January 15, 2010 209528

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Alameda County Environmental Health

Jerry Wickham Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Subject: 1424 Harrison Street, Oakland, California

Fuel Leak Case #RO0002992

GeoTracker Global ID #T100000000619

Dear Mr. Wickham:

Aquifer Sciences is pleased to present this technical report for the site located at 1424 Harrison Street, Oakland, California. If you have any questions regarding the information in this report, please call me.

Respectfully yours,

Rebecca A. Sterbentz, PG, CHG President

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Rebecca A. Sterbentz, PG, CHG President

Attachment

January 15, 2010 209528

Jerry Wickham Alameda County Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502

Subject: 1424 Harrison Street, Oakland, California

Dear Mr. Wickham:

Aquifer Sciences has reviewed the case files for 1424 and 1432 Harrison Street, Oakland, California, according to a letter dated May 11, 2009, from William Spencer to Alameda County Environmental Health (ACEH). This review was performed on behalf of Mr. Spencer, the owner of the property at 1424 Harrison Street.

#### 1.0 Introduction

As noted in the letter of May 11, 2009, it would be beneficial to compile all the existing soil and groundwater data onto one map and cross section before attempting to prepare a work plan for additional investigation, as requested by ACEH. Aquifer Sciences researched regulatory case files for the sites in the vicinity available on the GeoTracker website and the Alameda County Environmental Health website. Numerous investigations and on-going monitoring have been performed in the immediate vicinity of 1424 Harrison Street and the neighboring site at 1432 Harrison Street by different consultants at different times over a 25-year period. Careful effort was made to sort out and reconcile the boring locations, sampling depths, groundwater elevations and flow directions, and analytical data. Figure 1 is a vicinity map showing the locations of 1424 and 1432 Harrison Street. Figure 2 is an aerial photograph of the site vicinity, superimposed by the locations of soil borings, monitoring wells, and former underground gasoline tanks. Figure 2 also shows the location of cross section A–A', which is presented on Figure 3. Figure 4 is an enlarged version of the cross section A–A' centered on 1424 Harrison Street. Figure 5 is a map of sites on GeoTracker showing groundwater flow directions. Tables 1 and 2 present summaries of the analytical data for soil and groundwater samples collected in the area.

Section 2.0 presents details regarding the underground tank closure at 1424 Harrison Street. Section 3.0 presents details of the underground tank removal at 1432 Harrison Street. Section 4.0 provides a brief discussion of analytical data for soil and groundwater samples collected at, and in the vicinity of, the two sites. Section 5.0 presents an evaluation of the groundwater flow directions in the vicinity. Section 6.0 discusses the impact of vapor extraction on the groundwater flow

direction at the two sites. Section 7.0 expresses regulatory reaction and opinion regarding these issues. Section 8.0 provides further data evaluation based on groundwater flow direction. Section 9.0 offers our conclusions and recommendations.

#### 2.0 Tank Closure at 1424 Harrison Street

Two underground fuel tanks located beneath the sidewalk were closed in place in 1982 (not 1991, as erroneously stated elsewhere). The two tanks were filled with cement slurry. See the attached tank removal permit (Appendix A) for supporting documentation.

According to a follow-up report by Paul Smith, inspector from ACEH, both tanks were filled with cement slurry and closed in place at 1424 Harrison Street. The inspection report further noted that the tank was emptied of product prior to filling according to the Oakland Fire Department protocol.

In this inspection report, Mr. Smith states, "The tank was emptied prior to filling w/ cement slurry." A copy of this inspection report was included as an attachment in a Conestoga-Rovers report dated July 23, 2007. However, a year later the same inspection report was included in another Conestoga-Rovers report, dated April 22, 2008, with a handwritten alteration of the word "was" to "not" in darker ink! This alteration appears to be a deliberate attempt to deceive, not to mention tampering with the inspector's official document. (Conestoga-Rovers is the environmental consultant for the owner of 1432 Harrison Street.) Copies of both versions of this document are attached in Appendix A.

### 3.0 Tank Closures at 1432 Harrison Street

Several underground fuel tanks were operated at the adjacent site at 1432 Harrison Street. The locations of two of the adjacent site's tanks were also under the sidewalk, approximately 10 to 15 feet the northeast of the two tanks at 1424 Harrison Street. These two tanks at 1432 Harrison Street were removed 11 years after closure of the two tanks at 1424 Harrison Street.

The case file has many references to the fact that in 1990 the two tanks at 1432 Harrison Street had "substantial leaks of petroleum products." In 1990, approximately 200 gallons of gasoline was removed from the two tanks. A sample from the tank closest to the southwestern property boundary was discolored by rust (SCS Engineers, 1990). This indicates that water was present in the tank and had likely entered through ruptures in the tank. These two underground tanks were later excavated and removed from the 1432 Harrison Street site in 1993.

TPH-gasoline is present in soil and groundwater at 1432 Harrison Street as a result of releases from the tanks, as clearly documented in ACEH case files. The TPH-gasoline concentrations in

soil and groundwater at 1432 Harrison Street are significantly higher than at 1424 Harrison Street.

#### 4.0 Soil and Groundwater Data Evaluation

Several soil borings have been drilled in the vicinity of 1424 and 1432 Harrison Street over the years. The boring logs show that the soil in the vicinity consists predominantly of silty sand and sand. The depth to groundwater along Harrison Street at the two sites fluctuates seasonally within a range of approximately 11 to 23 feet below ground surface. The corresponding groundwater elevations are approximately 24 to 12 feet (NAD83).

A total of 16 soil samples have been collected beneath or in the immediate vicinity of the two closed-in-place tanks at 1424 Harrison Street (Figures 2, 3, and 4). These 16 samples are named SB-L, SB-P-3.75, SB-P-12.7, SB-Q-3.75, SB-Q-9.6, VES-2-16.5, VES-2-26.5, VES-2-30, CB-1-10, CB-1-16, CB-1-20, CB-1-24, CB-2-12, CB-2-15, CB-2-20.5, and CB-2-24. The analytical data for these samples and other soil samples in the area are listed in Table 1. Twelve of the 16 samples contained no petroleum hydrocarbons or only low concentrations. Of the other four samples, two (CB-1-24 and VES-2-26.5) were collected below the water table and do not represent soil quality. The other two samples (SB-P-12.7 and SB-Q-9.6) contained TPH-gasoline at 1,500 and 1,900 mg/kg. These two samples will be discussed further in Section 8.0.

At deeper depths, but above the water table, the data also show that soil samples CB-1-10, CB-1-16, CB-2-12, CB-2-15, and VES-2-16.5 contained no TPH-gasoline or only low concentrations. This signifies that the two closed-in-place tanks at 1424 Harrison Street are neither the cause of the TPH-gasoline concentrations in soil at the deeper depths above the water table, nor the TPH-gasoline concentrations in groundwater.

The soil samples (CB-1-24 and VES-2-26.5) were collected below the water table at depths of 20 feet or more and contained elevated TPH-gasoline concentrations. Soil samples collected below the water table are not representative of soil quality from the unsaturated zone. The analytical results from such soil samples collected from the saturated zone are influenced by the presence of TPH-gasoline in the groundwater.

A total of four groundwater samples (CB-1-W, CB-2-W, SB-D, and SB-E) have been collected in the immediate vicinity of the two closed-in-place tanks at 1424 Harrison Street (Figures 2, 3, and 4). Three of the four samples were collected within a few feet of the tanks. All of these groundwater samples were collected as grab samples. The concentrations of TPH-gasoline detected in the four samples ranged from 4.7 to 110 mg/L. The analytical data for these samples and other groundwater samples in the area are listed in Table 2.

Three groundwater monitoring wells (MW-1, MW-2, and MW-6) are located in Harrison Street adjacent to the two sites. Wells MW-1 and MW-2 are located at 1432 Harrison Street, and well MW-6 is located southwest of 1424 Harrison Street. The analytical data for the three wells are listed in Appendix B, (Conestoga-Rovers' Table 2). At well MW-1, TPH-gasoline has ranged from 0.25 to 2,500 mg/L since 1994. At well MW-2, TPH-gasoline has ranged from < 0.05 to 180 mg/L since 1994. At well MW-6, TPH-gasoline has not been detected, except for once at 0.059 mg/L in 2000. The highest concentrations of TPH-gasoline have consistently been found at well MW-1, which was installed at the former location of the tanks removed from 1432 Harrison Street.

### 5.0 Hydrogeology and Groundwater Flow Directions

By the end of 1996, monitoring wells MW-1 through MW-6 had been installed in the vicinity of the Harrison Street sites. Groundwater levels in these wells have been recorded quarterly since 1997 by consultants for the owners of 1432 Harrison Street. The groundwater elevations and potentiometric contours were plotted on maps for each quarter. The quarterly maps from March 1997 to September 2009 are included in Appendix B.

The maps show an occasional groundwater "mound" beneath 1432 Harrison Street, and groundwater flow directions to the northeast and the southwest. This indicates that the groundwater flow direction between the two properties (1424 and 1432 Harrison Street) is sometimes to the southwest. These conditions were noted by Cambria Environmental Technology, consultant for 1432 Harrison Street. Cambria resurveyed the wells in 2002 to correct any errors. A table of the corrected groundwater elevation data, prepared by Conestoga-Rovers & Associates on behalf of the owners of 1432 Harrison Street, is presented in Appendix B. Even after recalculating the groundwater elevations and redrawing the equipotential contours, the groundwater flow direction is still often to the southwest from 1432 Harrison toward 1424 Harrison Street. Therefore, 1424 Harrison Street has been recurrently downgradient of 1432 Harrison Street.

The variable groundwater flow direction was also recognized at the former Chevron site at 301 14<sup>th</sup> Street, located approximately 200 feet southwest of 1424 Harrison Street. Chevron's consultants (ICES) studied groundwater elevations and flow directions from 1991 to 1999. They prepared a rose diagram of the recorded flow directions, which is attached in Appendix C. The rose diagram shows that the groundwater flow direction varied widely around the compass between 1991 and 1999 during their remediation activities. After Chevron discontinued groundwater extraction at the site, the groundwater flow "reverted to a westerly direction" (ICES, 2005).

The Harrison Street vicinity is located between two major water bodies: Lake Merritt on the northeast and the Oakland Inner Harbor on the southwest. Figure 5 is a map showing the

groundwater flow directions recorded at many Oakland sites. The map base is from the GeoTracker website, and the groundwater flow information was obtained by researching the case file for each site. At sites nearest the Oakland Inner Harbor, groundwater flow is to the south and southwest. At sites nearest Lake Merritt, groundwater flows to the northeast and east. At sites in between, such as 1432 Harrison Street and 301 14<sup>th</sup> Street (Chevron), the groundwater flow direction is variable. The resulting pattern shows that the 1424 and 1432 Harrison Street sites are situated at or near a "groundwater divide." A groundwater divide is the boundary between two adjacent groundwater basins, which is represented by a high point in the water table. In other words, west of the divide, groundwater flows to the Oakland Inner Harbor, and east of the divide, groundwater flows toward Lake Merritt.

The groundwater mound reported in the case file for 1432 Harrison Street coincides in position with the groundwater divide. Chevron's data support the conclusion that there is a groundwater divide east of the Chevron site (301 14<sup>th</sup> Street) in the vicinity of the Harrison Street sites. If the flow direction is to the west at the Chevron site and easterly at well MW-2 (1432 Harrison Street), then at some point in between there must be a groundwater divide. A comparison the groundwater elevation data from wells MW-1 and MW-6 plainly bears this out, as discussed in Section 6.0.

#### 6.0 Vapor Extraction at 1432 Harrison Street

From December 2001 to April 2005, vapor extraction was implemented at 1432 Harrison Street to remove contaminants from the subsurface. From 2003 to 2005, the vapor extraction system included well MW-1, and the groundwater mound centered on the former tank area at 1432 Harrison Street became more pronounced. Consequently, the groundwater flow direction was more persistently to the southwest toward 1424 Harrison Street. After the vapor extraction system was shut down in April 2005, the groundwater flow direction between 1432 and 1424 Harrison Street has still been intermittently to the southwest.

The groundwater elevations (in feet) recorded for the three wells (MW-1, MW-2, and MW-6) on five select dates are tabulated below for easy reference. The groundwater flow direction was to the southwest on several other dates also, but these five dates are used as examples in this discussion.

	<u>3/31/97</u>	<u>3/6/01</u>	<u>3/10/04</u>	12/22/04	<u>3/3/08</u>
MW-1	16.15	16.75	21.55	24.12	15.80
MW-2	15.51	15.61	15.88	13.47	15.10
MW-6	16.08	16.35	15.69	13.36	15.42

Comparing these data, it can be seen that the groundwater elevations at well MW-1 are higher than those at well MW-6. Sometimes even the groundwater elevations at well MW-2 are higher than at well MW-6, shifting the groundwater mound still further eastward.

Figure 4 is an enlarged portion of cross section A-A' showing the subsurface data in the immediate vicinity of the former tanks. Figure 4 also shows the water table or potentiometric surface in March 2004 and December 2004 using groundwater elevations from wells MW-1, MW-2, and MW-6 at two of the dates noted above. The flow direction between 1432 and 1424 Harrison Street is clearly to the southwest, placing 1424 Harrison Street in the downgradient position.

The high groundwater elevations at well MW-1 illustrate the groundwater mound and the flow direction to the southwest. As shown by the data, the height and precise location of the groundwater mound changes. The factors influencing the location of the mound are precipitation, seasonal cycles, groundwater pumping, and vapor extraction. These groundwater conditions present a clear mechanism for gasoline contamination from the former tanks at 1432 Harrison Street to migrate to 1424 Harrison Street and back again.

#### 7.0 Regulatory Reaction to Southwesterly Groundwater Flow Direction

Cambria's report dated November 3, 1997, shows that there is a significant groundwater mound centered on the former tank area at 1432 Harrison Street, and that groundwater flow is to the northeast and the southwest. This places the 1424 Harrison Street site downgradient of 1432 Harrison Street. This conclusion was noted by letter dated December 26, 1997, from Thomas Peacock of Alameda County Environmental Health Services to the owners of 1432 Harrison Street. Mr. Peacock stated "This is very curious as it seems there must be some type of inflow at the location of the former tanks for this mounding effect to occur. It certainly tends to eliminate previous suggestions that the contamination has come from an off site source to the south down Harrison St." Concurrently, the gasoline and benzene concentrations increased significantly in the two monitoring wells (MW-1 and MW-2) at the former tank locations where the groundwater mounding occurred. Mr. Peacock states, "This is highly unusual and appears to be from more of a fresh product rather than degraded gasoline." In addition, these samples contained the first detections of MTBE. Mr. Peacock states, "This is also highly unusual and more indicative of a recent release."

Mr. Peacock had patiently and consistently responded in other letters to the owners of 1432 Harrison Street that the former tanks at 1424 Harrison Street were not an additional source of contamination. He reiterated facts such as the groundwater flow direction being to the northeast and southwest as shown in 1432 Harrison Street's consultants' reports, and stated" the levels of contamination found in SB-P and SB-Q, their location, and depth are such that they are not considered distinguishable from the contamination at [1432 Harrison Street]." He also stated that the tank at 1424 Harrison Street was filled with cement according to City of Oakland records and should not be an additional source.

#### 8.0 Analytical Data Evaluation

In 1996, angle borings SB-P and SB-Q were drilled under the former tanks at 1424 Harrison Street. Two soil samples were collected from each boring. The deeper sample from each boring contained TPH-gasoline. Sample SB-P-12.7 contained TPH-gasoline at 1,500 mg/kg, and sample SB-Q-9.6 contained TPH-gasoline at 1,900 mg/kg. While no TPH-gasoline was detected in any deeper soil samples, both of these samples were collected at the top of the "smear zone." The smear zone is defined as the area where free product has been smeared into soils due to a fluctuating water table. The groundwater elevation at well MW-1 has been 24 feet (and possibly higher) on at least one occasion (December 2004), which corresponds to a depth of approximately 10 feet below ground surface. Soil samples SB-P-12.7 and SB-Q-9.6 were collected at approximately this depth. Based on the absence of TPH-gasoline in deeper samples and a recurrent southwesterly flow direction, the TPH-gasoline found in these two soil samples was likely transported from 1432 Harrison Street with groundwater.

In July 1999, grab groundwater samples were collected from borings CB-1 and CB-2 adjacent to the closed tanks at 1424 Harrison Street. TPH-gasoline concentrations were detected in both groundwater samples (110 and 4.7 mg/L, respectively). However, as has been shown, the groundwater flow direction was already known to be toward the southwest. The likely source of these TPH-gasoline concentrations is 1432 Harrison Street due to the groundwater flow direction.

Well MW-6 is southwest of, and therefore, downgradient of the 1424 Harrison Street tanks at least some of the time. TPH-gasoline has only been detected one time in groundwater from this well. If there had been a release of gasoline from the 1424 Harrison Street tanks, certainly TPH-gasoline would be detected more consistently and at higher concentrations at this recurrent downgradient location. Instead, the one-time detection of TPH-gasoline at well MW-6 is more likely from 1432 Harrison Street.

The ACEH has requested that we drill borings and collect additional samples beneath and to the southwest of the former tanks at 1424 Harrison Street. However, if such borings were to be drilled and sampled, the results would likely show the presence of low concentrations of TPH-gasoline in soil and groundwater. Subsequently, we would conclude that the TPH-gasoline originated at 1432 Harrison Street, based primarily on the historical groundwater flow direction data. The preponderance of historical data already supports this outcome.

#### 9.0 Conclusions and Recommendations

The history of this environmental case indicates that, regulatory opinion, supported by data and consultants' conclusions, has been that releases from the former underground tanks at 1432 Harrison Street caused the gasoline contamination in groundwater beneath that site and the

vicinity, including beneath 1424 Harrison Street. To evaluate that opinion, Aquifer Sciences performed a thorough review of the data. The facts are:

- The 1424 Harrison Street tanks were properly closed under permit and regulatory supervision in 1982. The tank closure project was completed and accepted by the regulatory agencies.
- Based on soil data from samples collected in 1996 beneath the 1424 Harrison Street tanks, gasoline did not migrate downward to groundwater.
- Soil samples at 1424 Harrison Street from depths deeper than 20 feet contained concentrations of gasoline, but were collected below groundwater and do not represent soil quality. The gasoline detected in these soil samples migrated with groundwater from 1432 Harrison Street while the flow direction was to the southwest.
- A groundwater mound is centered on the former tank locations at 1432 Harrison Street. The groundwater flow direction is both northeasterly and southwesterly from this area. This places the 1432 Harrison Street upgradient of 1424 Harrison Street, and has allowed gasoline-contaminated groundwater to move toward the southwest.
- Vapor extraction at the 1432 Harrison Street site, especially from well MW-1, accentuated this groundwater mound, and caused the flow direction to be more persistently to the southwest toward 1424 Harrison Street for over three years.
- The highly variable groundwater flow direction was also recognized at the nearby Chevron site. After completing groundwater extraction, Chevron's consultants concluded that the flow reverted to a westerly direction.
- The Harrison Street sites are situated between the Oakland Inner Harbor and Lake Merritt, straddling a groundwater divide. West of the divide, groundwater flows to the Oakland Inner Harbor, and east of the divide, groundwater flows toward Lake Merritt.
- The groundwater mound reported in the case files coincides in position with the groundwater divide. Chevron's data support the conclusion that there is a groundwater divide east of the Chevron site in the vicinity of the Harrison Street sites.
- The flow direction is to the west at the Chevron site and easterly at well MW-2 (1432 Harrison Street). At some point in between there is a groundwater divide. This is confirmed by comparing the groundwater elevation data from wells MW-1, MW-2, and MW-6.

- Well MW-6 is downgradient of the 1424 Harrison Street tanks at least some of the time. If there had been a release of gasoline from the 1424 Harrison Street tanks, certainly TPH-gasoline would have been detected more than once at this recurrent downgradient location.
- Even if additional investigation were to identify TPH-gasoline in groundwater beneath 1424 Harrison Street, it would be impossible to conclude that the origin was not 1432 Harrison Street. In fact, the only conclusion that could be made is that the TPH-gasoline contamination originated at 1432 Harrison Street due to the recurrent southwesterly groundwater flow direction.

In Aquifer Sciences' opinion, the former tanks at 1424 Harrison Street do not require further investigation. Any contamination that might be found at 1424 Harrison Street could easily be attributed to 1432 Harrison Street. The numerous reports prepared by consultants for 1432 Harrison Street contain volumes of data to support this conclusion. Therefore, Aquifer Sciences recommends that no further investigation be performed on behalf of 1424 Harrison Street.

Please feel free to call me if you have any questions about these conclusions.

Respectfully yours,

Rebecca A. Sterbentz, PG, CHG

cc: William Spencer

#### **ATTACHMENTS**

#### **Figures**

President

Figure 1. Vicinity Map

Figure 2. Map Showing Sampling Locations

Figure 3. Cross Section A-A'

Figure 4. Enlarged Portion of Cross Section A-A'

Figure 5. Map Showing Groundwater Flow Directions

#### **Tables**

Table 1. Analytical Data for Soil - Petroleum Hydrocarbons

Table 2. Analytical Data for Groundwater - Petroleum Hydrocarbons

### **Appendices**

Appendix A. Tank Closure Documents – 1424 Harrison Street

Appendix B. Groundwater Elevation Maps and Data

Appendix C. Rose Diagram of Groundwater Flow Directions - 301 14th Street (Chevron site)

#### 10. References

- Alameda County Environmental Health Services, 1990. Letter from Paul Smith, to Alvin Bacharach and Barbara Borsuk requesting a preliminary site assessment to ascertain the extent of contamination to the groundwater, Harrison Street Garage, 1432 Harrison Street, Oakland, California, August 27, 1990.
- Alameda County Environmental Health Services, 1997. Letter from Thomas Peacock, to Alvin Bacharach, Barbara Borsuk, and Leland Douglas, comments on submitted reports (Groundwater Sampling Report, January 24, 1997, and Subsurface Investigation Report, January 6, 1997), 1432 1434 Harrison Street, Oakland, California, February 27, 1997.
- Alameda County Environmental Health Services, 1997. Letter from Thomas Peacock, to Alvin Bacharach, Barbara Borsuk, and Leland Douglas, comments on submitted reports (Groundwater Sampling Report, November 20, 1997, and Third Quarter Monitoring Report, November 3, 1997), 1432 1434 Harrison Street, Oakland, California, December 26, 1997.
- Alameda County Environmental Health Services, 1998. Letter from Thomas Peacock, to Mr. Borsuk, Estate of Alvin Bacharach, and Leland Douglas, comments on submitted reports (Fourth Quarter 1997 Monitoring Report, February 16, 1998 and Corrective action Plan, December 29, 1997), STID498, 1432 Harrison Street, Oakland, California, March 18, 1998.
- Alameda County Environmental Health website, 2009 2010. Case files for sites at 1424 Harrison Street, 1432 Harrison Street, and 301 14<sup>th</sup> Street.
- Cambria, 1997. Subsurface Investigation Report, 1432-1434 Harrison Street, Oakland, California, January 6, 1997.
- Cambria, 1997. Third Quarter 1997 Monitoring Report, 1432 Harrison Street, Oakland, California, November 3, 1997.
- Fitzgerald, Abbott & Beardsley, 1990. Letter from Jonathan W. Redding to Paul Smith, ACEHS regarding Health and Safety Code violations, Harrison Street Garage, 1432 Harrison Street, Oakland, California, August 22, 1990.
- Geotracker website, 2009 2010. Case files for sites at 105 5<sup>th</sup> Street, 245 8<sup>th</sup> Street, 250 8<sup>th</sup> Street, 383 11<sup>th</sup> Street, 601 12<sup>th</sup> Street, 165 13<sup>th</sup> Street, 301 14<sup>th</sup> Street, 19<sup>th</sup> & 20<sup>th</sup> Streets, 800 Franklin Street, 726 Harrison Street, 800 Harrison Street, 1424 Harrison Street, 1432 Harrison Street, 1633 Harrison Street, 1700 Jefferson Street, 1721 Webster Street.
- Innovative & Creative Environmental Solutions, 2005. Letter from Peng Leong to Barney Chan, ACEHS, regarding site closure, Former Chevron Station #9-4816, 301 14<sup>th</sup> Street, Oakland, California, May 11, 2005.
- SCS Engineers, 1990. Letter report from J. Don McClenagan and John P. Cummings to Robert A. Buchman, Esq., King, Shapiro, Mittelman & Buchman regarding waste oil and gasoline product removal, Harrison Street Garage, 1432 Harrison Street, Oakland, California, November 14, 1990.

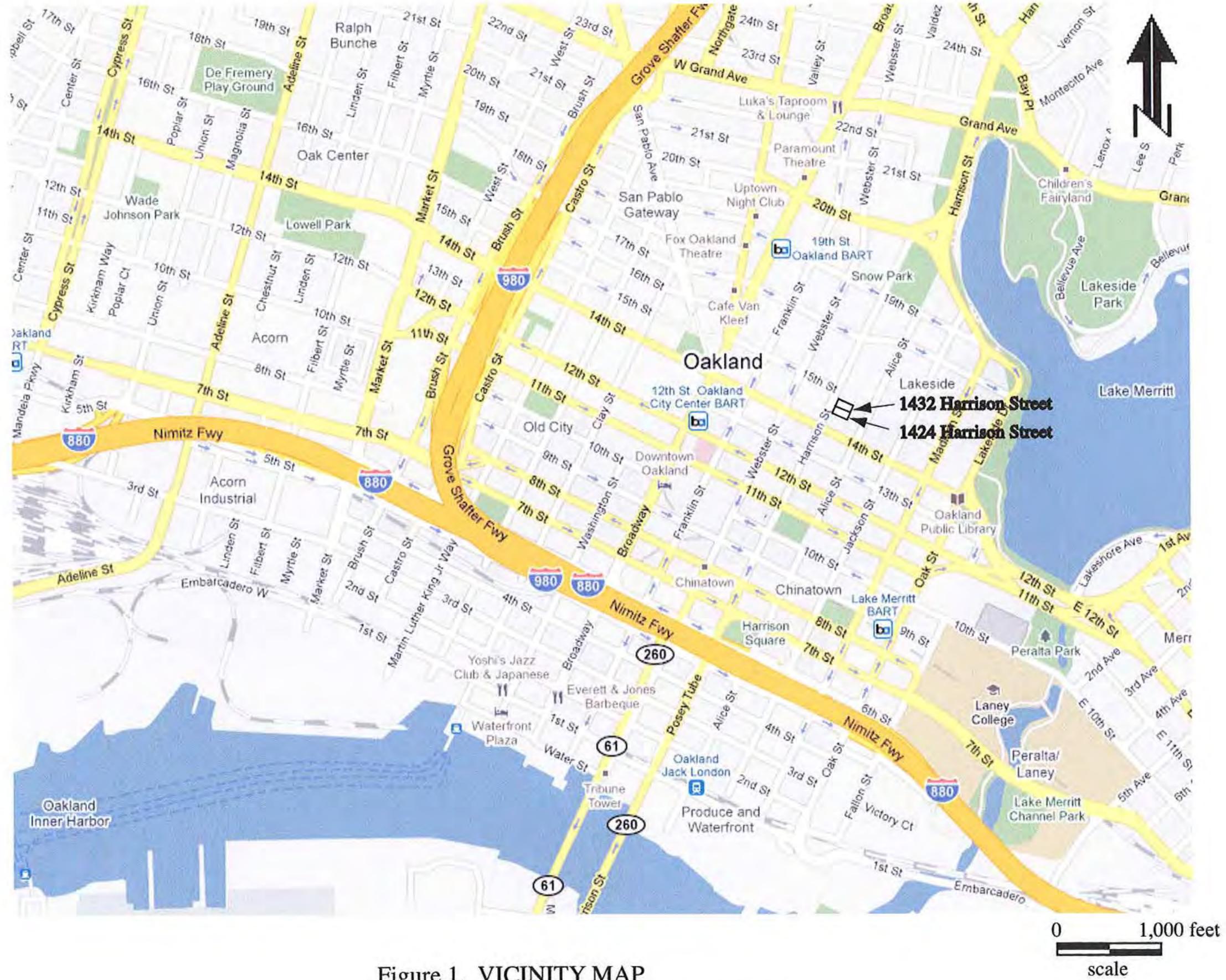


Figure 1. VICINITY MAP
Harrison Street, Oakland, California

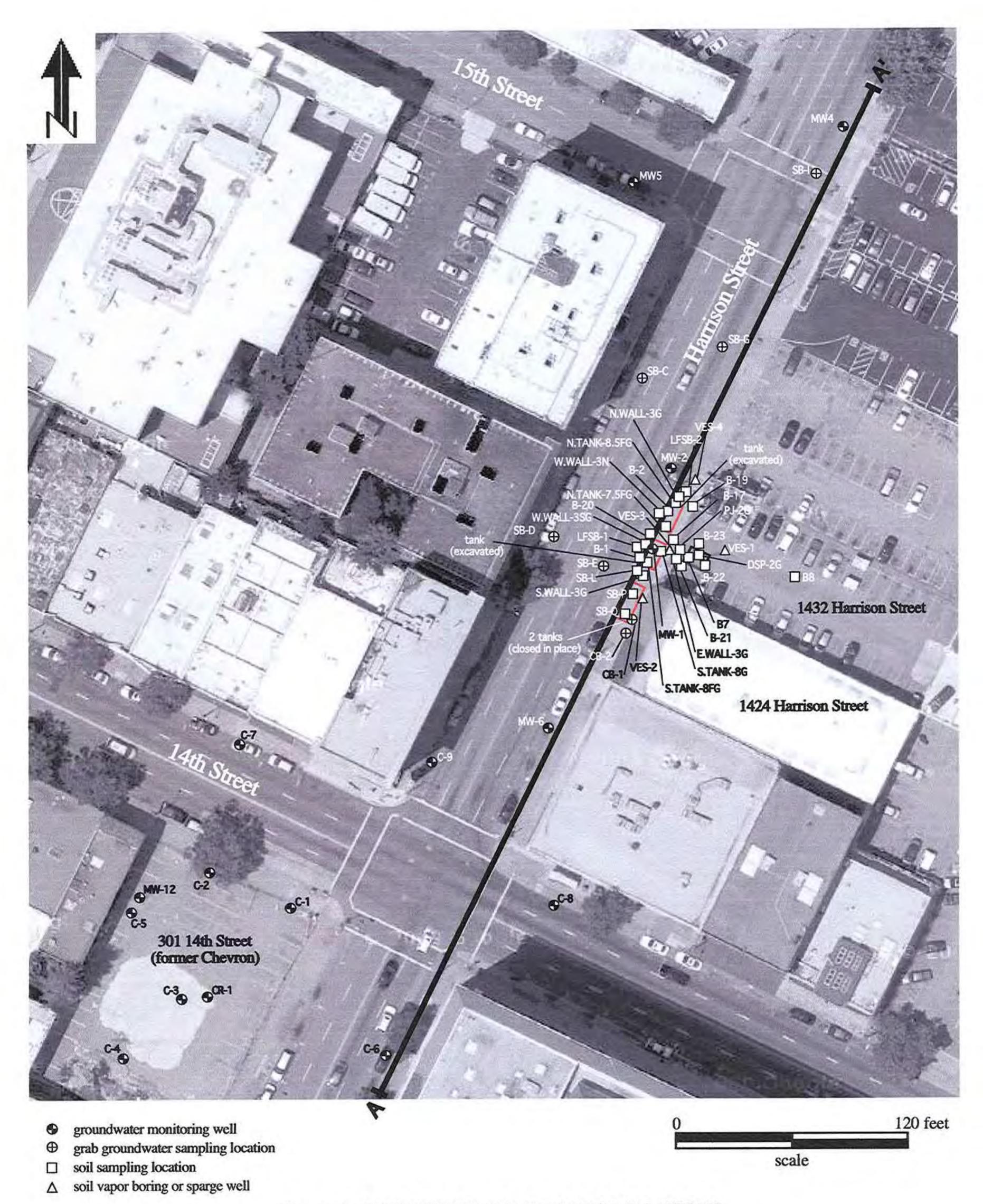
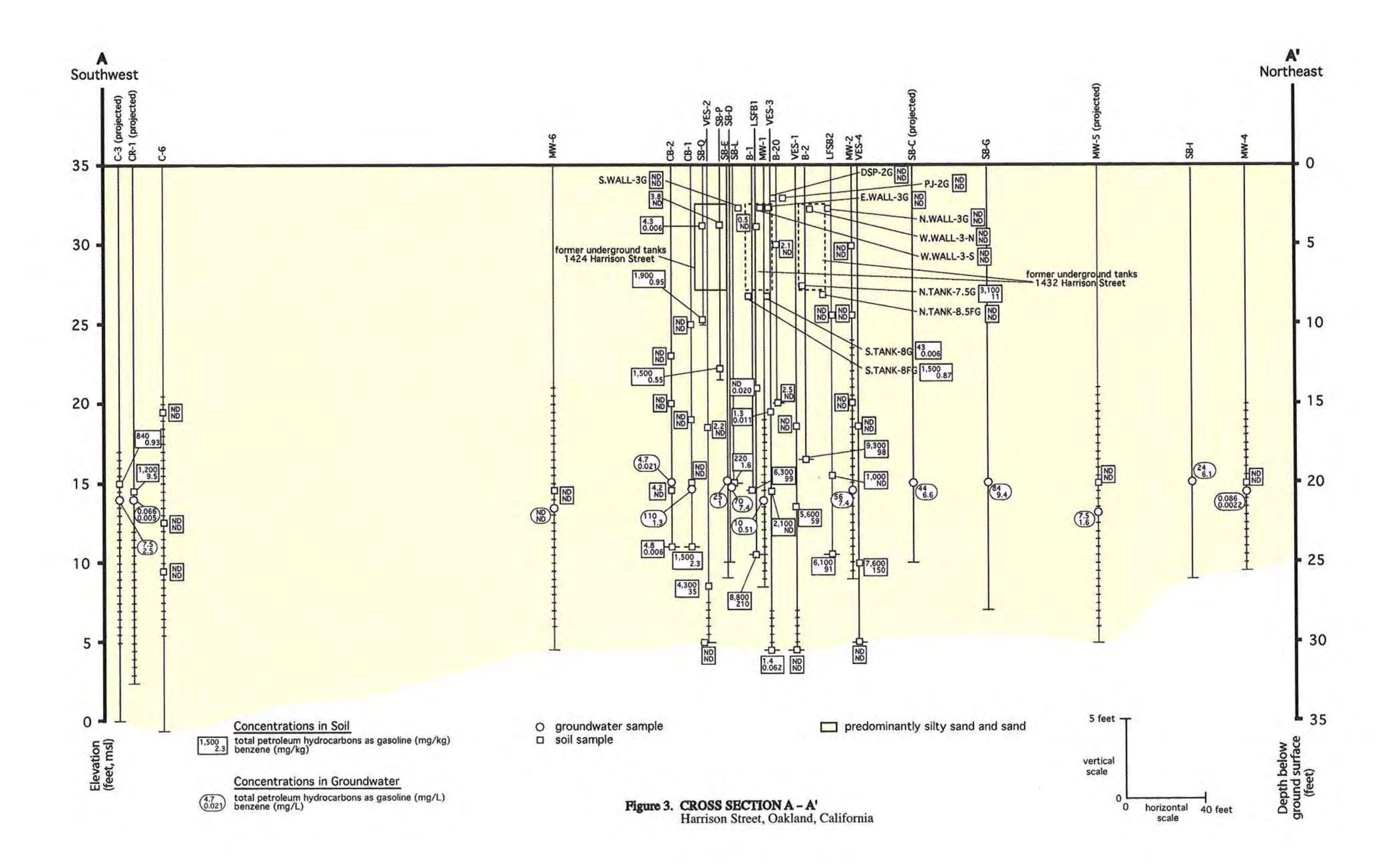


Figure 2. MAP SHOWING SAMPLING LOCATIONS
Harrison Street, Oakland, California



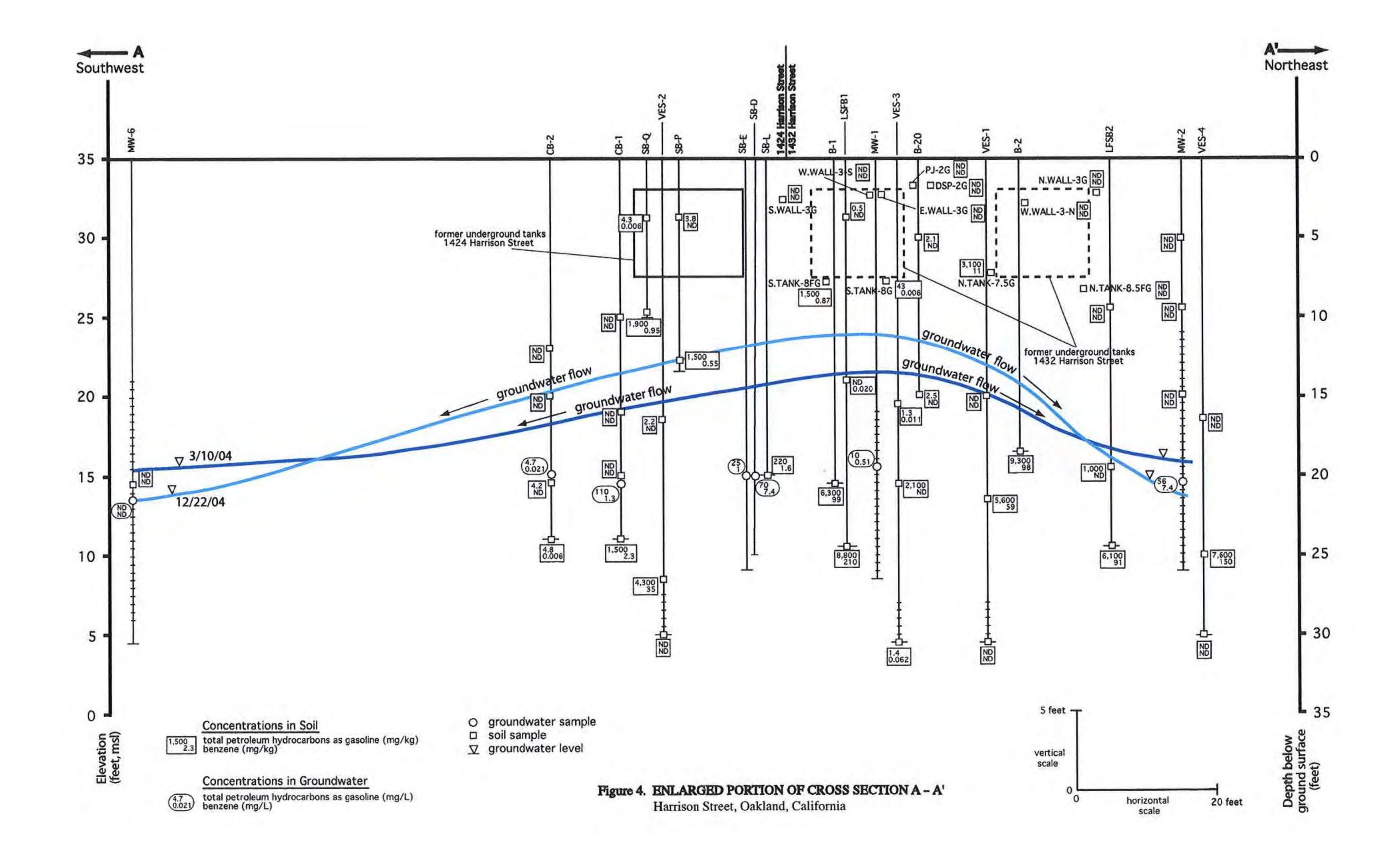




Figure 5. MAP SHOWING GROUNDWATER FLOW DIRECTIONS Harrison Street, Oakland, California

Table 1. ANALYTICAL DATA FOR SOIL - Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample Name	Sampling Location	Sample Date	Depth (feet)	TPH- gasoline (mg/kg)	TPH- diesel (mg/kg)	TPH- motor oil (mg/kg)	Oil & Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Source
B1-20	1434 Harrison St.	7/25/90	20	6,300	NA	NA	NA	99	490	110	610	NA	SCI
B2-18.5	1434 Harrison St.	7/25/90	18.5	9,300	NA	NA	NA	98	900	190	1,100	NA	SCI
B5-22.5	1434 Harrison St.	9/17/90	22.5	110	NA	NA	NA	0.024	0.21	0.069	1.3	NA	SCI
B7-13	1434 Harrison St.	9/17/90	13	< 1	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	SCI
B7-20	1434 Harrison St.	9/17/90	20	2,500	NA	NA	NA	4	34	33	130	NA	SCI
B8-22.5	1434 Harrison St.	9/17/90	22.5	1,200	NA	NA	NA	2	38	18	89	NA	SCI
B17-5	1434 Harrison St. sidewalk	2/3/92	5	NA	NA	NA	39.1	NA	NA	NA	NA	NA	RGA
B19-5	1434 Harrison St. sidewalk	2/3/92	5	2.5	28	NA	NA	< 0.005	< 0.005	< 0.005	0.01	NA	RGA
B20-5	1434 Harrison St. sidewalk	2/3/92	5	2.1	24	NA	NA	< 0.005	0.03	< 0.005	0.01	NA	RGA
B20-15	1434 Harrison St.	2/3/92	15	2.5	< 1	NA	35.2	< 0.005	0.034	< 0.005	< 0.005	NA	RGA
B21-5	1434 Harrison St.	2/3/92	5	2.1	16.7	NA	NA	< 0.005	0.02	< 0.005	0.01	NA	RGA
B21-10	1434 Harrison St.	2/3/92	10	1.9	15.7	NA	NA	< 0.005	0.021	< 0.005	0.026	NA	RGA
B21-15	1434 Harrison St.	2/3/92	15	2	22.7	NA	NA	< 0.005	0.03	< 0.005	< 0.005	NA	RGA
B22-5	1434 Harrison St.	2/3/92	5	42.3	670	NA	NA	< 0.005	0.113	< 0.005	2.13	NA	RGA
B22-10	1434 Harrison St.	2/3/92	10	1,540	175	NA	NA	0.987	11.7	1.67	2.88	NA	RGA
B23-5	1434 Harrison St.	2/3/92	5	2.5	26	NA	NA	< 0.005	0.027	< 0.005	< 0.005	NA	RGA
B23-10	1434 Harrison St.	2/3/92	10	3.3	< 1	NA	NA	< 0.005	0.034	< 0.005	< 0.005	NA	RGA
LFSB1-4	1434 Harrison St. in the street	5/22/93	4	0.5	NA	NA	NA	< 0.005	0.01	< 0.005	< 0.005	NA	LF
LFSB1-14	1434 Harrison St. in the street	5/22/93	14	< 0.2	NA	NA	NA	0.020	< 0.005	< 0.005	< 0.005	NA	LF
LFSB1-24.5	1434 Harrison St. in the street	5/22/93	24.5	8,800	NA	ΝA	NA	210	980	160	750	NA	LF
LFSB2-9.5	1434 Harrison St. sidewalk	5/22/93	9.5	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
LFSB2-19.5	1434 Harrison St. sidewalk	5/22/93	19.5	1,000	NA	NA	NA	< 0.2	9.4	16	68	NA	LF
LFSB2-24.5	1434 Harrison St. sidewalk	5/22/93	24.5	6,100	NA	NA	NA	91	320	120	410	NA	LF
S. Tank-8FG	1434 Harrison St. tank excevation	12/6/93	8	1,500	NA	NA	NA	0.87	43	34	240	NA	LF
S. Tank-8G	1434 Harrison St. tank excavation	12/6/93	8	43	NA	NA	NA	0.006	0.088	0.25	1.8	NA	LF
N. Tank-7.5G	1434 Harrison St. tank excavation	12/6/93	7.5	3,100	NA	NA	NA	11	190	64	400	NA	LF
N. Tank-8.5FG	1434 Harrison St. tank excavation	12/6/93	8.5	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
N. Tank-8.5FG	1434 Harrison St. tank excavation	12/6/93	8.5	< 0.2	NA	NA	NÄ	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
E. Wall-3G	1434 Harrison St. tank excavation	12/15/93	3	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
S. Wall-3G	1434 Harrison St. tank excavation	12/15/93	3	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
N. Wall-3G	1434 Harrison St. tank excavation	12/15/93	3	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
W. Wall-3-N	1434 Harrison St. tank excavation	12/15/93	3	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
W. Wall-3-S	1434 Harrison St. tank excavation	12/15/93	3	0.5	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF

Table 1. ANALYTICAL DATA FOR SOIL – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample Name	Sampling Location	Sample Date	Depth (feet)	TPH- gasoline (mg/kg)	TPH- diesel (mg/kg)	TPH- motor oil (mg/kg)	Oil & Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Source
PJ-2G	1434 Harrison St. fuel dispenser exc.	12/7/93	2	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
DSP-2G	1434 Harrison St. fuel dispenser exc.	12/7/93	2	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
MW-2	sorth of 1434 Harrison St. former tank	7/30/94	5	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
MW-2	sorth of 1434 Harrison St. former teak	7/30/94	9.5	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
MW-2	sorth of 1434 Harrison St. former tank	7/30/94	15	< 0.2	NA	NA	NA	< 0.005	0.007	< 0.005	< 0.005	NA	LF
MW-4	north of 1434 Harrison St. former tank	10/2/96	20.0	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
MW-5	north of 1434 Harrison St. former tank	10/2/96	20.0	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
MW-6	south of 1424 Harrison St. former tank	10/3/96	20.5	< 0.2	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	NA	LF
GW-1-10	1434 Harrison St. in the street	7/30/94	10	< 0.2	NA	NA	NA	< 0.005	0.007	< 0.005	< 0.005	NA	LF
GW-1-15	1434 Harrison St. in the street	7/30/94	15	< 0.2	NA	NA	NA	< 0.005	0.007	< 0.005	< 0.005	NA	LF
SB-L	1424 Harrison St. 20 feet north of tank	7/7/95	20	220 ao	NA	NA	NA	1.6 ,	4.1	4.8	24	NA	Cambria
SB-P-3.75	angle under tank area	10/3/96	3.75	3.8	NA	NA	NA	< 0.005	0.016	0.017	0.084	< 0.05	Cambria
SB-P-12.7	angle under tank area	10/3/96	12.7	1,500 20	NA	NA	NA	0.55	14	25	100	2.0	Cambria
SB-Q-3.75	angle under tank area	10/3/96	3.75	4.3 °	NA	NA	NA	0.006	0.024	0.027	0.11	< 0.02	Cambria
SB-Q-9.6	angle under tank area	10/3/96	9.6	1,900 ao	NA	NA	NA	0.95	15	43	200	< 1.4	Cambria
VES-1-16.5	434 Harrison St. adjacent to fuel dispens	7/22/99	16.5	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
VES-1-21.5	434 Harrison St. adjacent to fuel dispens	7/22/99	21.5	5,600°	NA	NA	NA	59	400	75	370	< 10	Cambria
VES-1-30.5	434 Harrison St. adjacent to fuel dispens	7/22/99	30.5	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
VES-2-16.5	1424 Harrison St. 2 feet east of tank area	7/22/99	16.5	2.2 °	NA	NA	NA	< 0.005	0.018	< 0.005	0.050	< 0.05	Cambria
VES-2-26.5	1424 Harrison St. 2 feet east of tank ares	7/22/99	26.5	4,300 °	NA	NA	NA	35 *	260 *	74 *	310 *	< 10	Cambria
VES-2-30	1424 Harrison St. 2 feet east of tank area	7/22/99	30.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
VES-3-15.5	1434 Harrison St. west of fuel dispenses	7/23/99	15.5	1.3 °	NA	NA	NA	0.011	< 0.005	< 0.005	0.010	< 0.05	Cambria
VES-3-20.5	1434 Harrison St. west of fuel dispenses	7/23/99	20.5	2,100 ac	NA	NA	NA	< 0.50	66	56	280	< 10	Cambria
VES-3-30.5	1434 Harrison St. west of fuel dispenses	7/23/99	30.5	1.4	NA	NA	NA	0.062	0.25	0.039	0	< 0.05	Cambria
VES-4-16.5	1434 Harrison St. north of former tanks	7/23/99	16.5	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
VES-4-25	1434 Harrison St. north of former tanks	7/23/99	25.0	7,600 °	NA	NA	NA	150	490	170	640	32	Cambria
VES-4-30	1434 Harrison St. north of former tanks	7/23/99	30.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria

Table 1. ANALYTICAL DATA FOR SOIL – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample Name	Sampling Location	Sample Date	Depth (feet)	TPH- gasoline (mg/kg)	TPH- diesel (mg/kg)	TPH- motor oil (mg/kg)	Oil & Grease (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	Source
CB-1-10	1424 Harrison St. 2 feet east of tank ares	7/23/99	10.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
CB-1-16	1424 Harrison St. 2 feet east of tank are:	7/23/99	16.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
CB-1-20	1424 Harrison St. 2 feet east of tank ares	7/23/99	20.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
CB-1-24	1424 Harrison St. 2 feet east of tank are:	7/23/99	24.0	1,500 a-	NA	NA	NA	2.3 *	6.8 *	12 *	58 *	< 2	Cambria
CB-2-12	1424 Harrison St. 5 feet south of tank are	7/23/99	12.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
CB-2-15	1424 Harrison St. 5 feet south of tank are	7/23/99	15.0	< 1.0	NA	NA	NA	< 0.005	< 0.005	< 0.005	< 0.005	< 0.05	Cambria
CB-2-20.5	1424 Harrison St. 5 feet south of track are	7/23/99	20.5	4.2 °	NA	NA	NA	< 0.005	0.01 *	0.007 *	0.025 *	< 0.05	Cambria
CB-2-24	1424 Harrison St. 5 feet south of tank are	7/23/99	24.0	4.8 °	NA	NA	NA	0.006 *	< 0.005	0.026 *	0.03 *	< 0.05	Cambria
C-1-20	Chevron	6/4/90	20	800	NA	NA	NA	3.6	33	13	77	NA	ICES
C-2-22	Chevron	6/4/90	22	11	NA	NA	NA	1.1	1.7	0.15	0.87	NA	ICES
C-3-20	Chevron	6/4/90	20	840	NA	NA	NA	0.93	15	9	63	NA	ICES
C-4-20	Chevron	6/4/90	20	< 1.0	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	NA	ICES
C-6-15.5	Chevron	4/5/91	15.5	< 1.0	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	ΝA	ICES
C-6-22.5	Chevron	4/5/91	22.5	< 1.0	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	NA	ICES
C-6-25.5	Chevron	4/5/91	25.5	< 1.0	NA	NA	NA	< 0.05	< 0.05	< 0.05	< 0.05	NA	ICES
CR-1-20.5	Chevron	10/18/90	20.5	1,200	NA	NA	NA	9.5	56	18	110	NA	ICES

mg/kg = milligrams per kilogram (parts per million or ppm)

NA = not analyzed

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

TPH-motor oil = total petroleum hydrocarbons quantified as motor oil

MTBE = methyl tertiary butyl ether

a = heavier gasoline range compounds are significant

b = gasoline range compounds having broad chromatographic peaks are significant

c = strongly aged gasoline or diesel compounds are significant

d = unmodified or weakly modified gasoline is significant

e = no recogizable pattern

<sup>\*</sup> Denotes concentrations from soil sample collected below the water table.

Table 2. ANALYTICAL DATA FOR GROUNDWATER – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample	Sampling	Sample	TPH- gasoline	TPH- diesel	TPH- motor oil	Benzene	Toluene	Ethyl- benzene	Total Xylenes	МТВЕ	
Name	Location	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	Source
GW-1	in street 1434 Harrison Street	7/30/94	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 2	NA	LF, grab GW
MW-1	1434 Harrsion St. in former tank excavation	8/1/94	170,000	NA	NA	35,000	51,000	2,400	13,000	NA	LF
MW-1	1434 Harrsion St. in former tank excavation	6/27/95	71,000	NA	NA	17,000	18,000	1,600	7,700	NA	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/20/96	110,000	NA	NA	30,000	38,000	2,200	13,000	< 200	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/27/97	130,000	NA	NA	25,000	36,000	2,000	14,000	ND	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/22/98	90,000	NA	NA	19,000	40,000	2,100	16,000	NA	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/23/99	80,000	NA	NA	20,000	33,000	1,600	11,000	NA	Cambria
MW-1	1434 Harrsion St. in former tank excavation	7/3/00	200,000	NA	NA	33,000	46,000	2,200	15,000	< 200	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/8/01	170,000	NA	NA	28,000	40,000	1,900	13,000	< 200	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/10/02	210,000	NA	NA	30,000	51,000	3,100	22,000	< 1,000	Cambria
MW-1	1434 Harrsion St. in former tank excavation	9/3/02	2,500,000	NA	NA	31,000	170,000	29,000	170,000	2,500,000	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/16/04	2,700	NA	NA	23	160	13	520	< 25	Cambria
MW-1	1434 Harrsion St. in former tank excavation	6/23/06	30,000	NA	NA	340	680	170	6,900	< 500	Cambria
MW-1	1434 Harrsion St. in former tank excavation	3/3/08	10,000	NA	NA	510	28	< 10	1,700	< 2.5	CRA
MW-1	1434 Harrsion St. in former tank excavation	6/4/08	NS	NS	NS	NS	NS	NS	NS	NS	CRA
MW-1	1434 Harrsion St. in former tank excavation	9/15/09	NS	NS	NS	NS	NS	NS	NS	NS	CRA
MW-2	north of 1434 Harrison St. former tank	8/1/94	130,000	NA	NA	28,000	35,000	3,000	12,000	NA	LF
MW-2	north of 1434 Harrison St. former tank	6/27/95	120,000	NA	NA	23,000	30,000	2,700	13,000	NA	Cambria
MW-2	north of 1434 Harrison St. former tank	6/20/96	94,000	NA	NA	15,000	23,000	2,400	12,000	< 200	Cambria
MW-2	north of 1434 Harrison St. former tank	6/27/97	62,000	NA	NA	13,000	16,000	1,300	6,000	ND	Cambria
MW-2	north of 1434 Harrison St. former tank	6/22/98	38,000	NA	NA	9,800	9,500	1,500	6,000	NA	Cambria
MW-2	north of 1434 Harrison St. former tank	6/23/99	41,000	NA	NA	10,000	9,400	1,100	5,000	NA	Cambria
MW-2	north of 1434 Harrison St. former tank	7/3/00	140,000	NA	NA	18,000	33,000	2,600	11,000	< 200	Cambria
MW-2	north of 1434 Harrison St. former tank	6/8/01	72,000	NA	NA	9,400	9,200	1,300	5,800	< 200	Cambria
MW-2	north of 1434 Harrison St. former tank	6/10/02	7,800	NA	NA	2,000	1,100	76	570	< 100	Cambria

Table 2. ANALYTICAL DATA FOR GROUNDWATER – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

			TPH-	TPH-	TPH-			Ethyl-	Total		
Sample	Sampling	Sample	gasoline	diesel	motor oil	Benzene	Toluene	benzene	Xylenes	MTBE	
Name	Location	Date	$(\mu g/L)$	(μg/L)	$(\mu g/L)$	Source					
		0 10 10 0	24.000			2 400			1 400	500	
MW-2	north of 1434 Harrison St. former tank	9/3/02	21,000	NA	NA	2,400	2,900	320	1,400	< 500	Cambria
MW-2	north of 1434 Harrison St. former tank	6/16/04	9,100	NA	NA	1,600	1,200	220	830	< 400	Cambria
MW-2	north of 1434 Harrison St. former tank	6/23/06	8,800	NA	NA	1,600	110	500	480	< 500	Cambria
MW-2	north of 1434 Harrison St. former tank	3/3/08	40,000	NA	NA	7,700	490	1,400	4,400	< 17	CRA
MW-2	north of 1434 Harrison St. former tank	6/4/08	56,000	NA	NA	7,400	600	1,500	4,100	< 25	CRA
MW-2	north of 1434 Harrison St. former tank	9/9/08	65,000	NA	NA	7,800	510	1,700	4,700	< 25	CRA
MW-2	north of 1434 Harrison St. former tank	9/15/09	48,000	NA	NA	6,400	600	1,900	2,800	< 25	CRA
MW-4	Harrison Street north of 1434	10/28/96	10,000	NA	NA	3,900	420	400	360	< 200	Cambria
MW-4	Harrison Street north of 1434	3/12/98	1,300	NA.	NA NA	410	21	ND	57	ND	Cambria
MW-4		6/23/99	1,500 ND	NA NA	NA NA	ND	ND	ND	ND	NA	Cambria
	Harrison Street north of 1434						100	65	660	< 250	Cambria
MW-4	Harrison Street north of 1434	7/23/03	20,000	NA	NA	7,600					-
MW-4	Harrison Street north of 1434	6/9/05	20,000	NA	NA	6,100	110	460	580	< 500	Cambria
MW-4	Harrison Street north of 1434	3/3/08	63	NA	NA	0.78	< 0.5	< 0.5	< 0.5	< 0.5	CRA
MW-4	Harrison Street north of 1434	6/4/08	86	NA	NA	2.2	< 0.5	< 0.5	0.58	< 0.5	CRA
MW-4	Harrison Street north of 1434	9/15/09	370	NA	NA	2.2	1.1	2.8	3.3	< 0.5	CRA
MW-5	15th Street	10/28/96	90	NA	NA	4.0	0.6	< 0.50	< 0.50	16	Cambria
MW-5	15th Street	6/23/99	ND	NA	NA	ND	ND	ND	ND	NA	Cambria
MW-5	15th Street	7/23/03	< 50	NA	NA	4.0	< 0.5	< 0.5	< 0.5	< 5.0	Cambria
MW-5	15th Street	9/9/05	2,000	NA	NA	390	5.0	71	38	< 400	Cambria
MW-5	15th Street	6/7/07	14,000	NA	NA	3,800	40	790	720	< 550	Cambria
MW-5	15th Street	3/3/08	30,000	NA	NA	6,200	31	900	1,400	< 10	CRA
MW-5	15th Street	6/4/08	7,500	NA.	NA	1,600	4.6	25	91	< 10	CRA
MW-5	15th Street	9/15/09	40,000	NA NA	NA NA	10,000	280	1400	2,600	< 2.5	CRA
TAT 44 -D	13ul Succi	3113103	+0,000	INA	IVA	10,000	200	1700	2,000	~ 2.3	CKA
MW-6	Harrison Street south of 1424	10/28/96	< 50	NA	NA	< 0.50	< 0.50	< 0.50	< 0.50	< 2.0	Cambria

Table 2. ANALYTICAL DATA FOR GROUNDWATER – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample Name	Sampling Location	Sample Date	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Source
MW-6	Harrison Street south of 1424	6/23/99	ND	NA	NA	ND	ND	ND	ND	NA	Cambria
MW-6	Harrison Street south of 1424	7/3/00	59	NA	NA	5.1	2.3	1.1	5.3	< 5.0	Cambria
MW-6	Harrison Street south of 1424	3/2/08	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	CRA
MW-6	Harrison Street south of 1424	3/2/09	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	CRA
MW-6	Harrison Street south of 1424	9/15/09	NS	NS	NS	NS	NS	NS	NS	NS	CRA
SB-C	Harrison Street	7/6/95	44,000 a	NA	NA	6,600	5,900	980	4,400	NA	Cambria, grab
SB-D	50 feet west of 1434 Harrison St. former tank area	7/6/95	70,000 a	NA	NA	7,400	10,000	1,600	7,200	NA	Cambria, grab
SB-E	15 feet northwest of 1424 Harrison Str. former tank area	7/6/95	25,000 a	NA	NA	1,000	3,000	610	2,700	NA	Cambria, grab
SB-G	Harrison Street	7/7/95	84,000 ab	NA	NA	9,400	16,000	2,200	9,900	NA	Cambria, grab
SB-I	Harrison Street	7/7/95	24,000 a	NA	NA	6,100	1,400	680	1,600	NA	Cambria, grab
CB-1-W	2 feet east of 1424 Harrison St. former tank area	7/22/99	110,000	NA	NA	1,300	16,000	2,700	12,000	< 3,000	Cambria, grab
CB-2-W	5 feet south of 1424 Harrison St. former tank area	7/22/99	4,700	NA	NA	21	13	170	76	< 50	Cambria, grab
C-1	Chevron	3/2/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
C-2	Chevron	3/2/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
C-3	Chevron	12/4/03	29,000	NA	NA	9,000	390.0	610	1,500	< 5.0	ICES
C-3	Chevron	6/4/04	7,400	NA	NA	2,200	9.0	27	23	< 2.0	ICES
C-3	Chevron	12/28/04	7,500	NA	NA	2,500	11	12	10	< 3	ICES
C-4	Chevron	3/2/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
C-5	Chevron	3/2/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
C-6	Chevron	6/4/04	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES

Table 2. ANALYTICAL DATA FOR GROUNDWATER – Petroleum Hydrocarbons 1424 and 1434 Harrison Street, Oakland, California

Sample Name	Sampling Location	Sample Date	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Source
C-7	Chevron	6/4/04	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	ICES
C-8	Chevron	6/4/04	220	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	ICES
C-9	Chevron	6/4/04	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	ICES
CR-1	Chevron	6/4/04	87	NA	NA	9	< 0.5	< 0.5	< 0.5	< 5.0	ICES
CR-1	Chevron	12/28/04	66	NA	NA	5	< 0.5	< 0.5	1	< 5.0	ICES
MW-10	Chevron	6/4/04	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Cambria
MW-11	Chevron	6/4/04	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	Cambria
MW-12	Chevron / abandoned	6/27/97	96	NA	NA	1.2	< 0.5	< 0.5	< 0.5	< 2.5	Cambria
GW-1	Chevron	2/5/05	93	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	7.3	ICES
GW-2	Chevron	2/5/05	640	NA	NA	19	< 0.5	< 0.5	110	12	ICES
GW-3	Chevron	2/5/05	53	NA	NA	5.3	3.6	0.73	8.0	< 5.0	ICES
GW-4	Chevron	2/5/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
GW-5	Chevron	2/5/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
GW-6	Chevron	2/5/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
GW-7	Chevron	2/5/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES
GW-8	Chevron	2/5/05	< 50.0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	ICES

 $\mu$ g/L = micrograms per liter (parts per billion or ppb)

NA = not analyzed

NS = not sampled

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

TPH-motor oil = total petroleum hydrocarbons quantified as motor oil

MTBE = methyl tertiary butyl ether

a = unmodified or weakly modified gasoline is significant

b = lighter than water immiscible sheen is present

### APPENDIX A

TANK CLOSURE DOCUMENTS

Excavation Permit-Grantes CITY OF OAKLAND Tank Permit 85 Permit to Excavate and Install, Repair, or Remove Inflammable Liquid Tanks. No. April 21, 1982 XXXXX Gasoline tank and excavate commencing. Street 1424 Harrison Street 2424 Webster Street Bill & Chip Sparks Number of Tenks Dimensions of street (sidewalk) surface to be disturbed This Permit is granted in accordance with existing City Ordinances. Owner hereby agreet to remove starts on discontinuence of useo where natified by the City Authorities. When installing, removing errepairing tanta, no open flame to be on or near premise. Drainage Division Engineering Dep EXCAVATING PERMIT issued in accordance with Ord. No. 278 CMS, Sec. 6-2.04 squere feet of digging or removal granted. special deposit is hereby acknowledged. Inspected and passed or GENERAL DEPOSIT. NOTICE 00 ck#0308 rec#107 Before Covering Tanks, Above Certificate Must Be Signed. Inspection Fee When ready for impection notify Fire Prevention Serese, 273-3851 THIS PERMIT MUST BE LEFT ON THE WORK AS AUTHORITY THEREFOR.

white -env.health yellow -facility pink -files

# ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

Hazardous Materials Inspection Form

80 Swan Way, #200 Oakland, CA 94621 (415) 271-4320

11,111

***		******************	ID # Name 6, 11 Sparks Date (79	191
II.A	BUSINESS PLANS (Title 19)			-/
	1. Immediate Reporting 2. Bus. Plan Stat. 3. RR Cars > 30 days	2703 25503(b) 25503.7	Site Address 1424 Harrison St	·
	4. Inventory Information 5. inventory Complete 6. Emergency Response	25504(a) 2730 25504(b)	City Collord Zip 94612 Phone 593-58	55
	7. Training 8. Deficiency 9. Modification	25504(c) 25505(a) 25505(b)	MAX AMT stored > 500 lbs, 55 gal., 200 cft.?	
			<pre>inspection Categories:1. Haz. Mat/Waste GENERATOR/TRANSPORTER</pre>	
I.B	ACUTELY HAZ. MATLS	25533(g)	II. Business Plans, Acute Hazardous Materials	
	10. Registration Form Filed 11. Form Complete 12. RMPP Contents 13, Implement Sch. Regid? (Y/N	25533(b) 25534(c)	∠ III. Underground Tanks	
	14. OffSite Conseq. Assess.  15. Probable Risk Assessment  16. Persons Responsible	25524(c) 25534(d) 25534(g)	Callf. Administration Code (CAC) or the Health & Safety Code (HS&C)	
	17. Certification18. Exemption Request? (Y/N)19. Trade Secret Requested?	25534(f) 25536(b) 25538	Comments: 1979 wy regard to undergrand track or one	volume
ш.	UNDERGROUND TANKS (Title	e 23)	Dayland fire protocol	
ē	1, Permit Application 2, Pipeline Leak Detection	25284 (H&S)		<del></del>
Gene	3. Records Maintenance 4. Release Report 5. Closure Plans	25292 (H&S) 2712 2651 2670	Mr sports doesn't have com programmer on	
	6, Method 1) Monthly Test		The premises by he will look for one	<del>}</del>
	Daily Vadose     Semi-annual gnowater		in the brilding promote pager work	J
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	One firme soils Annual tank test		The mr Smalls is the Correct owner at	1) e
Monitoring for Existing Tankı	4) Monthly Gndwater One time soils 5) Daily Inventory		above four litra. During hailding remodeling	
	Annual tank testing Contiple leak det		permits were taken for reconstruction of to	
o b	Vadose/gnawater mon.  6) Daily Inventory		in Plane Closure	<del>`</del>
Hort	Annual tank testing Cont pipe leak det 7) Weeldy Tank Gauce			
¥	Annual tank sting  8) Annual Tank Testing			epres-
	Daily kniventary 9) Other	titus	enterine was present during Sturry Fill	
	7. Precis Tank Test Date:	2643	In temp.	<del></del>
	8, Inventory Rec. 9, Soil Testing ,	2644	The tenh was Emptical continue to tille	<u> </u>
	10, Ground Water.	2646 2647	a) Cinent Starley	
nk:	11_Monitor Plan 12_Access. Secure	2632 2634	<u> </u>	
New Tanki	13.Plans Submit	2711	I will check boock next monday 5/10/0	31
z	Date:	2635	to indire as to the programance	
Rev	6/88	1-0		<del></del>
β <sup>†</sup>	of partial general	Will with		
.₹	Contact:	my Bi	511 Spanks	I, III
	Title:	GWALT	Inspector: Paul Smith	· منت عند :
	Signature:	300	Signature: Vend m dritte.	
·) ,	at the one		and great permit you where the solfofa	1

white -env.health yellow -facility pink -files

# ALAMEDA COUNTY, DEPARTMENT OF ENVIRONMENTAL HEALTH

Hazardous Materials Inspection Form

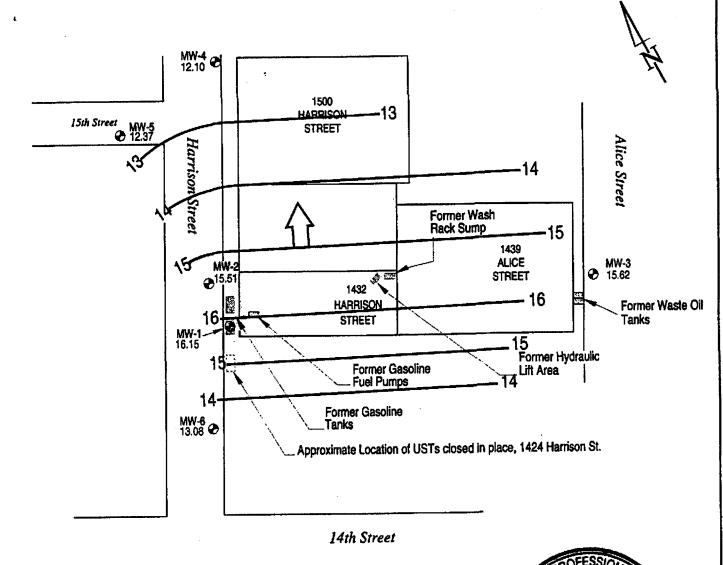
80 Swan Way, #200 Oakland, CA 94621 (415) 271-4320

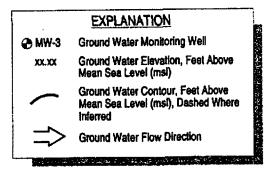
11,111

****		SIT	te Ste Name 6, 11 Sparks Today's 129 191	<u>(</u>
Α	BUSINESS PLANS (Title 19)  — 1. Immediate Reporting 2700	3 03(b)	Site Address 1424 Harrison St	• <i>•</i>
-	3, RR Cais > 30 days 2550 4, Inventory Information 2550 5, Inventory Complete 2730	03.7	City Col World Zip 94612 Phone 593-5855	<b></b>
	7. Youning 255 6. Deficiency 255	(04(e) (05(a) (05(b)	MAX AMT stored > 500 lbs, 55 gal., 200 cft.?	
.в /	ACUTELY HAZ, MAT'LS		inspection Categories:  1. Haz. Mat/Waste GENERATOR/TRANSPORTER  11. Business Plans, Acute Hazardous Materials	
	11. Form Complete 25:	533(a) 533(b) 534(e)	III. Underground Tanks	
	15, Probable Risk Assessment 25	524(c) 534(d) 534(g)	Callf, Administration Code (CAC) or the Health & Safety Code (HS&C)	
	17. Certification 25 18. Exemption Request? (Y/N) 25	534(f) 5536(b) 3538	Comments: 1979 wy regard to undergrand touth or inknown 12 yes and 1 vs way filled as per	THA Himas
III.	UNDERGROUND TANKS (Title 2:	3)	Dalland fire protocol	· <del></del>
General	2. Pipeline Leak Detection 2. 3. Records Maintenance 2. 4. Release Report 2.	5284 (H&S) 5292 (H&S) 712 651 670	my sports doesn't have come possernors on	
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	8) Annual Tank Testing Daily Inventory 9) Other		in tent.	<del> </del>
	B. Inventory Rec.	2643 2644	the temp not enotical cortion to filling	
	9, 501 Testing, 10, Ground: Water,	2646 2647	w/ Cement 51 rieg	·
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D-	14. A3 BUIT Date:	<b>2635</b> (	to indire as to the paperwork	<del>,</del>
+-	of positional account	Wint	No at the city of the master of	<u> </u>
••••	Contact: _	my Bi	1) Souns	
	Title: Signature:	GUNLA	Inspector: [m] 7min	
		man dada menggapat badan daga daga		
Ď	and the me	4	and the second section of the second section	

### APPENDIX B

GROUNDWATER ELEVATION MAPS AND DATA





100 Scale (ft)

NOTE: Wells MW-4, MW-5, and MW-6 installed in October, 1996.



Environmental Technology, Inc.

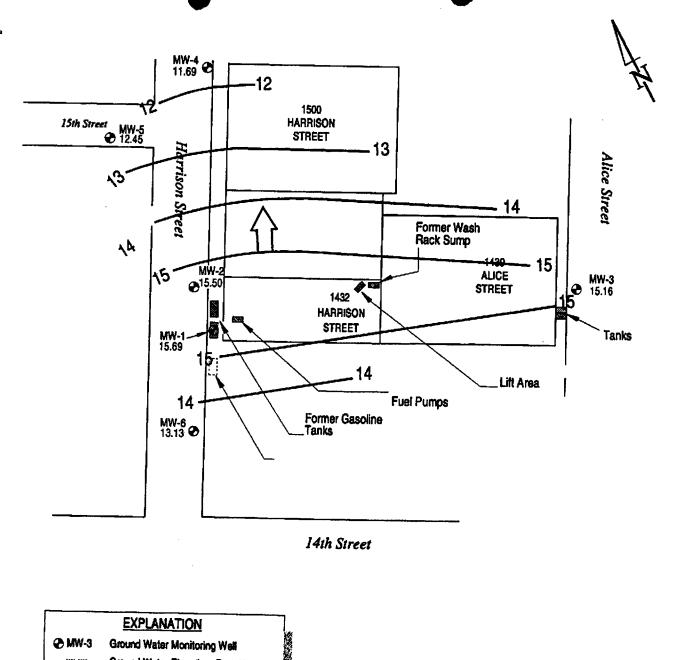
1432 Harrison Street

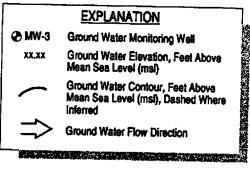
Oakland, California

F:PROJECT\SB-2004\OAKL-188\FIGUPES\10M87-MP.DWG

**Ground Water Elevation Contours** March 31, 1997

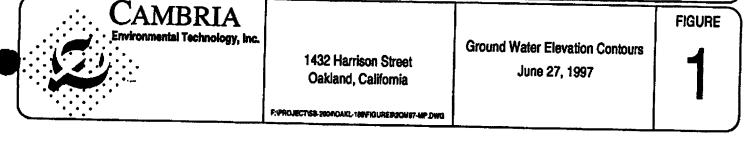
**FIGURE** 

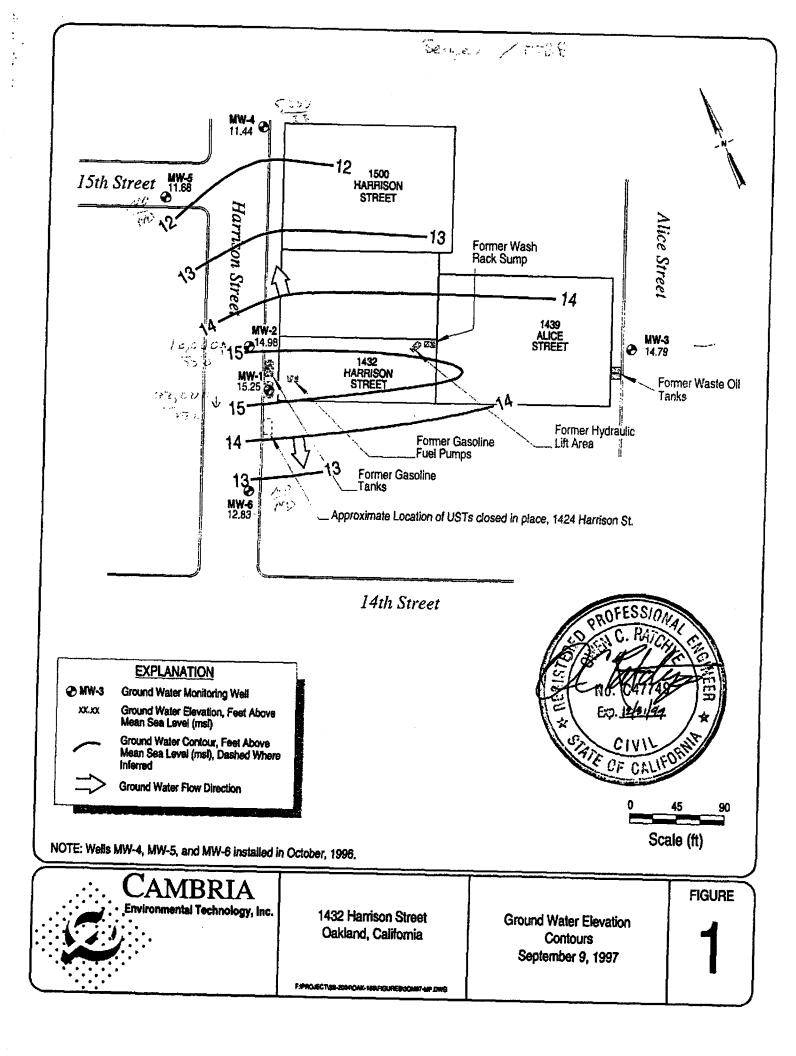


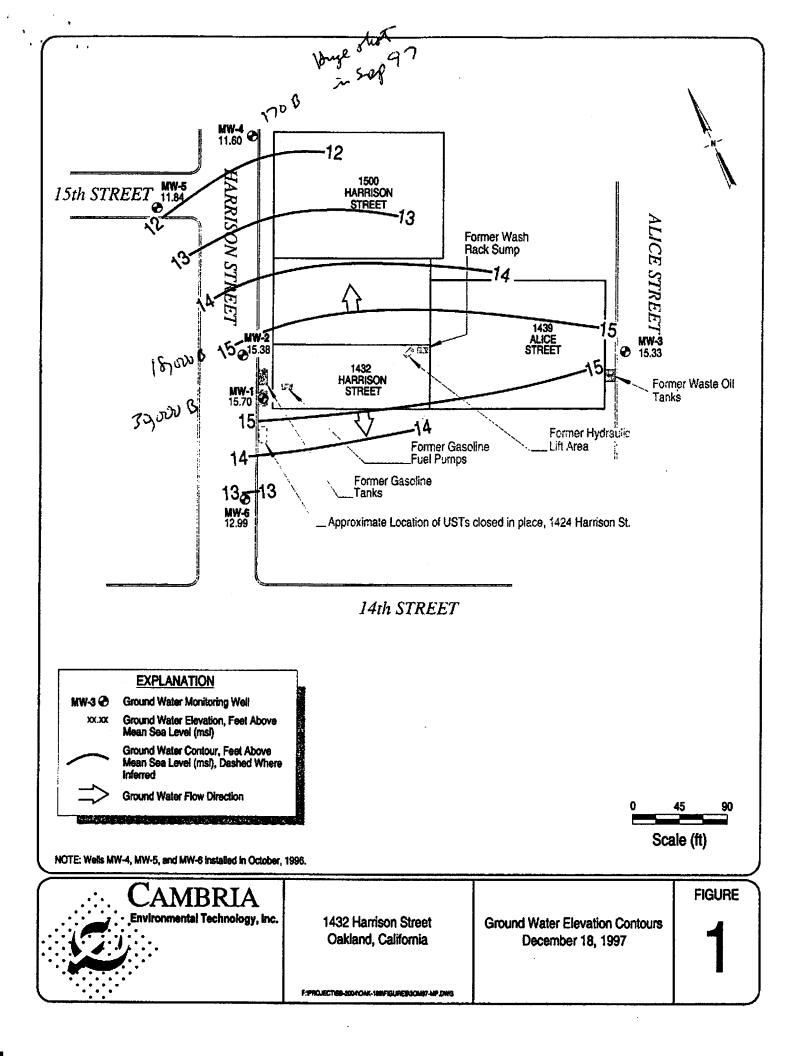


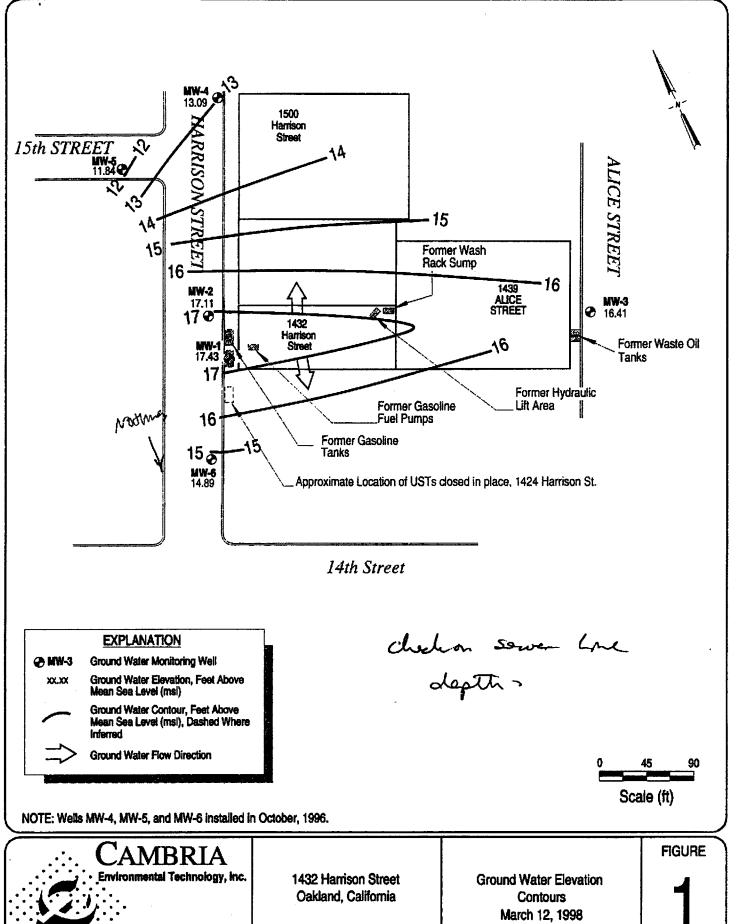
0 50 100

NOTE: Wells MW-4, MW-5, and MW-6 installed in October, 1996.

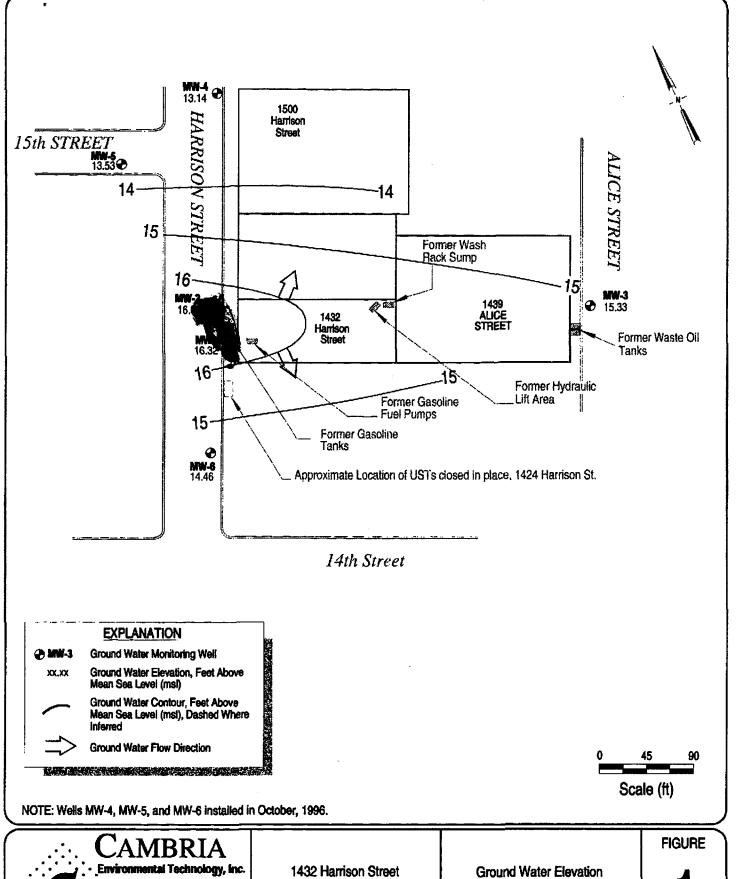




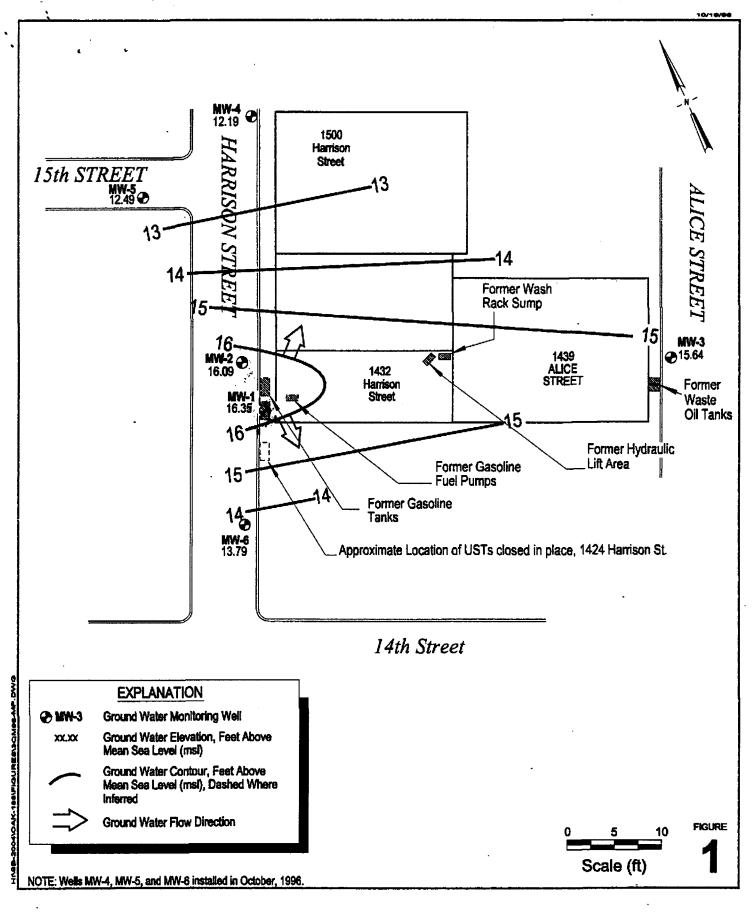




HSB-2000CAK-18NFIGURES/1CMRR-MF.DWG







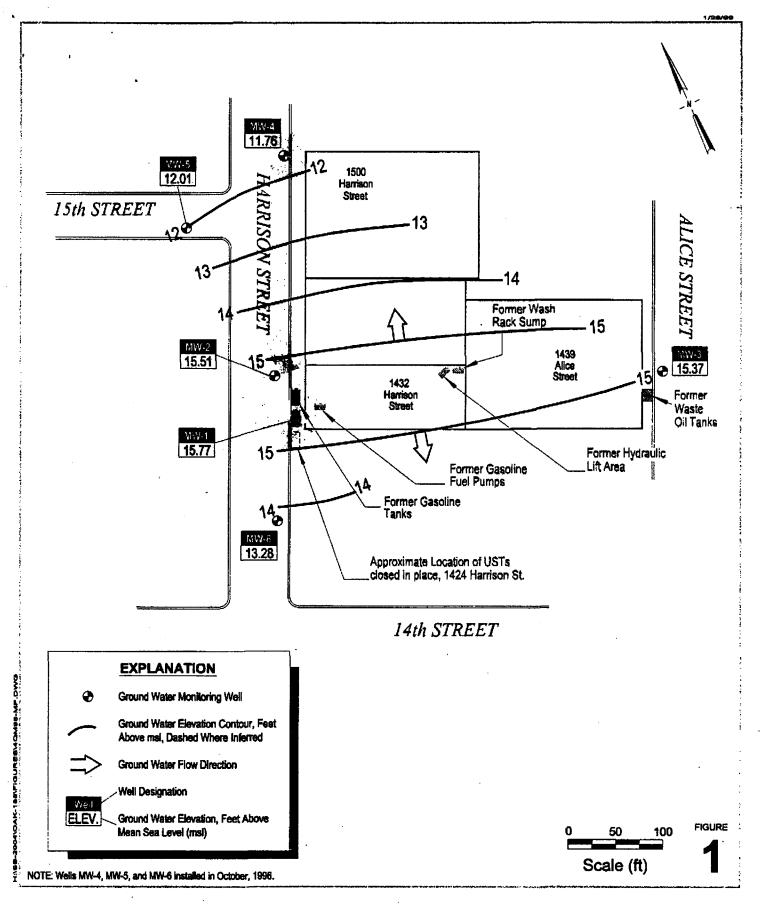
### **Borsuk**

1432 Harrison Street Oakland, California



Ground Water Elevation Contours

September 18, 1988



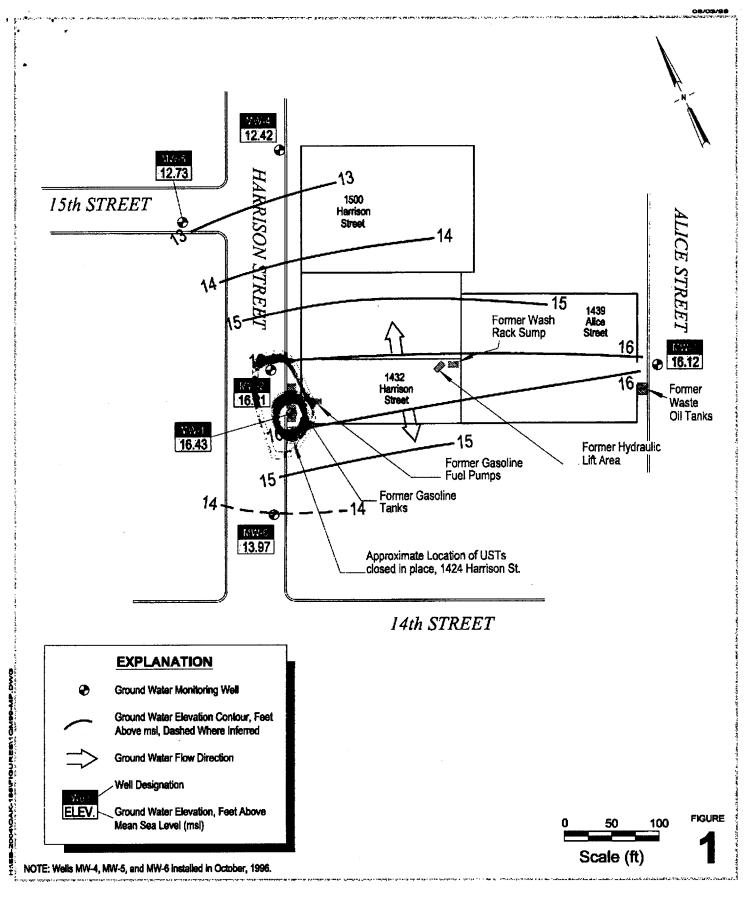
### **Borsuk**

1432 Harrison Street Oakland, California



Ground Water Elevation
Contours

December 23, 1988



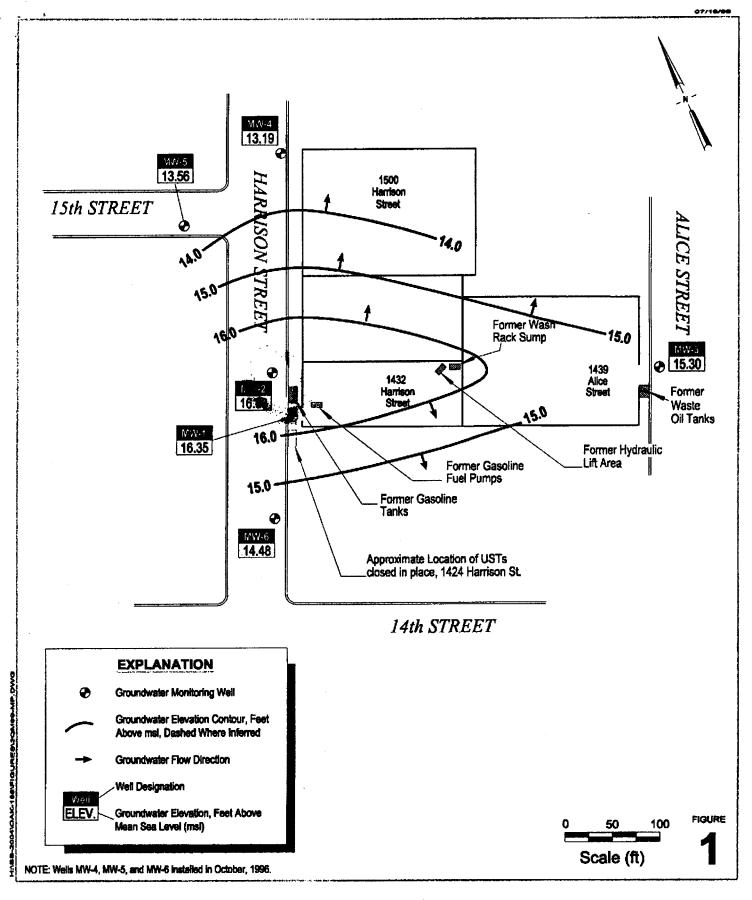
#### **Borsuk**

1432 Harrison Street Oakland, California



Ground Water Elevation Contours

March 29, 1999



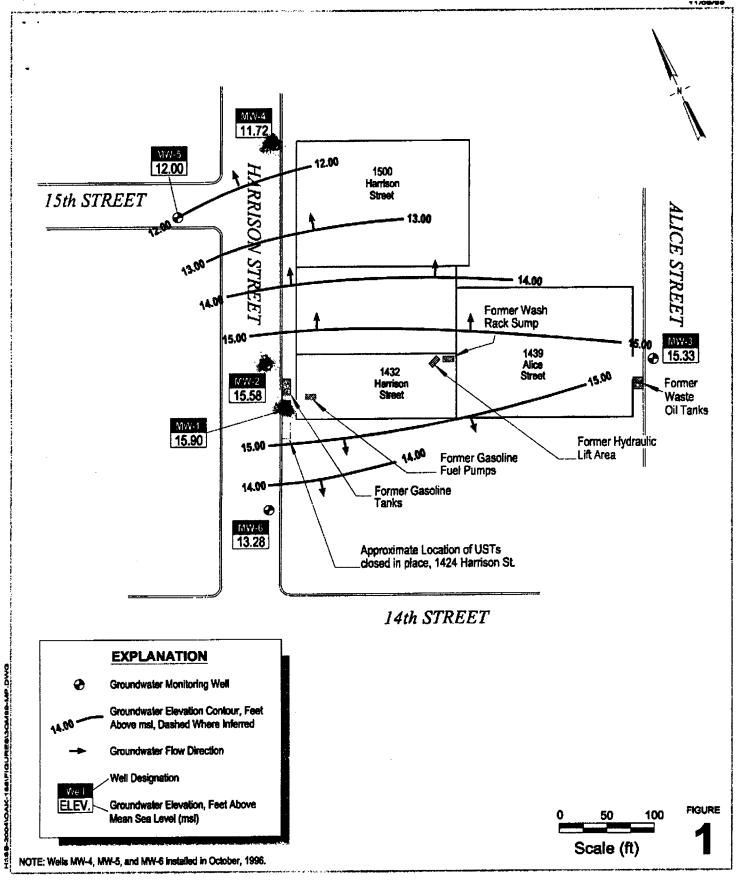
#### **Borsuk**

1432 Harrison Street Oakland, California



Groundwater Elevation Contours

June 23, 1999



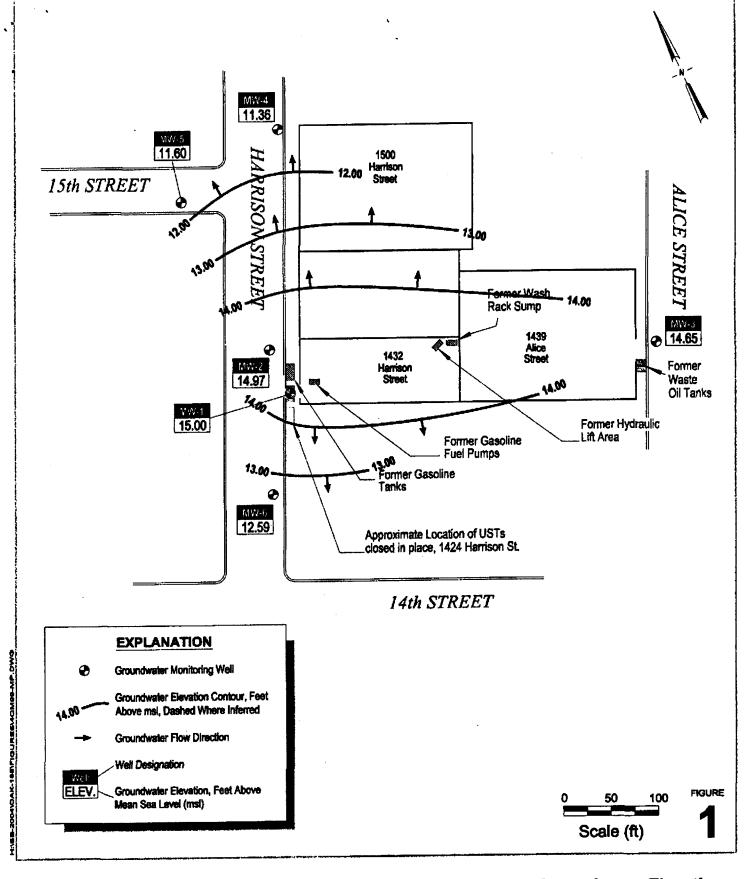
## Borsuk

1432 Harrison Street Oakland, California



Groundwater Elevation Contours

September 24, 1999

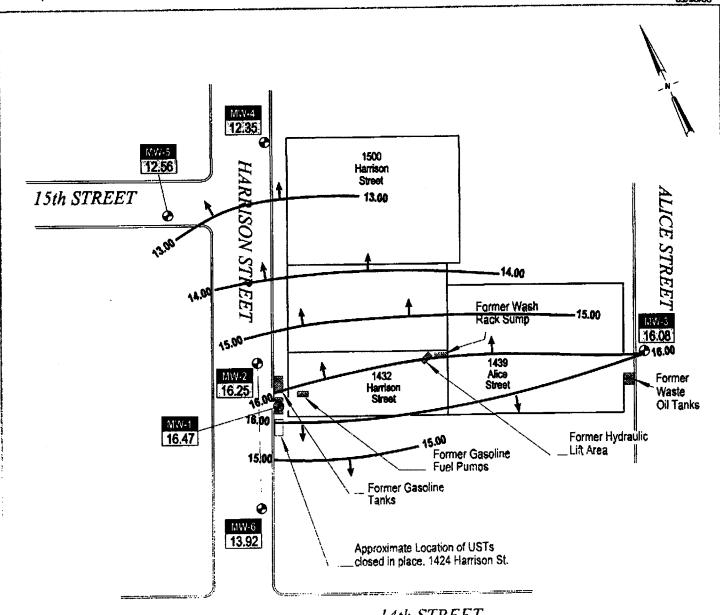


Oakland, California

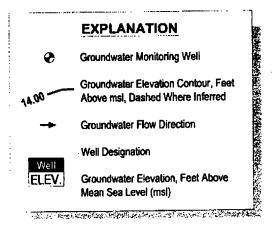


Groundwater Elevation Contours

December 23, 1999



14th STREET





FIGURE

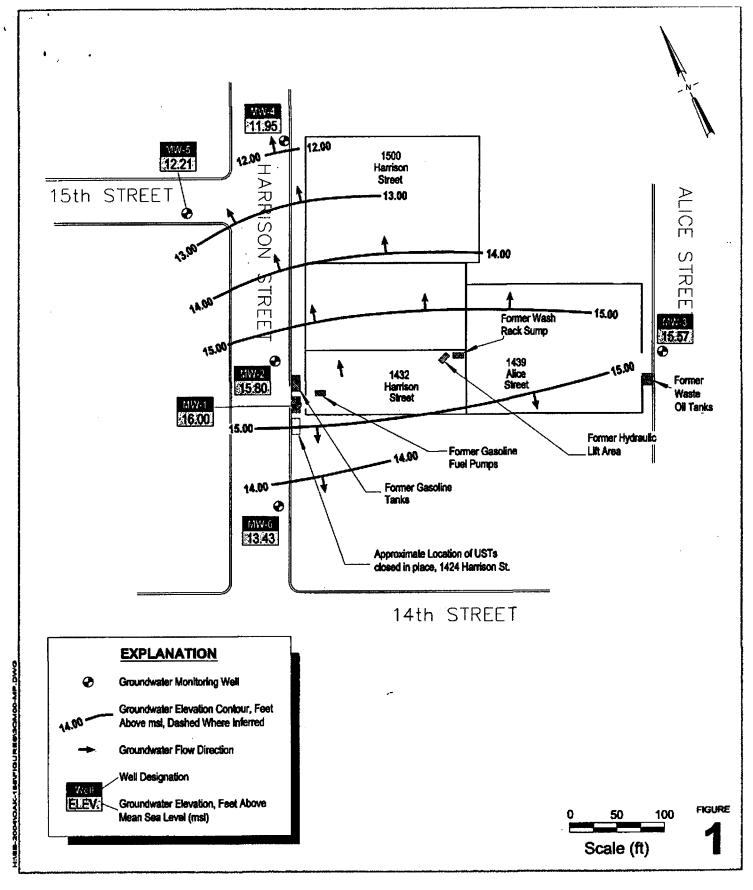
1432 Harrison Street

Oakland, California



Groundwater Elevation Contours

March 21, 2000

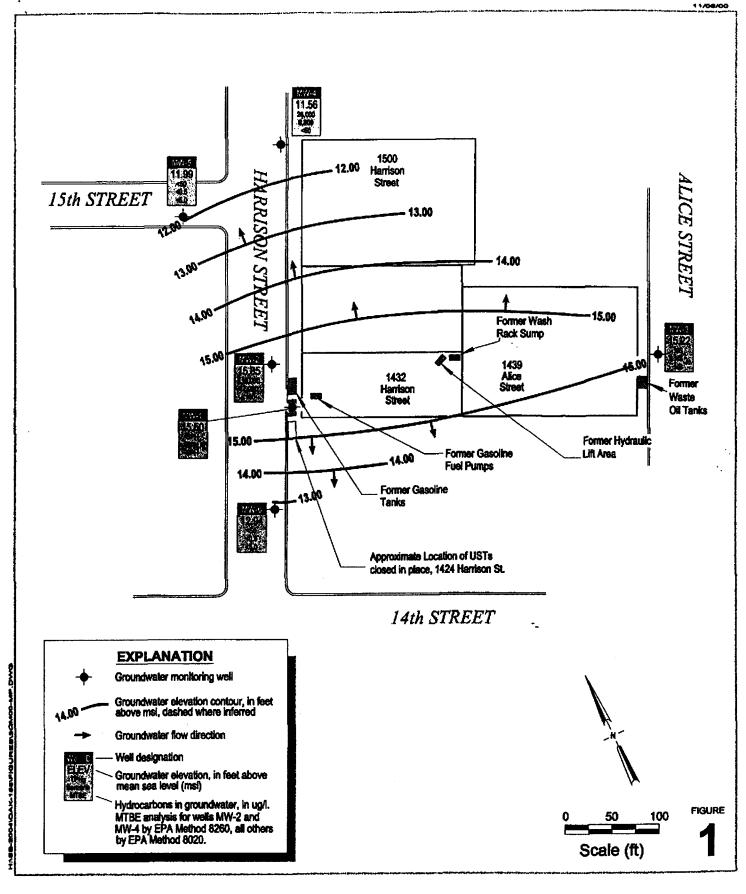


Oakland, California



Groundwater Elevation Contours

July 3, 2000

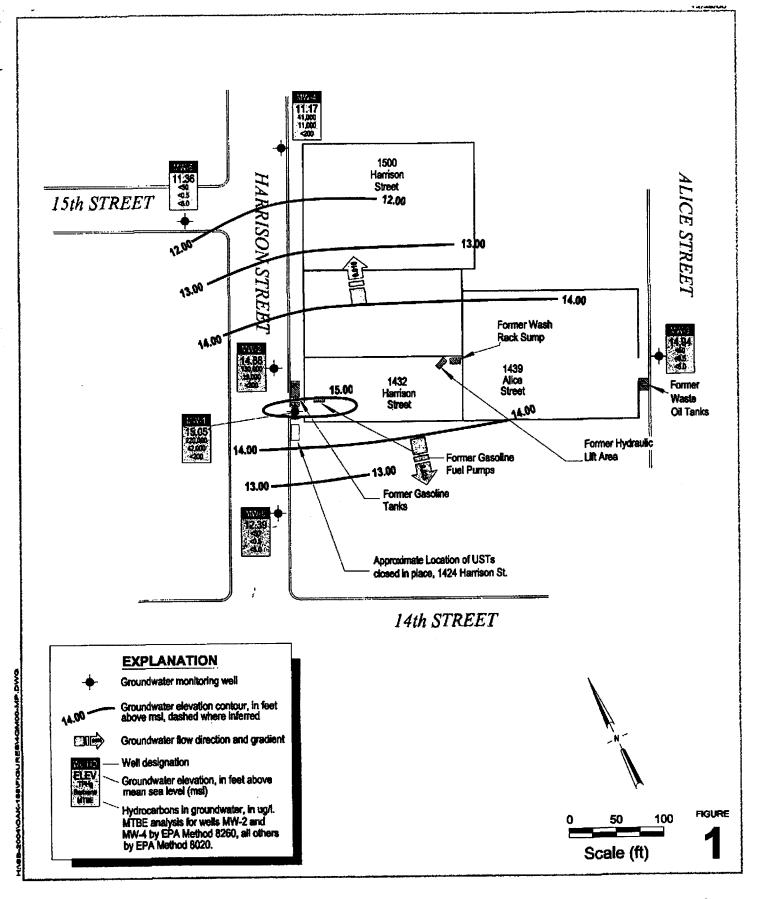


Oakland, California



Groundwater Elevation Contours

September 7, 2000

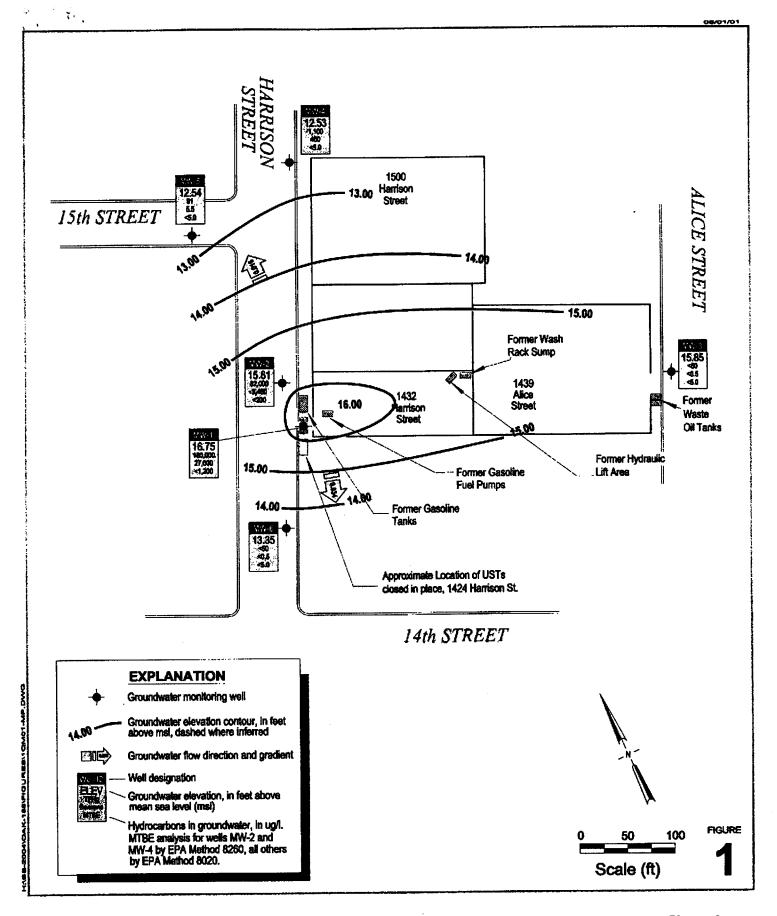


Oakland, California



Groundwater Elevation Contours

December 5, 2000

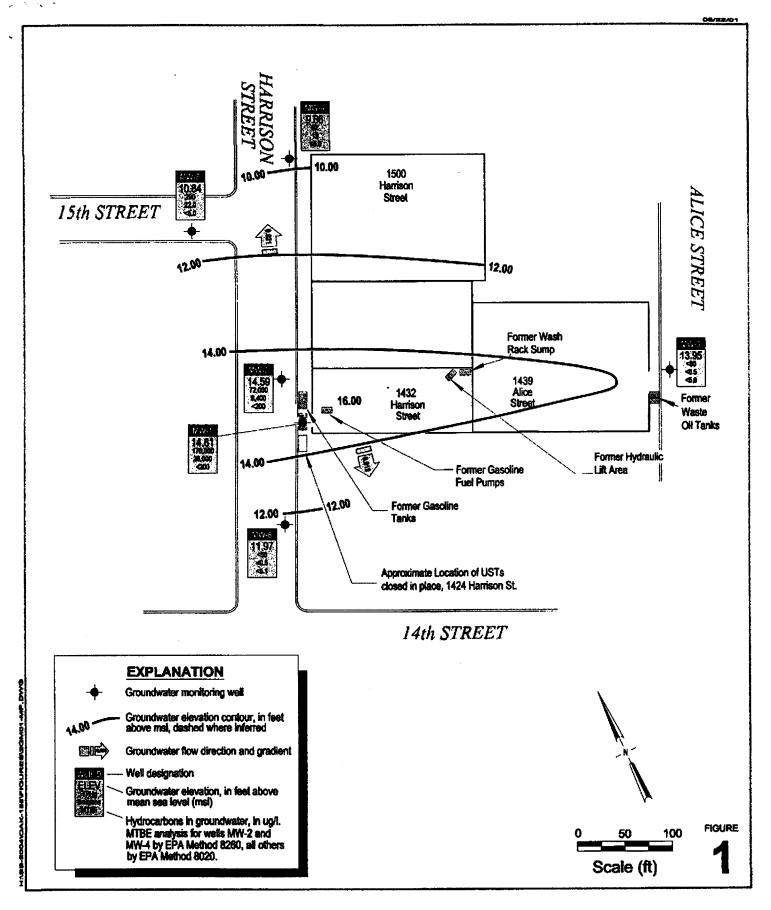


Oakland, California



Groundwater Elevation Contours

March 6, 2001

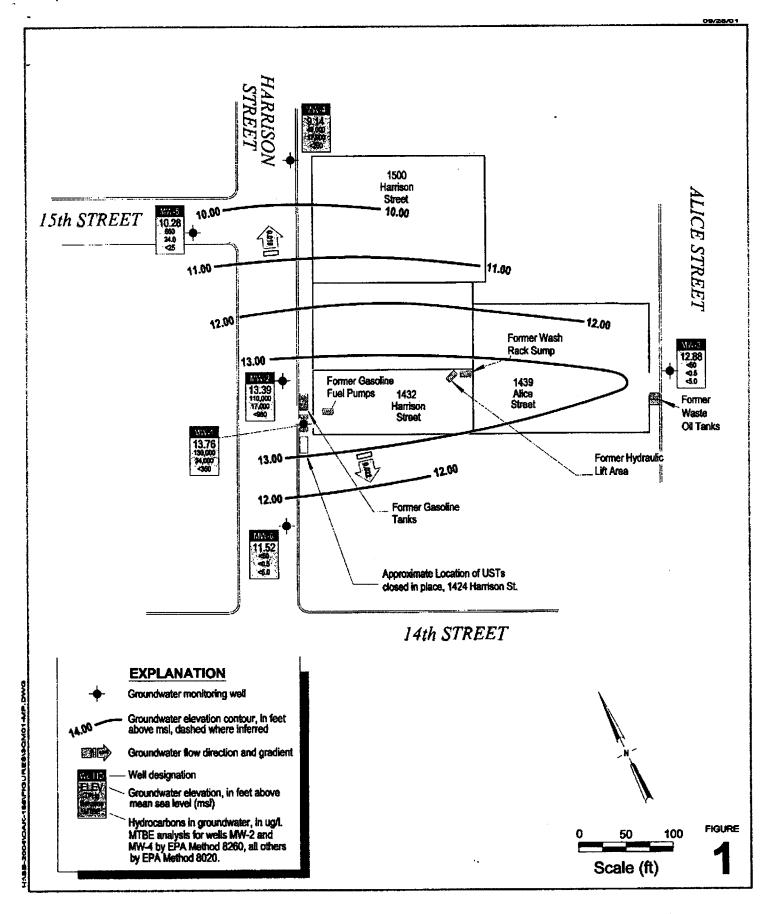




**Groundwater Elevation Contours** 

Oakland, California

June 8, 2001

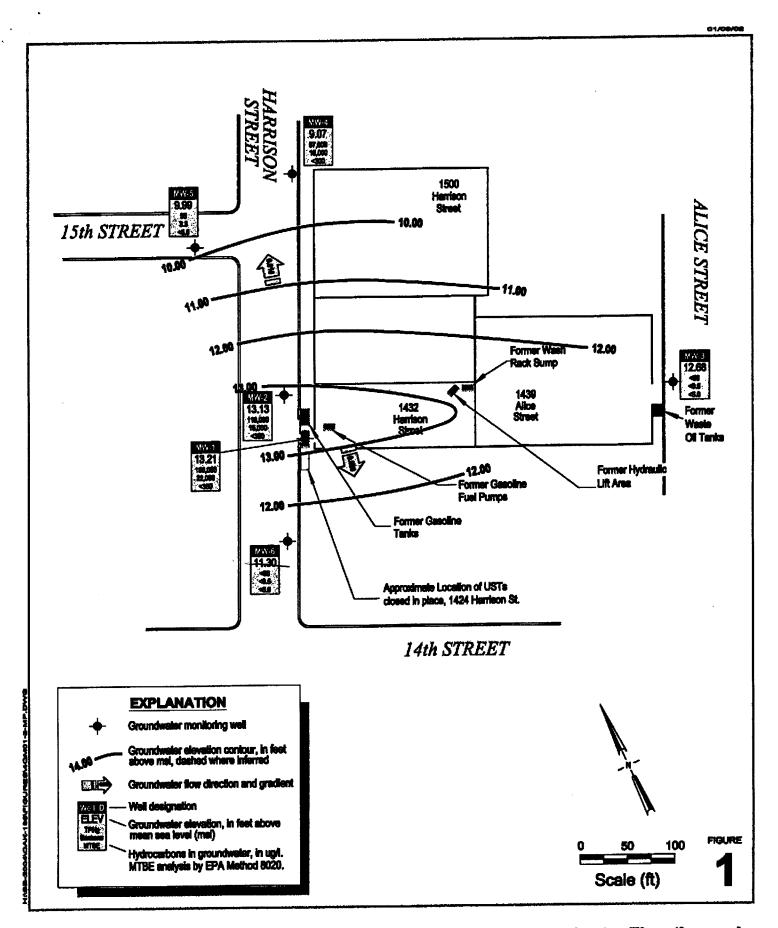




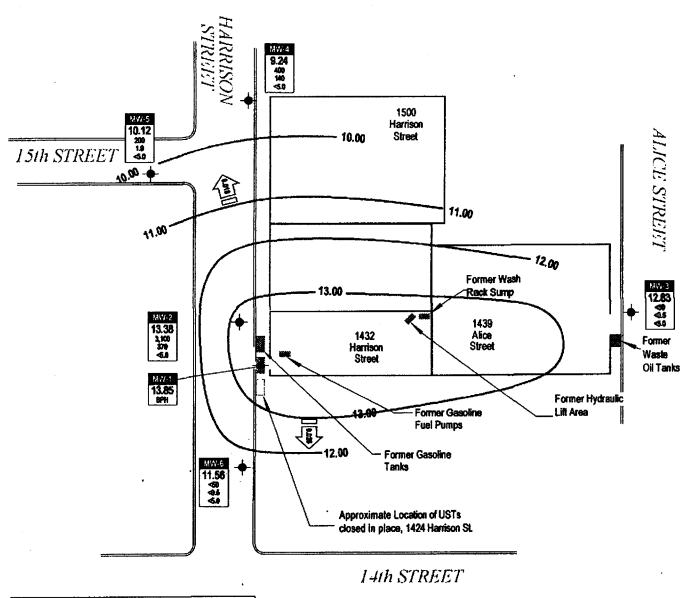
**Groundwater Elevation Contours** 

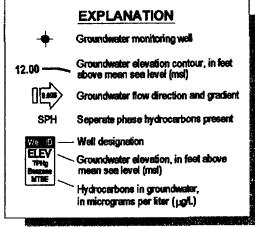
Oakland, California

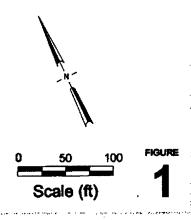
August 27, 2001



CAMBRIA





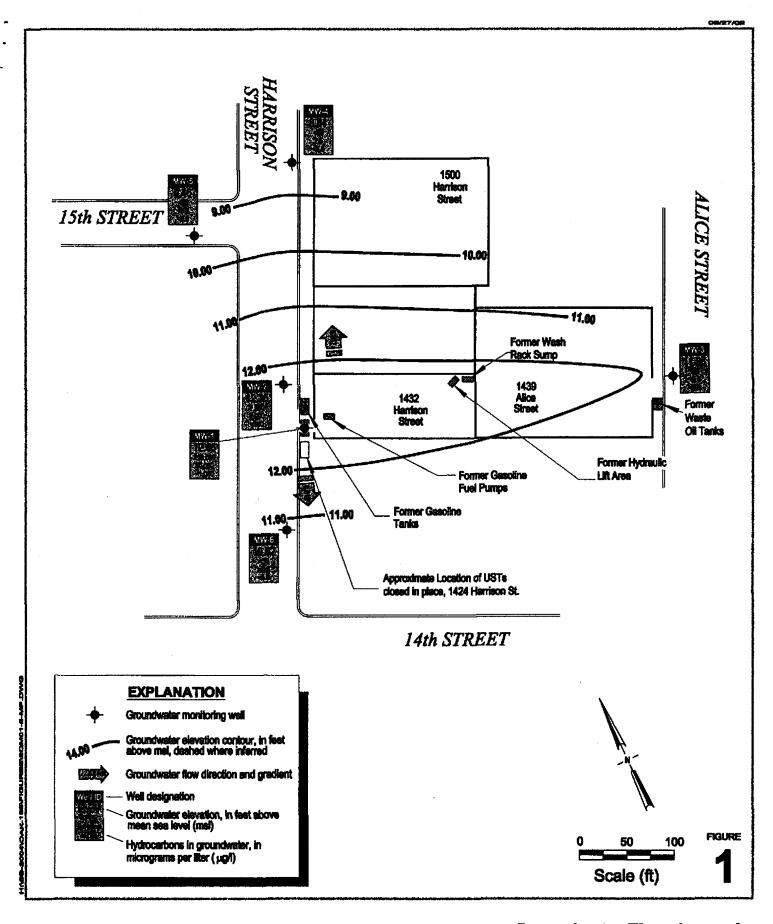


Oakland, California



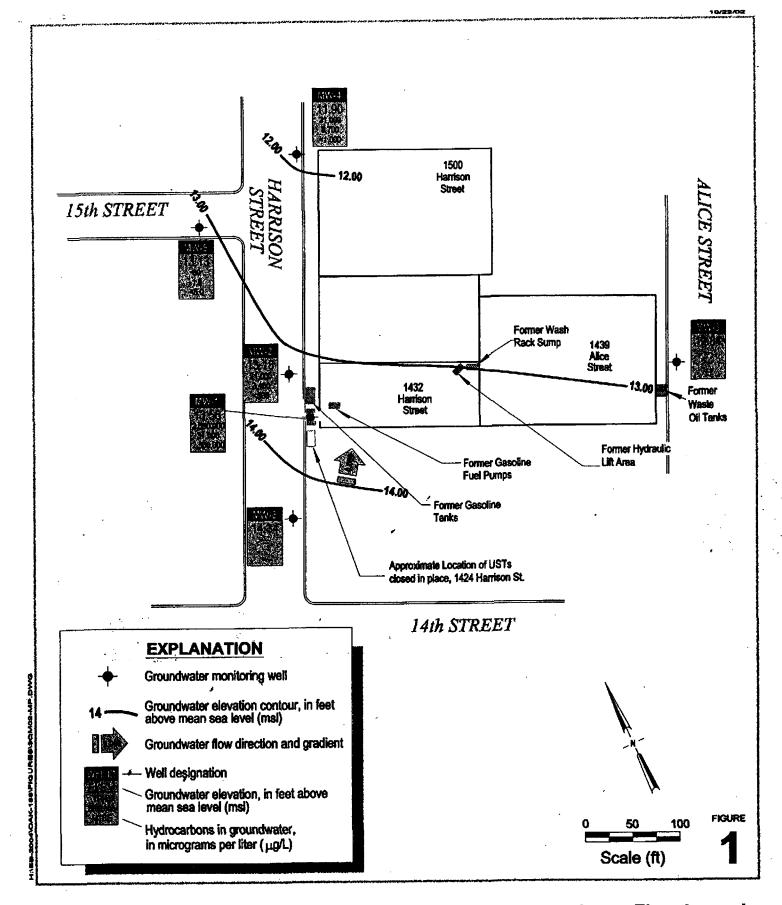
Groundwater Elevation and Analytical Summary

March 1, 2002



CAMBRIA

Groundwater Elevation and Analytical Summary

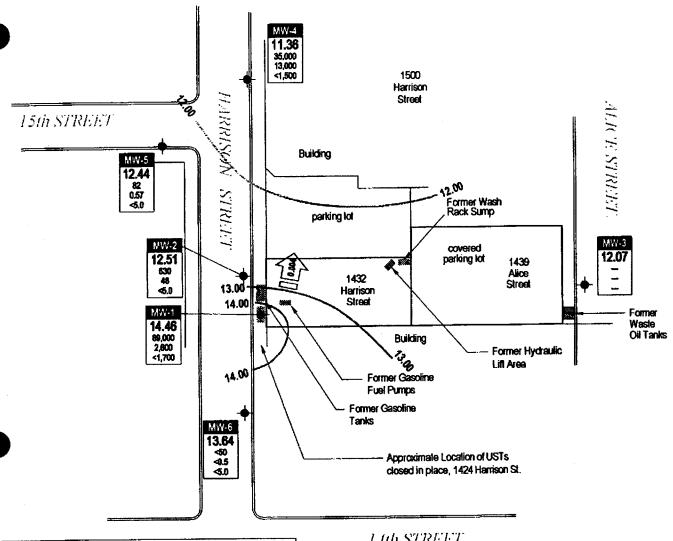


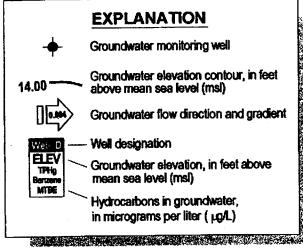
Oakland, California



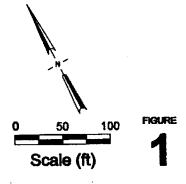
Groundwater Elevation and Analytical Summary

September 3, 2002





14th STREET



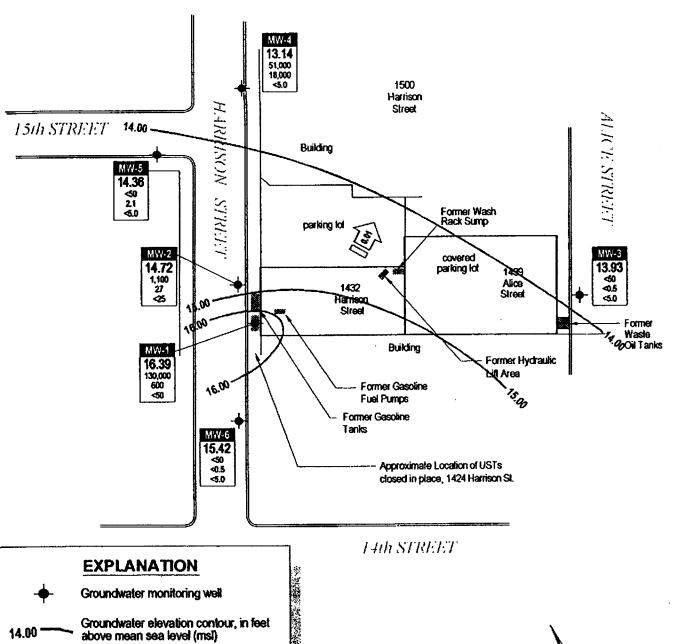
1432 Harrison Street

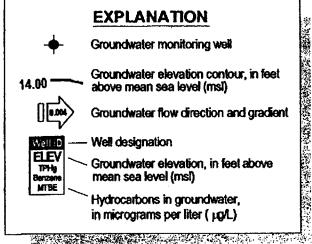
Oakland, California

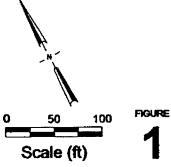


**Groundwater Elevation and Analytical Summary** 

December 22, 2002





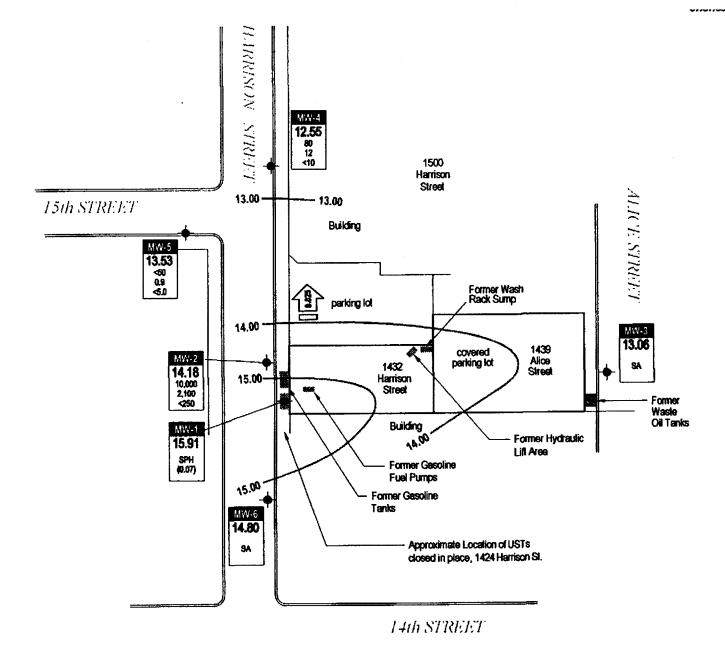


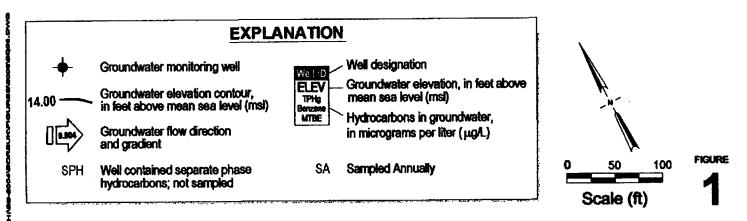
Oakland, California



Groundwater Elevation and Analytical Summary

January 23, 2003



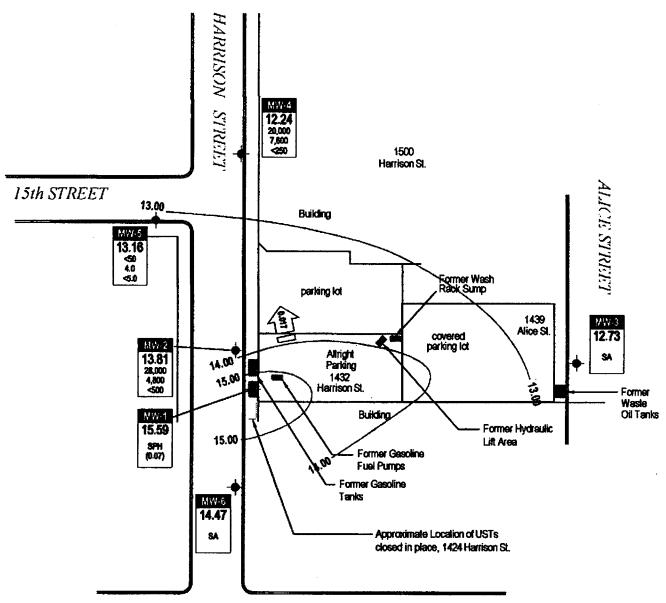


Oakland, California

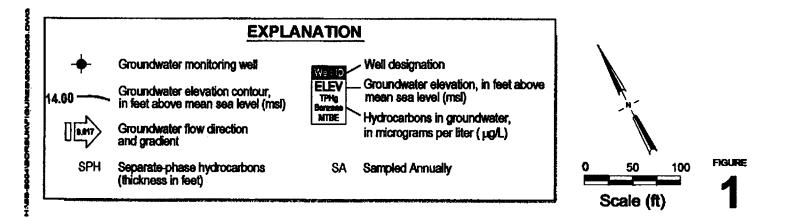


Groundwater Elevation and Analytical Summary

June 12, 2003



14th STREET

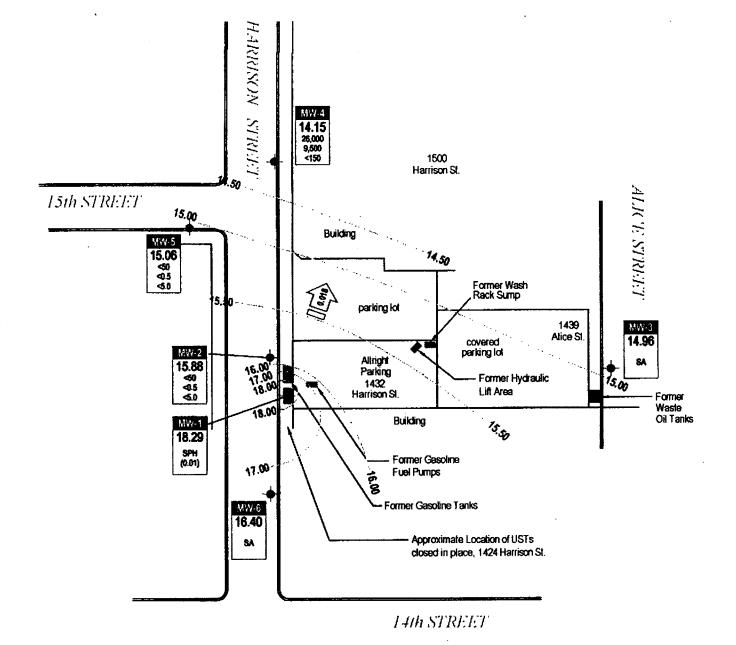


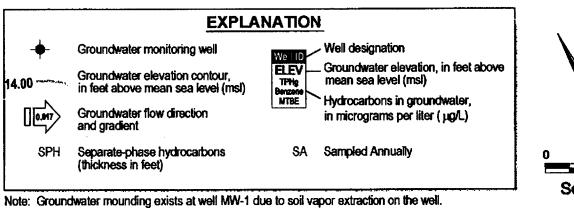
1432 Harrison Street Oakland, California



Groundwater Elevation and Analytical Summary

July 23, 2003





0 50 100 FIGURE
Scale (ft)

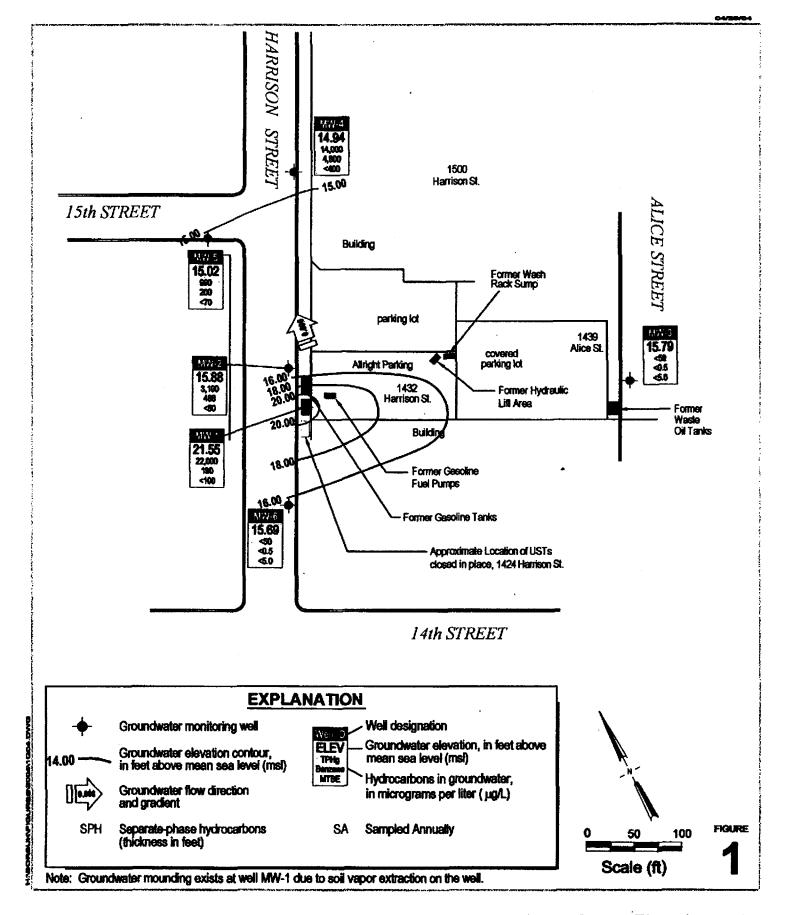
**Allright Parking** 

1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

**December 22, 2003** 



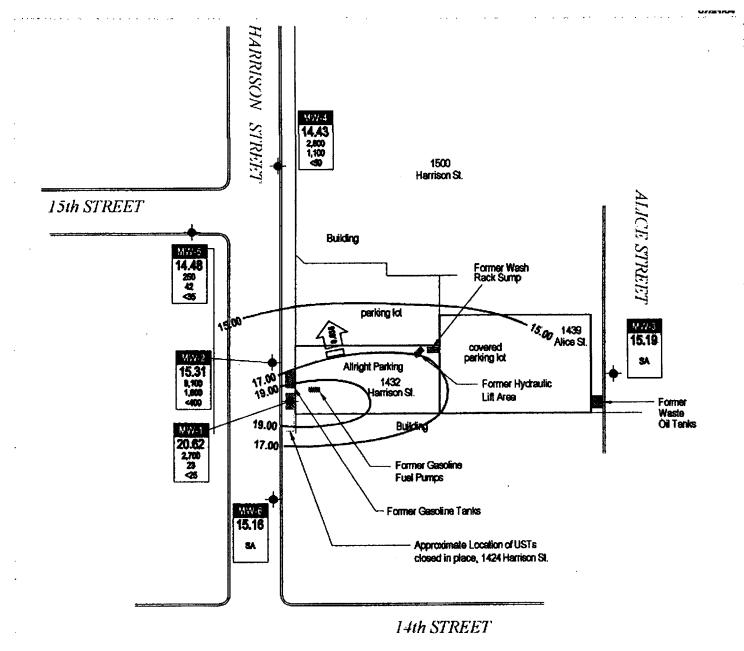


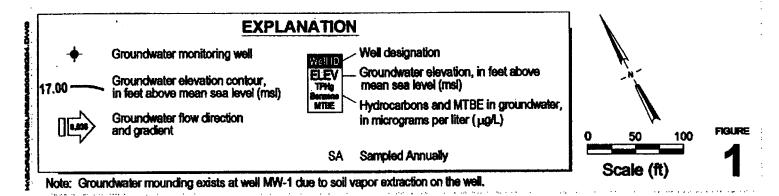
1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

March 10, 2004



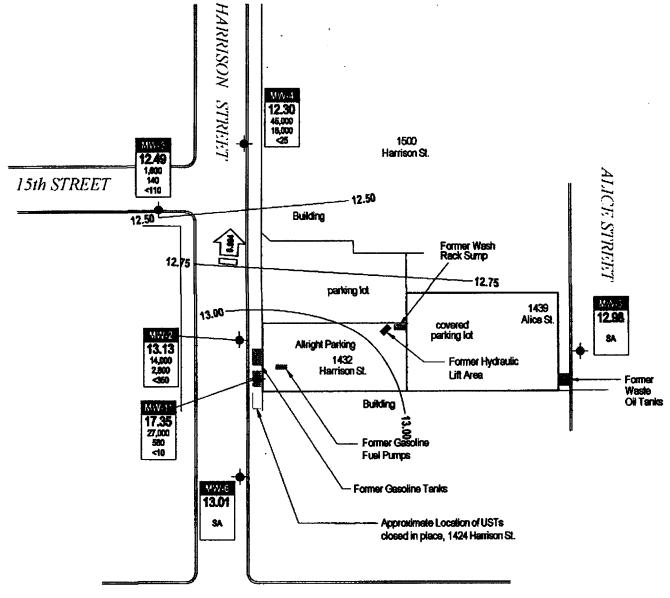


1432 Harrison Street Oakland, California

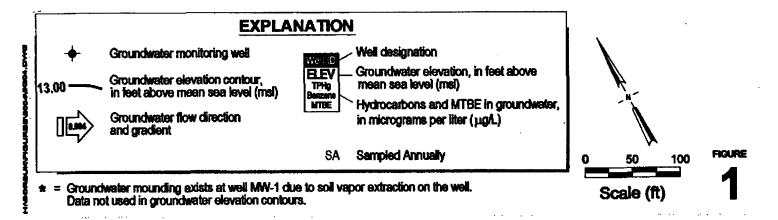


Groundwater Elevation and Hydrocarbon Concentration Map

June 16, 2004





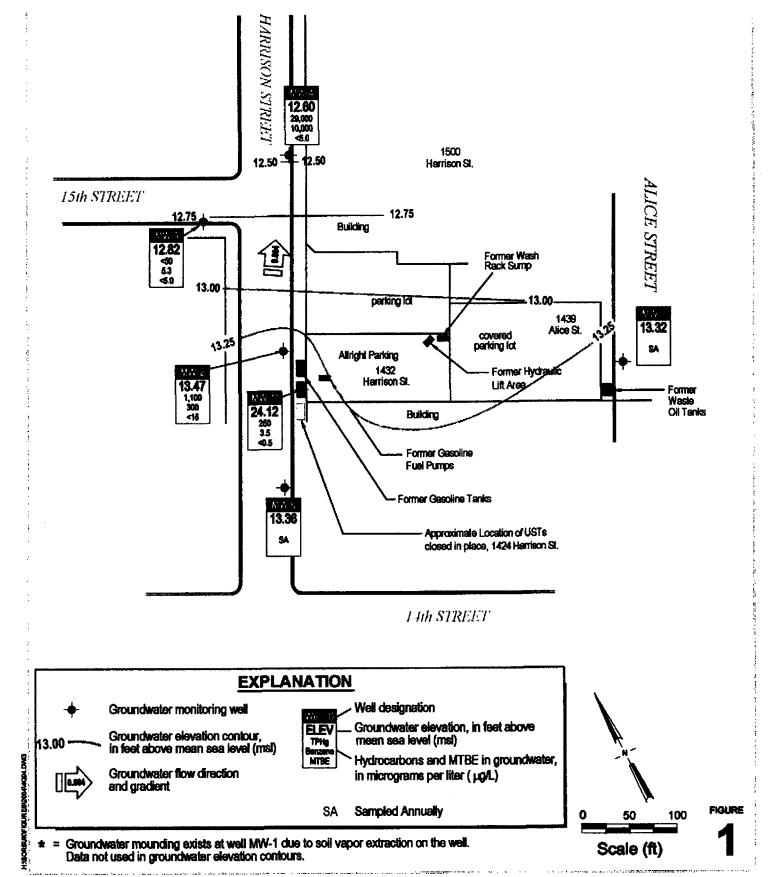


1432 Harrison Street Oaldand, California



**Groundwater Elevation and Hydrocarbon Concentration Map** 

September 27, 2004

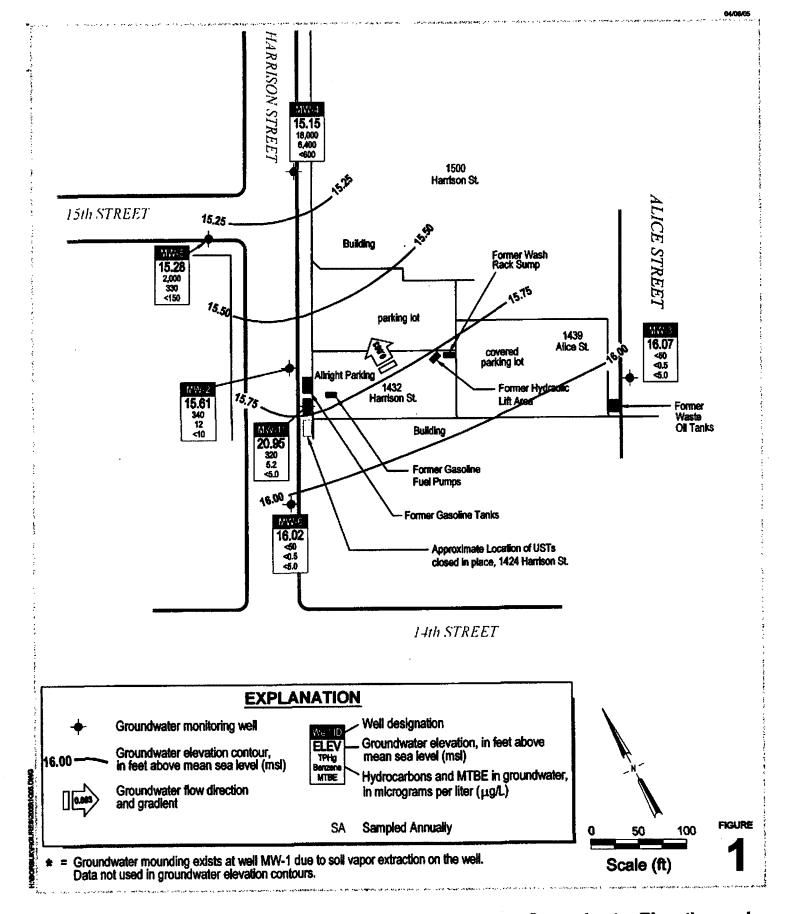


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

December 22, 2004

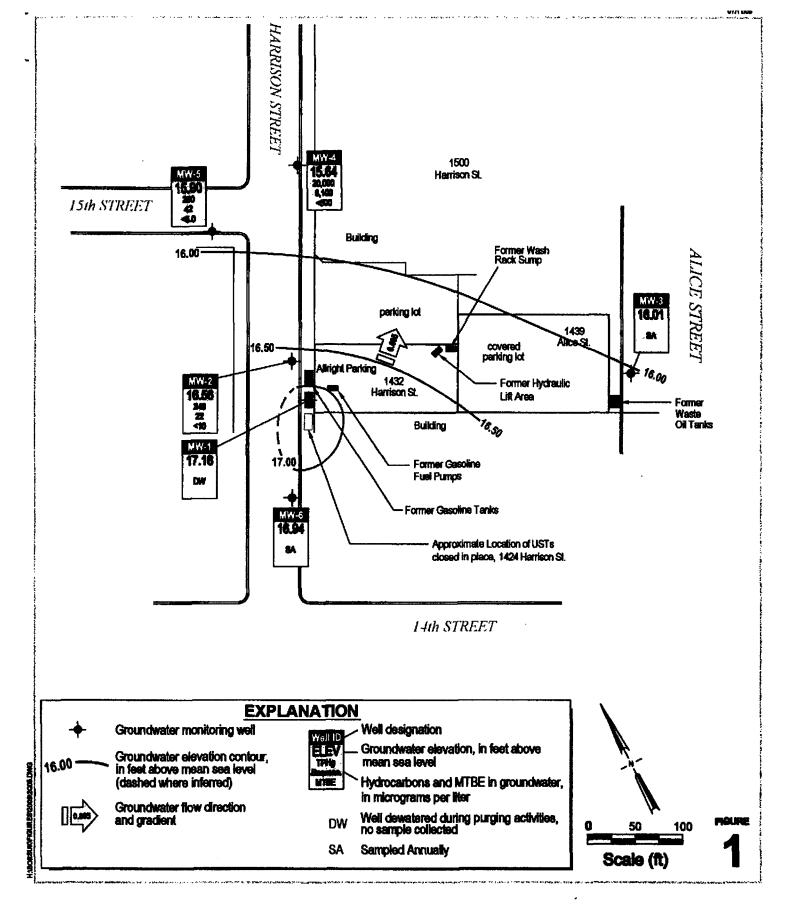


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

March 3, 2005

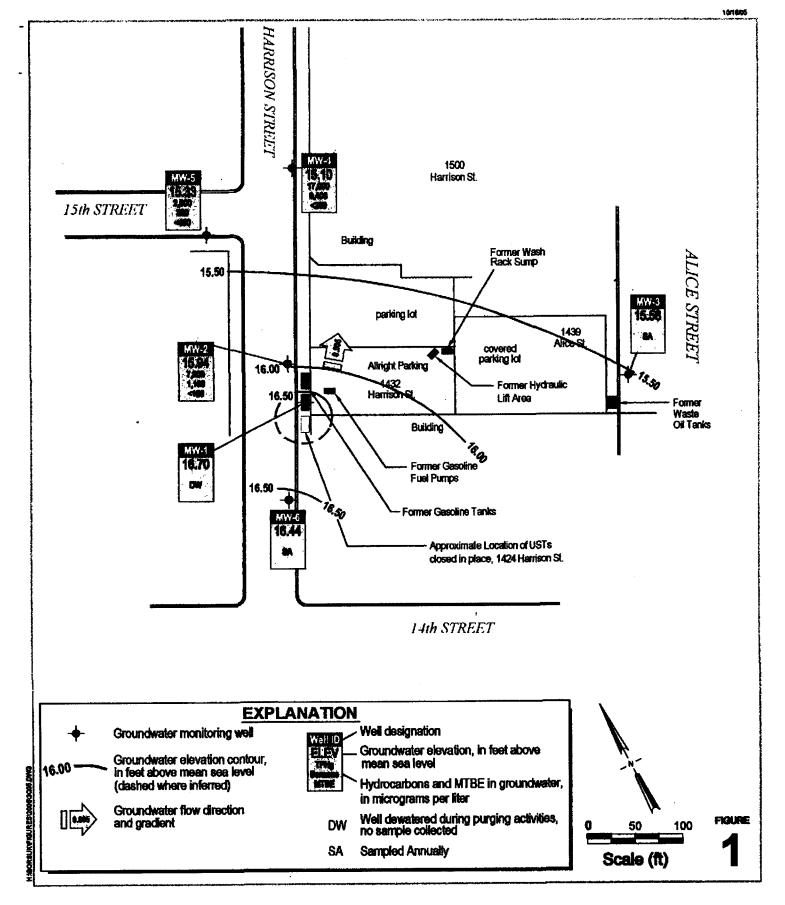


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

June 9, 2005

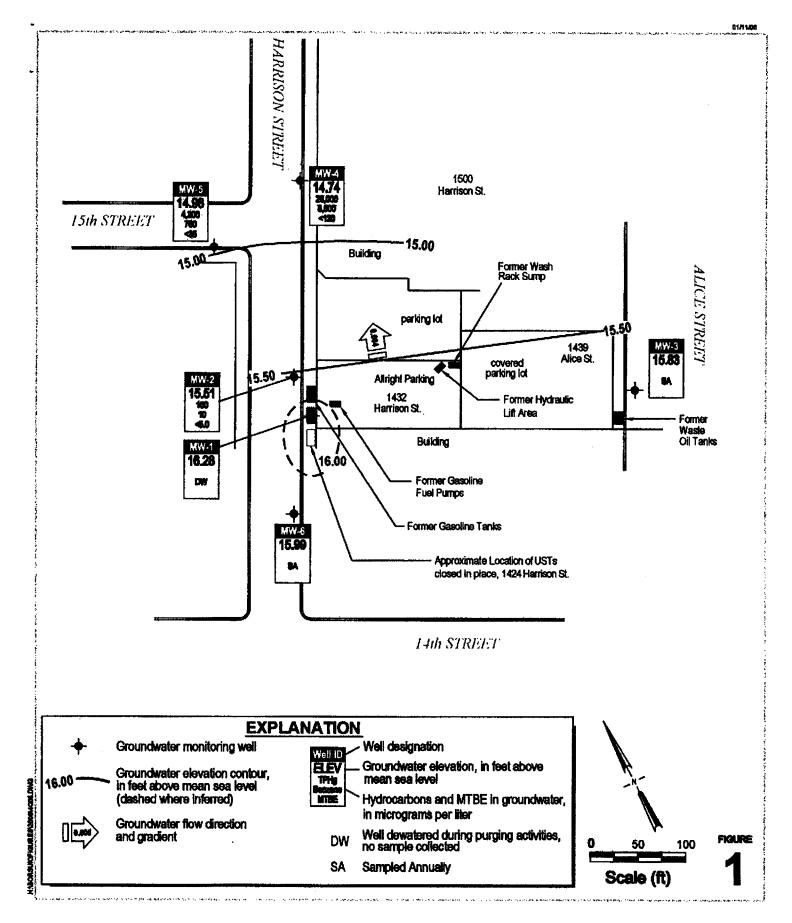


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

September 9, 2005

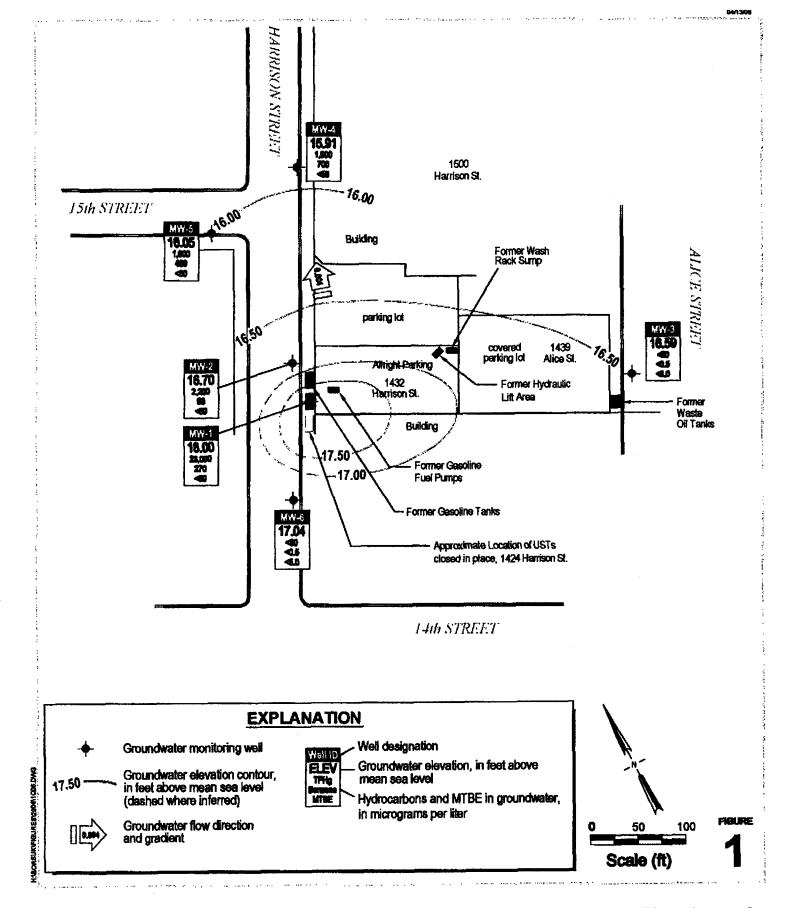


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

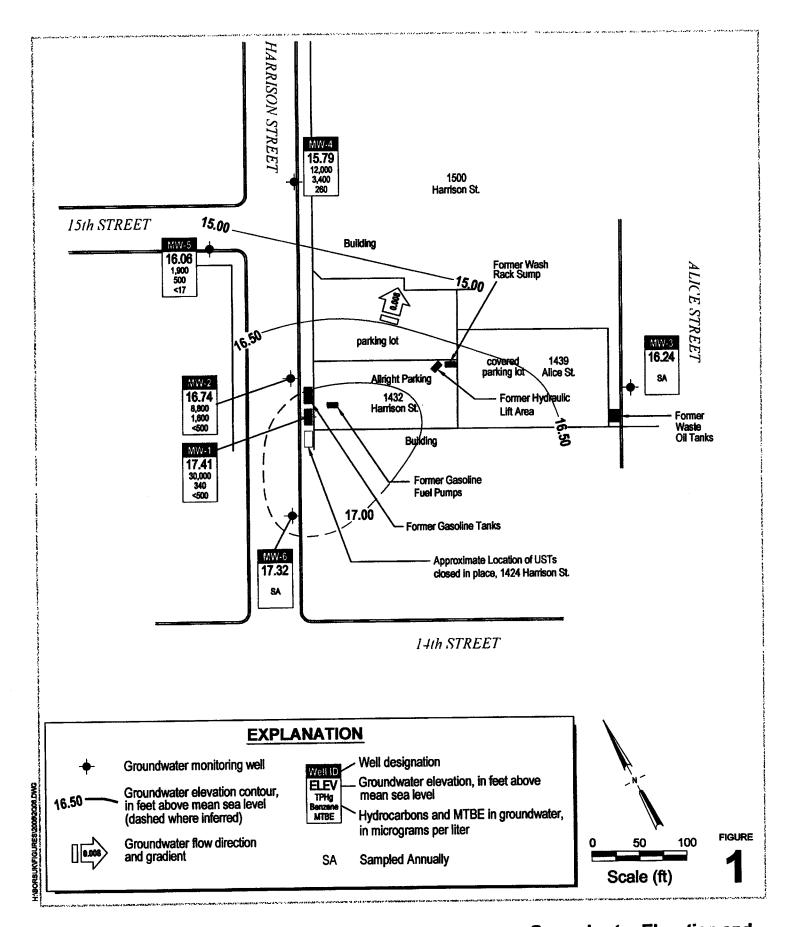
December 20, 2005



1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map March 26, 2006



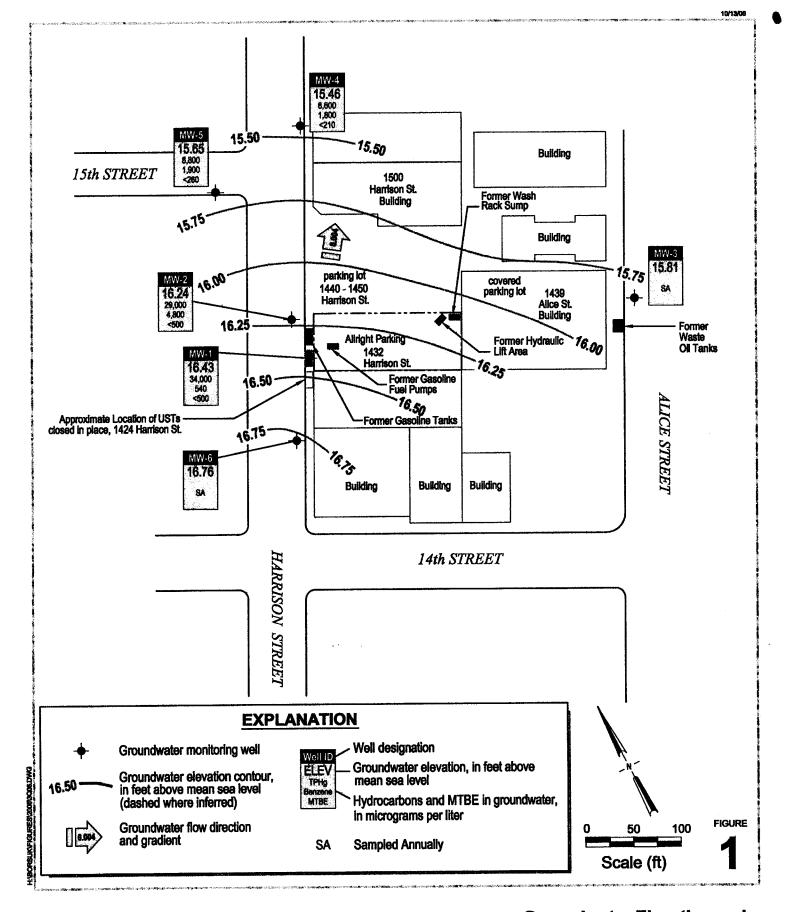


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

June 23, 2006

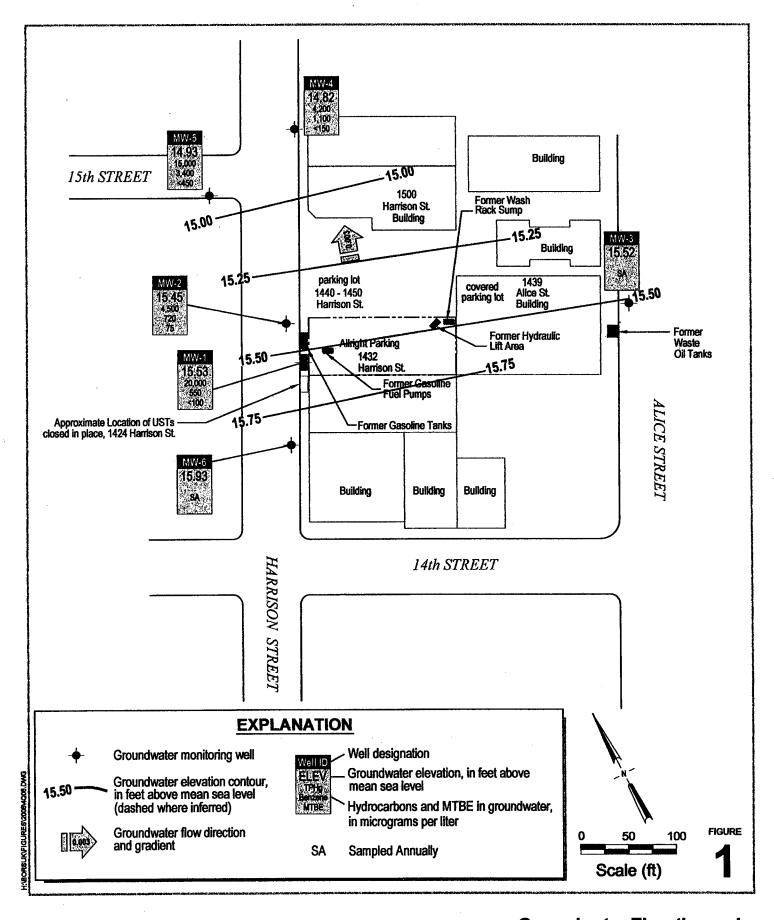


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

September 7, 2006

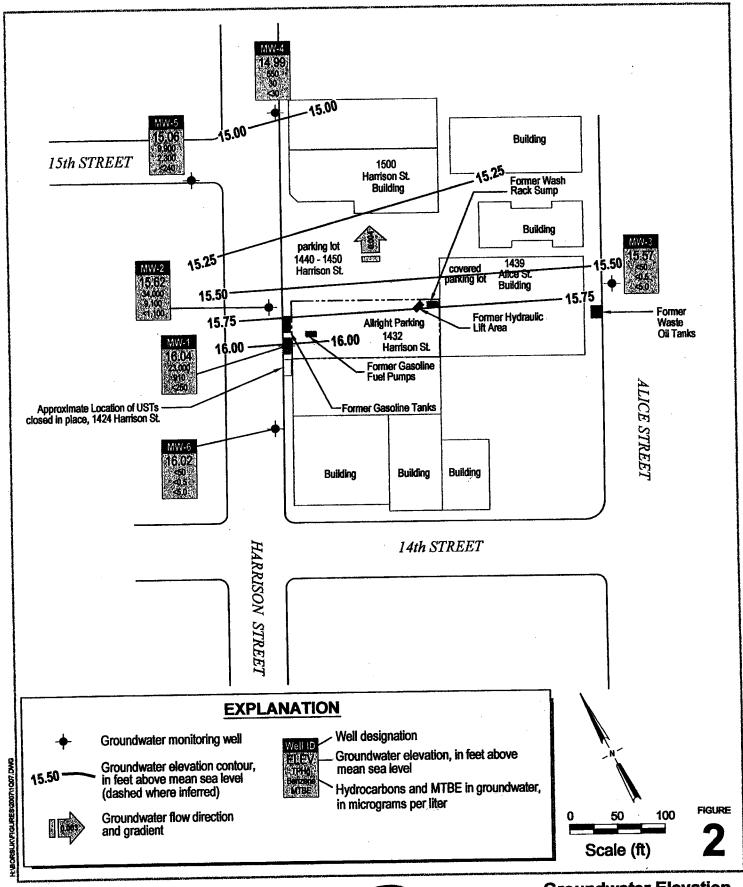


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

December 29, 2006

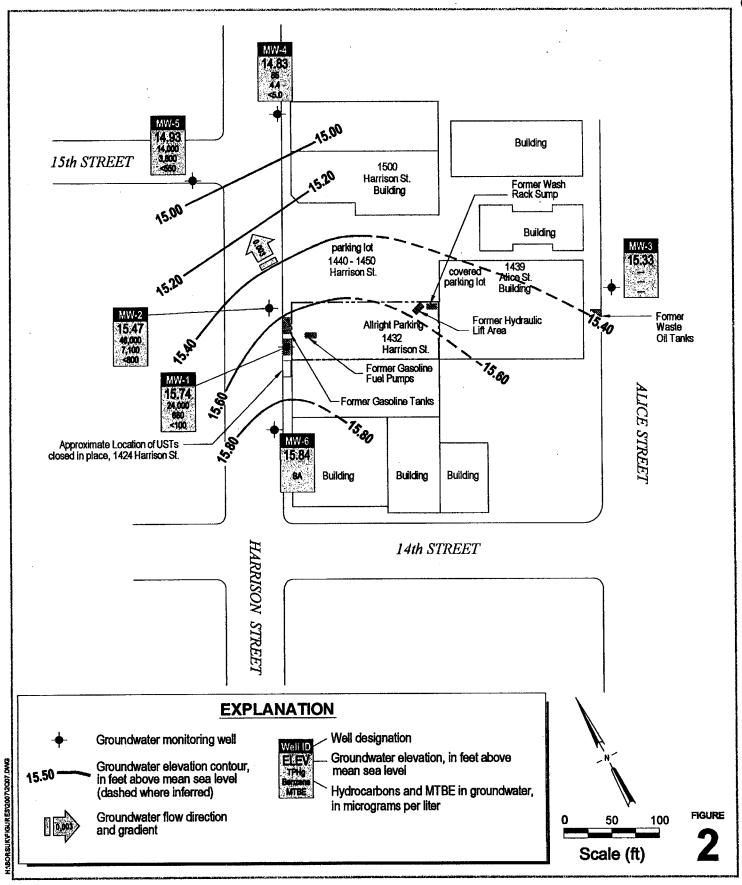


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

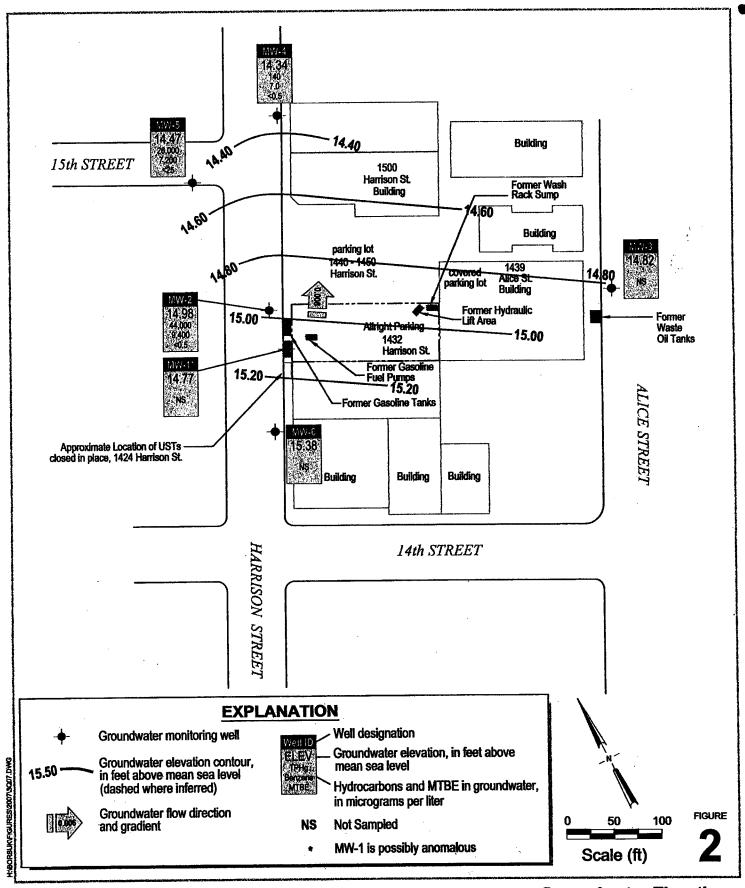
March 21, 2007



1432 Harrison Street Oakland, California



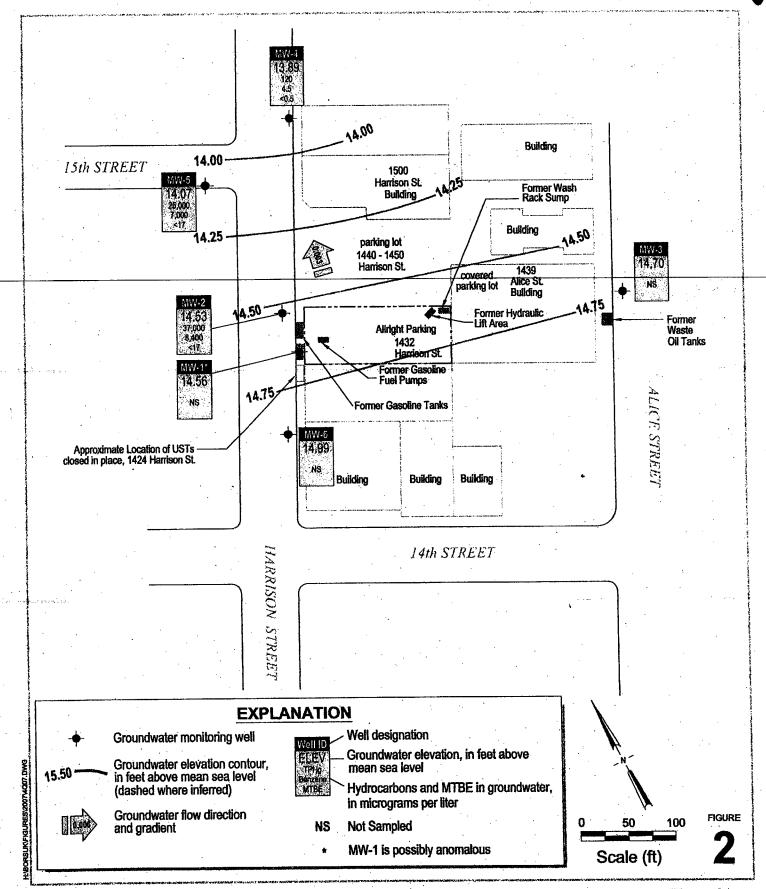
Groundwater Elevation and Hydrocarbon Concentration Map



1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

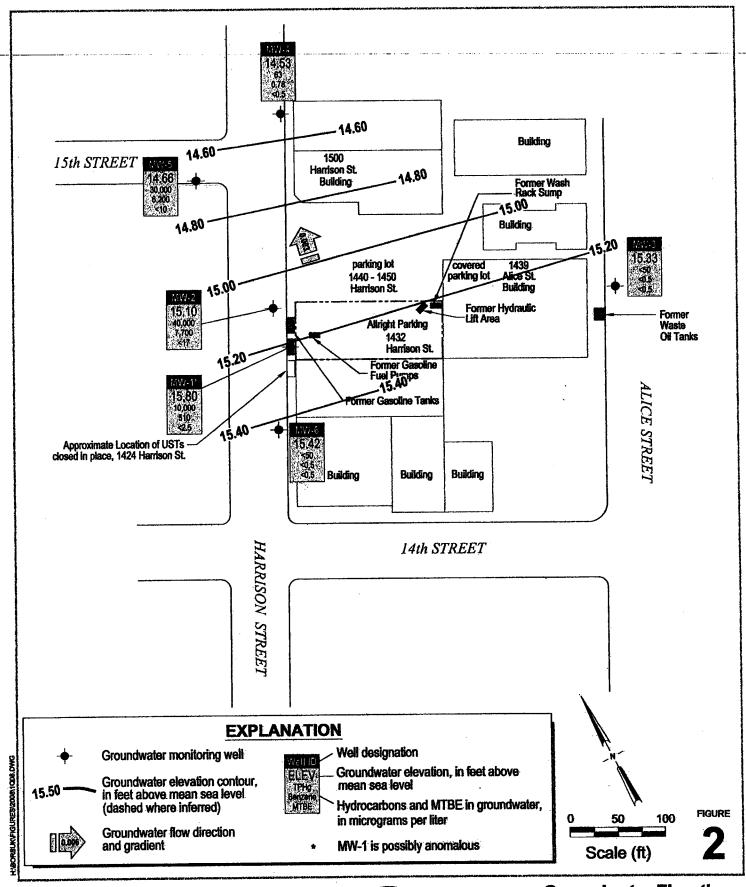


1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map

December 9, 2007



## Allright Parking

1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map



1432 Harrison Street Oakland, California



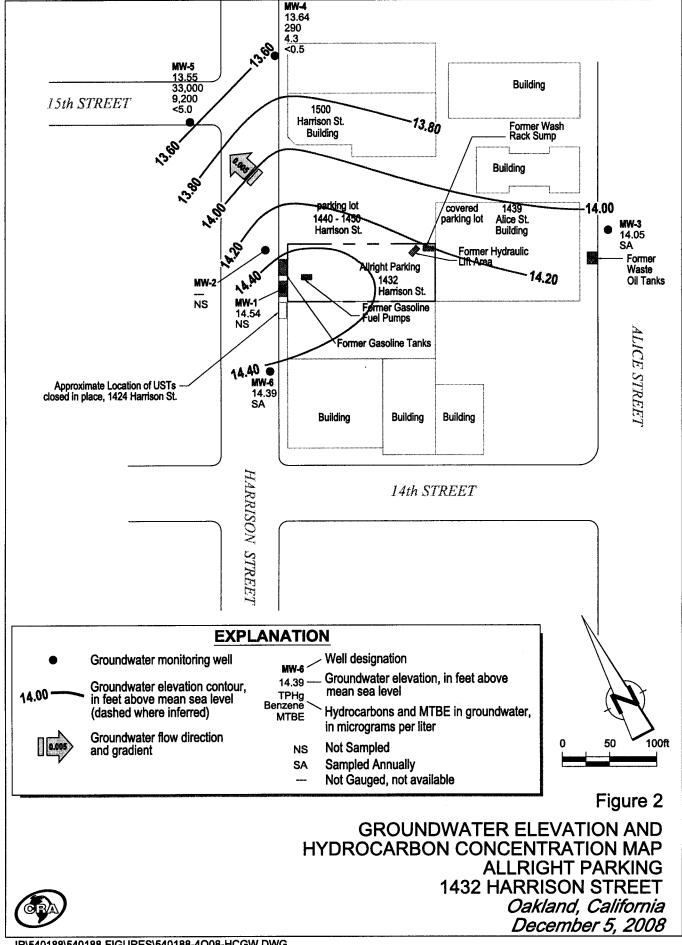
Groundwater Elevation and Hydrocarbon Concentration Map

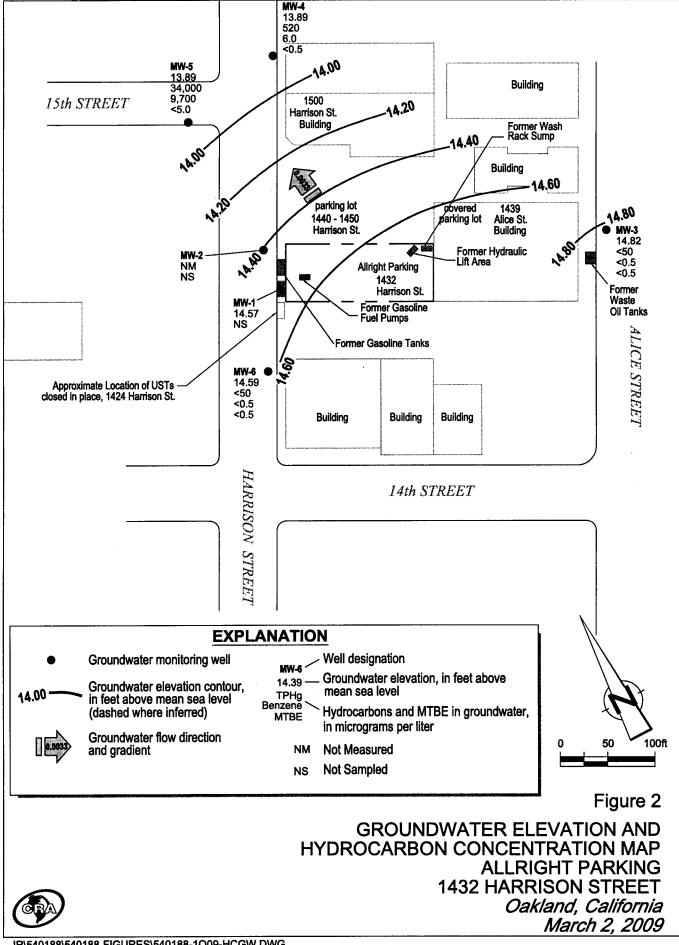


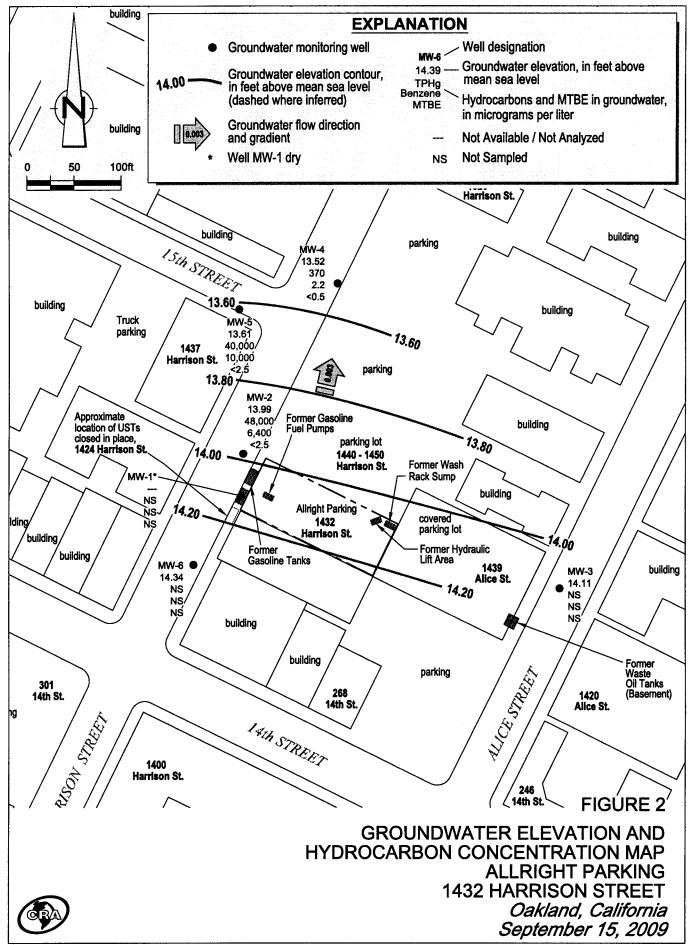
1432 Harrison Street Oakland, California



Groundwater Elevation and Hydrocarbon Concentration Map







### TABLE 2

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft below TOC)	SPH Thickness (feet)	TOC Groundwater Elevation (ft amsl)	TPHg ←	Benzene	Toluene 	Ethylbenzene (μg/L) ———	Xylenes	мтве →	Notes
	7-11 C1- D -	· · · · · · · · · · · · · · · · · · ·	V	<u> </u>							
Monitoring w	Vell Sample Re 8/1/1994	suits:			170,000	35,000	51,000	2,400	13,000		
34.95	12/21/1994	19.53		15.42	180,000	41,000	64,000	3,100	100,000		
34.33	3/13/1995	18.66		16.29	150,000	31,000	45,000	2,500	17,000	_	
	6/27/1995	18.20		16.75	71,000	17,000	18,000	1,600	7,700		
	7/7/1995	18.35		16.60	71,000	17,000	18,000	1,600	7,700		_
	9/28/1995	18.20		16.75	110,000	27,000	34,000	1,700	14,000		_
	12/20/1995	19.96		14.99	120,000	33,000	43,000	2,300	15,000		-
*	3/26/1996	19.27		15.68	140,000	29,000	36,000	1,900	13,000	<200*	d
	6/20/1996	18.64	-	16.31	110,000	30,000	38,000	2,200	13,000	<200*	
	9/26/1996	19.35	-	15.60	170,000	28,000	40,000	2,200	15,000	ND**	
	10/28/1996	19.58		15.37			47.000	2 500	14,000	 >104	-
	12/12/1996	19.68		15.27	110,000	36,000	47,000	2,500	16,000	ND*	-
	3/31/1997	18.80		16.15	160,000	24,000 25,000	39,000 36,000	1,900 2,000	13,000 14,000	ND* ND*	_
	6/27/1997 9/9/1997	19.26 19.70		15.69 15.25	130,000 99,000	22,000	27,000	1,600	13,000	270*	_
	12/18/1997	19.25	_	15.70	160,000	30,000	44,000	2,200	15,000	ND***	
	3/12/1998	17.52		17.43	190,000	20,000	49,000	2,500	18,000	ND***	
	6/22/1998	18.63		16.32	90,000	19,000	40,000	2,100	16,000		_
	9/18/1998	18.60		16.35	190,000	29,000	48,000	2,400	17,000		
	12/23/1998	19.18		15.77	140,000	24,000	44,000	2,000	8,200	***	
	3/29/1999	18.52		16.43	181,000	22,200	40,100	1,844	12,200		
	6/23/1999	18.60		16.35	80,000	20,000	33,000	1,600	11,000		
	9/24/1999	19.05		15.90	117,000	15,100	20,700	1,550	11,800		_
	12/23/1999	19.95	-	15.00	186,000	25,900	39,000	1,990	12,400		
	3/21/2000	18.48	-	16.47	210,000	35,000	42,000	2,200	13,000	<3,000	а
	7/3/2000	18.95		16.00	200,000	33,000	46,000	2,200	15,000	<200*	a
	9/7/2000	19.45	Sheen ""	15.50		42.000		2.700	17.000		
	12/5/2000	19.90	-	15.05 16.75	220,000	42,000 27,000	57,000 39,000	2,700 2,000	17,000 13,000	<200 <1200* /<20***	a
	3/6/2001	18.20		14.81	180,000 170,000	28,000	40,000	1,900	13,000	<200	a,l a
	6/8/2001 8/27/2001	20.14 21.19		13.76	130,000	24,000	33,000	1,600	11,000	<350	a
	10/25/2001	21.74		13.21	160,000	22,000	28,000	1,500	10,000	<350	a
	3/1/2002	21.39	0.41	13.84^			20,000				
	6/10/2002	22.30		12.65	210,000	30,000	51,000	3,100	22,000	<1,000*	a
34.96	9/3/2002	21.40	_	13.56	2,500,000	31,000	170,000	29,000	170,000	2,500,000*	а
	12/22/2002	20.50		14.46	89,000	2,600	9,300	530	28,000	<1,700	a,m
	1/23/2003	18.57	Sheen 🗝	16.39	130,000	600	1,600	<100	41,000	<50***	a,b,l
	6/12/2003	19.10	0.07	15.91^				_			
	7/23/2003	19.42	0.07	15.59					-		
<i>35.37</i> #	12/22/2003	17.09	0.01	18.29^		_					-
	3/10/2004	13.82		21.55	22,000	190	250	<10	5,100	<100	a,c
	6/16/2004	14.75		20.62	2,700	<b>2</b> 3	160	13	520	<25	а
	9/27/2004	18.02	Sheen """	17.35	27,000	580	2,000	56 <0.5	6,800	<10*** <0.5***	a,m
	12/22/2004	11.25	_	24.12 20.95	250 320	3.5 5.2	18 13	3.2	47 46	<5.0	a,m
34.96##	3/3/2005 6/9/2005	14.42 17.80	_	17.16	520	5.2	-	J.Z	40	<b>\</b> 5.0	a +
34.30##	9/9/2005	18.26		16.70							+
	12/20/2005	18.68		16.28							+
	3/26/2006	16.96		18.00	23,000	270	400	65	4,400	<50	a
	6/23/2006	17.55		17.41	30,000	340	680	170	6,900	<500	a,m
	9/7/2006	18.53		16.43	34,000	540	630	190	7,000	<500	a
	12/29/2006	19.43	Sheen ""eiu	15.53	20,000	550	55	130	4,700	<100*/<0.5***	a,m
	3/21/2007	18.92	Sheen "FEIL	16.04	23,000	910	210	140	5,900	<250*	a
	6/7/2007	19.22	Sheen "eiu	15.74	24,000	680	61	190	4,300	<100*	a,b
	9/28/2007	20.19		14.77		_					+
	12/9/2007	20.40	Lav	14.56	10.000		,		1 700	 -0 Fee	+
	3/3/2008	19.16	Sheen Lav	15.80	10,000	510	28	<10	1,700	<2.5***	a,b,m,l
	6/4/2008	20.05	-	14.91							-
	9/9/2008	20.40		14.56			-				
	12/5/2008	20.42		14.54 14.57						<del></del>	
	3/2/2009	20.39		14.57	-	_	_	 -	_		
	9/15/2009	Well Dry		_		-		_	_	-	_
MW-2	8/1/1994	_	-		130,000	28,000	35,000	3,000	12,000		
35.18	12/21/1994	19.91		15.27	200	140,000	200,000	3,500	22,000		
	3/13/1995	19.15		16.03	500	9,200	23,000	7,000	36,000		

#### TABLE 2

Well ID Sample ID	Date	Depth to Groundwater (ft below TOC)	SPH Thickness (feet)	TOC Groundwater Elevation (ft amsl)	ТРНg	Benzene	Toluene	Ethylbenzene (µg/L) ———	Xylenes	мтве	Notes
TOC (ft amsl)		(Ji below TOC)	(Jeel)		<del></del>			V i			
MW-2	6/27/1995	18.74		16.44	120,000	23,000	30,000	2,700	13,000		
(Cont.)	7/7/1995	18.80		16.38	120,000	23,000	30,000	2,700	13,000		
	9/28/1995	19.30		15.88	110,000	23,000	29,000	2,500	11,000		_
	12/20/1995	20.24		14.94	83,000	980	1,800	2,200	10,000		
	3/26/1996	19.69	-	15.49	150,000	23,000	32,000	2,800	12,000	<200*	d
	6/20/1996	19.20		15.98 15.38	94,000 150,000	15,000 20,000	23,000 29,000	2,400 2,800	12,000 12,000	<200* ND**	
	9/26/1996	19.80 20.18	_	15.00	150,000	20,000	29,000	2,600	12,000	ND 	
	10/28/1996 12/12/1996	20.17		15.01	58,000	3,100	11,000	1,700	8,100	220*	
	3/31/1997	19.67		15.51	38,000	6,000	7,900	690	3,300	ND*	
	6/27/1997	19.68	_	15.50	62,000	13,000	16,000	1,300	6,000	ND*	
	9/9/1997	20.20		14.98	81,000	16,000	18,000	1,800	8,600	ND***	
	12/18/1997	19.80	_	15.38	110,000	18,000	26,000	2,200	9,500	ND***	_
	3/12/1998	18.07		17.11	120,000	16,000	26,000	2,200	9,400	ND***	
	6/22/1998	18.29	_	16.89	38,000	9,800	9,500	1,500	6,000	-	-
	9/18/1998	19.09	_	16.09	68,000	12,000	16,000	1,400	5,900	-	
	12/23/1998	19.67	_	15.51	180,000	16,000	22,000	2,200	8,300		
	3/29/1999	18.97		16.21	16,600	1,380	1,920	373	1,840	-	
	6/23/1999	18.25		16.93	41,000	10,000	9,400	1,100	5,000		
	9/24/1999	19.60		15.58	40,600	4,880	3,490 9,320	1,090	4,560 5.360		
	12/23/1999	20.21 18.93		14.97 16.25	61,900 98,000	6,710 14,000	21,000	1,150 1,600	5,360 6,900	<1600	— а
	3/21/2000 7/3/2000	19.38		15.80	140,000	18,000	33,000	2,600	11,000	<200*	a
	9/7/2000	19.83		15.35	110,000	17,000	21,000	2,200	9,700	<100***	a,l
	12/5/2000	20.30		14.88	130,000	19,000	28,000	2,500	11,000	<200	a
	3/6/2001	19.57		15.61	32,000	3,400	3,400	580	2,500	<200	a
	6/8/2001	20.59		14.59	72,000	9,400	9,200	1,300	5,800	<200	a
	8/27/2001	21.79	_	13.39	110,000	17,000	28,000	2,600	11,000	<950	a
	10/25/2001	22.05		13.13	110,000	15,000	18,000	2,000	8,700	<350	а
	3/1/2002	21.80		13.38	3,100	370	180	62	330	<5.0*	а
	6/10/2002	22.83		12.35	7,800	2,000	1,100	76	570	<100*	а
35.21	9/3/2002	22.03		13.18	21,000	2,400	2,900	320	1,400	<500	а
	12/22/2002	22.70		12.51	630	48	56	19	82 150	<5.0	a
	1/23/2003	20.49		14.72	1,100 10,000	27 2,100	32 1,600	19 150	150 660	<25 <250	a
	6/12/2003	21.03 21.40		14.18 13.81	28,000	4,800	4,800	380	1,700	<500	a a
	7/23/2003 12/22/2003	19.33	 	15.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/10/2004	19.33		15.88	3,100	460	290	38	240	<50	a
	6/16/2004	19.90		15.31	9,100	1,600	1,200	220	830	<400	a
	9/27/2004	22.08		13.13	14,000	2,800	490	340	1,600	<350	а
	12/22/2004	21.74	_	13.47	1,100	300	28	22	71	<15	a
	3/3/2005	19.60		15.61	340	12	4.4	9.1	28	<10	а
	6/9/2005	18.65		16.56	240	22	2.7	6.4	27	<10	а
	9/9/2005	19.27	-	15.94	7,800	1,100	170	380	690	<160	a
	12/20/2005	19.70	-	15.51	150	10	1.9	2.8	10	<5.0	а
	3/26/2006	18.51		16.70	2,200	93	19	66	130	<50	а
	6/23/2006	18.47		16.74	8,800	1,600	110	500	480	<500 <500	a,m
	9/7/2006	18.97		16.24	29,000	4,800 720	280 54	940 250	1,000 480	<500 75**/<0.5***	a
	12/29/2006 3/21/2007	19.76 19.59		15.45 15.62	4,500 34,000	9,100	500	890	2,500	<1,100*	a a
	6/7/2007	19.74	Sheen 💯	15.47	46,000	7,100	410	870	2,400	<800*	a,b
	9/28/2007	20.23		14.98	44,000	9,400	630	1,400	3,600	<0.5***	a
	12/9/2007	20.68		14.53	37,000	8,400	550	1,400	4,500	<17***	a,l
	3/3/2008	20.11		15.10	40,000	7,700	490	1,400	4,400	<17***	a,l
	6/4/2008	20.40		14.81	56,000	7,400	600	1,500	4,100	<25***	a,j
	9/9/2008	20.85	·	14.36	65,000	7,800	510	1,700	4,700	<25***	a,Í
	12/5/2008	<del></del>				naccessible	<del></del>				
	3/2/2009 <b>9/15/2009</b>	<del>▼</del> 21.22	_	13.99	Well I 48,000	naccessible 6,400	600	1,900	2,800	<2.5***	a,l
			-		,	·					/-
MW-3	8/1/1994			 15 15	<50	<0.5	<0.5	<0.5	<2.0		
33.97	12/21/1994	18.82		15.15	<50 <50	<0.5	<0.5	<0.5	<0.5	-	
	3/13/1995	17.86		16.11 15.72	<50	<0.5	<0.5	<0.5	<0.5		e fa
	7/7/1995 9/28/1995	18.25 18.00		15.72							f,g h
	12/20/1995	18.74		15.23							
	3/26/1996	18.25		15.72				_			
	-,, ->>0										

#### TABLE 2

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft below TOC)	SPH Thickness (feet)	TOC Groundwater Elevation (ft amsl)	TPHg ←	Benzene	Toluene ——	Ethylbenzene (µg/L) ———	Xylenes	MTBE >	Notes
104/2	6 /20 /1006	10.25		15.62							
MW-3 (Cont.)	6/20/1996 9/26/1996	18.35 19.12	-	14.85		_	_			_	
(Cont.)	10/28/1996	19.12	_	14.86	_			<del></del>	_		
	12/12/1996	18.61	_	15.36		_				***	
	3/31/1997	18.35	_	15.62							
	6/27/1997	18.81		15.16			_	_		-	
	9/9/1997	19.18		14.79				_			
	12/18/1997	18.64		15.33				_			
	3/12/1998	17.56		16.41							
	6/22/1998	18.64		15.33	_						
	9/18/1998	18.33		15.64							_
	12/23/1998	18.60		15.37				_			
	3/29/1999	17.85	-	16.12			_			-	
	6/23/1999	18.67		15.30				-			
	9/24/1999	18.64		15.33	_		_				
	12/23/1999	19.32		14.65							
	3/21/2000	17.89	_	16.08			_			_	
	7/3/2000	18.40	_	15.57	-				-	_	
	9/7/2000	18.75		15.22		-					
34.01	12/5/2000	19.03		14.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	3/6/2001	18.12		15.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	6/8/2001	20.02		13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	8/27/2001	21.09		12.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/25/2001	21.29		12.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0 <5.0*	
	3/1/2002	21.14	-	12.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	6/10/2002	21.99	-	11.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	9/3/2002	21.17	-	12.84				_	_		
	12/22/2002	21.94		12.07	<50	<0.5	<0.5	<0.5	- <0.5	<5.0	
	1/23/2003	20.08	-	13.93 13.06			~0.5	~0.5 —	~0.5	~5.0 <del>-</del> -	
	6/12/2003	20.95 21.28		12.73	_	_			_	_	
	7/23/2003 12/22/2003	19.05		14.96							
	3/10/2004	18.22		15.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/16/2004	18.82		15.19	_		-	_		_	_
	9/27/2004	21.03		12.98			_	_		_	
	12/22/2004	20.69		13.32	_						
	3/3/2005	17.94		16.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/9/2005	18.00		16.01				_			
	9/9/2005	18.43		15.58	_						***
	12/20/2005	18.18		15.83	-						
	3/26/2006	17.42		16.59	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/23/2006	17.77		16.24	_						
	9/7/2006	18.20		15.81				-			
	12/29/2006	18.49		15.52							_
	3/21/2007	18.44		15.57	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	6/7/2007	18.68	_	15.33				_		-	
	9/28/2007	19.19	-	14.82	_		-				
	12/9/2007	19.31		14.70 15.33	- <50	<0.5	<0.5	<0.5	<0.5	<0.5***	
	3/3/2008	18.68 19.11		14.90	-50			~0.5 		<b>~0.5</b>	_
	6/4/2008 9/9/2008	19.65		14.36	-				_		
	12/5/2008	19.96	_	14.05	-						
	3/2/2009	19.19	-	14.82	<50	<0.5	<0.5	<0.5	<0.5	<0.5***	
	9/15/2009	19.90	_	14.11	_	_	_	-	_	-	_
	7/15/2005	15.50									
MW-4	10/28/1996	19.32	· <u> </u>	14.43	10,000	3,900	420	400	360	<200*	n
33.75	12/12/1996	19.42		14.33	11,000	4,200	410	420	260	32*	
	3/31/1997	18.67		15.08	ND	ND	ND '	ND	ND	ND*	
	6/27/1997	19.08		14.67	160	49	1.2	ND	5.9	ND*	_
	9/9/1997	19.33		14.42	7,400	5,000	410	230	470	33*	
	12/18/1997	19.17	-	14.58	710	170	8.0	ND	39	ND***	
	3/12/1998	17.68		16.07	1,300	410 ND	21	ND ND	57 ND	ND***	~
	6/22/1998	17.63		16.12	ND	ND	ND	ND ND	ND	-	_
	9/18/1998	18.58	-	15.17	ND 1.000	42	1.6	ND 50	4.8	-	
	12/23/1998	19.01	-	14.74 15.40	1,900 ND	1,000 ND	76 ND	ND	120 ND	_	
	3/29/1999 6/23/1999	18.35 17.58		16.17	ND ND	ND ND	ND	ND ND	ND	_	_
	0/ 43/ 1777	17.30		10.17	140	1410	MD	ND	140		

#### TABLE 2

Well ID		Depth to	SPH	TOC Groundwater							
Sample ID TOC (ft amsl)	Date	Groundwater (ft below TOC)	Thickness (feet)	Elevation (ft amsl)	TPHg <b>←</b>	Benzene	Toluene	Ethylbenzene (µg/L) ———	Xylenes	MTBE →	Notes
MW-4	9/24/1999	19.05		14.70	9,150	3,270	131	34	537		_
(Cont.)	12/23/1999	19.41		14.34	12,200	5,360	275	424	592		
(Cont.)	3/21/2000	18.42		15.33	45,000	16,000	1,100	1,400	1,900	1400* /<35***	a,l
	7/3/2000	18.82		14.93	33,000	10,000	720	840	1,800	<200*	a
	9/7/2000	19.21	_	14.54	26,000	8,800	800	740	1,500	<50***	a,c,l
	12/5/2000	19.60		14.15	41,000	11,000	840	930	1,900	<200	а
	3/6/2001	18.24		15.51	1,100	400	5. <b>7</b>	<0.5	20	<5.0	a
	6/8/2001	20.91		12.84	92	19	<0.5	<0.5	1	<5.0	a
	8/27/2001	21.63		12.12	49,000	17,000	1700	1,700	3,200	<260	а
	10/25/2001	21.70		12.05	57,000	16,000	1,500	1,600	2,600	<300	а
	3/1/2002	21.53		12.22	400	140	2.3	<0.5	12	<5.0*	a
	6/10/2002	22.23		11.52	<50	2.5	< 0.5	<0.5	<0.5	<5.0*	
	9/3/2002	21.85		11.90 11.36	31,000 35,000	9,700 13,000	300 310	650 1,100	1,100 1,800	<1,000 <1,500	a
	12/22/2002 1/23/2003	22.39 20.61	 	13.14	51,000	18,000	430	1,500	2,200	<5.0***	a a,l
	6/12/2003	21.20		12.55	80	12	<0.5	<0.5	1.0	<10	a,ı
	7/23/2003	21.51		12.24	20,000	7,600	100	65	660	<250	a
	12/22/2003	19.60		14.15	26,000	9,500	200	380	1,100	<150	a
	3/10/2004	18.81	_	14.94	14,000	4,800	150	320	530	<400	a
	6/16/2004	19.32	_	14.43	2,800	1,100	24	17	100	<50	a
	9/27/2004	21.45	_	12.30	45,000	16,000	260	1,700	2,000	<25***	a
	12/22/2004	21.15		12.60	29,000	10,000	160	890	1,200	<5.0***	a,j
	3/3/2005	18.60		15.15	18,000	6,400	98	500	610	<600	а
	6/9/2005	18.11		15.64	20,000	6,100	110	460	580	<500	a
	9/9/2005	18.65		15.10	17,000	6,400	100	470	730	<250	a
	12/20/2005	19.01		14.74	26,000	8,500	160	640	800	<120	a
	3/26/2006	17.84		15.91	1,900	700	22	49 370	85 510	<50	a
	6/23/2006	17.96		15.79 15.46	12,000 8,600	3,400 1,800	130 100	170	510 220	260 <210	a o i
	9/7/2006 12/29/2006	18.29 18.93	_	14.82	4,200	1,100	120	150	280	<150*/<0.5***	a,i a
	3/21/2007	18.76	 	14.99	550	30	2.0	4.5	5.1	<30*	a
	6/7/2007	18.92		14.83	85	4.4	<0.5	0.77	0.82	<5.0*	a
	9/28/2007	19.41	_	14.34	140	7.0	<0.5	1.2	<0.5	<0.5***	a
	12/9/2007	19.86		13.89	120	4.5	< 0.5	0.62	< 0.5	<0.5	a
	3/3/2008	19.22		14.53	63	0.78	<0.5	<0.5	<0.5	<0.5***	i
	6/4/2008	19.58		14.17	86	2.2	<0.5	<0.5	0.58	<0.5***	a
	9/9/2008	20.01		13.74	460	9.4	0.95	3.1	19	<0.5***	а
	12/5/2008	20.29		13.46	290	4.3	1.4	3.0	14	<0.5***	a
	3/2/2009	19.86		13.89	520	6.0	2.2	6.5	9.2	<0.5***	a
	9/15/2009	20.23		13.52	370	2.2	1.1	2.8	3.3	<0.5***	а
MW-5	10/28/1996	19.88	-	14.75	90	4.0	0.6	<0.50	<0.50	16*	
34.63	12/12/1996	20.09	_	14.54	230	5.6	0.9	ND	0.9	3.6*	n
	3/31/1997	19.24	<del>-</del> .	15.39 15.47	90 ND	3.1 ND	ND ND	ND ND	ND ND	ND* ND*	
	6/27/1997 9/9/1997	19.16 19.93		14.70	ND	ND	ND	ND ND	ND	ND*	
	12/18/1997	19.77		14.86	ND	ND	ND	ND	ND	ND***	
	3/12/1998	19.77		14.86	79	2.3	ND	0.8	ND	ND*	
	6/22/1998	18.08	_	16.55	ND	ND	ND	ND	ND		
	9/18/1998	19.12		15.51	ND	ND	ND	ND	ND		
	12/23/1998	19.60		15.03	ND	0.8	0.9	ND	ND		
	3/29/1999	18.88		15.75	ND	ND	ND	ND	ND		
	6/23/1999	18.05	_	16.58	ND	ND	ND	ND	ND		
	9/24/1999	19.61	_	15.02	ND	ND	ND	ND	ND		
	12/23/1999	20.01		14.62	ND	ND	ND	ND	ND		
	3/21/2000	19.05	-	15.58	140	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/3/2000	19.40	_	15.23	85 450	8.1	3.1	1.6	7.8	<5.0*	k
	9/7/2000	19.62		15.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	a
	12/5/2000	20.25		14.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/6/2001	19.07		15.56 13.86	91 290	5.5 <b>22</b> .0	<0.5	<0.5	<0.5	<5.0	_
	6/8/2001 8/27/2001	20.77 21.33		13.86 13.30	290 660	22.0 24.0	0.8 2.2	<0.5 1.3	<0.5 4.0	<5.0 <25	
	10/25/2001	21.62		13.01	55	3.5	<0.5	<0.5	<0.5	<5.0	a a
	3/1/2002	21.49		13.14	200	1.9	0.69	<0.5	<0.5	<5.0*	a
	6/10/2002	22.15		12.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	a
	9/3/2002	21.50		13.13	60	1.9	<0.5	<0.5	0.77	<5.0	-
	12/22/2002	22.19	-	12.44	82	0.57	<0.5	0.68	<0.5	<5.0	a

### TABLE 2

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft below TOC)	SPH Thickness (feet)	TOC Groundwater Elevation (ft amsl)	ТРНg	Benzene	Toluene ——	Ethylbenzene (µg/L)	Xylenes	МТВЕ →	Notes
MW-5	1/23/2003	20.27		14.36	<50	2.1	<0.5	<0.5	<0.5	<5.0	a
(Cont.)	6/12/2003	21.10	_	13.53	<50	0.88	<0.5	<0.5	<0.5	<5.0	
(Cont.)	7/23/2003	21.47		13.16	<50 <50	4.0	<0.5	<0.5	<0.5	<5.0	
	12/22/2003	19.57		15.06	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/10/2004	19.61		15.02	990	200	2.9	4.0	20	<70	_
	6/16/2004	20.15		14.48	250	42	<0.5	0.88	<0.5	<35	a
	9/27/2004	22.14		12.49	1,600	140	4.8	45	18	<110	a
	12/22/2004	21.81		12.82	<b>&lt;</b> 50	5.3	<0.5	<0.5	0.66	<5.0	
	3/3/2005	19.35	<u></u>	15.28	2,000	330	4.4	63	39	<150	a
	6/9/2005	18.73		15.90	250	42	1.4	14	3.2	<5.0	a
	9/9/2005	19.30		15.33	2,000	390	5.0	71	38	<400	a
	12/20/2005	19.65		14.98	4,300	760	18	170	150	<35	a
	3/26/2006	18.58		16.05	1,600	460	3.3	35	32	<50	а
	6/23/2006	18.57		16.06	1,900	500	3.9	81	56	<17	a
	9/7/2006	18.98		15.65	8,800	1,900	12	350	220	<260	a,i
	12/29/2006	19.70		14.93	15,000	3,400	69	610	700	<450*/<0.5***	a
	3/21/2007	19.57		15.06	9,900	2,300	24	360	410	<240*	a
	6/7/2007	19.70		14.93	14,000	3,800	40	<b>79</b> 0	720	<550*	a
	9/28/2007	20.16		14.47	26,000 .	7,200	84	1,100	1,600	<25***	a,I
	12/9/2007	20.56		14.07	25,000	7,000	59	1,100	2,000	<17	a,I
	3/3/2008	19.97		14.66	30,000	6,200	31	900	1,400	<10***	a,l
	6/4/2008	20.32		14.31	7,500	1,600	4.6	25	91	<10***	a,j
	9/9/2008	20.75		13.88	54,000	8,900	76	1,300	1,700	<25***	a,l
	12/5/2008	21.08		13.55	33,000	9,200	43	1,500	1,800	<5.0***	a,l
	3/2/2009	20.74		13.89	34,000	9,700	41	1,100	1,300	<5.0***	a,l
	9/15/2009	21.02	_	13.61	40,000	10,000	280	1,400	2,600	<2.5***	a,l
MW-6	10/28/1996	20.02		15.87	<50	< 0.50	< 0.50	< 0.50	< 0.50	<2.0*	
35.89	12/12/1996	20.18		15.71	ND	ND	ND	ND	ND	ND*	n
	3/31/1997	19.81		16.08		_		_	-	_	_
	6/27/1997	19.76		16.13				_			
	9/9/1997	20.06	_	15.83	ND	ND	ND	ND	ND	ND*	
	12/18/1997	19.90	-	15.99	ND	ND	ND	ND	ND		
	3/12/1998	18.00	-	17.89	ND	ND	ND	ND	ND	ND*	
	6/22/1998	18.43		17.46	ND	ND	ND	ND	ND	_	_
	9/18/1998	19.10		16.79	ND	ND	ND	ND	ND		
	12/23/1998	19.61		16.28	ND	ND	ND	ND	ND		
	3/29/1999	18.92		16.97	ND	ND	ND	ND	ND	-	
	6/23/1999	18.41		17.48	ND	ND	ND	ND	ND	-	
	9/24/1999	19.61	-	16.28	ND	ND	ND	ND	ND	-	
	12/23/1999	20.30		15.59	ND	ND	ND	ND	ND	<del></del>	
	3/21/2000	18.97		16.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	7/3/2000	19.46		16.43	59	5.1	2.3	1.1	5.3	<5.0*	
	9/7/2000	19.95		15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	а
	12/5/2000	20.50	_	15.39	<b>&lt;</b> 50	<0.5	<0.5	<0.5	<0.5	<5.0	
	3/6/2001	19.54		16.35	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/8/2001	20.92		14.97	<50	<0.5	<0.5	<0.5	<0.5	<5.1	_
	8/27/2001	21.37		14.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	10/25/2001	21.59		14.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	3/1/2002	21.33		14.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	_
	6/10/2002	21.97		13.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	
	9/3/2002	21.55 22.25		14.34 13.64	- <50	<0.5	- <0.5	 <0.5	 <0.5	- <5.0	
	12/22/2002	20.47		15.42	<50	<0.5 <0.5	<0.5	<0.5 <0.5	<0.5	<5.0 <5.0	
	1/23/2003	21.09		14.80							
	6/12/2003				_	-					
	7/23/2003 12/22/2003	21.42 19.49		14.47 16.40			_	_			
	3/10/2004	20.20		15.69	<50	<0.5	<0.5	 <0.5	<0.5	<5.0	_
	6/16/2004	20.73		15.16				~0.5 			
	9/27/2004	22.88		13.01	_	_	_		<del></del>	-	_
	12/22/2004	22.53		13.36	_	_	_				_
	3/3/2005	19.87		16.02	<b>&lt;</b> 50	<0.5	<0.5	<0.5	<0.5	<5.0	_
	6/9/2005	18.95	_	16.94			-		-		
	9/9/2005	19.45		16.44	-					_	
	12/20/2005	19.90		15.99							
	3/26/2006	18.85		17.04	<50	<0.5	<0.5	<0.5	<0.5	<5.0	
	6/23/2006	18.57		17.32	_			-			

#### TABLE 2

## GROUNDWATER ELEVATION AND ANALYTICAL DATA ALLRIGHT PARKING 1432 HARRISON STREET OAKLAND, CALIFORNIA

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft below TOC)	SPH Thickness (feet)	TOC Groundwater Elevation (ft amsl)	ТРНg	Benzene	Toluene	Ethylbenzene (µg/L)	Xylenes	MTBE →	Notes
MW-6	9/7/2006	19.13		16.76							
(Cont.)	12/29/2006	19.96		15.93						_	
(	3/21/2007	19.87		16.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	m
	6/7/2007	20.05		15.84							
	9/28/2007	20.51		15.38	-						_
	12/9/2007	20.90		14.99		_		_			
	3/3/2008	20.47		15.42	<50	<0.5	< 0.5	<0.5	<0.5	<0.5***	
	6/4/2008	20.70		15.19	· <del>-</del>	_	_		_	_	
	9/9/2008	21.09		14.80							
	12/5/2008	21.50		14.39	_	_					
	3/2/2009	21.30		14.59	<50	<0.5	<0.5	<0.5	<0.5	<0.5***	
	9/15/2009	21.55	-	14.34	-	-	-	-	-	-	-
Trip Blank	3/21/2000	_		_	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-
•	9/7/2000		**	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-
Grab Ground	water Sample l	Results:									
SB-A	7/6/1995	~20			330	16	3.6	1.3	4.9	-	i,j
SB-B	7/7/1995	~20			450	55	3.1	5.1	5.0	_	a
SB-C	7/6/1995	~20		_	44,000	6,600	5,900	980	4,400	_	а
SB-D	7/6/1995	~20			70,000	7,400	10,000	1,600	7,200	_	a
SB-E	7/6/1995	~20			25,000	1,000	3,000	610	2,700	_	a
SB-G	7/7/1995	~20			84,000	9,400	16,000	2,200	9,900		a,b
SB-I	7/7/1995	~20			24,000	6,100	1,400	680	1,600		а
SB-J	7/7/1995	~20			960	110	66	8.7	71	-	a
SB-K	7/7/1995	~20		-	72,000	9,600	9,600	1,800	7,000		а
CB-1-W	7/22/1999				110,000	1,300	16,000	2,700	12,000	<3000*	a,b,c
CB-2-W	7/22/1999			-	4,700	21	13	170	76	<50*	a,c
GW-1	7/30/1994				<50	<0.5	<0.5	<0.5	<2.0		
GW-2 ^	7/29/1994	'			<50	<0.5	<0.5	<0.5	<2.0		
GW-3 ^	7/29/1994				<50	<0.5	<0.5	<0.5	<2.0		_

#### Abbreviations, Methods, & Notes

TOC = Top of casing elevation

ft amsl = feet above mean sea level

SPH = Separate-phase hydrocarbons

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

Benzene, toluene, ethylbenzene, and xylenes by EPA Method SW8021B

MTBE = Methyl tert-butyl ether

- \* = MTBE by EPA Method SW8021B
- \*\* = MTBE by EPA Method SW8240
- \*\*\* = MTBE by EPA Method SW8260
- 1 = Not confirmed with EPA Method 8260B.
- $\mu g/L$  = micrograms per liter, equivalent to parts per billion
- = Not sampled, not analyzed, not applicable, or no SPH was measured or observed
- n = Not detected in sample above n mg/L

ND = Not detected above laboratory detection limit

- $\mathbf{x}$  = Groundwater elevation adjusted for SPH by the relation:
  - Groundwater Elevation = TOC Elevation Depth to Groundwater + (0.7 x SPH thickness)
- # = The wellhead elevation was raised by 0.41 feet when well MW-1 was connected to the SVE system on October 31, 2003.
- ## = The wellhead elevation was lowered by 0.41 feet when well MW-1 was disconnected from the SVE system on April 30. 2005.
- + = Well de-watered during purging, no measurable water to sample.

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

Field = Observed in the field

Lab = Observed in analytical laboratory

- ^ = Samples associated with 1439 Alice St. Property
- a = Unmodified or weakly modified gasoline is significant.
- b = Lighter than water immiscible sheen is present.

TABLE 2

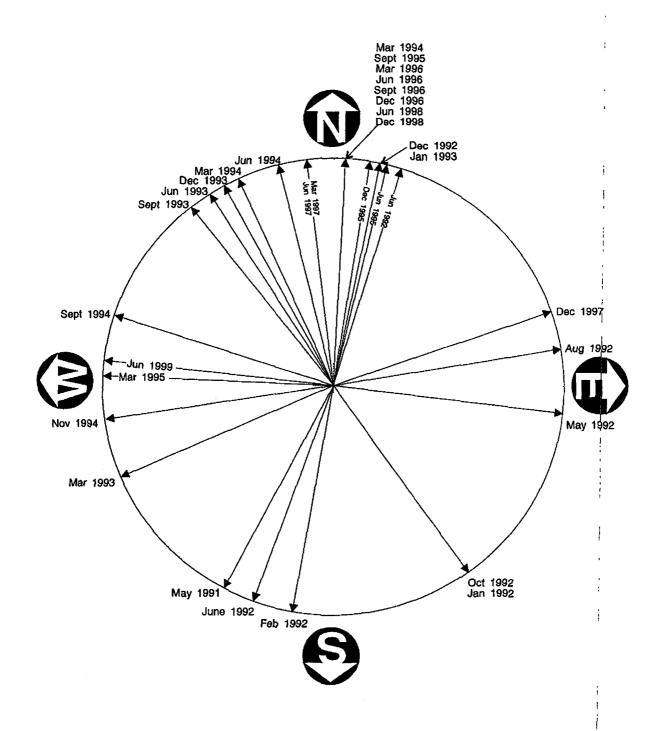
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				100							
Well ID		Depth to	SPH	Groundwater							
Sample ID	Date	Groundwater	Thickness	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
TOC (ft amsl)		(ft below TOC)	(feet)	(ft amsl)	<del>-</del>			(μg/L) ———		<b>→</b>	

- c = Liquid sample that contains greater than ~2 vol. % sediment.
- d = MTBE result confirmed by secondary column or GC/MS analysis.
- ${
  m e}$  = Sample analyzed for purgeable hydrocarbons by EPA Method SW8010, no purgeable hydrocarbons were detected.
- $f = Sample \ analyzed \ for \ VOCs \ by EPA \ Method SW8240, no non-BTEX \ compounds were detected.$
- g = Sample analyzed for Total Petroleum Hydrocarbons as motor oil (TPHmo) by Modified EPA Method SW8015, no TPHmo was detected.
- h = Analytic sampling discontinued. Approved by Alameda County Department of Environmental Health.
- i = Lighter gasoline range compounds are significant.
- j = Gasoline range compounds having broad chromatographic peaks are significant.
- k = No recognizable pattern.
- I = Sample diluted due to high organic content.
- m = Liquid sample that contains greater than ~1 vol. % sediment.
- n = TOC well elevation was increased by 3 ft based on a benchmark discrepancy discovered during a well survey performed on September 11, 2002.

### APPENDIX C

Rose Diagram of Groundwater Flow Directions  $301\ 14^{\text{TH}}$  Street (former Chevron Site)



# SUMMARY OF GROUNDWATER FLOW DIRECTIONS Former Chevron Station #9-4816

Former Chevron Station #9-4816 301 14th Street Oakland, California