CONESTOGA-ROVERS & ASSOCIATES

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TRANSMITTAL

DATE: October 12, 2010

REFERENCE NO.: 581000

PROJECT NAME: 800 Franklin Street, Oakland

TO: Mr. Jerry Wickham
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

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QUANTITY	DESCRIPTION
1	Down-Gradient Site Characterization Work Plan

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
Should you have any questions regarding the contents of the document, please contact Bryan Fong at (510) 420-3369.

Copy to: Ms. Anny Chiu

Completed by: Bryan Fong [Please Print] Signed: Bryan Fong

Filing: **Correspondence File**

With respect to:

Down-Gradient Site Characterization Work Plan
Dated October 12, 2010
Fuel Leak Case No. RO0000196

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

Tommy Chiu
Mr. Tommy Chiu

10-12-10
Date

DOWN-GRADIENT SITE CHARACTERIZATION WORK PLAN

CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

FUEL LEAK CASE NO. RO0000196

Prepared by:
Conestoga-Rovers & Associates

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OCTOBER 12, 2010
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1.0 INTRODUCTION

On behalf of our client, Mr. Tommy Chiu, Conestoga-Rovers & Associates (CRA) has prepared the following *Down-Gradient Site Characterization Work Plan* (Work Plan) for the site located at 800 Franklin Street, Oakland, California. The preparation of this Work Plan is in response to a letter dated August 9, 2010, from Alameda County Environmental Health Agency (ACEH), requesting a work plan to assess the down-gradient extent of the plume. The site is referenced by ACEH as Fuel Leak Case No. RO0000196. Mr. Jerry Wickham is the ACEH Case Manager. A copy of the regulatory agency correspondence is provided in Appendix A.

The Work Plan provides a description of the site background, hydrocarbon distribution and a proposed scope of work and schedule for the additional site assessment.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION

The site is located in a commercial area, at the eastern corner of the intersection of 8th and Franklin Streets in Oakland, California (Figure 1). It is set at an elevation of approximately 35 feet above mean sea level (msl). The site presently has a two-story commercial building that occupies the entire lot (Figure 2). Retail stores currently operate on the ground floor: Cathay Chinese Herb Company, Pacific Seafood Inc., Kim Van Jewelry, and Phoung Jewelry. Commercial offices currently operate on the second floor: Express Tax Service, Trident Financial, Mekong Reality & Mortgage Inc., and Evergreen Travel. The site is bound by commercial properties to the northeast and southeast, 8th Street to the southwest, and Franklin Street to the northwest.

Prior to 1989, the site operated as a gasoline service station. Previous investigations indicated that up to five underground storage tanks (USTs) previously existed at the site. The former USTs consisted of two 6,000-gallon gasoline USTs, one 550-gallon waste oil, and one 1,000-gallon solvent UST. These four USTs were installed circa 1970 (MES, 1989a) and subsequently removed in 1989. The 6,000-gallon USTs were formerly located in the northwest portion of the site, and the 550-gallon and 1,000-gallon USTs were formerly located underneath the sidewalk along 8th Street on the south side of the site. A potential fifth former UST is presumed to have been located on the eastern portion of the site and removed prior to 1988; however, no documentation has been discovered regarding the size, former contents, and removal of the UST.

2.2 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located within the Coast Range geomorphic province of California. In general, the Coast Range province consists of Jurassic eugeosynclinal basement rocks and Cretaceous and Cenozoic sedimentary and volcanic rocks that have been faulted and folded with a northwest-southeast trend. Sediments beneath the site consist of coalescing alluvial deposits from the Oakland-Berkeley Hills. According to the United States Geologic Survey (USGS) Professional Paper 943, the site is located on quaternary age alluvial deposits consisting of medium-grained, unconsolidated, moderately sorted, and permeable, fine sand, silt, and clayey silt with thin beds of coarse sand.

The site is located in the East Bay Plain Subbasin, Groundwater Basin No. 2-9.04 (DWR 2003). The East Bay Plain Subbasin is a northwest trending alluvial basin, bounded on the north by San Pablo Bay, on the east by the contact with Franciscan basement rock, and on the south by the Nile Cone Groundwater Basin. The East Bay Plain Subbasin extends beneath the San Francisco Bay to the west of the site. The East Bay Plain Subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Throughout most of the East Bay Plain in the vicinity of the site, groundwater flows from east to west, towards San Francisco Bay, and typically correlates with the site topography.

From 1860 to 1930, groundwater from the East Bay Plain was the major water supply for communities in the East Bay, before Sierra water was imported into the area. By the late 1920's the groundwater supply was too small to meet the growing population and the wells often became contaminated by seepage or saltwater intrusion. By 1929, East Bay Municipal Utility District (EBMUD) provided imported water to East Bay communities via the Mokelumne Aqueduct. This high-quality, reliable supply soon eliminated the need for local groundwater wells. In 1996, the Regional Board reviewed General Plans for Oakland and other communities. They found that Oakland did not have any plans to develop local groundwater resources for drinking water, due to existing or potential saltwater intrusion, contamination, or poor or limited quality (Regional Board 1999).

2.3 LOCAL GEOLOGY AND HYDROGEOLOGY

Based on previous subsurface investigations, subsurface soil beneath the site consists predominantly of fine to medium-grained sand and silty sand to approximately 36 feet. Some sand-clay mixtures were encountered in boring B-4 (Frank Lee & Associates) on the western portion of the site from 2 to 6 feet below ground surface (ft bgs), and

northwest of the site from 15 to 18 ft bgs in boring MW-6. Geotechnical soil boring logs obtained from nearby Bay Area Rapid Transit District (BART) identified fine to medium-grained sand to 40 ft bgs underlain by a low permeability, hard, silty clay from approximately 40 to 70 ft bgs.

An unconfined water-bearing zone is present beneath the site at a depth of 20 ft bgs and with a thickness of approximately 20 feet. Since 1989, the groundwater table has fluctuated approximately 4 feet from approximately 20 to 24 ft bgs. Groundwater beneath the site flows predominantly towards the northwest. The observed flow direction may potentially be influenced by the BART tunnels, which run east-west beneath 8th Street and Franklin Street and vary in depth from approximately 27 to 32 ft bgs, and/or by potential groundwater pumping from the BART pump station No. 2 located approximately 550 feet southwest of the site.

2.4 SUMMARY OF PREVIOUS INVESTIGATIONS

Several phases of soil and groundwater assessments have been conducted at the site since the USTs were removed in 1989. Boring and well locations are presented on Figure 2.

May 1988: Frank Lee & Associates performed a geotechnical investigation for the subject site. The purpose of this investigation was to determine the strength characteristics of the soil as a basis for making site grading and foundation design recommendations for a proposed three-story commercial building. Soil beneath the site was observed to consist of generally moist, medium dense, fine-grained silty sand to the total explored depth of 28.5 ft bgs. Tank backfill soil was observed to approximately 15.5 ft bgs in B-3 and to a minimum depth of 6 ft bgs in B-4. Frank Lee & Associates recommended excavating the then existing surficial material "to a minimum depth of 2 feet and re-compact before placement of engineered fill or construction." Soil samples were collected from 1 to 4 ft bgs for analysis for volatile organic compounds (VOCs); low to medium boiling point hydrocarbons; benzene, toluene, ethylbenzene, xylenes (BTEX); and total oil and grease (TOG). None of these analytes were detected above laboratory detection limits (Frank Lee & Associates, 1988). Soil analytical data is summarized in Table 3. See Appendix C for copies of the boring logs.

August 1988: LW Environmental Services, Inc. performed a soil investigation. Gasoline hydrocarbon concentrations were detected in the vicinity of the then existing USTs (MEC, 1989b).

June 1989: The Robert J. Miller Company removed four USTs: two 6,000-gallon gasoline tanks, one 550-gallon waste-oil tank, and one 1,000-gallon solvent tank. The Traverse Group Inc. (TGI) collected soil samples from beneath each tank and visually inspected the condition of each tank upon removal. No obvious pitting or corrosion was reported. The two gasoline USTs were removed from one excavation area in the northwestern corner of the site. The waste-oil and solvent USTs were removed from one excavation area in the sidewalk south of the site, along 8th Street. Approximately 10 cubic yards of soil was deemed contaminated by TGI and stockpiled on site. Soil that TGI determined to be clean or only slightly impacted was stockpiled on site. Soil samples from the excavations and stockpiles were analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPHg), as diesel (TPHd), as waste oil (TPHwo), and BTEX. Additionally, samples from the waste oil and solvent UST's excavation were analyzed for purgeable organics and semi-volatile organic compounds (SVOCs). High levels of fuel hydrocarbon contamination were detected in the northeast corner of the northeastern excavation and in the waste oil/solvent UST's excavation (MEC, 1989c).

September – October 1989: Miller Environmental Company (MEC) performed a preliminary investigation to determine whether fuel detected in soil during UST excavation activities impacted groundwater. Two excavation pits were re-excavated to approximately 15 ft bgs and approximately 25 cubic yards of additional contaminated soil was removed. Confirmation soil samples were collected from the overexcavation sidewalls and bottoms. The highest levels detected in the northwestern overexcavated pit were 2.3 milligrams per kilogram (mg/kg) TPHg, 80 mg/kg TPHwo, 0.05 mg/kg toluene, and 0.14 mg/kg xylenes. TPHd, benzene, and ethylbenzene were not detected above laboratory detection limits in samples collected from the northwestern pit. The highest levels detected in the waste oil/solvent overexcavated pit were 10,000 mg/kg TPHg, 250 mg/kg TPHd, 400 mg/kg TPHwo, 50 mg/kg benzene, 210 mg/kg toluene, 54 mg/kg ethylbenzene, and 270 mg/kg xylenes. Further overexcavation in the waste oil/solvent pit was not possible due to the proximity of 8th Street and interfering utilities along the southern edge of this excavation. An estimated 32 cubic yards of contaminated soil was hauled to a Class I disposal facility. The northwestern pit was backfilled with a combination of clean fill and re-used "uncontaminated soil" from the initial excavation of the two gasoline USTs. This re-used fill was intended to be temporary and to be removed when construction took place on the property. The waste oil/solvent pit was backfilled with clean fill. In addition, three monitoring wells (MW-1, MW-2, and MW-3) were installed as part of this investigation. Analytical results from these borings and wells indicated soil and groundwater from boring MW-1 was not impacted by hydrocarbons. Impacted soil was detected in offsite borings MW-2 and MW-3, between 20 to 25 ft bgs. Groundwater was first encountered in all boreholes at

approximately 25 ft bgs. The groundwater gradient and flow direction were calculated to be 0.006 feet per foot and to the west-northwest, respectively.

Early 1991: Construction of the existing building on site began in early 1991. It is reported that the ACEH concurred with MEC's conclusion that soil excavation in the 6,000-gallon UST pit was successful in removing all but minor residual hydrocarbon contamination. As a result no objections were raised to construction activities on site. Monitoring well MW-1 was preserved in the construction process and remains accessible inside the building (MEC, 1992).

September – October 1991: MEC conducted a subsurface investigation to further define the lateral extent of offsite hydrocarbon contamination. On September 11, 1991, one borehole (B-1) was advanced and soil samples were collected. On October 2 and 3, 1991, three boreholes (B-2, MW-4, and MW-5) were advanced, soil samples were collected, and two monitoring wells were constructed. Groundwater was first encountered in all boreholes at approximately 25 ft bgs. No hydrocarbons were detected in soil samples collected to a depth of 20 ft bgs. However, soil samples from 25 ft bgs in boreholes B-1 and B-2 detected TPHg, Total Recoverable Petroleum Hydrocarbons (TRPH), TPHd, and toluene (Table 3). On October 31, 1992, groundwater was sampled from wells MW-1 through MW-5. Approximately 1/8-inch of floating product was observed in well MW-2. Groundwater analytical results indicated very low to moderate concentrations of TPHg, TPHd, BTEX, and 1,2-dichloroethane (1,2-DCA) in monitoring wells MW-1, MW-2, and MW-3. No TOG was detected above laboratory detection limits in any of the wells. Also detected in well MW-3 were 1,2-dichloropropane at 0.0007 parts per million (ppm) and 1,1,1-trichoroethane (1,1,1-TCE) at 0.0014 ppm. No hydrocarbons were detected in groundwater from off site wells MW-4 and MW-5. However, very low levels of chloroform were detected in off site wells MW-4 and MW-5. See Table 2 for historic groundwater analytical results.

May 1997: On May 15, 1997, Associated Terra Consultants, Inc. (ATC) installed monitoring well MW-6. Soil samples were collected and analyzed. Soil samples had detectable concentrations of TPHd, BTEX, and methyl tertiary butyl ether (MTBE). TPHd was detected in soil at 10 ft bgs. BTEX were detected in soil at 25 ft bgs. MTBE was detected in soil at 30 ft bgs. See Table 3 for soil analytical results. Groundwater was first encountered at approximately 22.5 ft bgs. Boring logs are included in Appendix C. On May 21, 1997 ATC performed groundwater monitoring and sampling activities for all six of the site's monitoring wells.

November-December 2006: On November 17, 2006, Cambria Environmental Technology, Inc. (Cambria) installed soil vapor probes VP-1 and VP-2 in the city

sidewalk along Franklin and 8th Streets. Soil samples were collected from each soil vapor probe location at approximately 5 ft bgs. Soil samples were analyzed for TPHg, TPHd, and TPHmo by EPA Method 8015C; BTEX and MTBE by EPA Method 8021 B; and 1,2-DCA and chloroform by EPA Method 8260. Low levels of TPHd and TPHmo concentrations were detected in soil sample VP-1.5.5 at 4.0 and 6.9 mg/kg, respectively. Based on these results, Cambria concluded the upper 5.5 feet of soil at locations VP-1 and VP-2 has little to no hydrocarbon impact.

On December 28, 2006, Cambria returned to the site to collect vapor samples from VP-1 and VP-2. The samples were analyzed, in accordance with the approved July 24, 2006 Work Plan, for benzene and tracer compounds isobutene, butane, and propane by modified EPA Method TO-15. No concentrations of benzene, and the tracer compounds were detected.

January-February 2007: Since 2004, monitoring well MW-3 has been filled with debris and inaccessible. ACEH requested that this well be decommissioned and rebuilt. On January 29, 2007, Cambria destroyed well MW-3 by pressure grouting. To replace MW-3, Cambria returned to the site on February 8, 2007 to install well MW-3A. This work was performed in accordance with the approved July 24, 2006 *Work Plan*. On July 25, 2007, CRA collected a second round of vapor samples from soil vapor wells VP-1 and VP-2. Each sample was analyzed by EPA Method TO-15 GC/MS for benzene and the full VOC target list. No concentrations of benzene or tracer compounds were detected. The only chemicals detected were 2-butanone (methyl ethyl ketone), 2,2,4-Trimethylpentane, Freon 12, Acetone, and Tetrachloroethane. Detections did not exceed Regional Water Quality Control Board – San Francisco Bay Region Environmental Screening Levels (ESLs) for any of the chemicals with an established ESL.

Groundwater Monitoring: Groundwater monitoring was initially conducted from October 1989 through 2000, and from 2004 through October 2006. Due to some missing project files, the entire monitoring and sampling history is unknown. Groundwater is currently monitored on a semi-annual basis.

3.0 HYDROCARBON DISTRIBUTION

Following is an overview of hydrocarbon distribution in soil and groundwater at the site.

3.1 HYDROCARON DISTIBUTION IN SOIL

Soil samples have been collected from a total of six soil borings; six groundwater monitoring well locations and two vapor probes located on and off the site. Of the six soil borings, four of them (B-1 through B-4; Frank Lee & Associates) were drilled mainly for geotechnical reasons and therefore soil samples were only collected from 1 to 4 ft bgs for VOC analysis. No VOCs were detected in any of the samples.

Petroleum hydrocarbons have been detected at depths ranging from 21 to 26 ft bgs beneath the sidewalk and street located directly west-northwest of the former 6,000-gallon gasoline USTs, and also beneath the former 550-gallon and 1,000-gallon USTs located in the sidewalk along 8th Street. TPHg concentrations ranged from 120 to 2,200 mg/kg in the vicinity of the two former 6,000-gallon USTs and ranged from 1,900 to 10,000 mg/kg in the vicinity of the former 550-gallon and 1,000-gallon USTs.

Hydrocarbon-impacted soil in the vicinity of the former 6,000-gallon USTs appears to extend offsite beneath the sidewalk and Franklin Street to the northwest. Hydrocarbon-impacted soil in the vicinity of the former 550-gallon and 1,000-gallon USTs appears to extend offsite beneath the sidewalk and 8th Street to the southwest and south. The extent of hydrocarbon-impacted soil is not fully defined laterally and also vertically below groundwater, beyond 26 ft bgs. However, based on the lack of any identified exposure pathways in CRA's *Site Conceptual Model Report*, dated July 2, 2010, no further assessment of hydrocarbon-impacted soil is warranted at this time. Soil analytical data is presented on Table 3. Figure 3 provides a summary of soil analytical data, and Figures 4 and 5 provide isoconcentrations for TPHg and benzene in soil, respectively.

3.2 HYDROCARBON DISTRIBUTION IN GROUNDWATER

During the September 3, 2010 sampling event, TPHg concentrations were 9,500, 35,000, and 4,600 micrograms per liter (µg/L) in monitoring wells MW-2, MW-3A, and MW-6, respectively. Elevated concentrations of TPHg and benzene in groundwater appear to form a comingled plume that extends from the two former UST source areas towards well MW-6. The elongated plume shape is consistent with the local groundwater flow direction (Figure 6). The down-gradient extent of the hydrocarbon plume is undefined; however concrete-lined BART tunnels in the immediate vicinity may be acting as a potential barrier to plume migration. Installation records indicate that the top of the BART tunnels ranges from approximately 27 to 32 ft bgs under 8th and Franklin Street. However, further down-gradient of the site, the BART tunnels may rise up to the same

elevation as the groundwater table. The hydrocarbon plume appears to be adequately defined in all directions except down-gradient to the northwest. Figures 7 and 8 present isoconcentrations for TPHg and benzene in groundwater, respectively.

4.0 PROPOSED SCOPE OF WORK

The objectives of this work plan are to further characterize the hydrocarbon plume down-gradient of the source areas. CRA proposes to assess the down-gradient portion of the plume by the collection of grab groundwater samples, and installation of an additional monitoring well. To determine the appropriate monitoring well location and achieve the work tasks described in this Work Plan cost efficiently, CRA proposes to implement this work through the following two phases; 1) Drill soil borings and perform Hydropunch grab groundwater sampling, and 2) Install a monitoring well based on the analytical results of the grab groundwater samples. During the first phase, a minimum of three Hydropunch borings will be drilled to collect grab groundwater samples. Based on field observations, additional step out Hydropunch borings may be drilled (Figure 9). Grab groundwater samples will be submitted for laboratory analysis. Following receipt of the analytical results, CRA will determine the most appropriate location for a down-gradient monitoring well and submit a Work Plan Addendum that will include the results of the first phase and the proposed monitoring well location. Following ACEH approval of the Work Plan Addendum, CRA will install the monitoring well as described below during the second phase of this field work.

4.1 HEALTH AND SAFETY PLAN

A site specific Health and Safety Plan will be prepared for the fieldwork. The Health and Safety Plan will be available onsite to all site workers and visitors during all field work activities.

4.2 PERMIT

A drilling permit will be obtained from Alameda County Public Works Agency. Excavation, encroachment, and obstructions permits will be obtained from the City of Oakland.

4.3 UTILITY CLEARANCE

Prior to any drilling activities, the proposed drilling locations will be marked with white paint. CRA will alert Underground Service Alert (USA) of the proposed drilling locations a minimum of 48 hours prior to drilling and obtain a USA ticket. Following receipt of the USA ticket, CRA will obtain a private utility locator to identify and mark any subsurface utilities not identified by USA. In addition, CRA will notify BART of the proposed drilling locations, and request to review any available BART records to identify the locations and depths of the BART tubes in the vicinity of the proposed drilling locations. Actual soil boring and monitoring well locations will be based on the field conditions and possible utility constraints.

4.4 FIELD LOGISTICS

The proposed drilling locations are located within the public right of way. Pedestrian and vehicle traffic are expected to be high during the daylight hours. CRA will coordinate with the City of Oakland to schedule and conduct the proposed work during evening hours when public activity is anticipated to be minimal.

4.5 SOIL BORINGS

A minimum of three Hydropunch borings are proposed to the northwest of MW-5 and MW-6 (Figure 9). Based on field observations, additional step out Hydropunch borings to the northwest may be drilled. The soil borings will be advanced to approximately 25 ft bgs using a Geoprobe direct push or similar drilling rig. The monitoring well will be drilled to approximately 35 ft bgs using a hollow-stem auger drilling rig. Prior to drilling, each of the borings will be cleared for utilities to 8 ft bgs using a hand auger or air knife method.

4.6 GRAB GROUNDWATER SAMPLING

A grab groundwater sample will be collected from the proposed Hydropunch borings. Once the boring is advanced to approximately 25 ft bgs, the drilling rods will be retracted from the bottom of the boring approximately 4 feet, exposing a stainless steel screen. A grab groundwater sample will be collected using a new clean disposable bailer and submitted for laboratory analysis.

4.7 CHEMICAL ANALYSIS

A grab groundwater samples will be analyzed for the following constituents:

- TPHg by EPA Method 8015Bm
- BTEX by EPA Method 8021B

4.8 MONITORING WELL INSTALLATION

The well will be constructed using 2-inch diameter, schedule 40 PVC pipe with 0.010-inch slotted casing from approximately 18 to 35 ft bgs. A filter pack of Monterey No. 2/16 sand will be placed from the bottom of the boring to approximately 2 feet above the screen. The well annulus will have a 2-foot bentonite seal above the filter pack and will be filled with neat Portland Type I/II cement to grade. CRA's standard field procedure for soil borings and monitoring well installation is presented as Appendix B.

4.9 WELL DEVELOPMENT

Following installation of the monitoring well(s), each well will be developed using a surge block and purge method.

4.10 WELL SURVEY

Newly installed monitoring well(s) will be surveyed for latitude and longitude coordinates based on the California State Coordinate System, Zone III (NAD83).

4.11 INVESTIGATION DERIVED WASTE

All investigation derived waste (IDW) will be temporarily stored on-site in sealed DOT-approved drums. IDW composite samples will be collected and submitted for laboratory analysis and waste profiling. The drums will be properly labeled and transported off site for disposal.

4.12 REPORTING

Following receipt of the analytical results, CRA will prepare a subsurface investigation report that at a minimum will include:

- Descriptions of the drilling and groundwater sampling methods,
- Tabulated groundwater analytical results,
- Soil boring logs and well construction details,
- Figures depicting the location of all borings and associated analytical groundwater results,
- Laboratory reports and chain-of-custody forms,
- An evaluation of the analytical results and distribution of hydrocarbons, and
- Conclusions and recommendations.

5.0 SCHEDULE

CRA will perform this investigation after receiving written approval of this *Work Plan* from the ACEH and obtaining necessary permits from Alameda County Public Works and the City of Oakland. CRA will submit a comprehensive investigation report approximately 6 weeks after all field work has been completed and the receipt of all analytical data.

REFERENCES

California Department of Water Resources (DWR), 2003, *Bulletin 118 - California's Groundwater.*

Regional Water Quality Control Board, San Francisco Bay Region – Groundwater Committee, 1999. *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report. June.*

Frank Lee & Associates, 1988. *Soil and Foundation Investigation Proposed Commercial Building* at 800 Franklin Street, Oakland, California. June 13, 1988.

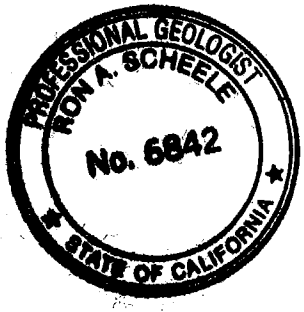
MEC, 1989b. *Update on 800 Franklin Street in Oakland*, 800 Franklin Street, Oakland, California. October 9, 1989.

MEC, 1989c. *Report on Subsurface Investigation and Remediation of Contaminated Soil*, 800 Franklin Street, Oakland, California. November 3, 1989 Draft Edition.

MEC, 1992. *Report on Subsurface Investigation, Related to Well Installation and Borings*, 800 Franklin Street, Oakland, California. January 20, 1992.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Bryan A. Fong



Ron Scheele, P.G.

FIGURES

04/17/07

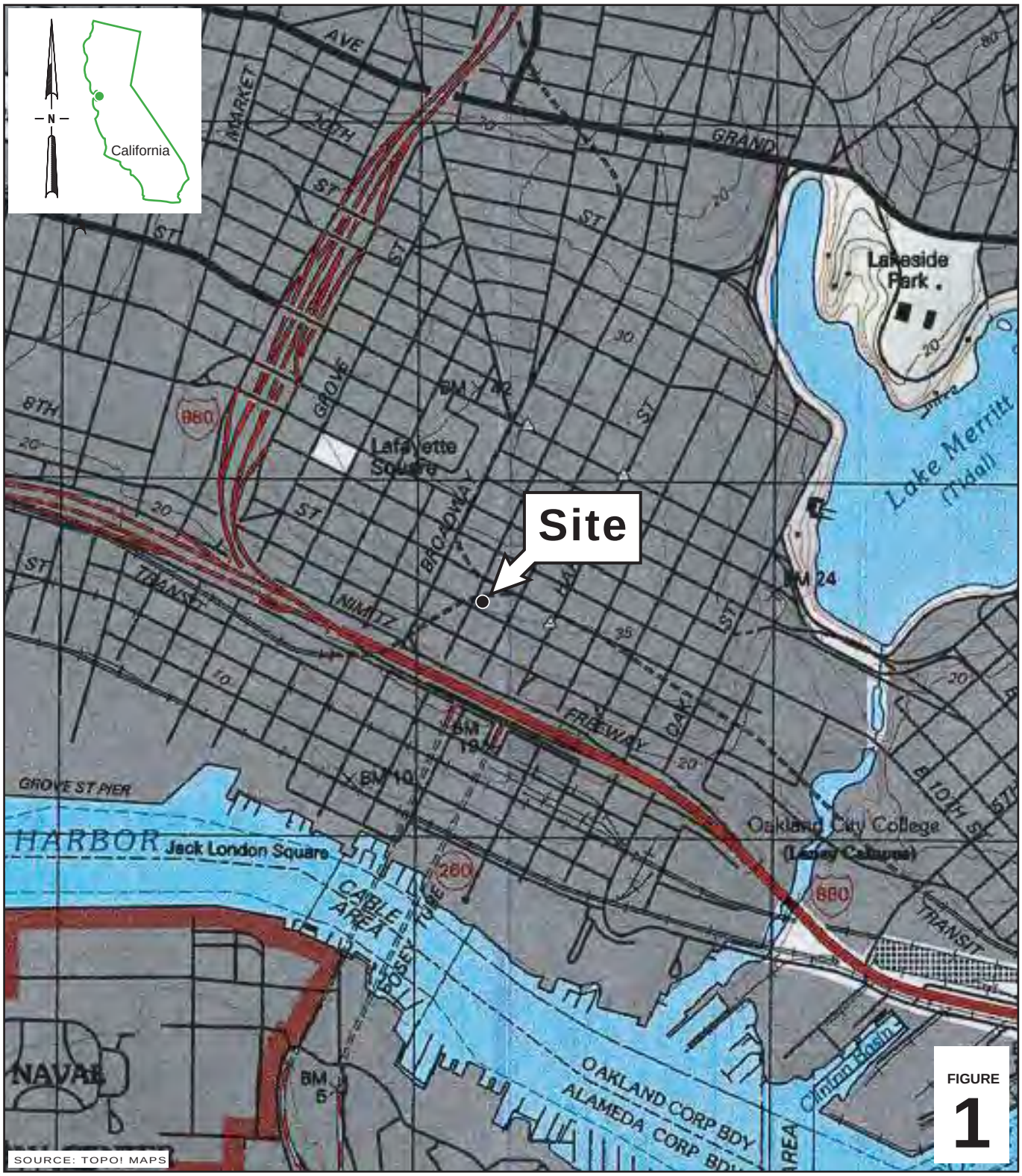


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FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Chiu Property
800 Franklin Street
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

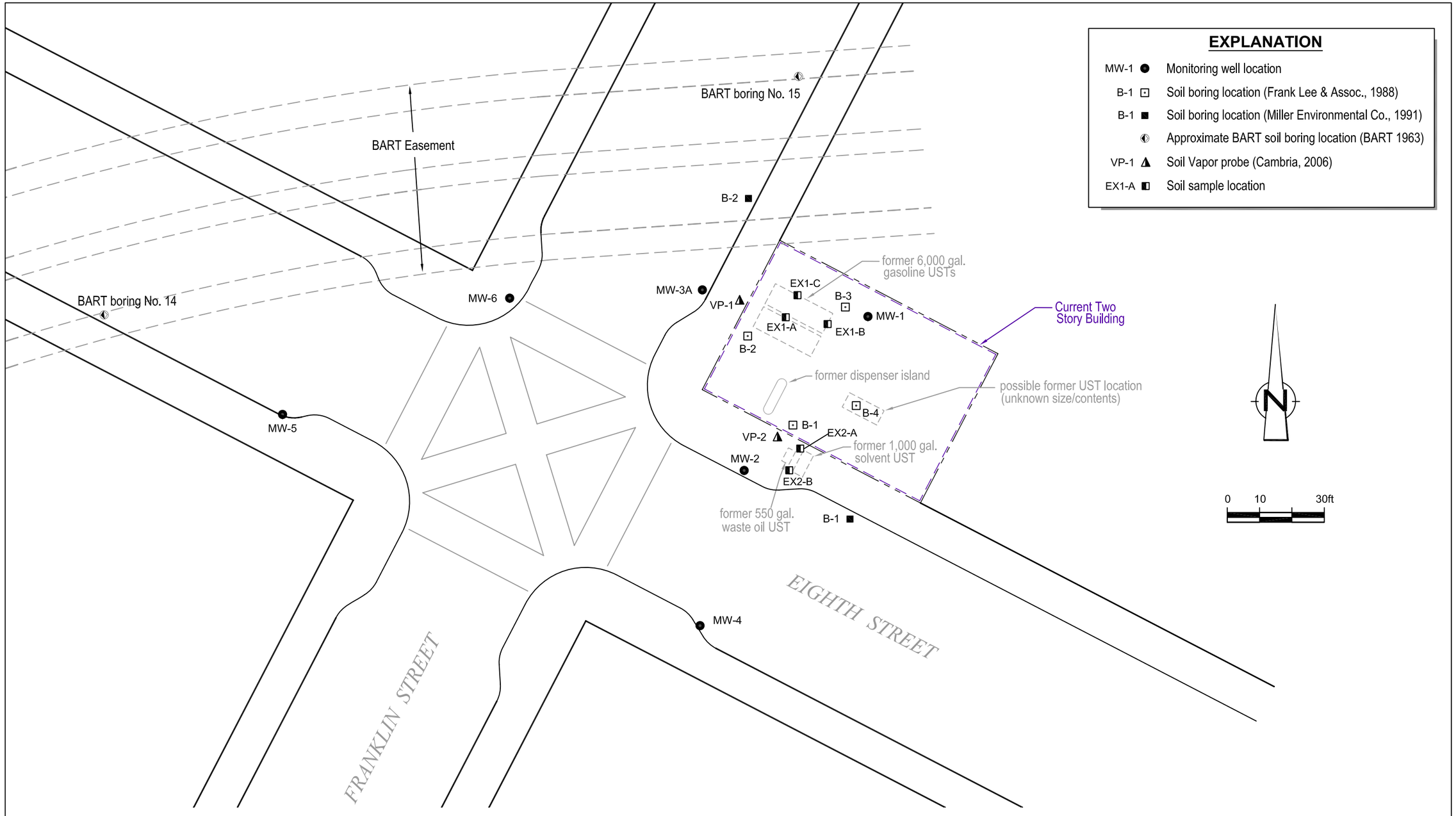


FIGURE 2

SITE PLAN
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-SITEPLAN.DWG

EXPLANATION

- MW-1 ● Monitoring well location
- B-1 ⊡ Soil boring location (Frank Lee & Assoc., 1988)
- B-1 ■ Soil boring location (Miller Environmental Co., 1991)
- ◐ Approximate BART soil boring location (BART 1963)
- EX1-A ◧ Soil sample location
- VP-1 ▲ Soil Vapor probe (Cambria, 2006)

NOTE: Soil concentrations are in milligrams per kilogram (mg/kg)

MW-3A			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**2,200**	**7.5**
9/12-13/89	26'	**24**	**0.6**

MW-6			
Date	Depth	TPHg	Benzene
5/15/97	5'	<1.0	<0.0050
5/15/97	10'	<1.0	<0.0050
5/15/97	15'	<1.0	<0.0050
5/15/97	20'	<1.0	<0.0050
5/15/97	25'	<1.0	0.050
5/15/97	30'	<1.0	<0.0050
5/15/97	35'	<1.0	<0.0050

MW-5			
Date	Depth	TPHg	Benzene
10/3/91	5'	<1.0	<0.0025
10/3/91	10'	<1.0	<0.0025
10/3/91	15'	<1.0	<0.0025
10/3/91	20'	<1.0	<0.0025
10/3/91	25'	<1.0	<0.0025

B-2			
Date	Depth	TPHg	Benzene
10/2/91	5'	<1.0	<0.0025
10/2/91	10'	<1.0	<0.0025
10/2/91	15'	<1.0	<0.0025
10/2/91	20'	<1.0	<0.0025
10/2/91	25'	**120**	<0.0025

VP-1			
Date	Depth	TPHg	Benzene
11/17/06	5.5'	<1.0	<0.005

B-2			
Date	Depth	TPHg	Benzene
5/3/88	1'	<1.0	<0.05

B-1			
Date	Depth	TPHg	Benzene
5/3/88	3'	---	<0.1

VP-2			
Date	Depth	TPHg	Benzene
11/17/06	5.5'	<1.0	<0.005

MW-4			
Date	Depth	TPHg	Benzene
10/2/91	5'	<1.0	<0.0025
10/2/91	10'	<1.0	<0.0025
10/2/91	15'	<1.0	<0.0025
10/2/91	20'	<1.0	<0.0025
10/2/91	25'	<1.0	<0.0025

EX1-A			
Date	Depth	TPHg	Benzene
9/7/89	15'	ND	ND

EX1-C			
Date	Depth	TPHg	Benzene
9/7/89	15'	**2.3**	ND

B-3			
Date	Depth	TPHg	Benzene
5/3/88	4'	<1.0	<0.05

MW-1			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**52**	**0.12**
9/12-13/89	26'	ND	ND

EX1-B			
Date	Depth	TPHg	Benzene
9/7/89	15'	ND	ND

EX2-A			
Date	Depth	TPHg	Benzene
9/7/89	15'	**10,000**	**50**

EX2-B			
Date	Depth	TPHg	Benzene
9/7/89	15'	**4.1**	ND

MW-2			
Date	Depth	TPHg	Benzene
9/12-13/89	6'	ND	ND
9/12-13/89	11'	ND	ND
9/12-13/89	16'	ND	ND
9/12-13/89	21'	**1,900**	**50**
9/12-13/89	26'	**7,800**	**30**

B-1			
Date	Depth	TPHg	Benzene
9/11/91	5'	<0.20	<0.0050
9/11/91	10'	<0.20	<0.0050
9/11/91	15'	<0.20	<0.0050
9/11/91	20'	<0.20	<0.0050
9/11/91	25'	**2,900**	<25

BART boring No. 14
BART boring No. 15
BART Easement
MW-3A
MW-6
MW-5
MW-4
MW-1
MW-2
B-1
B-2
B-3
B-4
VP-1
VP-2
EX1-A
EX1-B
EX1-C
EX2-A
EX2-B
former 6,000 gal. gasoline USTs
Current Two Story Building
former dispenser island
possible former UST location (unknown size/contents)
former 1,000 gal. solvent UST
former 550 gal. waste oil UST
FRANKLIN STREET
EIGHTH STREET
N
0 10 30ft

FIGURE 3

SOIL ANYALYTICAL SUMMARY MAP
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM003.DWG

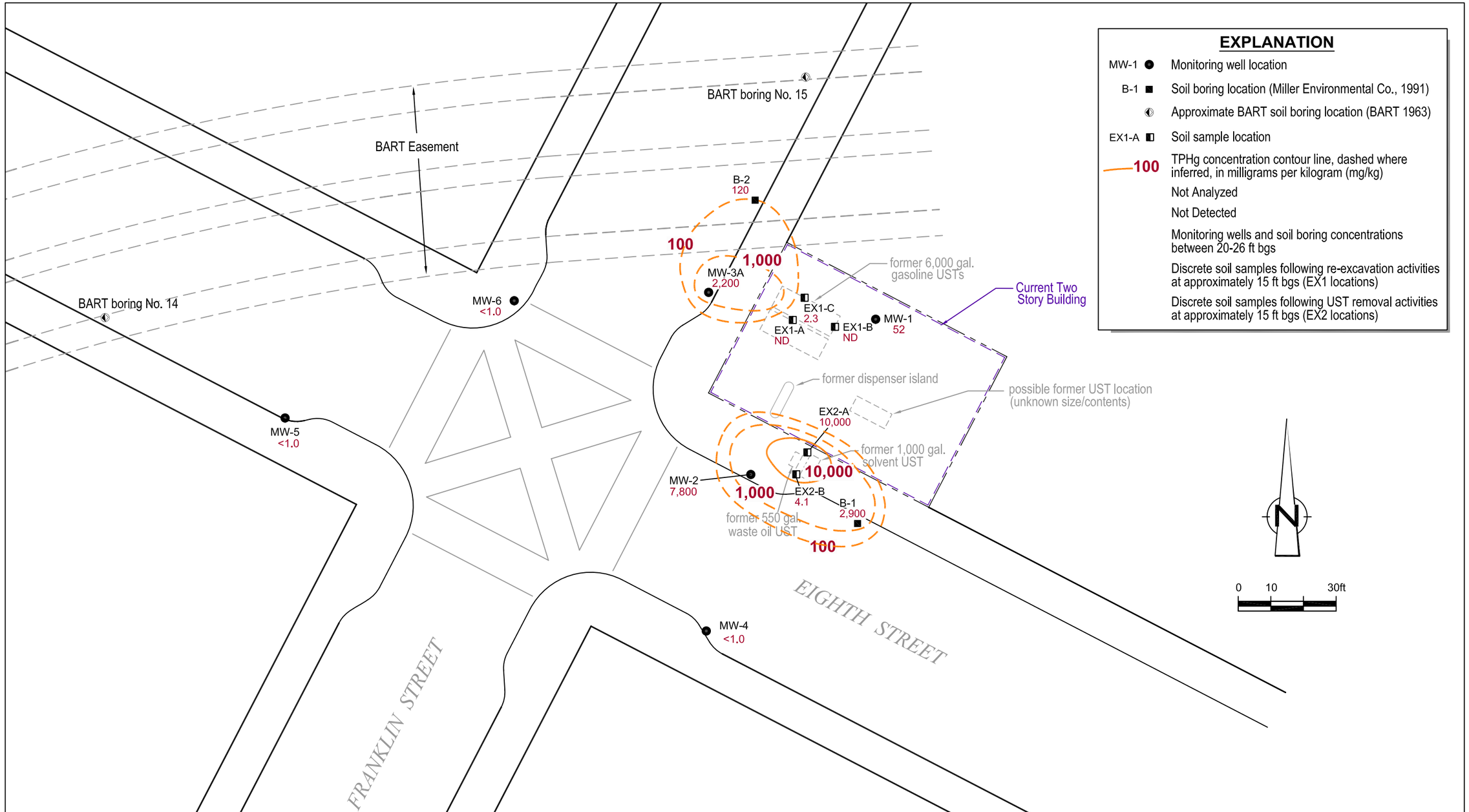


FIGURE 4

TPHG IN SOIL ISOCONCENTRATION MAP (15-26 ft bgs)
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM004.DWG

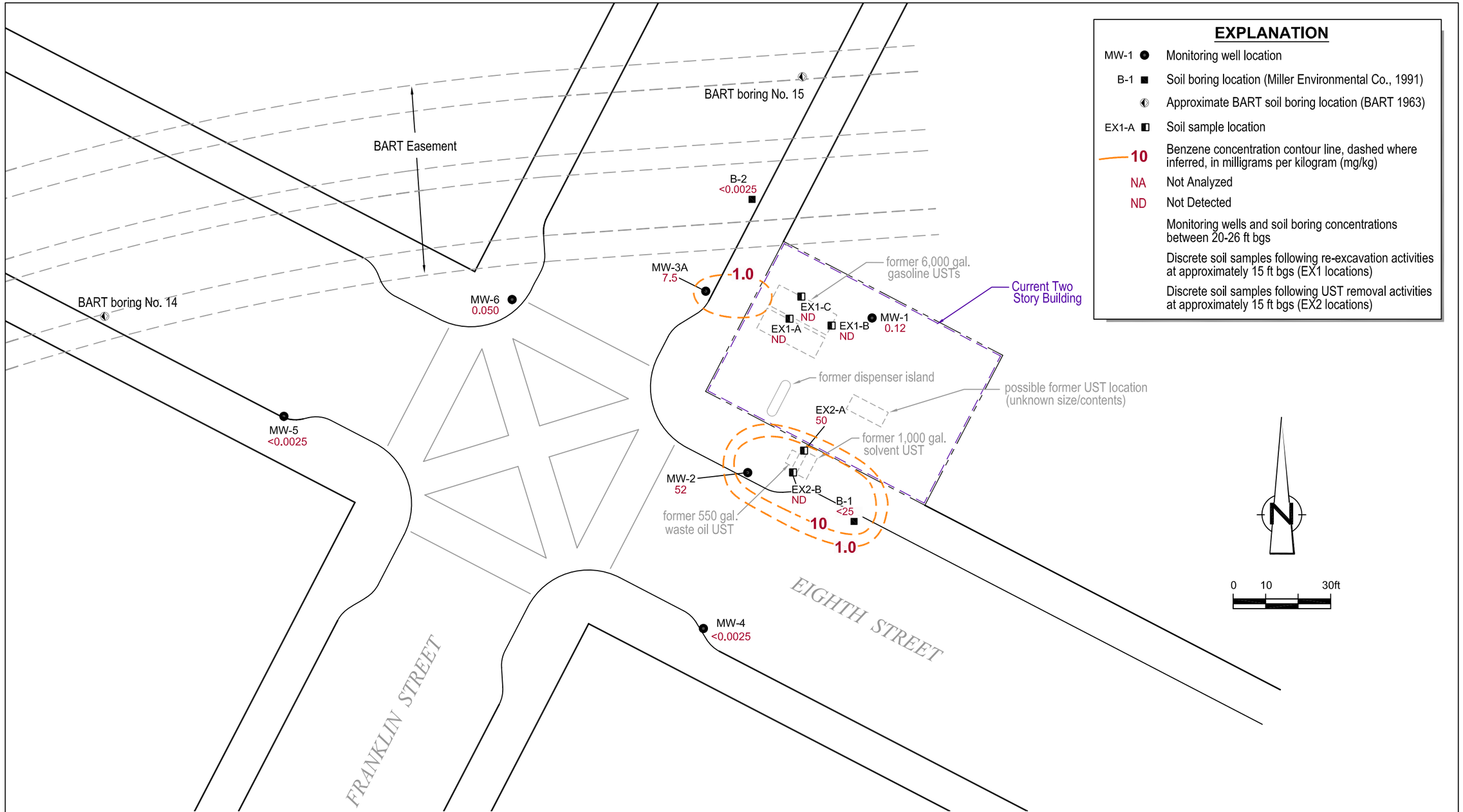


FIGURE 5

BENZENE IN SOIL ISOCONCENTRATION MAP (15-26 ft bgs)
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM005.DWG

EXPLANATION

MW-1 ● Monitoring well location

0.006 Groundwater flow direction and gradient (ft/ft)

11.00 Groundwater elevation contour, in feet above mean sea level (msl), dashed where inferred

Well ID — Well designation

ELEV — Groundwater elevation (msl)

TPHG
BENZ
MTBE — Hydrocarbon concentrations in groundwater in micrograms per liter (µg/L)

BART Easement

BART boring No. 15

BART boring No. 14

MW-6
10.86
4,600
1,500
<25

MW-3A
11.14
35,000
5,300
<120

MW-1
11.47
<50
<0.5
<0.5

MW-5
10.64
<50
<0.5
<0.5

MW-2
11.45
9,500
320
<12

MW-4
11.52
<50
<0.5
<0.5

10.80

11.00

11.20

11.40

0.006

former 6,000 gal. gasoline USTs

Current Two Story Building

former dispenser island

possible former UST location (unknown size/contents)

former 1,000 gal. solvent UST

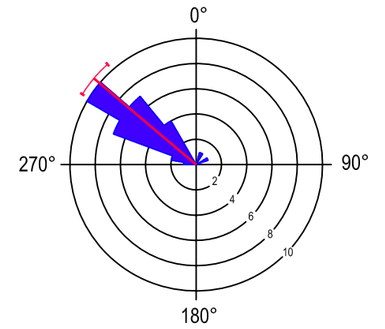
former 550 gal. waste oil UST

EIGHTH STREET

FRANKLIN STREET

N

0 10 30ft



Historical Groundwater Flow Direction
4Q89 to 3Q10

FIGURE 6

GROUNDWATER ELEVATION CONTOUR AND HYDROCARBON CONCENTRATION MAP
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California
September 3, 2010

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-2Q10-GWHC.DWG

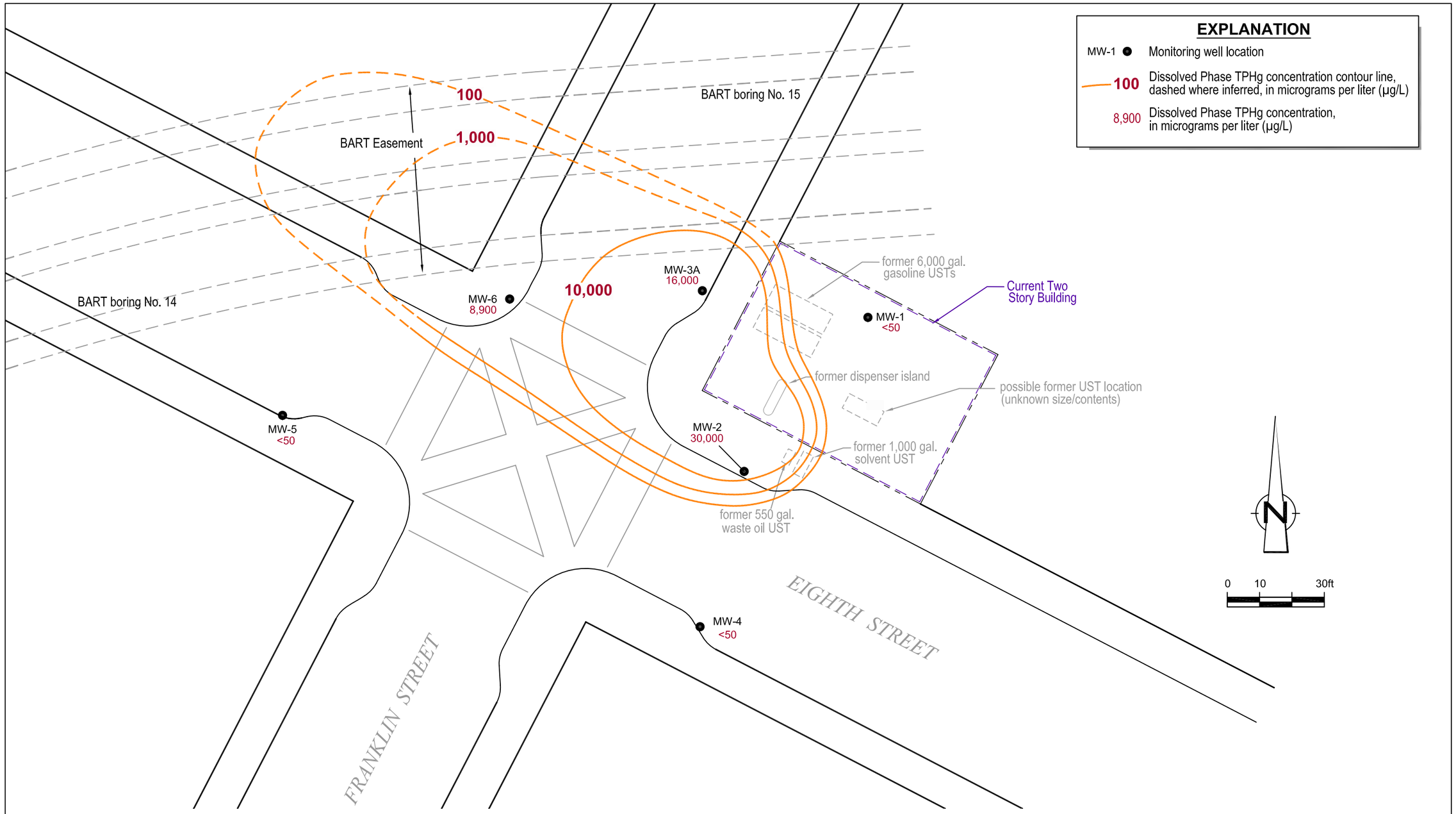


FIGURE 7

DISSOLVED PHASE TPHg ISOCONCENTRATION MAP
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California
March 19, 2010

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM007.DWG

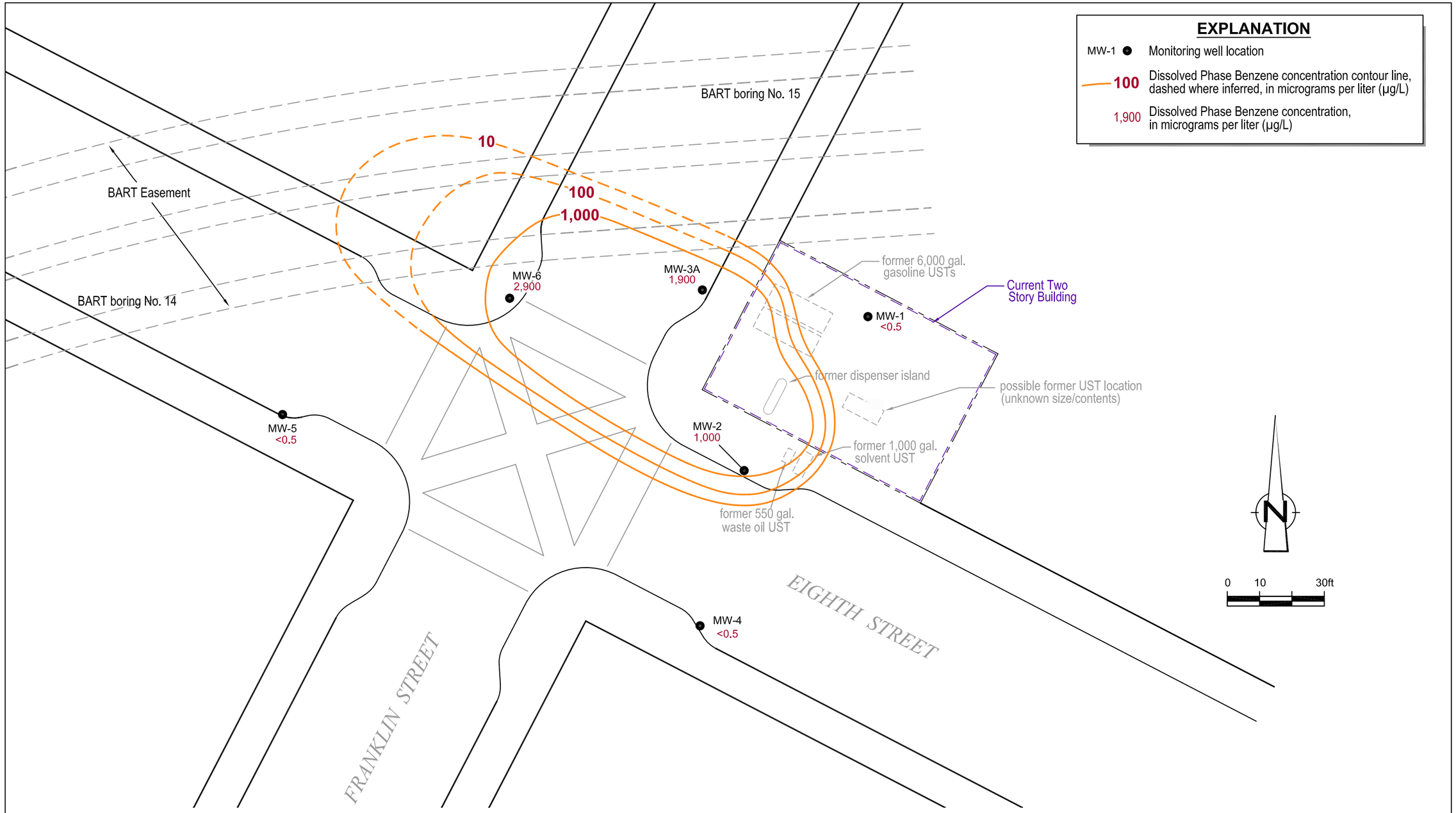


FIGURE 8

DISSOLVED PHASE BENZENE ISOCONCENTRATION MAP
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California
March 19, 2010

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM008.DWG

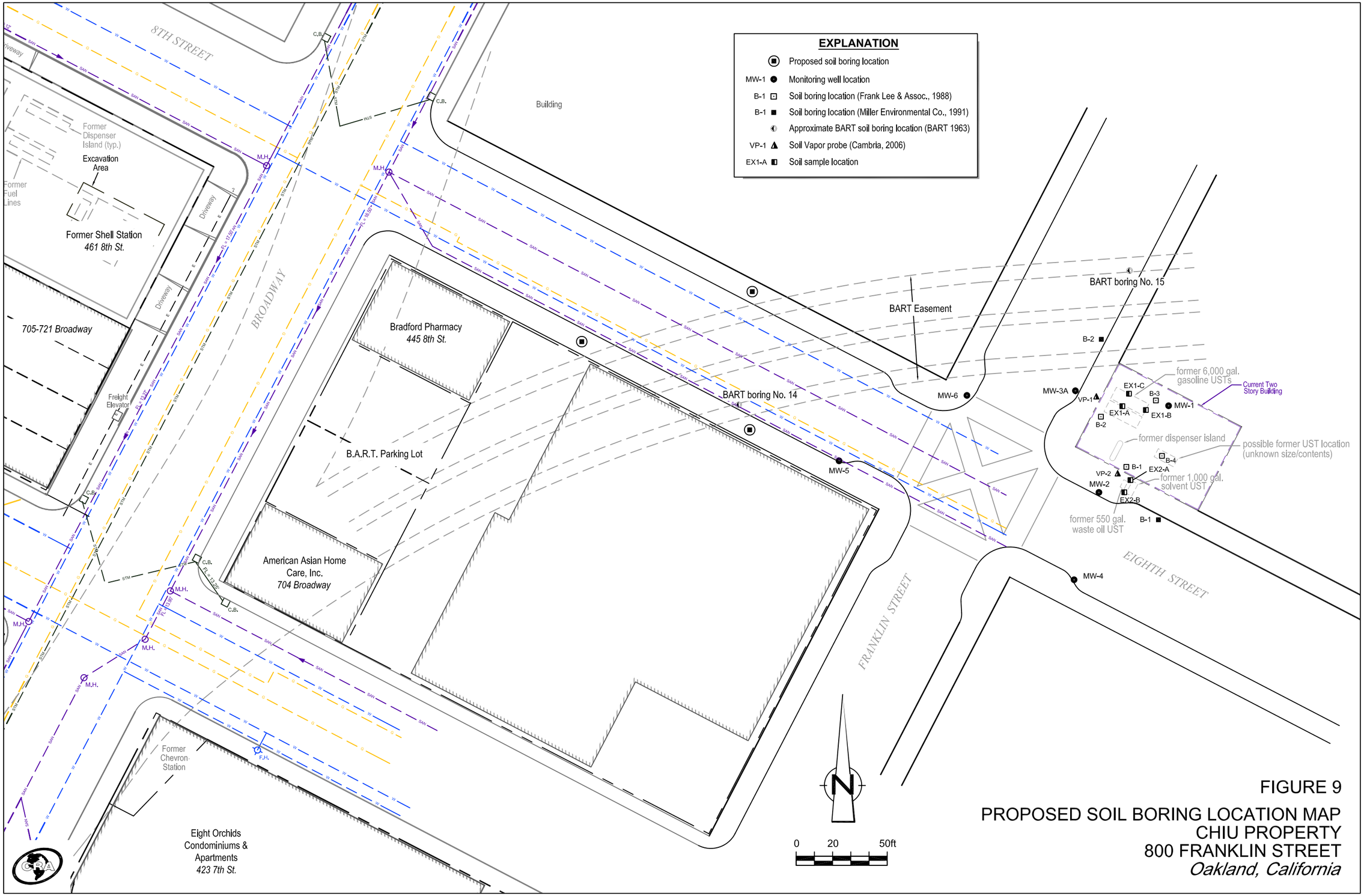


FIGURE 9

PROPOSED SOIL BORING LOCATION MAP
CHIU PROPERTY
800 FRANKLIN STREET
Oakland, California

I:\IR\6-chars\5810--\581000\581000-CHIU\581000-FIGURES\581000-EM002.DWG

TABLES

TABLE 1

WELL CONSTRUCTION DETAILS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID	Date Installed	Borehole Depth (ft)	Borehole Diameter (in)	Casing Diameter (in)	Screen Interval (ft bgs)	Screen Size (in)	Filter Pack (ft bgs)	Bentonite Seal (ft bgs)	Cement Seal (ft bgs)	TOC Elevation (ft msl)
MW-1	1989	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	33.42
MW-2	1989	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	33.66
MW-3*	Installed: 1989 Destroyed: 1/29/07	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	16.0 - 18.0	0 - 16.0	34.23
MW-3A	2/8/2007	35.0	10.0	4	20.0 - 35.0	0.010	19.0 - 35.0	17.0 - 19.0	0 - 17.0	34.16
MW-4	10/2/1991	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	-	0 - 18.0	33.64
MW-5	10/3/1991	35.0	8.0	2	20.0 - 35.0	0.010	18.0 - 35.0	-	0 - 18.0	33.56
MW-6	5/15/1997	35.0	8.0	2	14.5 - 36.25	0.010	14.5 - 36.25	12.5 - 14.5 (?)	0 - 12.5	33.98

Abbreviations / Notes

ft = feet

in = inches

ft bgs = feet below grade surface

ft msl = feet above mean sea level

TOC = top of casing

* = Monitoring well MW-3 properly destroyed on January 29, 2007 by Cambria.

TABLE 2

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				←					µg/L				→
MW-1	10/12/1989	22.87	10.55	ND	–	–	ND	ND	ND	ND	–	0.8	8.6
33.42	10/31/1991	–	–	630	960	1,700	3.2	ND<0.5	ND<0.5	130	–	–	0.0098
34.89	10/21/1992	23.48	11.41	520	–	–	78	38	ND<0.5	120	–	–	ND
	2/25/1993	22.51	12.38	1,600	–	–	160	190	34	350	–	–	–
	4/27/1993	22.36	12.53	380	–	–	5.2	ND<0.5	ND<0.5	74	–	–	–
	10/7/1993	–	12.10	1,000	–	–	81	150	47	230	–	–	–
33.98	3/28/1994	–	11.91	460	–	–	14	25	14	39	–	–	–
	4/29/1994	–	–	–	–	–	–	–	–	–	–	–	–
	6/10/1994	–	11.66	–	–	–	–	–	–	–	–	–	–
	7/8/1994	–	11.62	–	–	–	–	–	–	–	–	–	–
	7/26/1994	–	11.48	–	–	–	–	–	–	–	–	–	–
	8/25/1994	–	11.47	–	–	–	–	–	–	–	–	–	–
	10/27/1994	22.51	11.47	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	1/6/1995	–	12.08	–	–	–	–	–	–	–	–	–	–
	2/1/1995	–	12.79	–	–	–	–	–	–	–	–	–	–
	3/29/1995	–	12.75	–	–	–	–	–	–	–	–	–	–
	10/31/1995	–	12.48	1,400	–	–	15	38	49	510	19	–	–
	5/21/1997	–	12.49	150	–	–	2.9	1.5	8.6	26	ND<5.0	–	–
	8/10/2004	23.35	10.63	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/28/2004É	–	–	–	–	–	–	–	–	–	–	–	–
	12/21/2004	22.93	11.05	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/11/2005É	–	–	–	–	–	–	–	–	–	–	–	–
	6/16/2005	20.68	13.30	ND<50	–	–	0.64	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/1/2005	20.74	13.24	ND<50	–	–	1.2	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	12/16/2005	20.95	13.03	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/10/2006	20.34	13.64	ND<50	–	–	0.60	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/15/2006	21.51	12.47	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	6.4	ND<0.5
	3/8/2007	21.81	12.17	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	0.72	ND<0.5	ND<5.0	6.9	ND<0.5
	9/17/2007	22.08	11.90	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	2.3	ND<0.5	ND<0.5	4.7	ND<0.5
	3/4/2008	21.72	12.26	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.3	ND<0.5
	9/3/2008	22.70	11.28	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.98	ND<0.5
	3/4/2009	22.49	11.49	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.65
	9/8/2009	22.80	11.18	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5	ND<0.5
	3/19/2010	22.25	11.73	ND<50	ND<50	–	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	ND<0.5	0.58
	9/3/2010	**22.51**	**11.47**	**ND<50**	**ND<50**	–	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**1.2**	**ND<0.5**
MW-2	10/12/1989	23.25	10.40	38,000	–	3,900	1,300	1,200	ND	4,700	–	–	–
33.66	10/31/1991	–	–	10,000	1,500	–	1,800	1,200	270	960	–	–	0.17
	11/6/1991	24.02	9.64	–	–	–	–	–	–	–	–	–	–
	10/21/1992	22.42	11.24	270,000	–	–	9,700	4,500	9,600	56,000	–	–	15.4
	2/25/1993	21.50	12.16	49,000	–	–	4,300	11,000	1,300	9,100	–	–	–
	4/27/1993	21.26	12.40	39,000	–	–	1,400	4,000	220	5,200	–	–	–
	10/7/1993	–	12.04	50,000	–	–	2,700	8,100	940	7,800	–	–	–

TABLE 2

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				←					µg/L				→
MW-2 (cont.)	3/28/1994	–	11.88	20,000	–	–	360	1,300	220	1,800	–	–	–
	4/29/1994	–	11.87	–	–	–	–	–	–	–	–	–	–
	6/10/1994	–	11.44	–	–	–	–	–	–	–	–	–	–
	7/8/1994	–	11.42	–	–	–	–	–	–	–	–	–	–
	7/26/1994	–	11.22	–	–	–	–	–	–	–	–	–	–
	8/25/1994	–	11.01	–	–	–	–	–	–	–	–	–	–
	10/27/1994	22.66	11.00	21,000	–	–	1,200	3,700	600	4,300	–	–	–
	1/6/1995	–	11.66	–	–	–	–	–	–	–	–	–	–
	2/1/1995	–	12.21	–	–	–	–	–	–	–	–	–	–
	3/29/1995	–	12.66	–	–	–	–	–	–	–	–	–	–
	10/31/1995	–	11.51	45,000	–	–	3,100	8,800	1,200	8,400	810	–	–
	5/21/1997	–	12.65	18,000	–	–	1,400	4,200	680	3,600	370	–	–
	8/10/2004	21.03	12.63	47,000 (a)	–	–	4,200	4,900	1,400	6,000	ND<500	–	–
	9/28/2004	22.95	10.71	–	–	–	–	–	–	–	–	–	–
	12/21/2004	20.91	12.75	13,000 (a)	–	–	500	310	34	1600	ND<100	–	–
	3/11/2005	11.35	22.31	32,000 (a)	–	–	970	2,400	890	4,200	ND<1,000	–	–
	6/16/2005	20.50	13.16	43,000 (a,i)	–	–	1,500	3,400	1,200	5,400	ND<1,200	–	–
	9/1/2005	20.60	13.06	20,000 (a)	–	–	640	1,700	460	2,200	ND<200	–	–
	12/16/2005	20.83	12.83	32,000 (a,i)	–	–	1,000	3,100	760	3,800	ND<500	–	–
	3/10/2006	20.05	13.61	20,000 (a)	–	–	460	1,900	440	2,400	ND<400	–	–
	9/15/2006	21.31	12.35	43,000 (a)	3,100 (d)	ND<250	1,600	4,400	1,100	5,100	ND<500	16	ND<10
	3/8/2007	21.62	12.04	30,000 (a,h)	4,600 (d,h)	ND<1,200	1,200	3,400	890	4,500	ND<500	ND<50	ND<50 (j,h)
	9/17/2007	21.92	11.74	31,000 (a)	6,600 (d,b)	340	790	3,000	700	3,100	ND<100	ND<100	ND<100
	3/4/2008	–	–	–	–	–	–	–	–	–	–	–	–
	9/3/2008	22.50	11.16	46,000 (a)	5,100 (d)	370	1,700	8,600	1,400	7,500	ND<250	ND<250	ND<250
	3/4/2009	22.25	11.41	56,000 (a)	13,000 (d)	1,100	1,500	5,300	990	4,500	ND<10	ND<10	ND<10
	9/8/2009	22.60	11.06	42,000 (a)	11,000 (d)	1,200	1,400 (1,200)	5,200 (4,900)	970 (890)	5500 (4,900)	ND<100 (ND<100)	ND<0.5	ND<100
33.75	3/19/2010 **	21.96	11.70	30,000 (a,h)	12,000 (d,h)	–	(1,000)	(3,500)	(980)	(4,500)	(ND<50)	ND<5.0	ND<5.0
	9/3/2010	**22.30**	**11.45**	**9,500 (a)**	**1,500 (d)**	–	**(320)**	**(290)**	**(140)**	**(970)**	**(ND<12)**	**ND<12**	**ND<12**
MW-3	10/12/1989	24.02	10.21	87,000	–	4,500	3,200	8,800	ND	6,500	–	–	70.0
34.23	10/31/1991	–	–	310,000	25,000	–	9,300	25,000	5,600	27,000	–	–	0.058
	11/6/1991	23.52	10.71	–	–	–	–	–	–	–	–	–	–
	10/21/1992	23.32	10.91	22,000	–	–	10,000	4,300	790	2,100	–	–	ND
	2/25/1993	22.51	11.72	29,000	–	–	8,400	5,400	1,300	3,300	–	–	–
	4/27/1993	22.37	11.86	50,000	–	–	8,200	8,700	1,000	5,400	–	–	–
	10/7/1993	–	14.19	1,700	–	–	3,100	3,700	400	1,700	–	–	–
	3/28/1994	–	11.52	53,000	–	–	3,900	4,600	710	2,500	–	–	–
	4/29/1994	–	11.34	–	–	–	–	–	–	–	–	–	–
	6/10/1994	–	11.13	–	–	–	–	–	–	–	–	–	–
	7/8/1994	–	11.09	–	–	–	–	–	–	–	–	–	–
	7/26/1994	–	10.94	–	–	–	–	–	–	–	–	–	–
	8/25/1994	–	10.80	–	–	–	–	–	–	–	–	–	–

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				←					µg/L				→
MW-3 *(cont.)*	10/27/1994	23.56	10.67	8,500	–	–	2,700	2,700	490	2,000	–	–	–
	1/6/1995	–	11.33	–	–	–	–	–	–	–	–	–	–
	2/1/1995	–	11.79	–	–	–	–	–	–	–	–	–	–
	3/29/1995	–	12.10	–	–	–	–	–	–	–	–	–	–
	10/31/1995	–	11.23	19,000	–	–	4,400	4,600	720	2,900	410	–	–
	5/21/1997	–	11.68	4,000	–	–	810	840	190	690	ND<100	–	–
	9/28/2004			*Well is damaged. Unable to measure depth to water or collect sample.*									
	12/21/2004			*Well is damaged. Unable to measure depth to water or collect sample.*									
	3/11/2005			*Well is damaged. Unable to measure depth to water or collect sample.*									
	6/16/2005			*Well is damaged. Unable to measure depth to water or collect sample.*									
	9/1/2005			*Well is damaged. Unable to measure depth to water or collect sample.*									
	12/16/2005			*Well is damaged. Unable to measure depth to water or collect sample.*									
	3/10/2006			*Well is damaged. Unable to measure depth to water or collect sample.*									
	9/15/2006			*Well is damaged. Unable to measure depth to water or collect sample.*									
	1/29/2007			*Well properly destroyed by Cambria.*									
MW-3A	1/29/2007			*MW-3A replaces MW-3*									
34.16	3/8/2007	22.42	11.74	30,000 (a,i)	1,700 (d,i)	ND<250	2,600	4,400	710	4,600	ND<1,000	ND<50	ND<50 (j)
	9/17/2007	22.65	11.51	9,800 (a)	980 (d)	ND<250	1,100	1,800	270	1,100	ND<25	ND<25	ND<25
	3/4/2008	22.31	11.85	21,000 (a,i)	1,700 (d,i)	ND<250	2,600	5,000	810	3,500	ND<50	ND<50	ND<50
	9/3/2008	23.11	11.05	13,000 (a)	880 (d)	ND<250	1,400	2,100	370	1,500	ND<50	ND<50	ND<50
	3/4/2009	22.98	11.18	12,000 (a)	810 (d)	ND<250	1,000	1,700	330	1,200	ND<5.0	7.9	7.2
	9/8/2009	23.25	10.91	8,900 (a)	780 (d)	ND<250	870 (830)	1300 (1,200)	260 (200)	1100 (880)	ND<25 (ND<25)	6.3	ND<25
	3/19/2010	22.79	11.37	16,000 (a)	1,700 (d)	–	(1,900)	(3,200)	(620)	(2,800)	(ND<50)	ND<5.0	10
	9/3/2010	**23.02**	**11.14**	**35,000 (a)**	**1,600 (d)**	**–**	**(5,300)**	**(6,500)**	**(1,100)**	**(5,100)**	**(ND<120)**	**ND<120**	**ND<120**
MW-4	10/31/1991	–	–	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	2.6	ND
33.64	11/6/1991	23.32	10.32	–	–	–	–	–	–	–	–	–	–
	10/21/1992	22.10	11.54	410	–	–	3.1	29	6.8	47	–	–	ND
	2/25/1993	21.13	12.51	170	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	4/27/1993	20.74	12.90	100	–	–	ND<0.5	ND<0.5	ND<0.5	0.9	–	–	–
	10/7/1993	–	12.52	240	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	3/28/1994	–	12.34	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	4/29/1994	–	11.33	–	–	–	–	–	–	–	–	–	–
	6/10/1994	–	11.55	–	–	–	–	–	–	–	–	–	–
	7/8/1994	–	11.54	–	–	–	–	–	–	–	–	–	–
	7/26/1994	–	11.30	–	–	–	–	–	–	–	–	–	–
	8/25/1994	–	11.09	–	–	–	–	–	–	–	–	–	–
	10/27/1994	22.69	10.95	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	1/6/1995	–	11.70	–	–	–	–	–	–	–	–	–	–
	2/1/1995	–	12.34	–	–	–	–	–	–	–	–	–	–
	3/29/1995	–	12.76	–	–	–	–	–	–	–	–	–	–
	10/31/1995	–	11.61	80	–	–	ND<0.5	0.6	ND<0.5	1.0	ND<0.5	–	–
	5/21/1997	–	12.08	ND<50	–	–	11	120	27	180	ND<5.0	–	–

TABLE 2

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				←					µg/L			→	
MW-4 *(cont.)*	9/28/2004	22.72	10.92	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	12/21/2004	20.65	12.99	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/11/2005	20.20	13.44	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	6/16/2005	20.38	13.26	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/1/2005	20.48	13.16	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	12/16/2005	20.78	12.86	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/10/2006	19.81	13.83	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/15/2006	21.16	12.48	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	28	ND<0.5
	3/8/2007	21.52	12.12	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	23	ND<0.5
	9/17/2007	21.84	11.80	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	18	ND<0.5
	3/4/2008	21.41	12.23	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	13	ND<0.5
	9/3/2008	22.50	11.14	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	12	ND<0.5
	3/4/2009	22.15	11.49	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	14	ND<0.5
	9/8/2009	22.56	11.08	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	11	ND<0.5
33.73	3/19/2010 *	21.88	11.76	ND<50	ND<50	–	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	10	ND<0.5
	9/3/2010	**22.21**	**11.52**	**ND<50**	**ND<50**	**–**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**ND<0.5**	**ND<0.5**
MW-5	10/31/1991	–	–	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	1.1	–
33.51	11/6/1991	24.00	9.51	ND	–	–	ND	ND	ND	ND	–	–	–
	10/21/1992	23.24	10.27	840	–	–	17	120	39	180	–	–	–
33.56	2/25/1993	22.40	11.16	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	4/27/1993	22.15	11.41	260	–	–	53	19	1.2	2.4	–	–	–
	10/7/1993	–	11.06	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	3/28/1994	–	10.95	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	4/29/1994	–	10.91	–	–	–	–	–	–	–	–	–	–
	6/10/1994	–	10.68	–	–	–	–	–	–	–	–	–	–
	7/8/1994	–	10.60	–	–	–	–	–	–	–	–	–	–
	7/26/1994	–	10.45	–	–	–	–	–	–	–	–	–	–
	8/25/1994	–	10.28	–	–	–	–	–	–	–	–	–	–
	10/27/1994	23.50	10.06	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–	–
	1/6/1995	–	10.78	–	–	–	–	–	–	–	–	–	–
	2/1/1995	–	11.25	–	–	–	–	–	–	–	–	–	–
	3/29/1995	–	11.63	–	–	–	–	–	–	–	–	–	–
	10/31/1995	–	10.64	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	–	–
	5/21/1997	–	11.04	260	–	–	2.4	33	7.7	56	ND<5.0	–	–
	9/28/2004	23.70	9.86	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	1.5	ND<5.0	–	–
	12/21/2004	21.40	12.16	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/11/2005	21.40	12.16	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	6/16/2005	21.63	11.93	ND<50 (i)	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/1/2005	21.65	11.91	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	12/16/2005	21.94	11.62	ND<50 (i)	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/10/2006	21.11	12.45	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	9/15/2006	22.20	11.36	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	10	ND<0.5

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				←					µg/L				→
MW-5 *(cont.)*	3/8/2007	22.44	11.12	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	18	ND<0.5
	9/17/2007	22.73	10.83	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	14	ND<0.5
	3/4/2008	22.32	11.24	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	19	ND<0.5
	9/3/2008	23.13	10.43	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	17	ND<0.5
	3/4/2009	22.95	10.61	ND<50	ND<50	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	14	ND<0.5
	9/8/2009	23.21	10.35	ND<50	ND<50	ND<250	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	ND<0.5 (ND<0.5)	11	ND<0.5
33.67	3/19/2010 *	22.72	10.84	ND<50	ND<50	–	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	(ND<0.5)	14	ND<0.5
	9/3/2010	**23.03**	**10.64**	**ND<50**	**ND<50**	–	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**(ND<0.5)**	**7.2**	**ND<0.5**
MW-6	5/21/1997	–	11.26	760	–	–	2.5	1.7	ND<0.50	25	10	–	–
33.98	9/28/2004	24.00	9.98	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	12/21/2004	21.61	12.37	ND<50	–	–	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5.0	–	–
	3/11/2005	21.60	12.38	340 (a)	–	–	1.9	2.6	0.68	0.61	ND<5.0	–	–
	6/16/2005	21.81	12.17	1,300 (a)	–	–	58	8.3	6.1	4.0	ND<25	–	–
	9/1/2005	21.82	12.16	1,900 (a)	–	–	150	19	18	76	ND<12	–	–
	12/16/2005	22.03	11.95	3,600 (a,i)	–	–	560	63	33	230	ND<50	–	–
	3/10/2006	21.46	12.52	2,200 (a)	–	–	240	10	20	87	ND<50	–	–
	9/15/2006	22.46	11.52	1,800 (a)	480 (d)	ND<250	10	6.7	9.9	42	ND<17	3.2	ND<0.5
	3/8/2007	22.64	11.34	4,300 (a)	890 (d)	ND<250	260	36	29	140	ND<60	ND<10	ND<10 (j)
	9/17/2007	22.88	11.10	7,000 (a)	970 (d)	ND<250	760	28	46	270	ND<10	ND<10	ND<10
	3/4/2008	22.51	11.47	400 (a)	74 (d)	ND<250	46	ND<1.0	1.0	6.0	ND<1.0	ND<1.0	ND<1.0
	9/3/2008	23.24	10.74	280 (a)	69 (d, b)	ND<250	2.9	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	3/4/2009	23.14	10.84	670 (a)	150 (d)	ND<250	68	13	ND<2.5	12	ND<2.5	ND<2.5	ND<2.5
	9/8/2009	23.38	10.60	8,000 (a)	1,400 (d)	ND<250	870 (770)	16 (ND<12)	34 (17)	1500 (1,200)	ND<12 (ND<12)	ND<0.5	ND<12
34.05	3/19/2010 *	22.93	11.05	8,900 (a)	1,200 (d)	–	(2,900)	(ND<100)	(ND<100)	(ND<100)	(ND<5.0)	ND<5.0	15
	9/3/2010	**23.19**	**10.86**	**4,600 (a)**	**710 (d)**	–	**(1,500)**	**(33)**	**(35)**	**(79)**	**(ND<25)**	**ND<25**	**ND<25**

Abbreviations and Notes:

TOC Elevation = Top of well casing elevation measured in feet above mean sea level

msl = Above mean sea level

µg/L = Micrograms per liter

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method SW8015C.

TPHd = Total petroleum hydrocarbons as diesel by EPA Method SW8015C with silica gel cleanup.

TPHmo = Total petroleum hydrocarbons as motor oil by EPA Method SW8015C with silica gel cleanup.

Benzene, toluene, ethylbenzene, and xylenes by EPA Method SW8021B (SW8260B).

MTBE = Methyl tertiary-butyl ether by EPA Method SW8021B by (8260B)

Chloroform by EPA Method SW8260B.

1,2-DCA = 1,2-Dichloroethane by EPA Method SW8260B.

Sheen = A sheen was observed on the water's surface.

Field = Observed in the field.

Lab = Observed in analytical laboratory.

(a) = unmodified or weakly modified gasoline is significant

(b) = diesel range compounds are significant; no recognizable pattern

TABLE 2

GROUNDWATER ANALYTICAL AND ELEVATION DATA: PETROLEUM HYDROCARBONS
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Well ID / TOC Elevation (ft msl)	Date Sampled	Depth to Water (ft below TOC)	Groundwater Elevation (feet msl)	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Chloroform	1,2-DCA
				← µg/L →									

(d) = gasoline range compounds are significant
(h) = lighter than water immiscible sheen/product is present
(i) = liquid sample that contains ~1 vol. % sediment
(j) = sample diluted due to high organic content/matrix interference
ND<5.0 = Not detected above detection limit.
– = Not available, not analyzed, or not applicable
* = Surveyed September 7, 2006; updated to table May 24, 2010
** = Surveyed March 8, 2007; updated to table May 24, 2010
É = Unable to access well due to denial by current tenant

TABLE 3

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Sample ID	*Date Sampled*	*Depth (ft)*	*TPHg (mg/kg)*	*TPHd (mg/kg)*	*TPHwo (mg/kg)*	*TPHmo (mg/kg)*	*Benzene (mg/kg)*	*Toluene (mg/kg)*	*Ethylbenzene (mg/kg)*	*Xylenes (mg/kg)*	*MTBE (mg/kg)*	*SVOCs (mg/kg)*	*VOCs (mg/kg)*	*Total Oil & Grease (mg/kg)*	*TRPH*	*Total Lead (mg/kg)*
Soil and Foundation Investigation by Frank Lee & Associates - Soil Borings																
B-1-3	5/3/1988	3	-	-	-	-	ND<0.1	ND<0.1	ND<0.1	ND<0.1	-	-	ND	ND<30	ND<30	-
B-2-1	5/3/1988	1	ND<1.0 *	-	-	-	ND<0.05	ND<0.1	-	ND<0.1	-	-	ND	-	-	-
B-3-4	5/3/1988	4	ND<1.0 *	-	-	-	ND<0.05	ND<0.1	-	ND<0.1	-	-	ND	-	-	-
UST Removal by Robert J. Miller Company																
UST Excavation Compliance Samples - Collected by The Traverse Group, Inc.																
T1 - Gasoline Tank	June-89	-	ND<1.0	ND<6.3	ND<30	--	0.011	0.0036	ND<0.0025	0.006	-	(1)	ND	-	-	-
T2 - Gasoline Tank	June-89	-	5.0	ND<6.7	30	--	0.050	0.044	0.0036	0.023	-	(2)	ND	-	-	-
T3 - Gasoline Tank	June-89	-	ND<1.0	ND<7.0	ND<30	--	0.0046	ND<0.0025	ND<0.0025	ND<0.0025	-	(3)	ND	-	-	-
T4 - Gasoline Tank	June-89	-	3,100	420	1,350	--	7.5	87	59	290	-	(4)	ND	-	-	-
W1 - Waste Oil Tank	June-89	-	270	430	4,000	--	ND<5.0	ND<5.0	ND<5.0	14	-	(5)	ND	-	-	-
W2A - Waste Oil Tank	June-89	-	2,300	170	50	--	ND<2.5	3	ND<2.5	12	-	(6)	ND	-	-	-
S1 - Solvent Tank	June-89	-	1.8	ND<6.0	ND<30	--	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	(7)	ND	-	-	-
S2 - Solvent Tank	June-89	-	62	106	ND<30	--	ND<1.0	ND<1.0	ND<1.0	ND<1.0	-	(8)	ND	-	-	-
SP1 - Spoils Pile "Contaminated	June-89	-	184	240	900	--	ND<5.0	17	19	110	-	(9)	ND	-	-	-
SP2 - Spoils Pile "Clean"	June-89	-	ND<1.0	ND<6.7	ND<30	--	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	ND	ND	-	-	-
SP3 - Spoils Pile "Clean"	June-89	-	120	40	150	--	ND<1.0	ND<1.0	ND<1.0	2.1	-	(10)	ND	-	-	-
Subsurface Investigation by Miller Environmental Company																
Over-Excavation Confirmation Samples																
EX1-A (fuel tank)	9/7/1989	15	ND	ND	ND	--	ND	ND	ND	ND	-	-	-	-	-	-
EX1-B (fuel tank)	9/7/1989	15	ND	ND	40	--	ND	ND	ND	ND	-	-	-	-	-	-
EX1-C (fuel tank)	9/7/1989	15	2.3	ND	80	--	ND	0.05	0.14	ND	-	-	-	-	-	-
EX2-A (waste oil and solvent ta	9/7/1989	15	10,000	250	400	--	50	210	270	54	-	-	-	-	-	-
EX2-B (waste oil and solvent tar	9/7/1989	15	4.1	ND	ND	--	ND	ND	0.15	ND	-	-	-	-	-	-
Well Installation Soil Samples																
MW1-A	9/12-13/1989	6	ND	23	--	30	ND	ND	ND	ND	-	-	-	30	-	-
MW1-B	9/12-13/1989	11	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	ND	-	-
MW1-C	9/12-13/1989	16	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	ND	-	-
MW1-D	9/12-13/1989	21	52	ND	--	ND	0.12	0.7	0.53	4.5	-	-	-	ND	-	-
MW1-E	9/12-13/1989	26	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	ND	-	-
MW2-A	9/12-13/1989	6	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	--	-	-
MW2-B	9/12-13/1989	11	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	--	-	-
MW2-C	9/12-13/1989	16	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	--	-	-
MW2-D	9/12-13/1989	21	1,900	110	--	50	7.4	51	24	180	-	-	-	50	-	-
MW2-E	9/12-13/1989	26	7,800	170	--	30	52	220	77	400	-	-	-	30	-	-
MW3-A	9/12-13/1989	6	ND	ND	--	ND	ND	ND	ND	ND	-	-	-	ND	-	-
MW3-B	9/12-13/1989	11	ND	25	--	ND	ND	ND	ND	ND	-	-	-	ND	-	-
MW3-C	9/12-13/1989	16	ND	ND	--	ND	ND	ND	ND	0.07	-	-	-	ND	-	-
MW3-D	9/12-13/1989	21	2,200	160	--	40	7.5	42.3	16	180	-	-	-	40	-	-
MW3-E	9/12-13/1989	26	24	ND	--	ND	0.6	1.1	0.17	1.4	-	-	-	ND	-	-

TABLE 3

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Sample ID	*Date Sampled*	*Depth (ft)*	*TPHg (mg/kg)*	*TPHd (mg/kg)*	*TPHwo (mg/kg)*	*TPHmo (mg/kg)*	*Benzene (mg/kg)*	*Toluene (mg/kg)*	*Ethylbenzene (mg/kg)*	*Xylenes (mg/kg)*	*MTBE (mg/kg)*	*SVOCs (mg/kg)*	*VOCs (mg/kg)*	*Total Oil & Grease (mg/kg)*	*TRPH*	*Total Lead (mg/kg)*
Additional Subsurface Investigation by Miller Environmental Company																
B1-5	9/11/1991	5	ND<0.20	ND<5.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND	ND<20	-
B1-10	9/11/1991	10	ND<0.20	ND<5.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND	ND<20	-
B1-15	9/11/1991	15	ND<0.20	ND<5.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND	ND<20	-
B1-20	9/11/1991	20	ND<0.20	ND<5.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	-	ND	ND<20	-
B1-25	9/11/1991	25	2,900	160	-	-	ND<25	60	ND<25	ND<25	-	-	-	ND	190	-
B2-5	10/2/1991	5	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
B2-10	10/2/1991	10	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
B2-15	10/2/1991	15	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
B2-20	10/2/1991	20	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
B2-25	10/2/1991	25	120	83	-	ND<10	ND<0.0025	0.310	0.210	0.600	-	-	-	ND<50	-	-
MW4-5	10/2/1991	5	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW4-10	10/2/1991	10	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW4-15	10/2/1991	15	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW4-20	10/2/1991	20	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW4-25	10/2/1991	25	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW5-5	10/3/1991	5	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW5-10	10/3/1991	10	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW5-15	10/3/1991	15	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW5-20	10/3/1991	20	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
MW5-25	10/3/1991	25	ND<1	ND<1	-	ND<10	ND<0.0025	ND<0.0025	ND<0.0025	ND<0.0025	-	-	-	ND<50	-	-
Additional Subsurface Investigation by Associated Terra Consultants, Inc.																
B6-1 (MW-6)	5/15/1997	5	ND<1.0	ND<1.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	ND<50	-	-
B6-2 (MW-6)	5/15/1997	10	ND<1.0	9.1	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	ND<50	-	-
B6-3B (MW-6)	5/15/1997	15	ND<1.0	ND<1.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	ND<50	-	-
B6-4B (MW-6)	5/15/1997	20	ND<1.0	ND<1.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	ND<50	-	-
B6-5B (MW-6)	5/15/1997	25	ND<1.0	ND<1.0	-	-	0.050	0.011	0.023	0.099	ND<0.0050	-	-	ND<50	-	-
B6-6B (MW-6)	5/15/1997	30	ND<1.0	ND<1.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	0.0050	-	-	ND<50	-	-
B6-11 (MW-6)	5/15/1997	35	ND<1.0	ND<1.0	-	-	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	-	-	ND<50	-	-
Soil Vapor Borings by Cambria																
VP-1.5.5	11/17/2006	5.5	ND<1.0	4.0	–	6.9	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	-	chloroform & 1,2-DCA: ND<0.005	–	-	35
VP-2-5.5	11/17/2006	5.5	ND<1.0	ND<1.0	–	ND<5.0	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.05	-	chloroform & 1,2-DCA: ND<0.005	–	-	-

Abbreviations and Analyses:

ND<0.5 = Not Detected (ND) above laboratory detection limit.

ft = Measured in feet

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015

TABLE 3

SOIL ANALYTICAL DATA
CHIU PROPERTY
800 FRANKLIN STREET
OAKLAND, CALIFORNIA

Sample ID	Date Sampled	Depth (ft)	TPHg (mg/kg)	TPHd (mg/kg)	TPHwo (mg/kg)	TPHmo (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	SVOCs (mg/kg)	VOCs	(mg/kg)	Total Oil & Grease (mg/kg)	TRPH	Total Lead (mg/kg)

TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
TPHwo = Total petroleum hydrocarbons as waste oil by modified EPA Method 418.1/3550/SM503
TPHmo = Total petroleum hydrocarbons as motor boil by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8020 or 8021B
SVOCs = Semi-volatile organics by EPA Method 8270.
VOCs = Volatile organics by EPA Method 8240.
TRPH = Total Recoverable Petroleum Hydrocarbons by EPA Method 418.1
Total Lead by EPA Method 7420
mg/kg = Milligrams per kilogram
- = Not sampled, not analyzed, or not applicable
* = Analyzed for "low to medium boiling point hydrocarbons" by EPA Method 8015.
WO1 sampled on 1/17/1991 was also analyzed for Total Petroleum Fuel Hydrocarbons by EPA Method 8015 (ND<1.0 mg/kg).
WO1 sampled on 1/17/1991 was also analyzed for Halogenated Volatile Organics by EPA Method 8010 (all analytes were ND).
WO1 sampled on 1/17/1991 was also analyzed for Semi-Volatile Organics by EPA Method 8270. The following analytes were detected: benzo(a)pyrene at 0.10 mg/kg,
(1) = 0.20 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(2) = 0.24 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(3) = 0.42 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(4) = 28 mg/kg naphthalene; 23 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(5) = 0.37 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(6) = 6.4 mg/kg naphthalene; 4.1 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(7) = 0.50 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(7) = 0.50 mg/kg bis (2-ethylhexyl) phthalate. Other SVOCs were ND.
(8) = 2.4 mg/kg naphthalene; 1.9 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(9) = 27 mg/kg naphthalene; 13 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.
(10) = 1.6 mg/kg naphthalene; 2.0 mg/kg 2-methyl-naphthalene. Other SVOCs were ND.

APPENDIX A

AGENCY CORRESPONDENCE

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 9, 2010

Mr. Tommy Chiu
P.O. Box 28194
Oakland, CA 94606

Subject: Fuel Leak Case No. RO0000196 and Geotracker Global ID T0600100050, Bill Louie's Auto Service, 800 Franklin Street, Oakland, CA 94607 – Request for Work Plan

Dear Mr. Chiu:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the subject site including the most recently submitted document entitled, "*Site Conceptual Model*," dated July 2, 2010. The Site Conceptual Model (SCM), which was prepared on your behalf by Conestoga-Rovers & Associates, was prepared to identify and address data gaps. The SCM identifies the downgradient extent of the hydrocarbon plume to the northwest as a data gap and includes a recommendation to install an off-site downgradient monitoring well northwest of MW-6.

We generally concur with this recommendation and request that you prepare a Work Plan no later than October 12, 2010 to define the downgradient extent of the plume. Please assure that the proposed scope of the investigation is sufficient to assess the downgradient extent of the plume and whether the BART tube acts as a barrier that potentially deflects plume migration; potentially this may require installation of more than one monitoring well.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **October 14, 2010** – Work Plan
- **November 8, 2010** – Semi-Annual Groundwater Monitoring Report – Thrid Quarter 2010

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham

Digitally signed by Jerry Wickham
DN: cn=Jerry Wickham, o, ou, email=jerry.wickham@acgov.org, c=US
Date: 2010.08.10 08:59:03 -07'00'

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachment: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Leroy Griffin, Oakland Fire Department, 250 Frank H. Ogawa Plaza, Ste. 3341, Oakland, CA 94612-2032 2032 (*Sent via E-mail to: lgriffin@oaklandnet.com*)

Bryan Fong, Conestoga-Rovers & Associates, 5900 Hollis Street, Suite A Emeryville, CA 94608 (*Sent via E-mail to: bfong@craworld.com*)

Donna Drogos, ACEH (*Sent via E-mail to: donna.drogos@acgov.org*)
Jerry Wickham, ACEH

Geotracker, File

Attachment 1
Responsible Party(ies) Legal Requirements/Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**ISSUE DATE:** July 5, 2005
	REVISION DATE: July 8, 2010
	PREVIOUS REVISIONS: December 16, 2005, October 31, 2005
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
         Or
      ii) Send a fax on company letterhead to (510) 337-9335, to the attention of Teena Le Khan.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape and Firefox browsers will not open the FTP site.
   b) Click on Page on upper right side of browser, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

APPENDIX B

STANDARD FIELD PROCEDURES FOR SOIL BORINGS AND MONITORING WELL INSTALLATION

Conestoga-Rovers & Associates

STANDARD FIELD PROCEDURES FOR SOIL BORING AND MONITORING WELL INSTALLATION

This document presents standard field methods for drilling and sampling soil borings and installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

SOIL BORINGS

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and to collect samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Professional Geologist (PG).

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or direct-push technologies such as the Geoprobe®. Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments at the bottom of the borehole.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4^{o} C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable volatile vapor analyzer measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. Volatile vapor analyzer measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch® type sampler or are collected from the open borehole using bailers. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Groundwater monitoring wells are installed to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two feet above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I, II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 72 hours after seal installation to ensure that the Portland cement has set up correctly.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles and composited at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples in addition to any analytes required by the receiving disposal facility. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Groundwater removed during development and sampling is typically stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Upon receipt of analytic results, the water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

APPENDIX C

WELL CONSTRUCTION DETAILS AND SOIL BORING LOGS

BORING LOG B-1

JOB NO: 8854-S1 DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin St., Oakland SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT - LB	HEIGHT OF FALL - IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
					SM	Silty fine sand, mottled yellowish-brown and brown, moist, loose.
B-1-1	7	10.4	98.8			Medium dense.
						Color changes to yellowish-brown.
				5		Dense.
B-1-2	45	12.8	106.4			
				10		Boring terminated at 10 feet deep. No free ground water encountered.

FILE

BORING LOG B-2

JOB NO: 8864-S1 DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
					SM	Silty sand, brown, moist, medium dense.
				5		Color changes to yellowish-brown.
				10		
B-2-1	45			15		Less fines.
B-2-2	50/9"	13.7	96.3	20		Some silt.
						Boring terminated at 20 feet deep. No free ground water encountered.

FILE

BORING LOG B-3

JOB NO: 8864-S1

DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland

SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger

DATUM MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
B-3-1	8	11.6	107.0		SM	Silty sand with some gravel, brown, moist, stiff: baserock.
						Some clay, gray, green and brown: tank backfill?
B-3-2	12	17.9	102.6	5		
					ML	Sandy silt, dark gray, moist, low plasticity, firm to stiff: tank backfill?
B-3-3	50	11.8	110.4	10	SM	Silty fine sand, grayish-green, moist, dense: tank backfill?
						Slight petroleum odor?
B-3-4	45	13.3	114.2	15		Slight petroleum odor?
						End of backfill 15½ feet?
						Color changes to yellowish-brown.
B-3-5	50 6"	15.1	108.9	20		

FILE

BORING LOG B-3 (cont.)

JOB NO.: 8864-S1

JOB NAME: 800 Franklin Street, Oakland

SHEET 2 OF 2

DEPTH 20 TO 28½ FT.

Sample	Blows per ft.	Moisture Content %	Dry Unit Weight p.c.f.	Depth in feet	USCS Classification	
				20		
B-3-6	50/6"			25		Petroleum odor? Partial recovery.
				30		Boring terminated at 28½ feet deep. Free ground water encountered at 28 feet deep. Boring backfilled with cement grout to 23½ feet.

FILE

FRANK LEE & ASSOCIATES

BORING LOG B-4

JOB NO: 8864-S1

DATE DRILLED: 5-3-88

JOB NAME: 800 Franklin Street, Oakland

SURFACE ELEV.: Approx. 35'

EQUIPMENT: DRILLING 6" cont. flight auger

DATUM: MSL

SAMPLER TYPE	DRIVE WEIGHT-LB	HEIGHT OF FALL-IN
California Modified	140	30

Sample	Blows per ft	Moisture Content %	Dry Unit Weight pcf	Depth in feet	USCS Classification	Description
B-4-1	8	13.1	111.7		ML	Silt, brown, moist, low plasticity, soft: artificial fill? Some sand and gravel.
B-4-2	11			5	CL	Sandy clay, mottled light and dark brown, moist, low plasticity; metal objects: artificial fill, old tank removal backfill.
				10		Boring terminated at 6 feet deep due to refusal (obstruction in fill). No free ground water encountered.

FILE

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU	BORING NO:B1
LOCATION:800 FRANKLIN ST., OAKLAND, CA		DATE:09/11/91
GEOLOGIST:REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 25 FEET		DRILLER:HEW
DRILLING METHODS: HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
5	B1-5	18"	10 13 16	LIGHT BROWN FINE SAND: LOOSE; DRY.	SP		
10	B1-10	18"	9 11 11	GRAYISH-GREEN FINE SAND: LOOSE; DRY; ODOR.	SP		
15	B1-15	18"	6 10 14				
20	B1-20	18"	7 13 18	OLIVE-GRAY BROWN FINE SAND; MOTTLED; ODOR; DRY.	SP		
25	B1-25	18"	7 21 28	DARK GRAY FINE SAND; WET; ODOR; END OF BORING.			

REMARKS

BOREHOLE WAS BACKFILLED WITH NEAT CEMENT

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU	BORING NO:B2
LOCATION:800 FRANKLIN ST. OAKLAND. CA		DATE:10/02/91
GEOLOGIST:REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 26 FEET		DRILLER:HEW
DRILLING METHODS: HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
				8 INCHES CONCRETE			
				LIGHT BROWN FINE SAND; LOOSE; DRY.			
5	B2-5	18"	7 11 14	A LITTLE CLAY.	SP		
				NO CLAY.			
10	B2-10	14"	10 12 15	BROWN FINE SAND; LOOSE; DRY.			
					SP		
15	B2-15	4"	6 12 14	MOIST			
20	B2-20	18"	14 18 19	OLIVE-GRAY FINE SAND; SLIGHT ODOR; DRY.	SP		
25	B2-25	2"	7 7 10	DARK GRAY FINE SAND; WET; ODOR; END OF BORING			

REMARKS

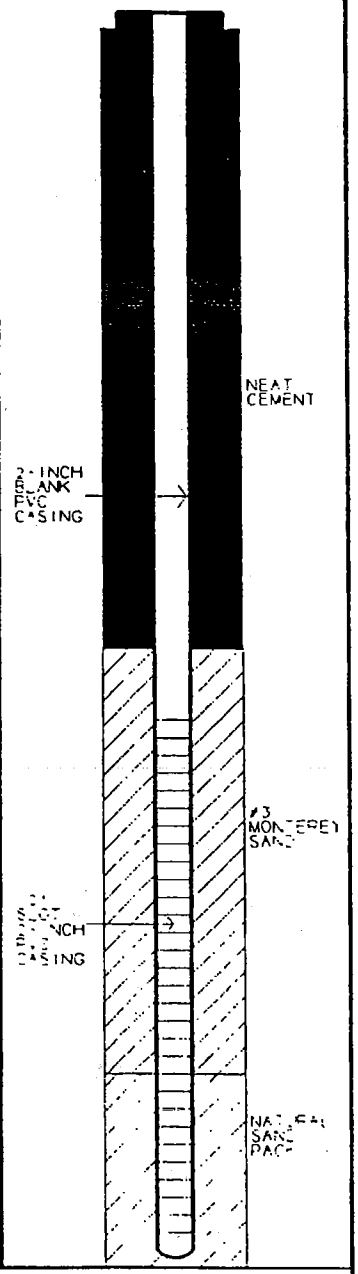
BOREHOLE WAS BACKFILLED WITH NEAT CEMENT

MILLER ENVIRONMENTAL COMPANY
RICHMOND. CA

BORING LOG

PROJECT NO: 90-1008	PROJECT NAME: CHIU	BORING NO: MW4
LOCATION: 800 FRANKLIN ST., OAKLAND, CA		DATE: 10/02/91
GEOLOGIST: REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 25 FEET		DRILLER: HEW
DRILLING METHODS: HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL	WELL CONSTRUCTION
0				8 INCHES CONCRETE			
5	MW4-5	18"	4 4 5	BROWN FINE SAND: LOOSE: DRY.	SP		
10	MW4-10	14"	12 15 16				
15	MW4-15	14"	5 6 9				
18				GRAY FINE SAND: LOOSE: DRY: ODOR	SP		
20	MW4-20	12"	12 18 21				
25	MW4-25		13 24 25	WET			
35				END OF BORING	SP		



REMARKS

A NATURAL FILTER PACK WAS GENERATED DUE TO FLOWING SANDS

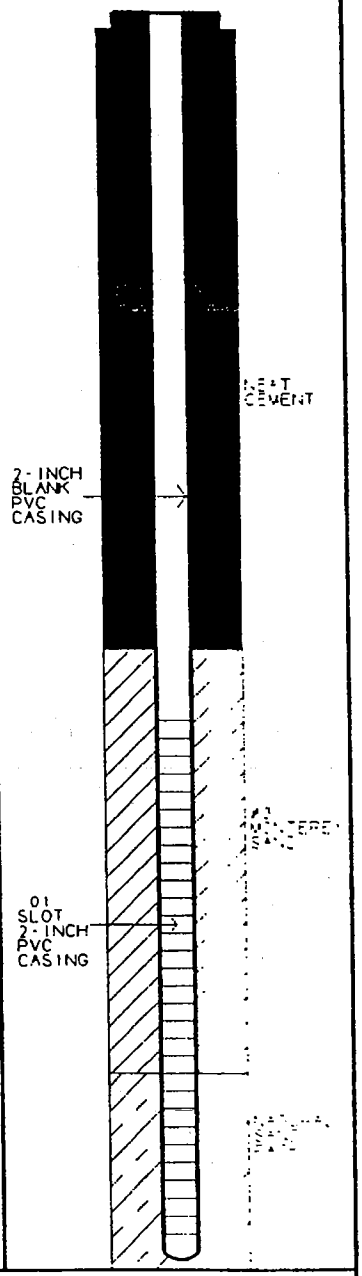
MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

BORING LOG

PROJECT NO:90-1008	PROJECT NAME: CHIU	BORING NO:MW5
LOCATION:800 FRANKLIN ST., OAKLAND, CA		DATE:10/03/91
GEOLOGIST:REINHARD RUHMKE		PAGE 1 OF 1
GROUND WATER DEPTH: 26 FEET		DRILLER:HEW
DRILLING METHODS:HOLLOW-STEM AUGER		

DEPTH	SAMPLE	RECOVERY	BLOWS	DESCRIPTION	USCS	GRAPHIC SYMBOL
0				8 INCHES CONCRETE		
5	MW5-5	10"	12 12 13	RUSTY BROWN SILTY FINE SAND: LOOSE:DRY	SP	
10	MW5-10	18"	10 12 14	A LITTLE CLAY NO CLAY OR SILT		
15	MW5-15	18"	5 8 11		SP	
20	MW5-20	18"	13 19 23	A LITTLE CLAY NO CLAY		
25	MW5-25	18"	12 19 34	WET		
35				END OF BORING		

WELL CONSTRUCTION



REMARKS

A NATURAL FILTER PACK WAS GENERATED DUE TO FLOWING SANDS

MILLER ENVIRONMENTAL COMPANY
RICHMOND, CA

KEY TO BORING LOGS

BORING LOG SYMBOL

—	Geologic contact line
═	Termination of boring
▽	Water level, preliminary measurement
▼	Water level, stabilized

SAMPLE RECOVERY

▮	Undisturbed sample, retained for lab testing
▯	Sampler drive distance, sample examined in the field
☒	No sample recovered
SPT	Standard Penetration Test

SOIL SAMPLE TYPE

C	California
CM	California Modified
HS	Driven manual Hand Sampler
NQ	NQ Wireline
P	Piston
PB	Pitcher Barrel
SS	Split Spoon (Terzaghi)

File No: 124575

LOG OF MONITORING WELL - MW-6

Client: Chiu
Site: 800 Franklin St.
Drillers: Kvilhaug
Drill Rig: B-61
Auger Type/Size: 8" hollow stem
Top of Casing Elevation: 33 (Local Datum)

Logged By: RH
Approved By:
Date Completed: May 15, 1997
Casing Diameter: 2 in.
Screen Size: .010
Filter pack: #3 sand

Symbols used explained on "Key to Boring Logs"

Sample Number	Sampler	Blows per foot	F.I.D. Reading (ppm)	Dry Unit Weight p.c.f.	Well Data	Depth in feet	U.S. C.S.	Surface Conditions: Concrete Description
						0		**Concrete Slab.**
								Baserock, grayish-brown crushed rock.
								Sand, medium-grained, brown, slightly damp to damp, dense; no odor.
								Some clay
						5		
B6-1		48						
								Easy drilling.
						10		No odor.
B6-2		24						
								Increased sand, decreased clay, moisture change to wet.
						15		**Clayey sand,** medium-grained, grayish-green, damp, dense; some petroleum hydrocarbon odor.
B6-3A B6-3B		42						
								Sand, medium- to coarse-grained, greenish-gray, damp, dense.
						20		

ASSOCIATED TERRA CONSULTANTS, Inc.

File No: 124575

LOG OF MONITORING WELL MW- 6 (Continued)

Sample Number	Sampler	Blows per foot	F.I.D. Reading (ppm)	Dry Unit Weight p.c.f.	Well Data	Depth in feet	U.S. C.S.	Description
B6-4A B6-4B		42				20		
						▽		Color change to gray.
						25		
B6-5A B6-5B		97						
						30		Change color to grayish-green.
B6-6A B6-6B		50						
						35		
B6-11		14						Bottom of hole at 36-1/4 ft. Free groundwater encountered at 22-1/2 ft.
						40		
						45		

Boring/Well Log Legend

KEY TO SYMBOLS/ABBREVIATIONS

- First encountered groundwater
- Static groundwater
- Soils logged by hand-auger or air-knife cuttings
- Soils logged by drill cuttings or disturbed sample
- Undisturbed soil sample interval
- Soil sample retained for submittal to analytical laboratory
- No recovery within interval
- Hydropunch screen interval

PID = Photo-ionization detector or organic vapor meter reading in parts per million (ppm)

fbg = Feet below grade

Blow Counts = Number of blows required to drive a California-modified split-spoon sampler using a 140-pound hammer falling freely 30 inches, recorded per 6-inch interval of a total 18-inch sample interval

(10YR 4/4) = Soil color according to Munsell Soil Color Charts

msl = Mean sea level

Soils logged according to the USCS.

UNIFIED SOILS CLASSIFICATION SYSTEM (USCS) SUMMARY

Major Divisions			Graphic	Group Symbol	Typical Description
Coarse-Grained Soils (>50% Sands and/or Gravels)	Gravel and Gravelly Soils	Clean Gravels (≤5% fines)		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		Gravels with Fines (≥15% fines)		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	Sand and Sandy Soils	Clean Sands (≤5% fines)		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sand, little or no fines
		Sands with Fines (≥15% fines)		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (>50% Silts and/or Clays)	Silts and Clays			ML	Inorganic silts, very fine sands, silty or clayey fine sands, clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays			MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
				CH	Inorganic clays of high plasticity
				OH	Organic clays of medium to high plasticity, organic silts
Highly Organic Soils				PT	Peat, humus, swamp soils with high organic contents

I:\MISC\TEMPLATES\BORING LOG LEGEND.AI

CONESTOGA-ROVERS & ASSOCIATES

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Telephone: 510-420-0700
Fax: 510-420-9170

BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3A
JOB/SITE NAME	Chiu	**DRILLING STARTED**	08-Feb-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	08-Feb-07
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Woodward Drilling Co., C57 #710079	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	10-inch	**SCREENED INTERVALS**	20 to 35 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA ▽
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Well located on Franklin St. between two metered parking spaces in front of 800 Franklin St. building.		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							8-inches of concrete.	0.7	
0							**Silty SAND (fill):** Light brown; moist; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		
0				5			**Silty SAND:** Light brown; moist; 40% silt, 60% fine to medium sand; low plasticity; low estimated permeability.	5.0	
1				10			@ 15' - Olive gray, 30% silt, 60% fine to medium sand.		
				15					
				20					

Portland Type I/II

Bentonite Seal

Lonestar Sand #2/12

Continued Next Page

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	MW-3A
JOB/SITE NAME	Chiu	**DRILLING STARTED**	08-Feb-07
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	08-Feb-07

Continued from Previous Page

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
					SM				
32				25			@ 25' - Light brown.		
1198				30			@ 30 - 15% silt, 85% fine to medium sand; non-plastic; and moderate estimated permeability.		4"-diam., 0.010" Slotted Schedule 40 PVC
128							@ 32.5' - Olive gray and wet.		
				35				35.0	Bottom of Boring @ 35 fbg

Notes:

Soil lithology based on soil cuttings from MW-3A.

4-inch well MW-3A is located adjacent to former well MW-3.

WELL LOG (PID) I:\IR\6-CHARS\5810--158100\581000-1158FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 9/28/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	VP-1
JOB/SITE NAME	Chiu	**DRILLING STARTED**	17-Nov-06
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	17-Nov-06
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	3-inch	**SCREENED INTERVALS**	5.5 to 6 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA
REMARKS	On Franklin St. in front of 800 Franklin St. building		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
0							Surface: 4-inches of concrete.	0.3	Portland Type I/II
							Silty SAND (fill): Light brown; damp; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		Hydrated Granular Bentonite 1.5 - 4 fbg
0		VP-1- 5.5		5					1/4-inch Nyflow tubing
									Dry Granular Bentonite 4 - 5 fbg
									Monterey Sand #2/12
									6-inch Screened Vapor Probe
								6.0	Bottom of Boring @ 6 fbg
							Note: Installed soil vapor probe VP-1 to 6 fbg. See Figure 3 for construction details of the soil vapor probe. Soil vapor probe was sampled on 12/28/2006.		

WELL LOG (PID) I:\IR\6-CHARS\5810-\581000\581000-1\58FF5B~1\BORING~1\CHIU- SOIL VAPOR PROBES.GPJ DEFAULT.GDT 9/28/10

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BORING / WELL LOG

CLIENT NAME	Chen Tso Chiu	**BORING/WELL NAME**	VP-2
JOB/SITE NAME	Chiu	**DRILLING STARTED**	17-Nov-06
LOCATION	800 Franklin Street, Oakland, CA	**DRILLING COMPLETED**	17-Nov-06
PROJECT NUMBER	589-1000	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Vironex	**GROUND SURFACE ELEVATION**	NA
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	3-inch	**SCREENED INTERVALS**	5.5 to 6 fbg
LOGGED BY	C. Hernandez	**DEPTH TO WATER (First Encountered)**	NA
REVIEWED BY	M. Jonas	**DEPTH TO WATER (Static)**	NA
REMARKS	On 8th St. in sidewalk in front of 800 Franklin St. building		

PID (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (fbg)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (fbg)	WELL DIAGRAM
							Surface: 4-inches of Concrete.	0.3	Portland Type I/II
0							**Silty SAND (fill):** Light brown; damp; 15% silt, 85% fine to medium sand; non-plastic; high estimated permeability.		Hydrated Granular Bentonite 1.5 - 4 fbg
							@3': Yellow-grey; 25% silt, 75% fine to medium sand.		1/4-inch Nyflow tubing
									Dry Granular Bentonite 4 - 5 fbg
0		VP-2- 5.5		5					Monterey Sand #2/12
								6.0	6-inch Screened Vapor Probe
									Bottom of Boring @ 6 fbg

Note:
Installed soil vapor probe VP-1 to 6 fbg.
See Figure 3 for construction details of the soil vapor probe.
Soil Vapor probe was sampled on 12/28/2006.

WELL LOG (PID) I:\IR\6-CHARS\5810-5810001581000-1\58FF5B~1\BORING~1\CHIU~ SOIL VAPOR PROBES.GPJ DEFAULT.GDT 9/28/10