA = 1.0, 1,1,-DCA = 0.68, 1,1,-DCE = 1.4
SB6-W	4/24/2008	ND<50	ND<50	ND<50	ND<100	ND<5.0	ND<0.5	ND<0.5	ND<0.5	ND<0.5	All ND, except TCE = 100, cis-1,2-DCE = 4.3
LTCP Groundwater-Specific Criteria	Scenario 2	None	None	None	None	1,000	3,000	None	None	None	MTBE = 1,000
	Scenario 4	None	None	None	None	1,000	1,000	None	None	None	MTBE = 1,000
ESL [1]		*100*	*100*	*100*	*100*	*5.0*	*1.0*	*40*	*30*	*20*	*MTBE = 5.0, TCE = 5.0, cis-1,2-DCE = 6.0, 1,1,1-TCA = 62, 1,1-DCA = 5..0, 1,1-DCE = 6.0,*
ESL [2]		*None*	*None*	*None*	*None*	*100,000*	*270*	*None*	*3,100*	*None*	*MTBE = 100,000, TCE = 1,300, cis-1,2-DCE = None, 1,1,1-TCA = None, 1,1-DCA = None, 1,1-DCE = 130,000,*

NOTES:
TPH-G = Total Petroleum Hydrocarbons as Gasolin
TPH-SS = Total Petroleum Hydrocarbons as Stoddard solven
TPH-D = Total Petroleum Hydrocarbons as Diese
TPH-BO = Total Petroleum Hydrocarbons as Bunker Oi
MTBE = Methyl tertiary-butyl ethe
VOCs = Volatile Organic Compounds
TCE = Trichloroethen
cis-1,2-DCE = cis-1,2-Dichloroethen
1,1,1-TCA = 1,1,1-Trichloroethan
1,1-DCA = 1,1-Dichloroethen
1,1-DCE = 1,1,-Dichloroethen
ND = Not detected.
LTCP = Low Threat Closure Policy, developed by State Water Resources Control Board , effective August 17, 2012, from Groundwater Specific Criteria Scenarios 2 and
ESL [1] = Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated May 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 May 2013, from Table E-1 – Groundwater Screening Levels for Evaluation of Potential Vapor Intr Fine-Coarse Mix. Commercial/Industrial Land Use
Values with underline exceed their respective ESI values.
Results, LTCP criteria, and ESLs in micrograms per Liter (µg/L) unless otherwise specifie

Table 5

Physical-Chemical Characteristics For Chemicals of Potential Concern

CAS No.	Chemical	Organic carbon partition coefficient, K_{oc} (cm^3/g)	Diffusivity in air, D_a (cm^2/s)	Diffusivity in water, D_w (cm^2/s)	Pure component water solubility, S (mg/L)	Henry's law constant H' (unitless)	Henry's law constant at reference temperature, H (atm-m^3/mol)	Henry's law constant reference temperature, T_R (^oC)	Normal boiling point, T_B (^oK)	Critical temperature, T_C (^oK)	Enthalpy of vaporization at the normal boiling point, $DH_{v,b}$ (cal/mol)	Molecular weight, MW (g/mol)
None	TPH gasolines (TPH-G)	5.00E+03	7.00E-02	1.00E-05	2.40E+02	4.50E+01	1.10E+00	25	NA	NA	NA	1.08E+02
None	TPH middle distillates (TPH-D)	5.00E+03	7.00E-02	1.00E-05	3.00E+00	3.20E+01	7.80E-01	25	NA	NA	NA	1.70E+02
None	TPH residual fuels (TPH-BO)	5.00E+03	NA	NA	3.00E+00	NA	NA	NA	NA	NA	NA	NA
1634044	MTBE	1.16E+01	7.53E-02	8.59E-06	5.10E+04	2.40E-02	5.87E-04	25	328.3	497.1	6,678	8.82E+01
108883	Toluene	2.34E+02	7.78E-02	9.20E-06	5.26E+02	2.71E-01	6.64E-03	25	383.8	591.8	7,930	9.21E+01
106423 *	Total Xylenes	3.75E+02	6.82E-02	8.42E-06	1.62E+02	2.82E-01	6.90E-03	25	411.5	616.2	8,525	1.06E+02

NOTES:

TPH=Total Petroleum Hydrocarbons

MTBE= methyl tert-butyl ether

NA = Not Available

* = CAS No. and physical-chemical characteristics for p-Xylene used

CalEPA Toxicity criteria (last updated 12/6/11 DTSC/HERD) obtained from DTSC Johnson & Ettinger Screening-Level Model for Groundwater Contamination VLOOKUP Chemical Properties Lookup Table

TPH values obtained from Environmental Screening Level, by San Francisco Bay – Regional Water Quality Control Board, updated December 2013, from Table J1 – Physical-Chemical Values

FIGURES

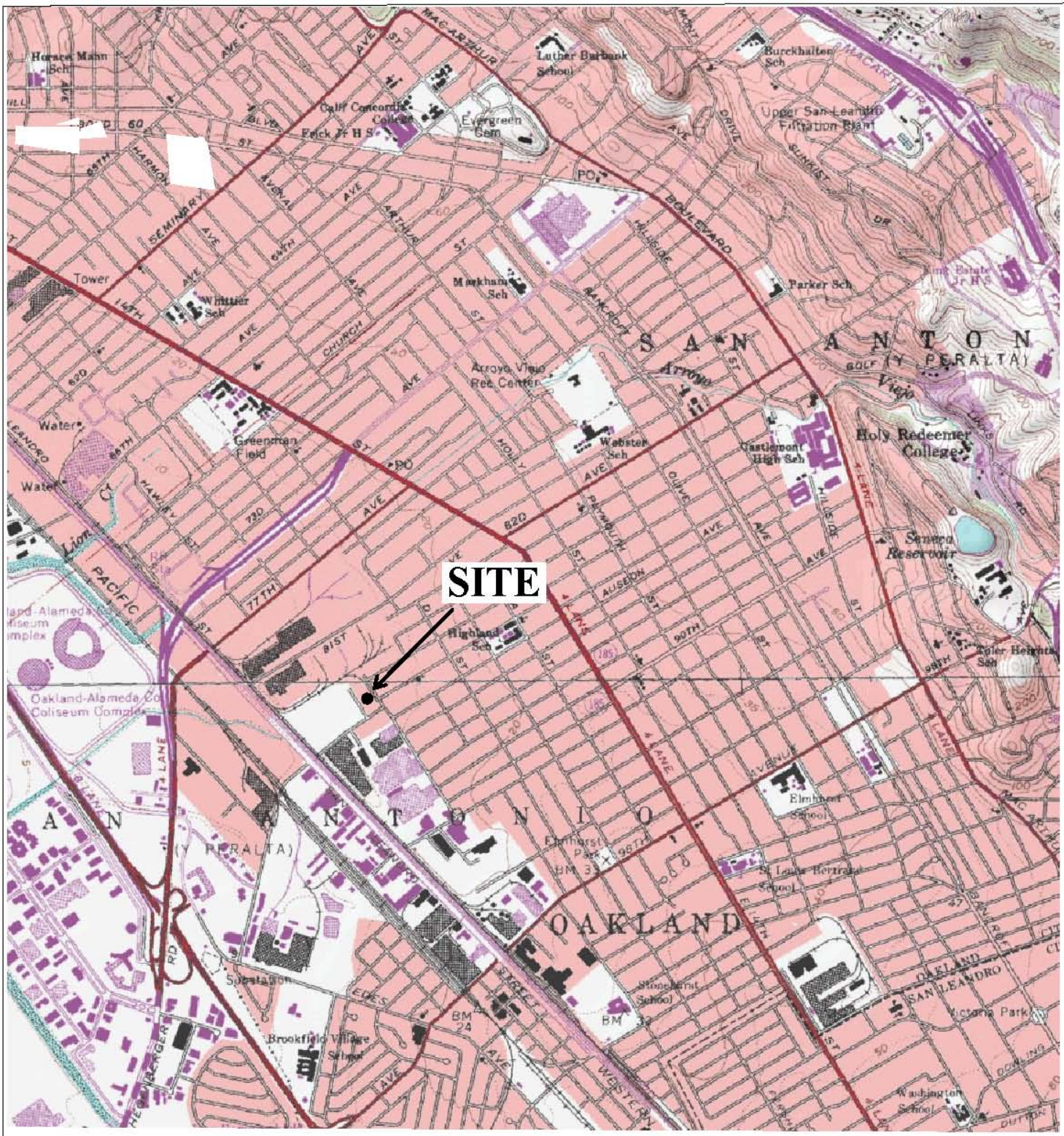


Figure 1
Site Location Map
8410 Amelia Street
Oakland, California

Base Map From:
US Geological Survey Oakland East, California, and San Leandro, California
7.5-Minute Quadrangles
Photorevised 1980

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

0 1000 2000
Approximate Scale in Feet

N

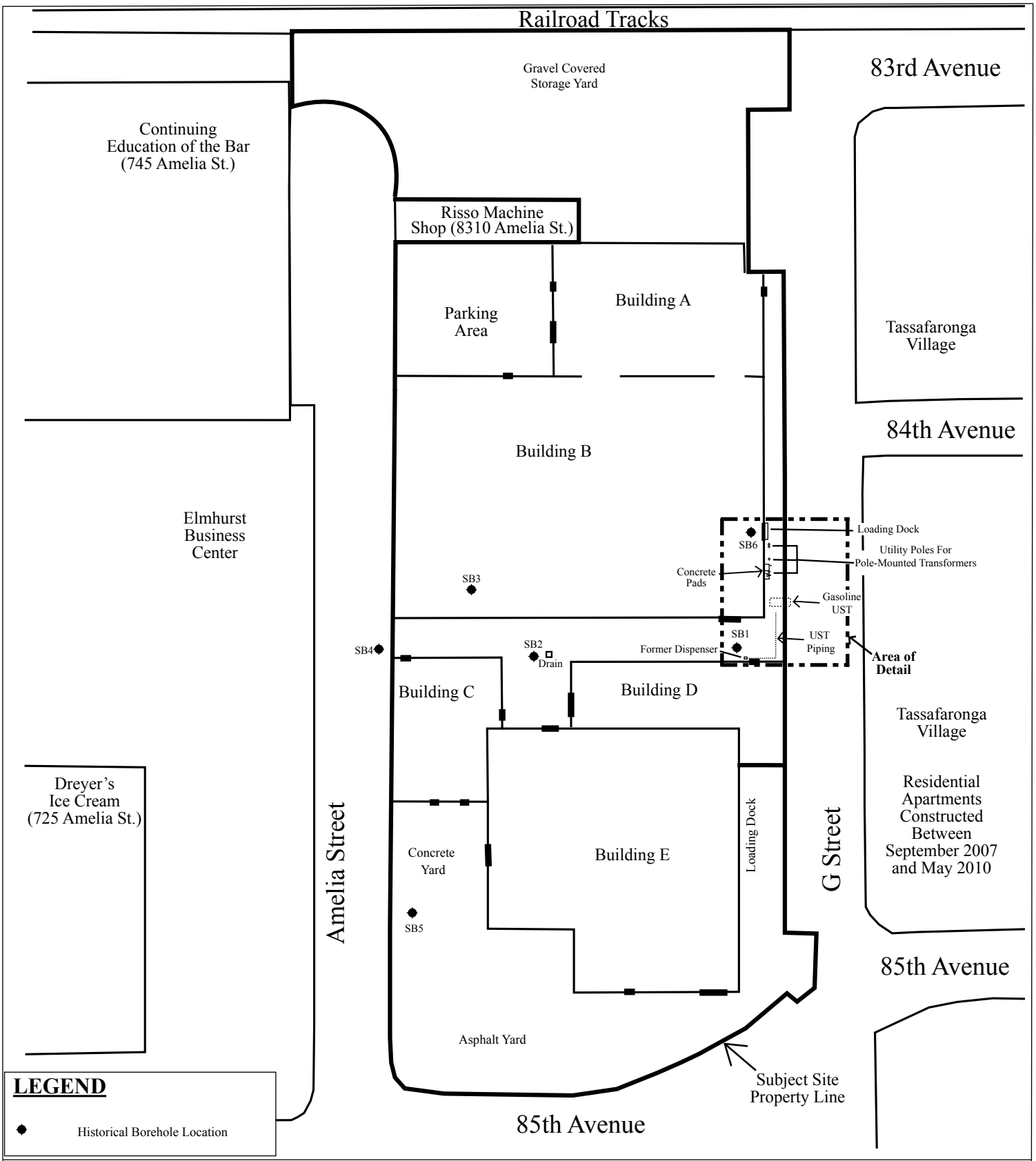


Figure 2
Site Vicinity Map
8410 Amelia Street
Oakland, California

Base Map From: Basics Environmental, Inc., May 2008	P&D Environmental, Inc. 55 Santa Clara Avenue Oakland, CA 94610	0 40 80 Approximate Scale in Feet N

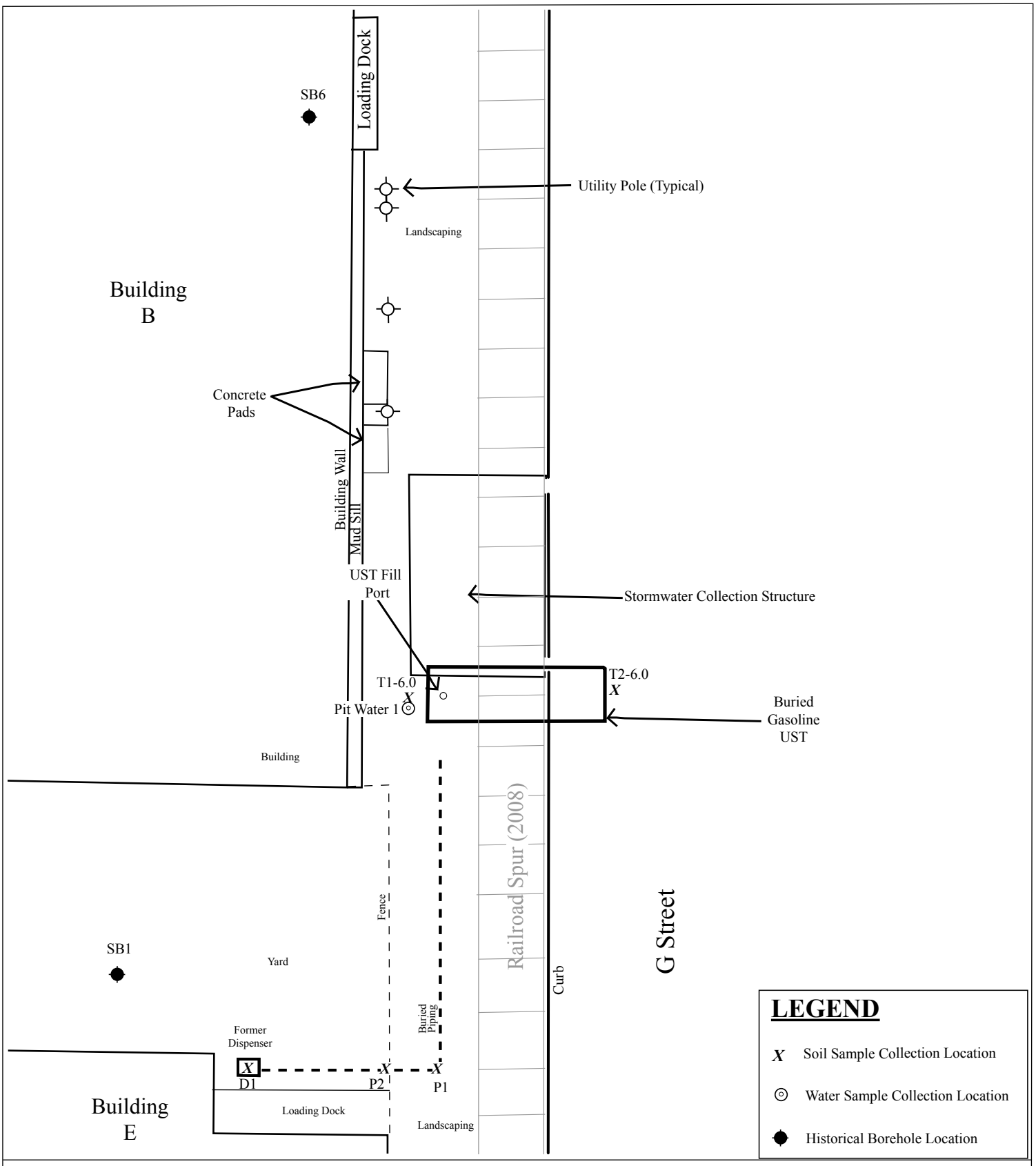


Figure 3
Site Vicinity Map Detail
8410 Amelia Street
Oakland, California

Base Map From:
Basics Environmental, Inc., May 2008,
P&D Environmental, Inc., October 2011

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

0 5 10
Approximate Scale in Feet

N