CAMBRIA

To:	Mr. Don Hwang
Company:	Alameda County Health Care Services
Address:	1131 Harbor Bay Parkway, 2nd Floor
	Alameda, CA 94502
Phone:	(510) 567-6746
From:	Subbarao Nagulapaty
Phone:	(510) 420-3361
Date:	19 September, 2005
Re:	1432 Harrison Street, Oakland - Reports

Transmittal

Dear Mr. Hwang,

Per your request, I am forwarding you copies of the following reports for your review and file for the above-referenced site.

1. Corrective Action Plan dated December 29, 1997
2. Subsurface Investigation and Remediation Well Installation Report dated September 7, 1999

Please feel free to call me at (510) 420-3361 with any questions.

Sincerely,
Cambria Environmental Technology, Inc.

Subbarao Nagulapaty
Project Engineer

Alameda County
SEP 21 2005
Environmental Health

CAMBRIA

December 29, 1997

Mr. Tom Peacock
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Corrective Action Plan**
1432 Harrison Street
Oakland, California

David Alras
420-3307

Dear Mr. Peacock: -deceased.

On behalf of Mr. Alvin H. Bacharach and Ms. Barbara Jean Borsuk, Cambria Environmental Technology (Cambria) is submitting this corrective action plan (CAP) for the site referenced above. The CAP objective is to remediate the hydrocarbon source area to the point where natural attenuation can remediate any residual hydrocarbons. Presented below are a site summary, a discussion of the distribution of hydrocarbons in soil and ground water, remedial objectives, an evaluation of remedial alternatives, and our proposed corrective action plan.

SITE SUMMARY

Site Location: The site is located in a commercial/residential area in downtown Oakland, California, between Harrison Street and Alice Street. The nearest surface waters are the Oakland Inner Harbor and Lake Merritt, located 14 blocks north and four blocks west of the subject site, respectively.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

July 1990 through May 1993 Soil Boring Investigations: In July and September 1990, Subsurface Consultants of Oakland, California installed eight soil borings near the waste oil storage area, the hydraulic lift area, and the gasoline tank area. Nine soil samples were analyzed for petroleum hydrocarbons. In January and February 1992, RGA Environmental Consulting of Emeryville, California installed twenty-three soil borings near the same areas and analyzed twenty-nine soil samples for petroleum hydrocarbons. In May 1993, Levine-Fricke, Inc. of Emeryville, California installed two soil borings near the gasoline tank areas and analyzed six soil samples for petroleum hydrocarbons. A site map from Levine-Fricke showing the boring locations and a table summarizing the analytical results are included in Attachment A.

November and December 1993 Tank Removal: In November and December 1993, Levine-Fricke, Inc. (Levine-Fricke) of Emeryville, California removed four underground storage tanks (USTs) from the site. Two 1,000-gallon, single-walled, steel, gasoline USTs were located under the sidewalk on Harrison

Street (Figure 1), with gasoline dispensers located about 20 ft east of the USTs. Two additional steel single-walled, waste oil USTs, each approximately 1,000-gallons in capacity, were located in the basement of the garage near Alice Street. In addition, three hydraulic lifts, one vault, one sump, and associated piping, were excavated and removed from the site. A total of approximately 240 cubic yards of hydrocarbon-impacted soils were removed from the three areas.

August 1994 Subsurface Investigation: In August 1994, Levine-Fricke conducted a subsurface investigation to assess the extent of hydrocarbons in soil and ground water. Three soil borings were installed and the borings were converted into ground water monitoring wells (MW-1, MW-2, and MW-3). A site map with well locations, boring logs, and soil analytical results are included in Attachment A.

July 1995 Subsurface Investigation: In July 1995, Cambria conducted a subsurface investigation to further define the extent of hydrocarbons in soil and ground water. Three additional wells were installed (MW-4, MW-5, and MW-6). The well locations are shown on Figure 1, and the soil and ground water analytical tables are included in Attachment A.

August 1996 Soil Vapor Extraction Test: In August 1996, Cambria conducted a soil vapor extraction test on existing ground water monitoring wells MW-1 and MW-2. TPHg concentrations in soil vapor ranged from 3,100 to 2,600 parts per million - volume (ppmv) in MW-1 and from 22,000 to 28,000 ppmv in MW-2. The highest benzene concentration was 590 ppmv from MW-2. Results of the test suggested that the subsurface consists of moderate permeability materials such as sands and silty sands, and that soil vapor extraction could effectively remove hydrocarbons from the subsurface soils, with an estimated radius of influence of 44 feet. Cambria's September 11, 1996 Soil Vapor Extraction Test Report is included as Attachment B.

October 1996 Subsurface Investigation: In October 1996, Cambria conducted an additional subsurface investigation to further define the extent of hydrocarbons in soil and ground water. Five soil borings were installed, and three of the borings were converted to monitoring wells MW-4, MW-5, and MW-6. Two additional angled borings were installed to assess the impact of hydrocarbons from two closed-in-place tanks located directly up-gradient of the site. The monitoring well locations are shown on Figure 1, Figure 2, and Figure 3, and the soil and ground water analytical tables are included in Attachment A.

Quarterly Ground Water Monitoring: Ground water samples have been collected from monitoring wells MW-1, MW-2, and MW-3 since January 1994, and from wells MW-4, MW-5, and MW-6 since October 1996. The depths to water in all wells are gauged on a quarterly basis. Monitoring wells MW-1, MW-2, MW-4, and MW-5 are sampled quarterly. Monitoring well MW-6 was sampled in the most recent quarterly sampling event on September 9, 1997, and will be sampled during the next sampling event. Monitoring well MW-3 is not currently sampled. A copy of the most recent quarterly ground water monitoring report is included as Attachment C.

Hydrogeology: The site is underlain primarily by sands and silty sands. Ground water is present at a depth of approximately 20 feet.

Adjacent Potential Hydrocarbon Sources: The subject site is located immediately down-gradient of 1424 Harrison Street, where two USTs were closed in place (Figure 1). A Chevron service station located at 14th Street and Harrison Street, up-gradient of the subject site, has had a confirmed gasoline release. Chevron is currently operating a soil and ground water remediation system at that site.

HYDROCARBON DISTRIBUTION IN SOIL AND GROUND WATER

Hydrocarbons in Soil: Based on soil analytical data collected during the boring and well installation, petroleum hydrocarbons in soil appear to be limited to the vicinity of the former UST complex. The maximum TPHg concentration was 9,300 parts per million (ppm) at a 18.5 ft depth in Boring 2 installed by SCI in July 1990. The horizontal and vertical extent of hydrocarbons has been determined except to the southwest along Harrison Street in the direction of the closed-in-place USTs in the sidewalk in front of 1424 Harrison Street. The boring and well installation locations are shown in Figure 1, and the results of soil sampling of all site investigation phases are summarized in the tables in Attachment A. The distribution of hydrocarbons in soil from 0 to 10 feet below grade are shown in Figure 2. The distribution of hydrocarbons in soils below 10 feet and above 20 feet are shown in Figure 3. Hydrocarbons have been detected in soil below 20 feet, but these are assumed to be due to hydrocarbons in ground water.

The August 1994 investigation by indicated that no hydrocarbons were detected in soil in well MW-3. Low concentrations of benzene and toluene were detected in a soil sample collected from the boring for MW-2.

During the July 1995 investigation, TPHg and benzene were detected in soil collected from 3 soil borings at maximum concentrations of 350 ppm TPHg and 4 ppm benzene in boring SB-H. In general, stained and odorous soils were first encountered at about 10 ft depth in all the borings drilled in and near Harrison Street.

During the October 1996 investigation, no hydrocarbons were detected in soil samples collected from borings SB-M, SB-N, and SB-O. Hydrocarbons were detected in soil collected from borings SB-P and SB-Q, which were located beneath the closed-in-place tanks, at concentrations up to 1,900 ppm TPHg and 2.0 ppm benzene.

Hydrocarbons in Ground Water: Based on the most recent quarterly ground water monitoring, hydrocarbon concentrations are highest in monitoring wells MW-1 and MW-2, which are located near the former USTs. The extent of hydrocarbons in ground water is currently defined on three sides. Hydrocarbon extent is defined by up-gradient well MW-6, cross-gradient well MW-3, and down-gradient well MW-5. The hydrocarbon concentrations in down-gradient well MW-4 were 160 ppb TPHg and 49 ppb benzene. Because hydrocarbon concentrations have varied in this well, continued monitoring will be used to assess whether

the northeastern extent of hydrocarbons has been fully defined. The latest quarterly ground water monitoring report is included as Attachment C.

Both TPHg and benzene were detected in grab ground water samples collected from 9 of the 12 soil borings drilled on the site during the July 1995 investigation on the adjacent properties north and south of 1432 Harrison Street, and in Harrison Street. The maximum concentrations of 84,000 parts per billion (ppb) TPHg and 9,600 ppb benzene were detected in ground water in the vicinity of the former gasoline USTs along Harrison Street. Elevated hydrocarbon concentrations were detected in ground water samples collected from borings up-, cross-, and down-gradient of the USTs. Boring locations are shown in Attachment A.

REMEDIAL OBJECTIVES

Remediation objectives are typically based on one or more of the following criteria:

- Department of Toxic Substances Control (DTSC) maximum contaminant levels (MCLs) for drinking water,
- Risk-based cleanup levels established by risk assessments or risk-based corrective action (RBCA) guidelines,
- Current closure guidelines from the regulatory agencies, such as the RWQCB criteria for low-risk ground water cases, or
- Asymptotic levels have been achieved for chemical concentrations in ground water or soil vapor extracted by a remediation system.

The proposed remediation objectives in this CAP are a combination of the above criteria. Our objectives are to implement the most cost effective approach for remediating site ground water, protecting sensitive receptors and human health, and to comply with regulatory concerns. Due to the absence of known water supply wells or surface waters in the vicinity of the site, inhalation of surface hydrocarbon vapors is the pathway with the most potential for human exposure, even though the site is paved and well developed. Therefore, this CAP should control potential exposure to hydrocarbon vapors and provide enhanced remediation of residual hydrocarbons beneath the site.

Given the specific site conditions, the specific CAP objectives are to:

- Prevent hydrocarbon migration from the site;
- Remediate soil and ground water to improve soil and ground water quality;
- Safeguard human health from subsurface hydrocarbon vapors;

- Continue the ground water monitoring program to monitor water quality; and
- Establish a contingency plan to expedite or enhance remediation if necessary.

The final objective of this CAP is to reduce dissolved hydrocarbons to the point where natural attenuation can remediate any residual hydrocarbons. RBCA guidelines may be used to revise site cleanup objectives in the future if deemed appropriate by the Alameda County Department of Environmental Health.

REMEDIATION ALTERNATIVE EVALUATION

Cambria evaluated four alternatives to remediate ground water at the site. A description of each alternative is presented below. In accordance with Title 23 of the UST regulations, we propose to implement the most cost-effective alternative to remediate the hydrocarbon source area to the point where natural attenuation can remediate any residual hydrocarbons at this site.

Soil Vapor Extraction

This alternative involves applying a vacuum to extract hydrocarbon-bearing vapors from the vadose zone and capillary fringe area. Extracted hydrocarbons are typically treated by activated carbon, oxidizers or internal combustion engines. SVE can improve ground water quality by removing source area hydrocarbons, by encouraging hydrocarbon diffusion from ground water, and by delivering oxygen to the subsurface. Oxygen usually stimulates naturally-occurring hydrocarbon biodegradation. This method is most effective for moderate to high permeability materials. Cambria's SVE test demonstrated that this technology would effectively remove hydrocarbons from the subsurface, with an estimated radius of influence of 25 to 44 ft. The SVE Test Report is included as Attachment C.

Cost-Effectiveness: A SVE system would likely operate for about 6 months to reach low, asymptotic hydrocarbon concentrations in the system influent. Installing a SVE system and operating it for about 6 months would cost about $75,000 to $100,000. Continued operation of the SVE system, if necessary, would likely cost about $50,000 to $100,000 per year. These costs include an estimate of $5,000 per year to rent four parking spaces from the site parking vendor to house the remediation system.

Recommendation: Because the hydrocarbon smear zone consists of relatively permeable sediments, and since the SVE testing yielded relatively high removal rates, SVE appears to be a cost-effective and appropriate remedial technique for source removal at this site.

Soil Vapor Extraction / Air Sparging

Air sparging involves injecting ambient air via wells screened below the water table to volatilize aqueous-phase hydrocarbons. Air sparging also supplies oxygen to indigenous microbes and stimulates naturally-occurring hydrocarbon biodegradation. Hydrocarbon vapors are typically captured and treated by a SVE system. This technique is most effective for sites with hydrocarbons in permeable materials where the injected air is easily captured by SVE. This technique usually remediates ground water much faster than SVE alone.

Cost-Effectiveness: Installing and operating an SVE/air sparging system 6 months would cost approximately $90,000 to $120,000. Continued operation of the SVE/air sparging system would likely cost about $50,000 to $100,000 per year. These costs include an estimate of $5,000 per year to rent four parking spaces from the site parking vendor to house the remediation system.

Recommendation: Air sparging with SVE appears to be a cost-effective and appropriate alternative to remediate hydrocarbons in ground water at this site.

Ground Water Oxygenation with Oxygen Releasing Compounds (ORCs)

This is a relatively new remedial technique being implemented at numerous sites. ORCs release dissolved oxygen (DO) into ground water to stimulate and accelerate naturally occurring aerobic hydrocarbon biodegradation. ORCs are capable of elevating dissolved oxygen (DO) concentrations up to 40 mg/l, while DO concentrations from air injection techniques such as air sparging can typically only achieve up to about 10 mg/l. Unlike air injection techniques, ORCs oxygenate ground water without the potential for causing hydrocarbon vapor migration. ORCs are a solid magnesium peroxide compound that is activated by moisture. ORCs release oxygen slowly to the ground water and are environmentally safe to use. The byproducts of the ORC reaction with water are oxygen and magnesium hydroxide, which is essentially milk of magnesia. ORCs can be installed in existing ground water monitoring wells or installed as a slurry in borings drilled below the water table. Using ORCs to remediate the hydrocarbons in ground water typically requires 1 or more years, and depends on site conditions and water quality objectives.

Cost-Effectiveness: Because ORCs do not require system operation or maintenance, remediation using ORCs is easy and inexpensive. The ORC manufacturer recommends installing ORCs in the entire water column for selected wells. ORCs cost approximately $50 for each 1 foot long ORC sock installed in a 4" diameter well, and are frequently replaced with new ORC material every six months to one year. ORC use in five on site wells could cost approximately $4,000 to $10,000 per year depending on ORC consumption rates and the duration of ORC remediation.

Recommendation: Because our objective is to safely and cost-effectively decrease hydrocarbon concentrations in ground water, oxygenation using ORCs appears to be a cost-effective and appropriate remedial technique for this site. This approach will be most feasible after conducting SVE to remove the hydrocarbon source from the vadose zone, and even more feasible after using air sparging to reduce hydrocarbon concentrations in ground water.

Natural Attenuation

The natural attenuation alternative involves allowing hydrocarbons to biodegrade naturally and implementing a long-term ground water monitoring plan. The recent Lawrence Livermore National Laboratory report indicates that almost all subsurface hydrocarbons releases eventually stabilize and degrade on their own. In response to this report, the RWQCB focuses on source area removal, and no longer requests active remediation of dissolved hydrocarbons unless the hydrocarbons represent a significant threat to human health or other sensitive receptors.

Hydrocarbon concentration trends are the primary indicators of natural attenuation rates. Secondary indicators such as DO, oxidation-reduction potential (ORP), alkalinity, nitrate, sulfate and ferrous iron are also used to evaluate the potential for natural attenuation. Natural attenuation at a given site can be due to aerobic and anaerobic hydrocarbon degradation. Most sites exhibit aerobic hydrocarbon degradation, and an inverse relationship is observed between hydrocarbon and DO concentrations. More specifically, DO concentrations are typically reduced in the hydrocarbon source area compared to near the plume boundary. For natural attenuation to occur by aerobic processes, a minimum of about 1 mg/l DO is required. Under anaerobic processes, sulfates, nitrates, and iron can act as electron receptors.

Cost-Effectiveness: Since this alternative allows hydrocarbons to degrade naturally and does not require active remediation, this is a very cost effective alternative. Sampling for intrinsic bioremediation parameters typically costs about $100 per well when performed in conjunction with routine ground water monitoring. This sampling is frequently performed only once or twice at a site. Subsequently, only DO is monitored, which generally increases monitoring costs by about $20/well. Since the site is currently being monitored on a quarterly basis for hydrocarbons, additional increases in monitoring costs would be about $1,000 per year. The cost of additional ground water monitoring should be considered in the overall cost-effectiveness evaluation.

Recommendation: A natural bioattenuation protocol could be implemented once SVE has removed the hydrocarbon source area from the vadose zone, or after SVE/air sparging has reduced the hydrocarbon concentrations in both soil and ground water.

PROPOSED CORRECTIVE ACTION PLAN

Based on the evaluation of the remedial alternatives above, Cambria proposes remediating the hydrocarbon source area and impacted ground water using SVE in combination with air sparging (AS), followed by the installation of ORC socks in selected site wells to accelerate the natural attenuation of hydrocarbons in ground water. SVE will target source area soil. Air sparging, ORC installation, and natural attenuation will target impacted ground water. In addition to this work, Cambria proposes to further investigate the extent of hydrocarbons in soil and ground water beneath the closed-in-place tanks adjacent to the subject site.

Remediation by this combination of methods has the following advantages: (1) SVE is typically the fastest and most cost-effective remediation alternative for the vadose zone, (2) impacted ground water will be effectively treated by AS and ORC installation, and (3) installation of a SVE/AS system at this site is a simple, straightforward process. By using these techniques, the site cleanup objectives will be satisfied in a cost-effective manner. Cambria recommends implementing the following CAP as described below.

Additional Investigation

The purposes of additional investigation of the up-gradient property are: (1) to determine the horizontal and vertical extent of hydrocarbons beneath the existing closed-in-place USTs, (2) to attempt to determine if these tanks are acting as a continuing source of hydrocarbons, and (3) to determine the amount and extent of remediation required in the vicinity of these tanks.

Cambria proposes to complete two additional borings, which will extend to ground water (approximately 20 feet). These borings will also help define the extent of contamination, if any, from the up-gradient tanks. The locations of the proposed borings are shown in Figure 4. Soil samples will be taken at five foot intervals, and a grab ground water sample will be taken from the borings. The samples will be analyzed for TPHg, TPHd, and BTEX. One of the borings will be converted to a SVE/air sparging well to be connected to the remediation system. Any hydrocarbons detected during the additional investigation will most likely be remediated by this well. Depending on the extent of the hydrocarbons near these tanks and whether the tanks are acting as a continuing up-gradient source, remediation of the site may be delayed or prolonged.

Remediation Using Air Sparging and Soil Vapor Extraction

The remediation system will utilize four new combination vapor extraction / air sparging wells. The locations of the proposed wells, and their estimated area of influence are shown on Figure 4. The estimated radius used was 35 ft. Below ground piping will run from each wellhead to a treatment compound, and a new electrical service will supply power to the compound. The extraction vapor flow rate will be 50 to 100 cubic feet per minute. Vapor treatment will be performed by a thermal oxidizer or a thermal/catalytic oxidizer. The specific system design will be performed as part of a Remedial Action Plan (RAP). The RAP will include the specific system design drawings and specifications, suitable for sending out for bids from

contractors for system installation. Approximately four parking spaces will be rented from the current site vendor to house the remediation system.

Permitting: Air discharge permits will be secured from the Bay Area Air Quality Control Board (BAAQMD) for the SVE system. Building and electrical permits will be obtained from the City of Oakland to install and operate the system. Well installation permits will be obtained from the Alameda County Water District for the installation of the vapor extraction / air sparging wells.

Well Installation: Cambria will install four new combination soil vapor extraction / air sparging wells in the locations shown on Figure 4. The wells will be designed specifically to perform soil vapor extraction and air sparging simultaneously. The vapor extraction portion of the wells will be screened in the vadose zone from 5 to 15 ft depth, and the air sparging portion of the wells will be screened approximately from 28 to 32 ft.

Wellhead Modification: The new wells will be plumbed to allow vapor extraction and air sparging. The wells will be individually connected to a manifold at the remediation equipment compound.

System Startup: An initial startup will be performed according to BAAQMD protocol. Upon receiving the startup results, a startup report will be issued to the BAAQMD.

System Operation and Maintenance (O&M): Two O&M visits will be performed during each month of operation to optimize hydrocarbon removal rates by the system and to test the destruction efficiency of the system. It is anticipated that 6 months of system operation will be required to achieve low, asymptotic hydrocarbon concentrations in soil vapor. When the concentrations decrease, system cycling will be performed to confirm that hydrocarbon concentrations remain low.

Reporting: Remediation system performance will be reported concurrent with the quarterly ground water monitoring reports. System performance parameters reported will include vapor extraction rates, hydrocarbon concentrations in extracted vapor, and hydrocarbon removal rates.

System Shutdown: When the hydrocarbon concentrations decrease to low, asymptotic concentrations and system cycling does not result in elevated hydrocarbon concentrations, Cambria will submit a request to shut down the soil vapor extraction system. After receiving approval to shutdown the system permanently, we will remove the remediation equipment and associated piping. We will restore the modified wellheads to their original condition and use them as monitoring wells.

Long-Term Ground Water Remediation and Monitoring

ORC Installation: Upon completing SVE and AS, the feasibility and cost-effectiveness of ORC installation will be assessed for several selected site wells. It is anticipated that the ORCs could remediate hydrocarbons down-gradient of the SVE and AS influence area. ORCs in former source area wells could also enhance remediation of any residual dissolved hydrocarbons. If residual hydrocarbon concentrations are very low after SVE/air sparging, natural attenuation may be more appropriate than ORC use.

Intrinsic Bioremediation Monitoring: To assess the present level of intrinsic bioremediation and to be able to assess the effectiveness of the remedial efforts, Cambria recommends evaluating indicators of intrinsic bioremediation of hydrocarbons in ground water. To perform this evaluation, we plan to follow the procedures outlined in *Monitoring Intrinsic Bioremediation in Ground Water* (Buscheck et al, 1995). Consistent with these procedures, ground water from selected wells will be analyzed for DO, oxidation/reduction potential (ORP or Eh), pH, conductivity and temperature in the field. DO measurement is also a useful tool for evaluating oxygenation caused by air sparging. Ground water samples will also be analyzed for alkalinity, nitrate, sulfate and ferrous iron by EPA Methods 310.2, 353.2, 375.4, and 200.7, respectively.

When evaluating intrinsic bioremediation data, an *inverse* relationship between hydrocarbon concentrations and DO, ORP, nitrate and sulfate concentrations is indicative of active biodegradation. Additionally, a *direct* relationship between hydrocarbon concentrations and alkalinity and ferrous iron concentrations is indicative of active biodegradation. These analyses are discussed below.

Dissolved Oxygen: During aerobic biodegradation, DO levels are reduced as aerobic respiration occurs. DO is the most thermodynamically favored electron acceptor used in aerobic biodegradation of petroleum hydrocarbons. Active aerobic biodegradation of BTEX compounds requires at least 1 ppm DO in ground water and DO concentrations can be as high as 8 to 13 mg/L in oxygen-saturated ground water that is free of hydrocarbons. Observed inverse relationships between DO and hydrocarbon concentrations indicate the occurrence of aerobic degradation, provided that at least 1 to 2 mg/L of DO is present in ground water.

Oxidation-Reduction Potential: The oxidation-reduction potential (ORP) of ground water is a measure of electron activity and is an indicator of the relative tendency of a solute species to gain or lose electrons. The ORP of ground water generally ranges from -400 millivolts (mV) to +800 mV. Under oxidizing conditions the ORP of ground water is positive, while under reducing conditions the ORP is usually negative. Reducing conditions (negative ORP) suggests that anaerobic biodegradation is occurring. Generally, the ORP of ground water inside a hydrocarbon plume should be somewhat less than that measured outside the plume.

Alkalinity: The total alkalinity of ground water indicates the ground water's ability to neutralize acid. High alkalinity (high pH) conditions occur when ground water contains elevated hydroxides, carbonates, and bicarbonates of elements such as calcium, magnesium, sodium, potassium, or ammonia. Since these chemical species are created by the respiration of microorganisms, high alkalinity is an indicator of biological

activity. However, these chemical species may also result from the dissolution of rock (especially carbonate rocks) and the transfer of carbon dioxide from the atmosphere. Alkalinity also buffers ground water pH against acid generation by both aerobic and anaerobic biodegradation processes. Higher alkalinity in the source area as compared to clean areas suggests that biodegradation is occurring.

Nitrate: After DO has been depleted in the ground water, nitrate may be used as an electron acceptor for anaerobic biodegradation. In this denitrification process, nitrate is reduced to nitrite. Reduced nitrate concentrations in the source area compared to the clean area suggests that anaerobic biodegradation is occurring.

Sulfate: After DO and nitrate have been depleted in the ground water, sulfate may be used as an electron acceptor for anaerobic biodegradation. If sulfate concentrations vary inversely with hydrocarbon concentrations, anaerobic biodegradation of fuel hydrocarbons is probably occurring.

Ferrous Iron: In some cases ferric iron acts as an electron acceptor during anaerobic biodegradation of petroleum hydrocarbons. In this process, ferric iron is reduced to ferrous iron, which may be soluble in water. Therefore, if the ferrous iron concentrations vary directly with hydrocarbon concentration, anaerobic biodegradation may be occurring.

Sampling for this parameter will be conducted during an upcoming quarterly ground water monitoring event. If necessary, these parameters can be evaluated on several occasions to further assess intrinsic bioremediation.

Continued Quarterly Monitoring including DO Monitoring: Cambria proposes to continue quarterly ground water sampling by collecting samples from all site ground water monitoring wells annually, and all wells except MW-3 and MW-6 during the other three quarters. All samples will be analyzed for TPHg, BTEX, and MTBE. Cambria will also monitor DO concentrations quarterly in the ground water monitoring wells to evaluate ground water oxygenation by the SVE/air sparging system. If ORCs are used to enhance remediation after the system has been shut down, DO monitoring will continue in any wells containing ORCs to determine when the ORCs have expired. Once the DO concentrations decrease to pre-ORC concentrations, new ORCs may be installed in the wells. We estimate that the ORCs in a given well will last between 6 and 12 months, depending on site-specific oxygen utilization. Wells containing elevated DO concentrations due to ORCs will be sampled without purging to avoid removal of oxygen-rich ground water.

CAMBRIA

CLOSING

We appreciate this opportunity to work with you on this project on behalf of Mr. Alvin H. Bacharach and Ms. Barbara Jean Borsuk. Upon CAP approval, Cambria will begin preparation of the Remedial Action Plan, which will specify the specific design parameters for the AS/SVE system.

Please call us if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

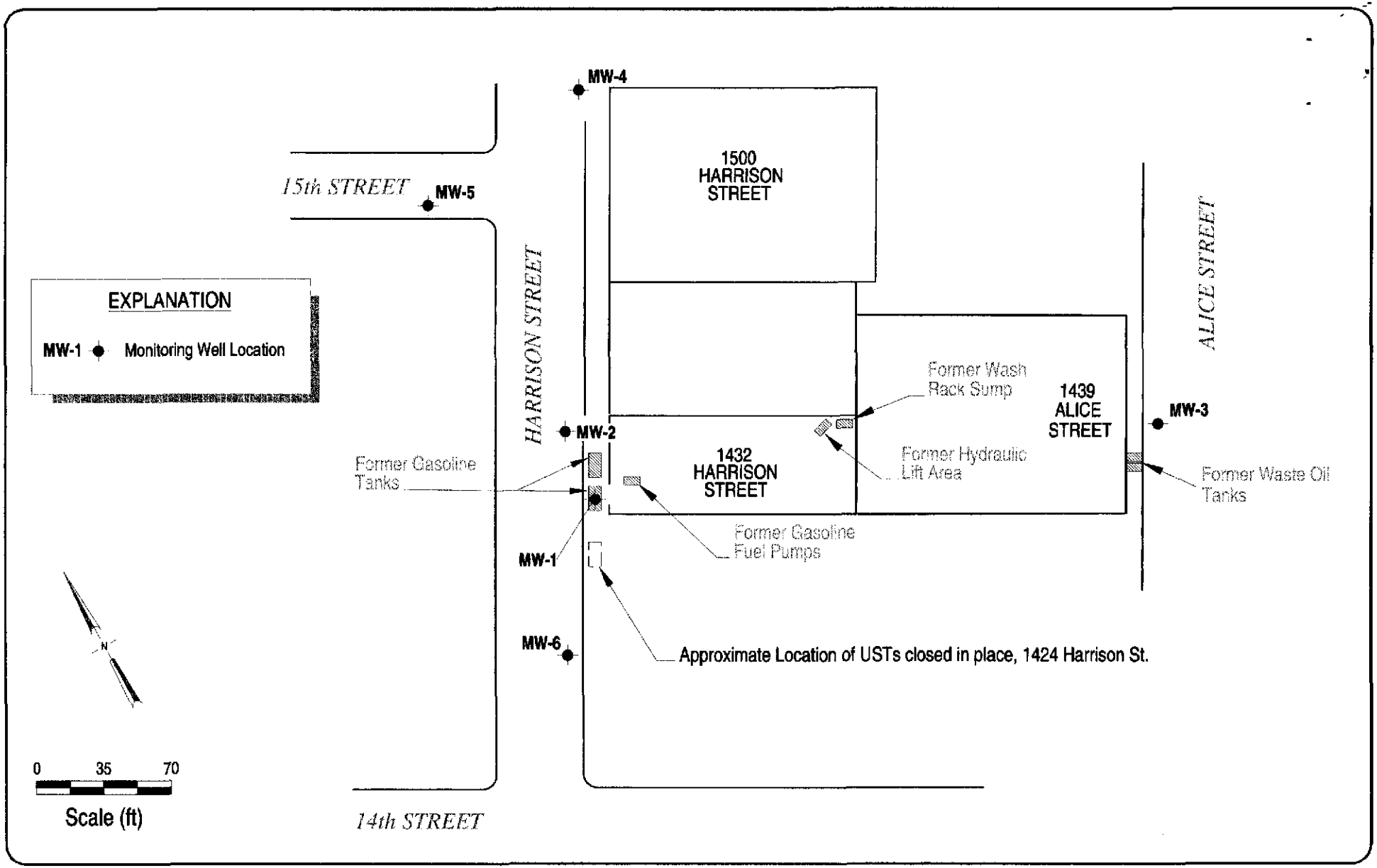
Owen C. Ratchye, P.E.
Project Engineer

Robert Clark-Riddell, P.E.
Project Engineer

cc: Mr. Mark Borsuk, 1626 Vallejo Street, San Francisco, CA 94123-5116

Attachments
A - Summary Data from Soil Investigations
B - Soil Vapor Extraction Test Report
C - Ground Water Sampling Report

\\SERVER\f_drive\PROJECT\SB-2004\OAKL-188\CAP\cap_r3.wpd



CAMBRIA
Environmental Technology, Inc.

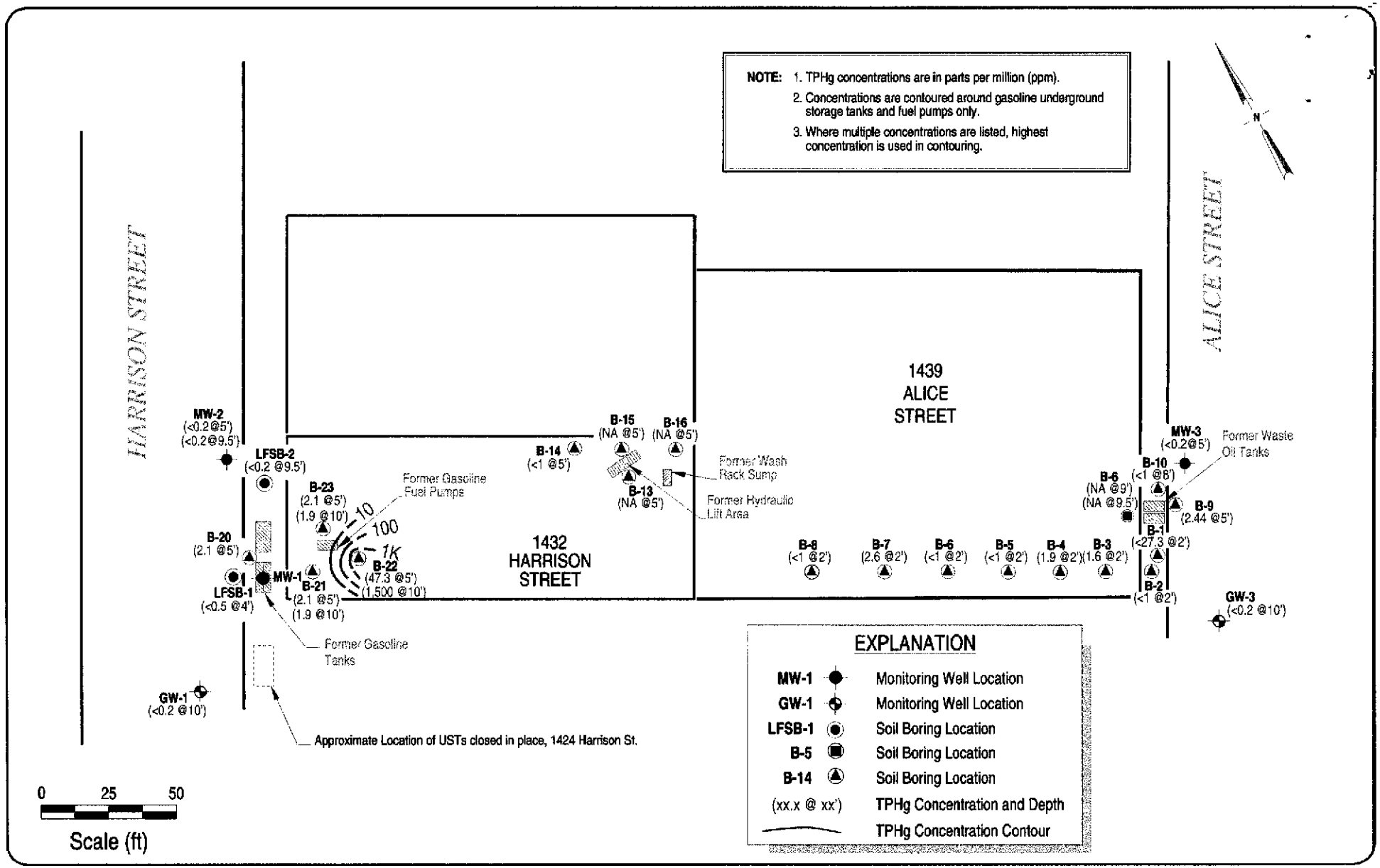
1432 Harrison Street
Oakland, Street

Site Plan

FIGURE
1

F:\PROJECT\SB2004\OAKL-188\FIGURES\NOV97\SIT-PLN-1.DWG

12/17/97



CAMBRIA
Environmental Technology, Inc.

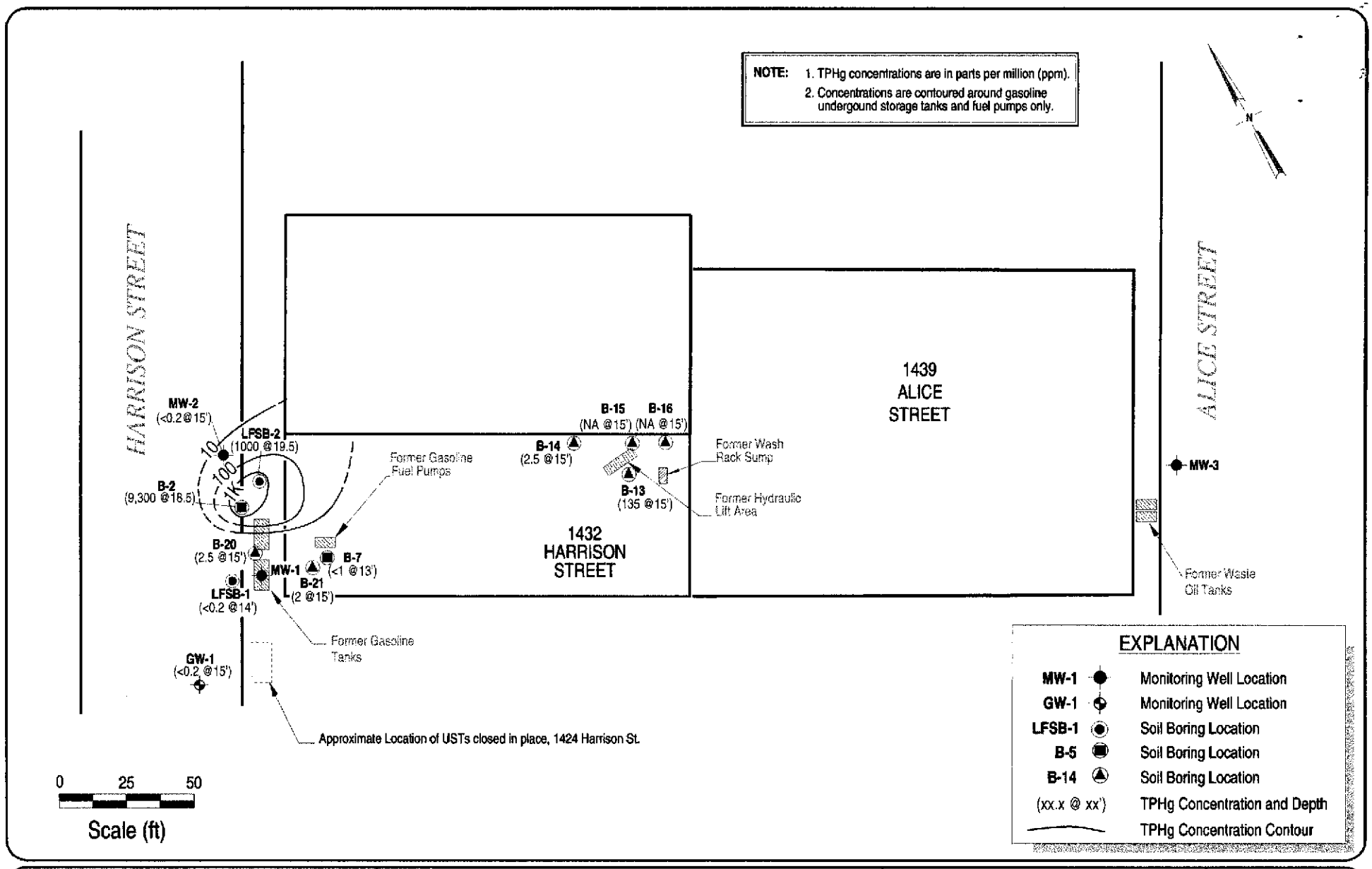
1432 Harrison Street
Oakland, California

TPH-g Concentrations in Soil
at Depth Less Than 10 ft

FIGURE
2

F:\PROJECT\SB-2004\OAKL-188\FIGURES\NOV97\NFLU-AREA-2.DWG

12/17/97



CAMBRIA
Environmental Technology, Inc.

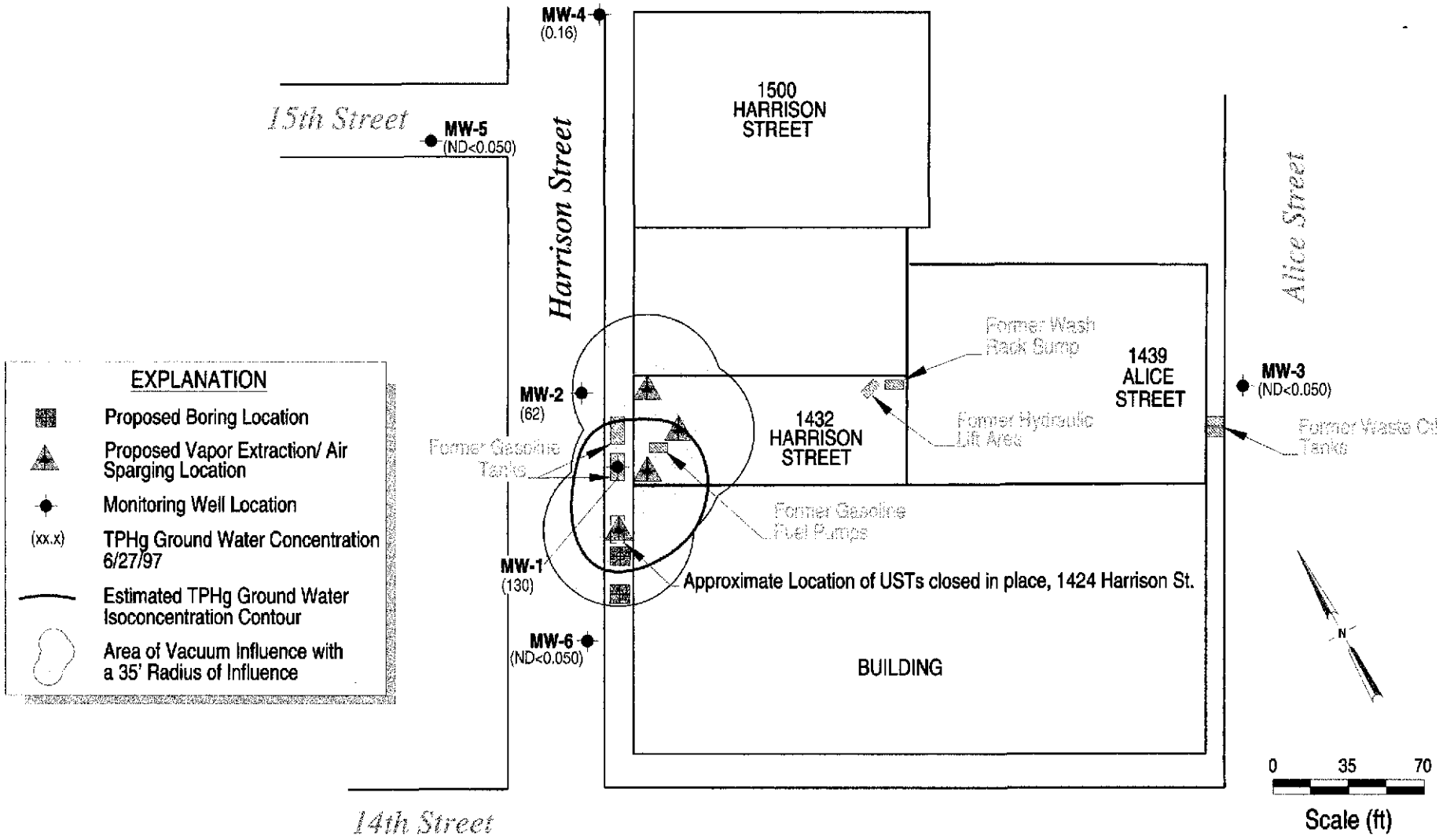
1432 Harrison Street
Oakland, California

F:\PROJECT\SB-2004\OAKL-188\FIGURES\NOV97\TPHG-3.DWG

TPH-g Concentrations in Soil
Between 10 ft and 20 ft
Depths

FIGURE
3

12/17/97



CAMBRIA
Environmental Technology, Inc.

1432 Harrison Street
Oakland, California

Proposed Boring and Well Locations and Estimated System Influence Area

FIGURE
4

F:\PROJECT\SB2004\OAKL-188\FIGURES\NOV97\TPHG-4.DWG

12/17/97

CAMBRIA

ATTACHMENT A

Summary Data from Soil Investigations

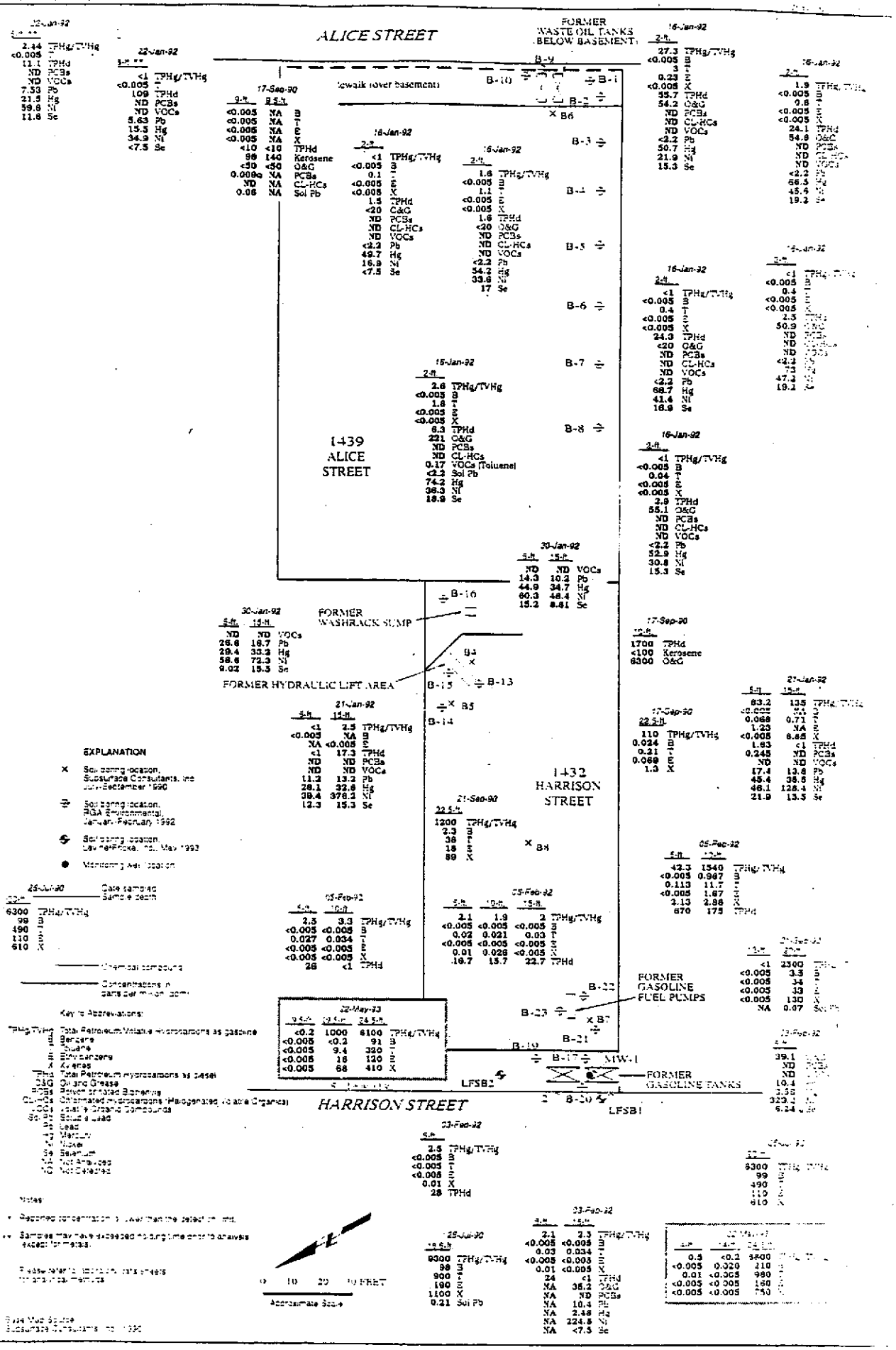


Figure 2 : RESULTS OF SOIL QUALITY ANALYSIS PERFORMED DURING PREVIOUS INVESTIGATIONS AT THE HARRISON STREET GARAGE IN OAKLAND, CALIFORNIA

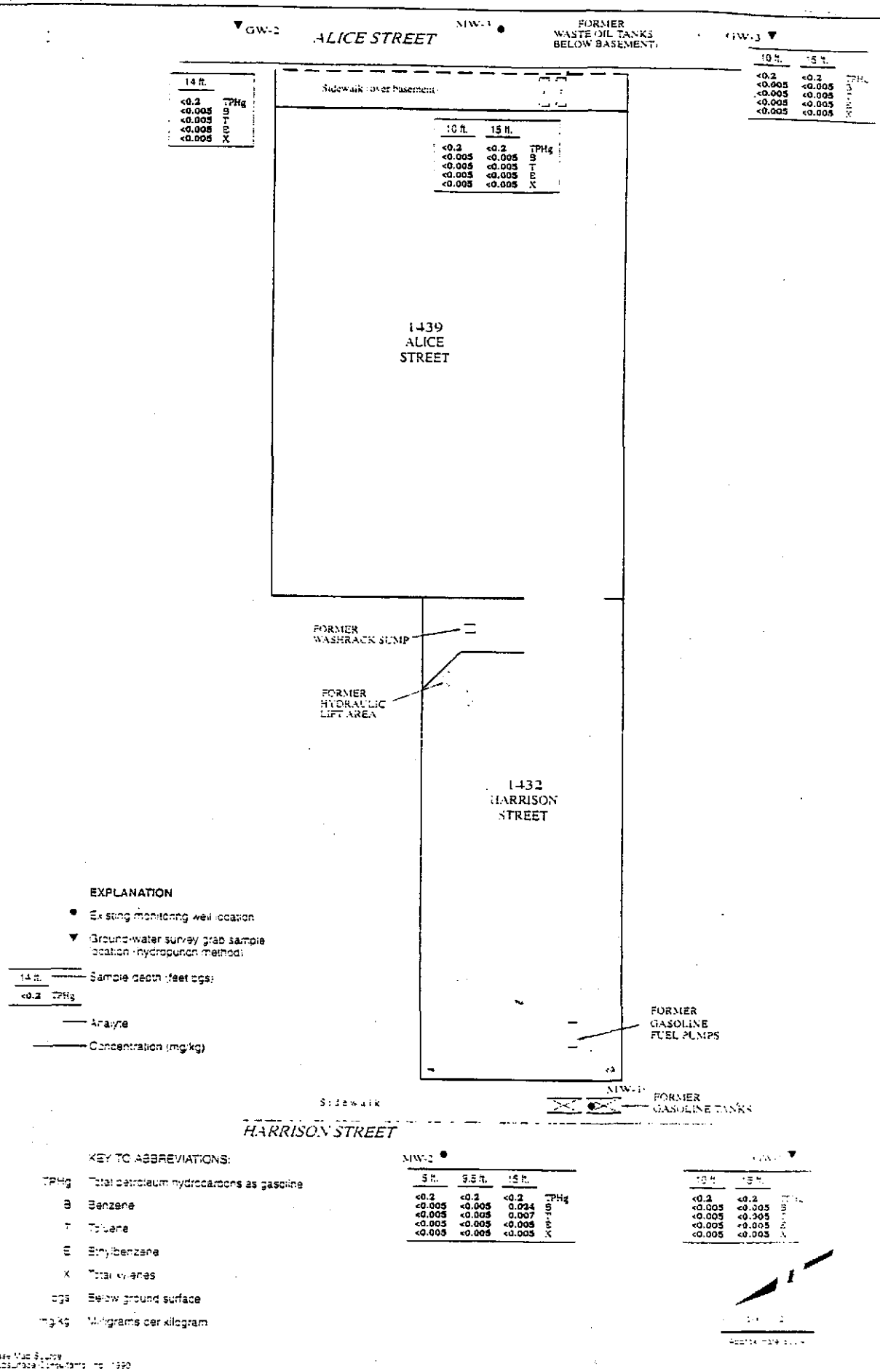


Figure 3 SOIL AND GROUND-WATER SURVEY SAMPLING LOCATIONS, MONITORING WELLS, AND SOIL ANALYSIS RESULTS (mg/kg) AT THE HARRISON STREET GARAGE IN OAKLAND, CALIFORNIA

TABLE 1
SOIL QUALITY RESULTS
HARRISON STREET GARAGE
1432 - 1434 HARRISON STREET, OAKLAND, CALIFORNIA
(all results in parts per million [ppm])

Sample ID	Date Collected	Consultant/ Laboratory	Depth (ft, bgs)	TPHg/ TVHg	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHd	Kerosene	O&G	PCBs	CL-HCs	VOCs	Soluble Pb	Metals Pb	Hg	Ni	Se
Former Waste Oil Tank Area (Basement)																			
B6@9'	17-Sep-90	SCI/C&T	9	NA	<0.005	<0.005	<0.005	<0.005	<10	98	<50	0.009*	ND	NA	0.06	NA	NA	NA	NA
B6@9.5'	17-Sep-90	SCI/C&T	9.5	NA	NA	NA	NA	NA	<10	140	<50	NA	NA	NA	NA	NA	NA	NA	NA
B1-2'	16-Jan-92	RGA/CAL	2	27.3	<0.005	3	0.23	<0.005	55.7	NA	54.2	ND	ND	ND	NA	<2.2	50.7	21.9	15.3
B2-2'	16-Jan-92	RGA/CAL	2	<1	<0.005	0.1	<0.005	<0.005	1.5	NA	<20	ND	ND	ND	NA	<2.2	49.7	16.9	<7.5
B3-2'	16-Jan-92	RGA/CAL	2	1.6	<0.005	1.1	<0.005	<0.005	1.6	NA	<20	ND	ND	ND	NA	<2.2	54.2	33.6	17
B4-2'	16-Jan-92	RGA/CAL	2	1.9	<0.005	0.8	<0.005	<0.005	24.1	NA	54.8	ND	ND	ND	NA	<2.2	66.5	45.6	19.2
B5-2'	16-Jan-92	RGA/CAL	2	<1	<0.005	0.4	<0.005	<0.005	2.5	NA	50.9	ND	ND	ND	NA	<2.2	73	47.2	19.2
B6-2'	16-Jan-92	RGA/CAL	2	<1	<0.005	0.4	<0.005	<0.005	24.3	NA	<20	ND	ND	ND	NA	<2.2	66.7	41.4	16.9
B7-2'	16-Jan-92	RGA/CAL	2	2.6	<0.005	1.6	<0.005	<0.005	6.3	NA	221	ND	ND	(1)	NA	<2.2	74.2	36.3	18.9
B8-2'	16-Jan-92	RGA/CAL	2	<1	<0.005	0.04	<0.005	<0.005	2.9	NA	55.1	ND	ND	ND	NA	<2.2	52.9	30.8	15.3
B9-5'**	22-Jan-92	RGA/CAL	5	2.44	NA	<0.005	NA	NA	11.1	NA	NA	ND	NA	ND	NA	7.53	21.5	59.8	11.6
B10-8'**	22-Jan-92	RGA/CAL	8	<1	NA	<0.005	NA	NA	109	NA	NA	ND	NA	ND	NA	5.63	15.5	34.9	<7.5
E.WALL-8.5B (6)	24-Nov-93	LF/AEN	8.5	820	1.4	7.7	3.9	13	NA	NA	19000	NA	NA	NA	NA	NA	NA	NA	NA
S.WALL-9.5B (7)	24-Nov-93	LF/AEN	9.5	<0.2	0.005	0.022	<0.005	0.02	NA	NA	20	NA	NA	NA	NA	NA	NA	NA	NA
N.WALL-9B (8)	24-Nov-93	LF/AEN	9	<800	<0.05	0.52	1.8	3.4	NA	NA	180	NA	NA	NA	NA	NA	NA	NA	NA
W.WALL-9B	24-Nov-93	LF/AEN	9	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA
N.TANK-10B (9)	24-Nov-93	LF/AEN	10	1300	1.5	2.7	5.9	10	NA	NA	14000	NA	NA	NA	NA	NA	NA	NA	NA
S.TANK-10B (10)	24-Nov-93	LF/AEN	10	<400	<0.2	<0.2	<0.2	<0.2	NA	NA	4800	NA	NA	NA	NA	NA	NA	NA	NA
GW-2-14'	29-Jul-94	LF/AEN	14	<0.2	<0.005	<0.005	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GW-3-10'	29-Jul-94	LF/AEN	10	<0.2	<0.005	<0.005	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GW-3-15'	29-Jul-94	LF/AEN	15	<0.2	<0.005	<0.005	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3-10'	30-Jul-94	LF/AEN	10	<0.2	<0.005	<0.005	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-3-15'	30-Jul-94	LF/AEN	15	<0.2	<0.005	<0.005	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Former Hydraulic Lift Area																			
B4@10'	17-Sep-90	SCI/C&T	10	NA	NA	NA	NA	NA	1700	<100	6300	NA	NA	NA	NA	NA	NA	NA	NA
B5@22.5'	17-Sep-90	SCI/C&T	22.5	110	0.024	0.21	0.069	1.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B13-5'	21-Jan-92	RGA/CAL	5	83.2	<0.005	0.068	1.23	<0.005	1.63	NA	NA	0.245	NA	ND	NA	17.4	45.4	46.1	21.9
B13-15'	21-Jan-92	RGA/CAL	15	135	NA	0.71	NA	8.85	<1	NA	NA	ND	NA	ND	NA	13.8	35.5	128.4	15.5
B14-5'	21-Jan-92	RGA/CAL	5	<1	<0.005	NA	NA	NA	<1	NA	NA	ND	NA	ND	NA	11.2	28.1	39.4	12.3
B14-15'	21-Jan-92	RGA/CAL	15	2.5	NA	NA	<0.005	NA	17.3	NA	NA	ND	NA	ND	NA	13.2	32.8	376.2	15.3
B15-5'	30-Jan-92	RGA/CAL	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	26.6	29.4	56.6	9.02
B15-15'	30-Jan-92	RGA/CAL	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	16.7	33.2	72.3	15.5
B16-5'	30-Jan-92	RGA/CAL	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	14.3	44.9	60.3	15.2
B16-15'	30-Jan-92	RGA/CAL	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	NA	10.2	34.7	48.4	8.81

TABLE 1
SOIL QUALITY RESULTS
HARRISON STREET GARAGE
1432 - 1434 HARRISON STREET, OAKLAND, CALIFORNIA
(all results in parts per million [ppm])

Sample ID	Date Collected	Consultant/ Laboratory	Depth (ft, bgs)	TPHg/ TVHg	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHd	Kerosene	O&G	PCBs	CL-HCs	VOCs	Soluble Pb	Metals Pb	Hg	Ni	Se
SUMP 5.5H (3)	29-Nov-93	LF/AEN	5.5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	<10	ND	NA	NA	NA	2	<0.06	50	<2
HOIST-1-8H	29-Nov-93	LF/AEN	8	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA
HOIST 2-9.5WH (2)	29-Nov-93	LF/AEN	9.5	0.3	<0.005	<0.005	<0.005	<0.005	NA	NA	17000	NA	NA	NA	NA	NA	NA	NA	NA
HOIST 2-11.5H	29-Nov-93	LF/AEN	11.5	970	2.9	14	4.2	24	NA	NA	5100	NA	NA	NA	NA	NA	NA	NA	NA
HOIST 2-9EH	29-Nov-93	LF/AEN	9	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA
E.VAULT-6.5H	29-Nov-93	LF/AEN	6.5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	<10	NA	NA	NA	NA	NA	NA	NA	NA
N. VAULT-7H (4)	29-Nov-93	LF/AEN	7	4.1	<0.005	<0.005	<0.005	23	NA	NA	1700	NA	NA	NA	NA	NA	NA	NA	NA
VAULT-BASE-9.5H (5)	29-Nov-93	LF/AEN	9.5	380	0.05	0.69	0.22	2	NA	NA	14000	NA	NA	NA	NA	NA	NA	NA	NA
Former Gasoline Tank Area																			
1@20.0'	25-Jul-90	SCI/C&T	20	6300	99	490	110	610	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2@18.5'	25-Jul-90	SCI/C&T	18.5	9300	98	900	190	1100	NA	NA	NA	NA	NA	NA	0.21	NA	NA	NA	NA
B7@13'	21-Sep-90	SCI/C&T	13	<1	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B7@20'	21-Sep-90	SCI/C&T	20	2500	3.5	34	33	130	NA	NA	NA	NA	NA	NA	0.07	NA	NA	NA	NA
B8@22 1/2'	21-Sep-90	SCI/C&T	22.5	1200	2.3	38	18	89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B17-5'	03-Feb-92	RGA/CAL	5	NA	NA	NA	NA	NA	NA	NA	39.1	ND	NA	ND	NA	10.4	3.56	329.2	6.24*
B19-5'	03-Feb-92	RGA/CAL	5	2.5	<0.005	<0.005	<0.005	0.01	28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B20-5'	03-Feb-92	RGA/CAL	5	2.1	<0.005	0.03	<0.005	0.01	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B20-15'	03-Feb-92	RGA/CAL	15	2.5	<0.005	0.034	<0.005	<0.005	<1	NA	35.2	ND	NA	NA	NA	10.4	2.48	224.8	<7.5
B21-5'	05-Feb-92	RGA/CAL	5	2.1	<0.005	0.02	<0.005	0.01	16.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B21-10'	05-Feb-92	RGA/CAL	10	1.9	<0.005	0.021	<0.005	0.026	15.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B21-15'	05-Feb-92	RGA/CAL	15	2	<0.005	0.03	<0.005	<0.005	22.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-5'	05-Feb-92	RGA/CAL	5	42.3	<0.005	0.113	<0.005	2.13	670	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B22-10'	05-Feb-92	RGA/CAL	10	1540	0.987	11.7	1.67	2.88	175	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B23-5'	05-Feb-92	RGA/CAL	5	2.5	<0.005	0.027	<0.005	<0.005	26	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
B23-10'	05-Feb-92	RGA/CAL	10	3.3	<0.005	0.034	<0.005	<0.005	<1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB1-4.0	22-May-93	LF/AEN	4	0.5	<0.005	0.01	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB1-14.0	22-May-93	LF/AEN	14	<0.2	0.020	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB1-24.5	22-May-93	LF/AEN	24.5	8800	210	980	160	750	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB2-9.5	22-May-93	LF/AEN	9.5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB2-19.5	22-May-93	LF/AEN	19.5	1000	<0.2	9.4	16	68	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
LFSB2-24.5	22-May-93	LF/AEN	24.5	6100	91	320	120	410	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S.TANK-8FG	06-Dec-93	LF/AEN	8	1500	0.87	43	34	240	NA	NA	NA	NA	NA	NA	<0.5#	4	NA	NA	NA
S.TANK-8G	06-Dec-93	LF/AEN	8	43	0.006	0.088	0.25	1.8	NA	NA	NA	NA	NA	NA	<0.5#	4	NA	NA	NA
N.TANK-7.5G	06-Dec-93	LF/AEN	7.5	3100	11	190	64	400	NA	NA	NA	NA	NA	NA	1.9#	8	NA	NA	NA
N.TANK-8.5FG	06-Dec-93	LF/AEN	8.5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	<0.5#	4	NA	NA	NA

TABLE 1
SOIL QUALITY RESULTS
HARRISON STREET GARAGE
1432 - 1434 HARRISON STREET, OAKLAND, CALIFORNIA
(all results in parts per million [ppm])

Sample ID	Date Collected	Consultant/ Laboratory	Depth (ft, bgs)	TPHg/ TVHg	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHd	Kerosene	O&G	PCBs	CL-HCs	VOCs	Soluble Pb	Metals Pb	Metals Hg	Metals Ni	Metals Se
E.WALL-3G	15-Dec-93	LF/AEN	3	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
S.WALL-3G	15-Dec-93	LF/AEN	3	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
N.WALL-3G	16-Dec-93	LF/AEN	3	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W.WALL-3-N	29-Dec-93	LF/AEN	3	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
W.WALL-3-S	29-Dec-93	LF/AEN	3	0.5	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PJ-2G	07-Dec-93	LF/AEN	2	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DSP-2G	07-Dec-93	LF/AEN	2	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2-5'	30-Jul-94	LF/AEN	5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2-9.5'	30-Jul-94	LF/AEN	9.5	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-2-15'	30-Jul-94	LF/AEN	15	<0.2	0.024	0.007	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GW-1-10'	30-Jul-94	LF/AEN	10	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
GW-1-15'	30-Jul-94	LF/AEN	15	<0.2	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Data entered by MEK/24 Aug 94 Data proofed by TTE QA/QC by TTE

NOTES TO TABLE 1:

NA = Not analyzed
ND = Not detected
* Reported concentration is lower than the detection limit
** Samples may have exceeded holding time prior to analysis (except for metals)
\# Concentrations reported are Organic Lead by DHS Method.

Consultants:

SCI = Subsurface Consultants Incorporated, Oakland, California
RGA = RGA Environmental Consulting, Emeryville, California
L-F = Levine-Fricke Incorporated, Emeryville, California

Analytical Laboratories:

C&T = Curtis & Tompkins Limited, Berkeley, California
CAL = Carter Analytical Laboratory, Campbell, California
AEN = American Environmental Network, Pleasant Hill, California

TABLE 1
SOIL QUALITY RESULTS
HARRISON STREET GARAGE
1432 - 1434 HARRISON STREET, OAKLAND, CALIFORNIA
(all results in parts per million [ppm])

Sample ID	Date Collected	Consultant/ Laboratory	Depth (ft, bgs)	TPHg/ TVHg	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHd	Kerosene	O&G	PCBs	CL-HCs	VOCs	Soluble Pb	Metals Pb	Hg	Ni	Se

Analyses/Methods:

TPHg/TVHg = Total Petroleum/Volatile Hydrocarbons as Gasoline. C&T used a DOHS method, CAL did not specify the method used, and AEN used EPA Method 5030 GCFID.
Benzene, Toluene, Ethylbenzene, and Xylenes = C&T and AEN used EPA Method 8020. CAL did not specify the method used.
TPHd = Total Petroleum Hydrocarbons as Diesel. C&T used a DOHS method and CAL did not specify the method used. AEN used EPA Method 3510/3550 GCFID.
Kerosene = C&T used a DOHS method.
O&G = Oil and Grease. C&T used Standard Method 5520 E,F and CAL used EPA Method 413.1 or 413.2.
PCBs = Polychlorinated Biphenyls. The total result is listed in the table. C&T and CAL used EPA Method 8080 for PCBs.
CL-HCs = Chlorinated Hydrocarbons (Halogenated Volatile Organics). C&T and CAL used EPA Method 8010.
VOCs = Volatile Organic Compounds. C&T and CAL used EPA Method 8240.
Soluble Pb = Soluble Lead. C&T used EPA Method 7420.
Pb = Lead. CAL used EPA Method 6010.
Hg = Mercury. CAL used EPA Method 6010.
Ni = Nickel. CAL used EPA Method 6010.
Se = Selenium. CAL used EPA Method 6010.

(1) Toluene detected at 0.17 ppm.
(2) Hydrocarbons detected at 17,000 ppm.
(3) Arsenic detected at 2 ppm, barium at 61 ppm, beryllium at 0.2 ppm, cadmium at 0.1 ppm, cobalt at 8.1 ppm, chromium at 49 ppm, copper at 17 ppm, vanadium at 32 ppm, and zinc at 33 ppm.
(4) Hydrocarbons detected at 1,500 ppm.
(5) Hydrocarbons detected at 14,000 ppm.
(6) Hydrocarbons detected at 17,000 ppm.
(7) Hydrocarbons detected at 10 ppm.
(8) Hydrocarbons detected at 170 ppm.
(9) Hydrocarbons detected at 13,000 ppm.
(10) Hydrocarbons detected at 4,200 ppm.

The EPA Method 8020 benzene, toluene, ethylbenzene, and xylene results listed in this table were analyzed separately from the VOC EPA 8240 analysis. If benzene, toluene, ethylbenzene, or xylenes were detected by the EPA 8240 analysis, they are listed under the VOC heading.
This table presents soil-quality data obtained from environmental assessments at the Harrison Garage site in Oakland, California. Included is data obtained by SCI, RGA, and Levine-Fricke.

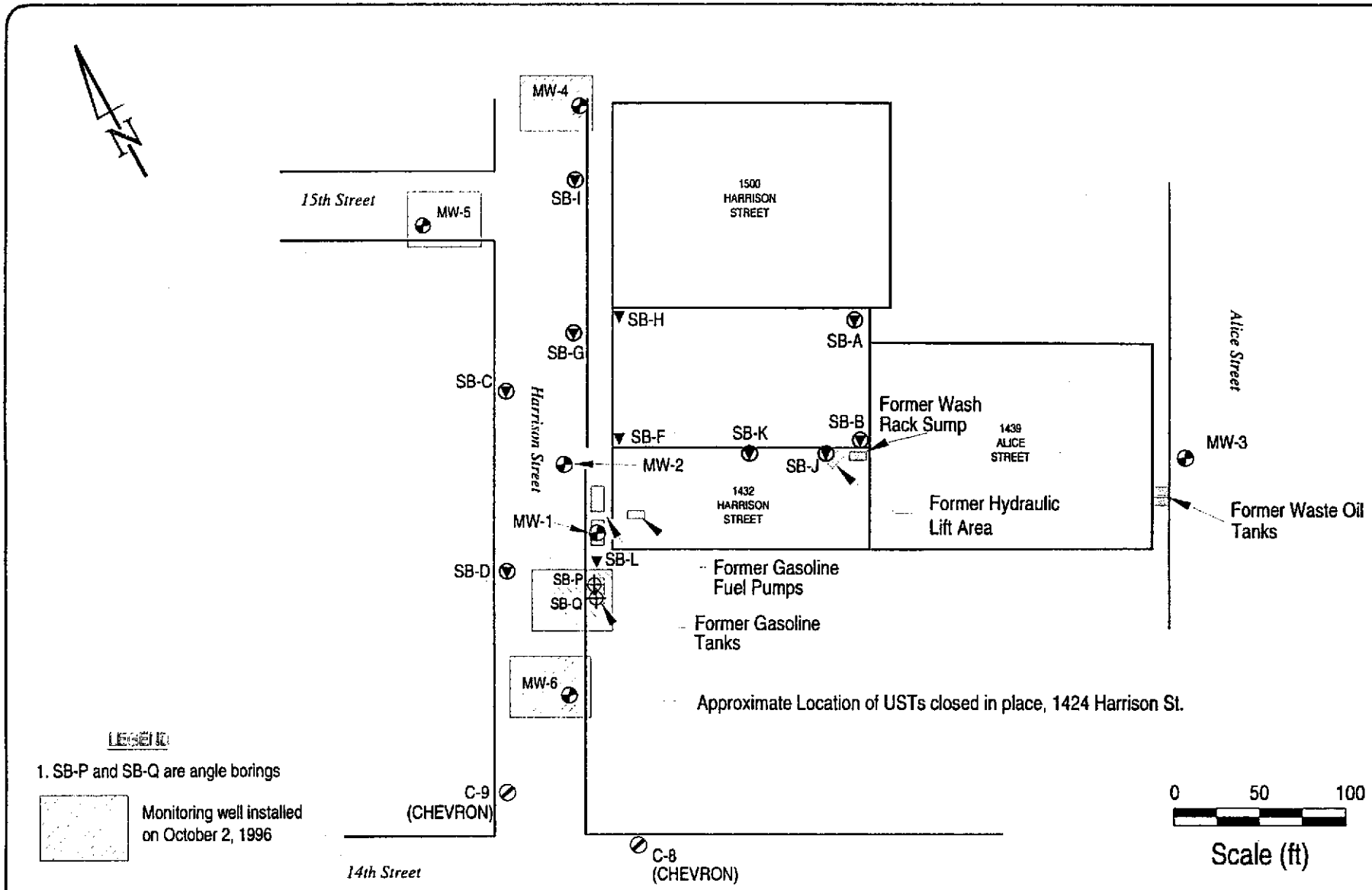
TABLE 2
WELL CONSTRUCTION DATA
HARRISON STREET GARAGE
OAKLAND, CALIFORNIA

Well Number	Well Elevation (feet, msl)	Casing Diameter (inches)	Well Depth (feet, bgs)	Perforated Interval (feet, msl)
MW-1	34.95	4	26.5	19.8 - 9.8
MW-2	35.18	2	26.0	24.4 - 9.4
MW-3	33.97	2	25.0	19.8 - 9.8

Data entered by MEK/24 Aug 94 Data proofed by THB

Elevation data from Brian, Kangas, Foulk, August 1994.

bgs - below ground surface
msl - mean sea level



D:\PROJECT\SB2004\OAKL-188\WELLS456.DWG

CAMBRIA
Environmental Technology, Inc.

EXPLANATION

- Ground Water Monitoring Well
- Chevron Ground Water Monitoring Well
- Soil Sample Location (7/95)
- Grab Ground Water Sample Location (7/95)
- Soil Boring Location (10/96)

Soil Boring and Monitoring
Well Locations

1432 Harrison Street
Oakland, California

FIGURE
1

Table 1. Ground Water Analytic Data -1432 Harrison Street, Oakland, California

Well/Boring ID	Date Sampled	Sample Type	Depth to Water During Drilling	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
				Concentrations in parts per billion (ppb)				
SB-A	7/6/95	grab	~20	330[ab]	16	3.6	1.3	4.9
SB-B	7/7/95	grab	~20	450[c]	55	3.1	5.1	5.0
SB-C	7/6/95	grab	~20	44,000[c]	6,600	5,900	980	4,400
SB-D	7/6/95	grab	~20	70,000[c]	7,400	10,000	1,600	7,200
SB-E	7/6/95	grab	~20	25,000[c]	1,000	3,000	610	2,700
SB-G	7/7/95	grab	~20	84,000[cd]	9,400	16,000	2,200	9,900
SB-I	7/7/95	grab	~20	24,000[c]	6,100	1,400	680	1,600
SB-J	7/7/95	grab	~20	960[c]	110	66	8.7	71
SB-K	7/7/95	grab	~20	72,000[c]	9,600	9,600	1,800	7,000
Blaine Tech Services, Inc Quarterly Sampling, 2nd Quarter 1995								
MW-1	6/27/95	well	18.4	71,000	17,000	18,000	1,600	7,700
MW-2	6/27/95	well	18.8	120,000	23,000	30,000	2,700	13,000
MW-3	---	---	---	---	---	---	---	---

Table 1. Ground Water Analytic Data -1432 Harrison Street, Oakland, California

Well/Boring ID	Date Sampled	Sample Type	Depth to Water During Drilling	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
				Concentrations in parts per billion (ppb)				

Abbreviations

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes analyzed by EPA Method 8020
nd = not detected

Notes

a = lighter gasoline range compounds are significant
b = gasoline range compounds having broad chromatographic peaks are significant
c = unmodified or weakly modified gasoline is significant
d = lighter than water immiscible sheen is present
--- = not sampled in the investigation

Table 2. Soil Analytic Data - 1432 Harrison Street, Oakland, California

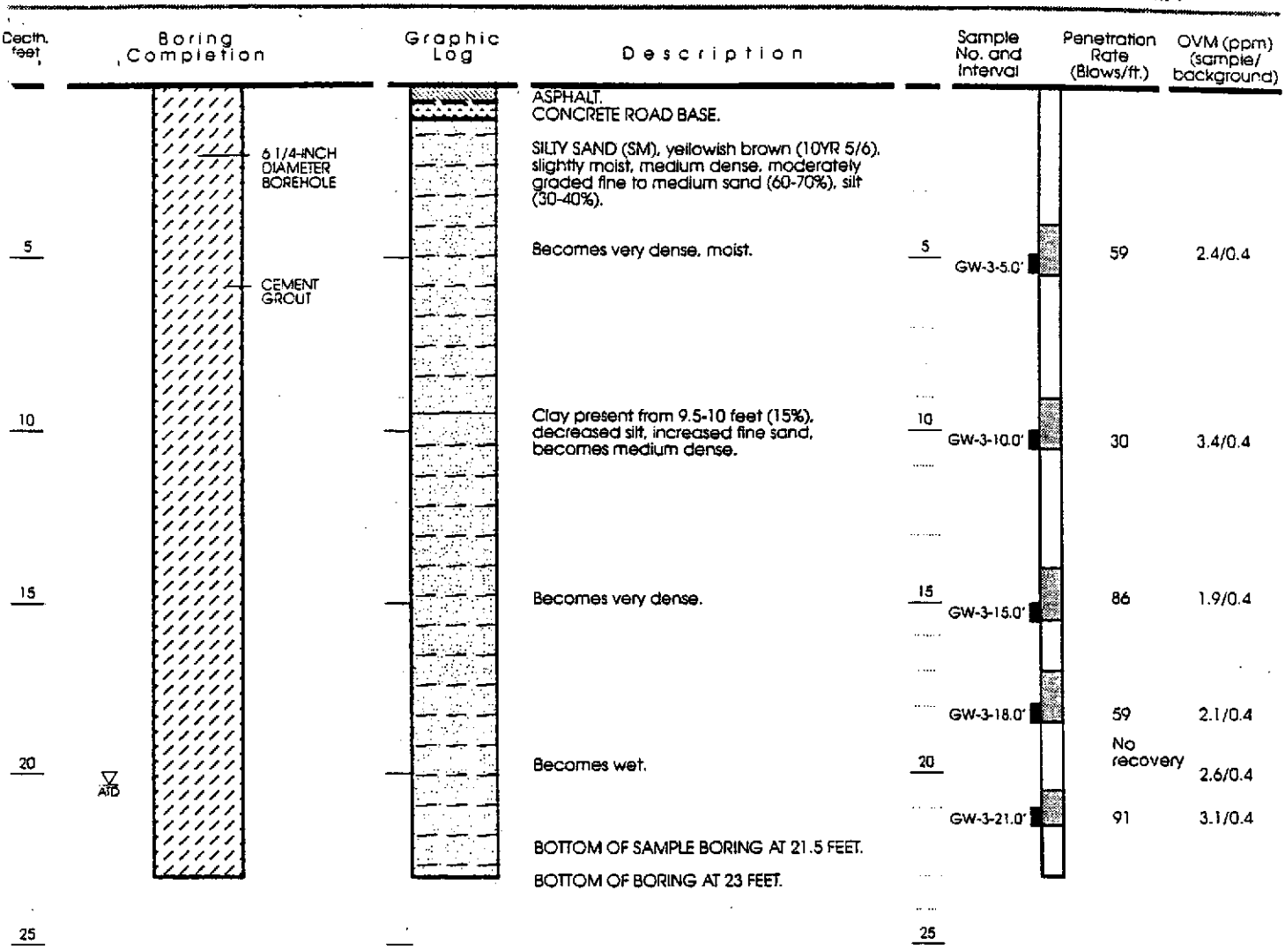
Boring and sample ID	Date Sampled	Sample Depth (ft)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
			Concentrations in parts per million (ppm)				
SB-F 20'	7/7/95	20.0	16[a]	1.9	10	2.5	11
SB-H 20'	7/7/95	20.0	350[a]	4.0	16	5.3	25
SB-L 20'	7/7/95	20.0	220[bc]	1.6	4.1	4.8	24

Abbreviations

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
Benzene, ethylbenzene, toluene and xylenes analyzed by EPA Method 8020
nd = not detected

Notes

a = unmodified or weakly modified gasoline is significant
b = heavier gasoline range compounds are significant
c = gasoline range compounds having broad chromatographic peaks are significant



Date boring drilled: July 29, 1994
Drilling Company: Spectrum
Driller: John
Drilling method: Hollow Stem Auger
Hammer weight: 140 lbs.
LF Geologist: Tim Limbers

EXPLANATION

- Clay
- Silt
- Sand
- Gravel

GW-3-5.0' — Modified California Sampler

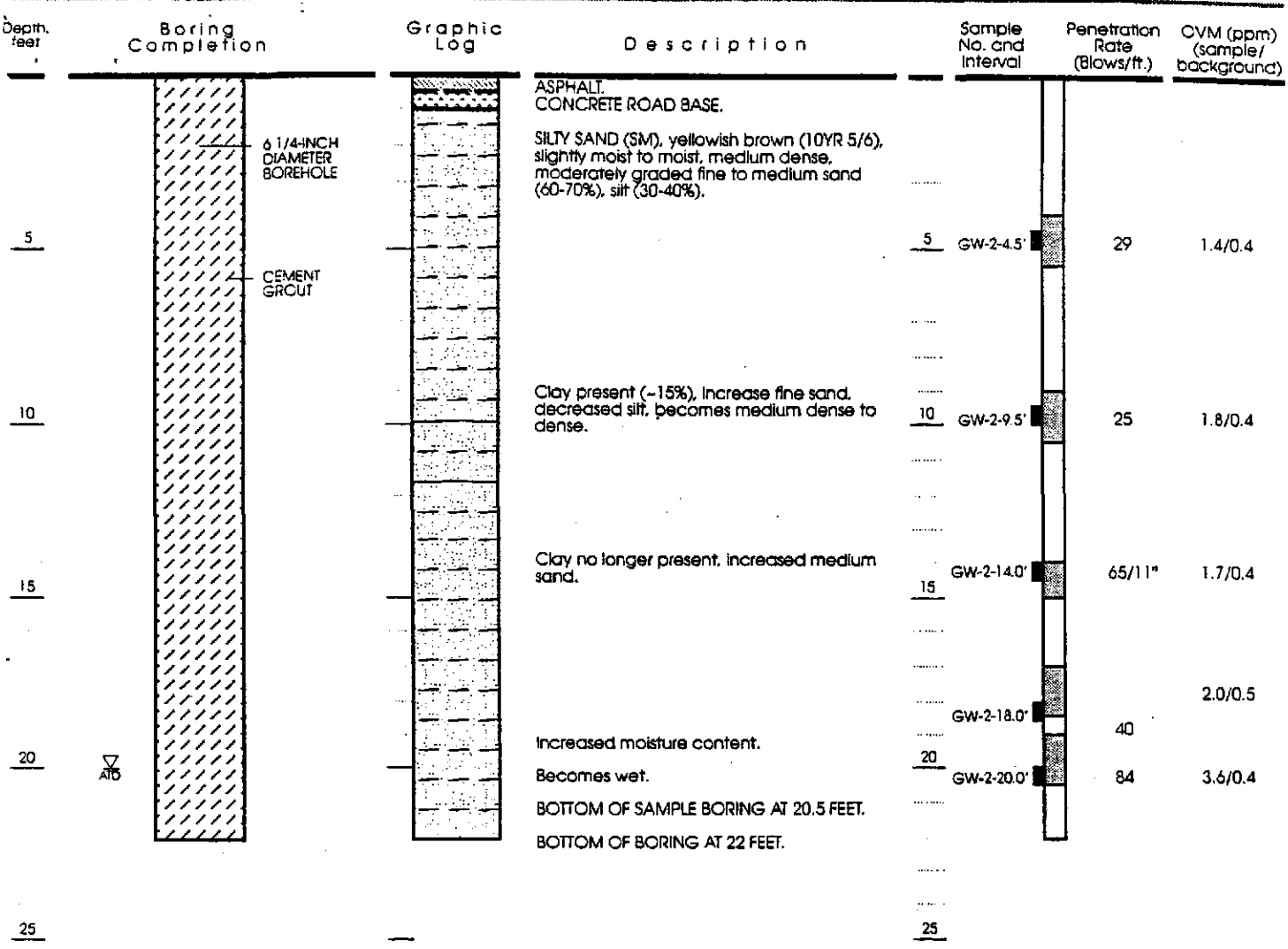
Sample retained for possible chemical analysis

AfD — First water encountered in borehole at time of drilling

OVM (ppm) — Organic vapor meter reading in parts per million (ppm)

Approved by: John Stutmire RG 5714

Figure A3 : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GW-3 *(page 1 of 1)*



EXPLANATION

- Clay
- Silt
- Sand
- Gravel

GW-2-4.5' — Modified California Sampler; Sample retained for possible chemical analysis

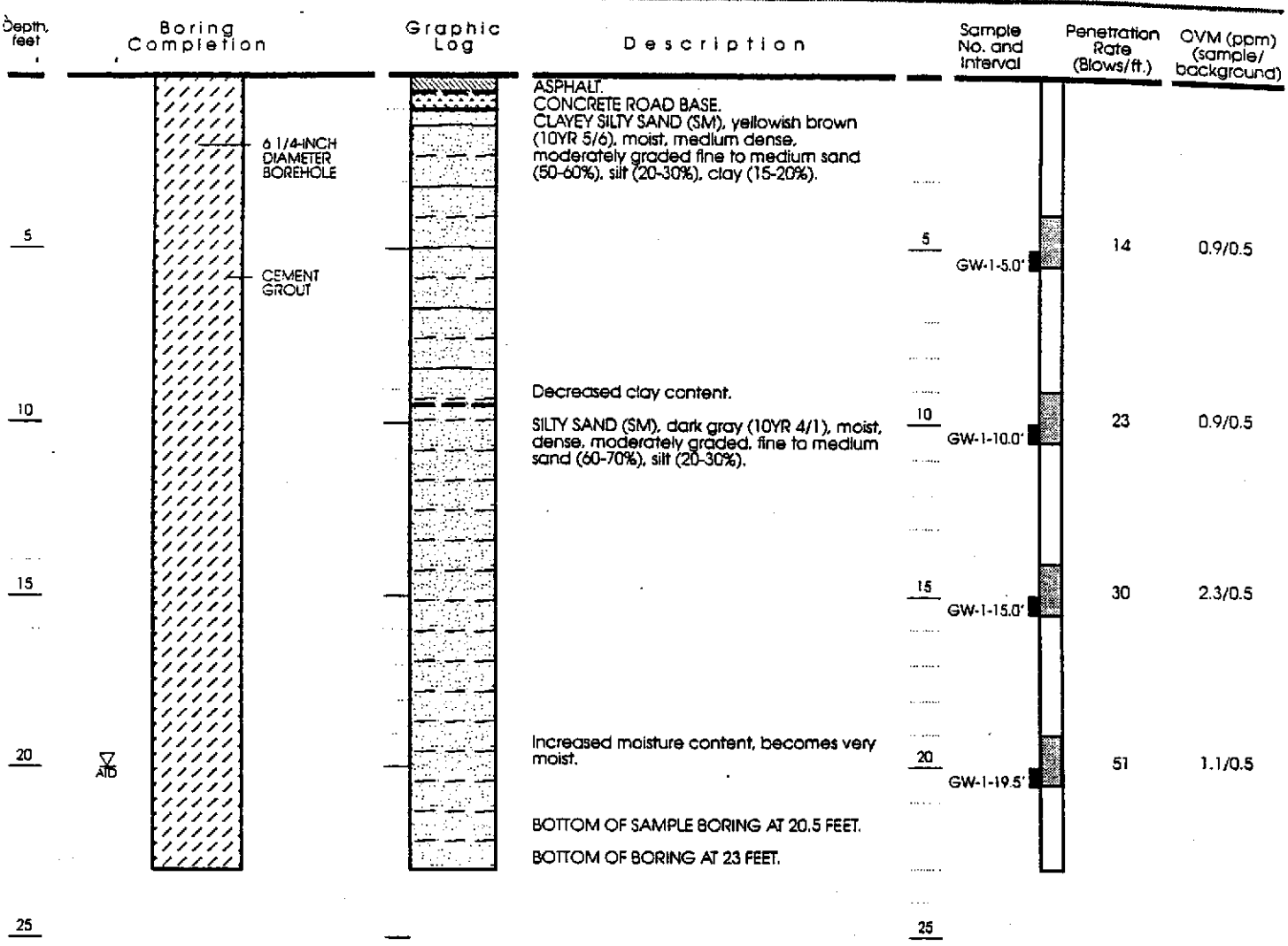
ATD — First water encountered in borehole at time of drilling

OVM (ppm) — Organic vapor meter reading in parts per million (ppm)

Date boring drilled: July 29, 1994
Drilling Company: Spectrum
Driller: John
Drilling method: Hollow Stem Auger
Hammer weight: 140 lbs.
LF Geologist: Tim Limbers

Approved by: John Stevens RG 5714

Figure A2 : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GW-2 *(page 1 of 1)*



EXPLANATION

- Clay
- Silt
- Sand
- Gravel

GW-1-5.0' — Modified California Sampler; Sample retained for possible chemical analysis

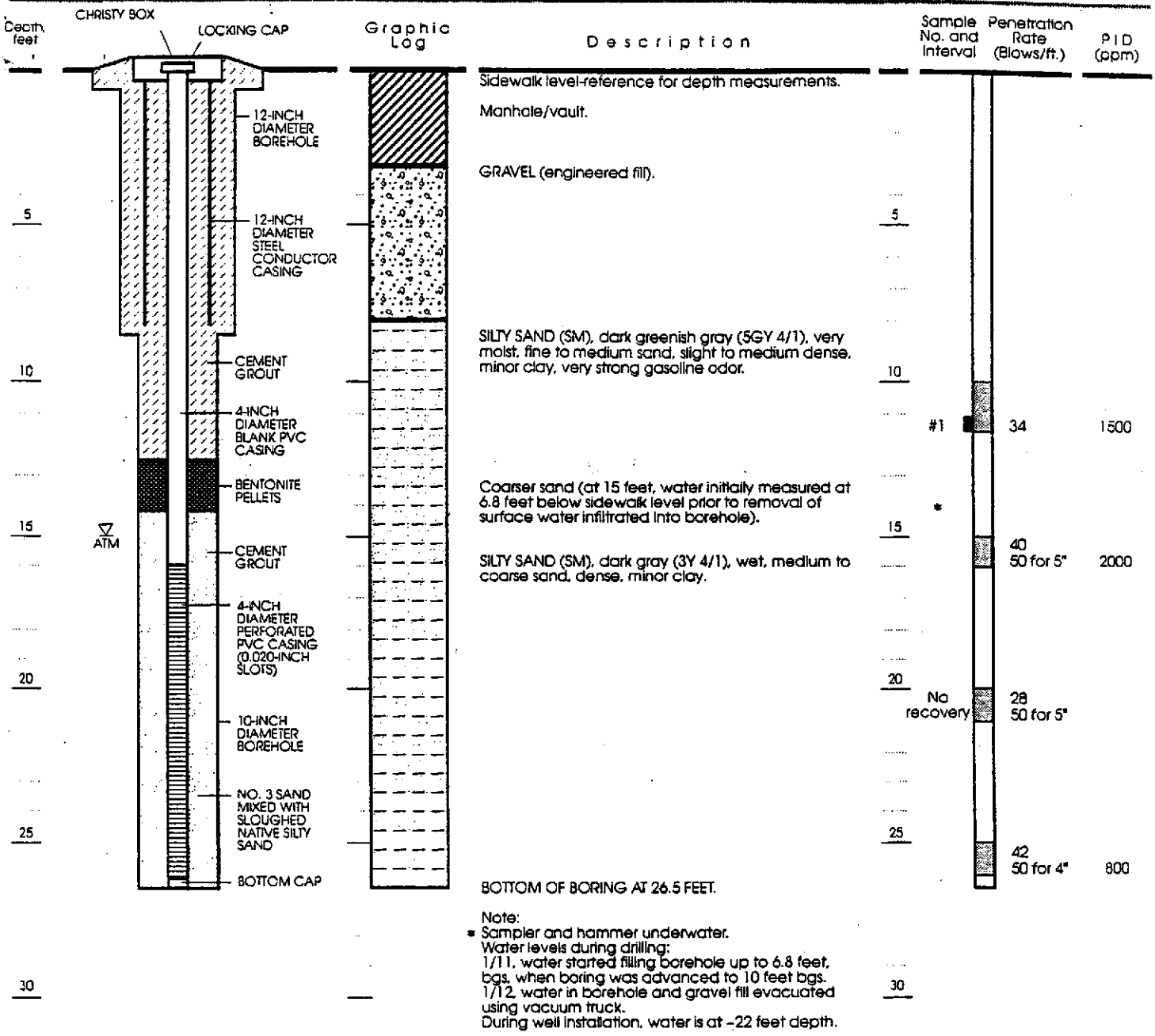
ATD — First water encountered in borehole at time of drilling

OVM (ppm) — Organic vapor meter reading in parts per million (ppm)

Date boring drilled: July 30, 1994
Drilling Company: Spectrum
Driller: John
Drilling method: Hollow Stem Auger
Hammer weight: 140 lbs.
LF Geologist: Tim Limbers

Approved by: John Stevens RG 5714

Figure A1 : LITHOLOGY AND SAMPLE DATA FOR SOIL BORING GW-1 *(page 1 of 1)*



Date well drilled: January 11-12, 1994
Drilling company: West Hazmat Drilling Corp.
Driller: Randy
LF Geologist: Thomas Zakaria

Clay
Silt
Sand
Gravel

2-Inch Modified California Sampler
Sample retained for chemical analysis
PID (ppm) Microtip (Photoionization detector) reading in parts per million
ATD First water encountered in borehole at time of drilling
bgs below ground surface

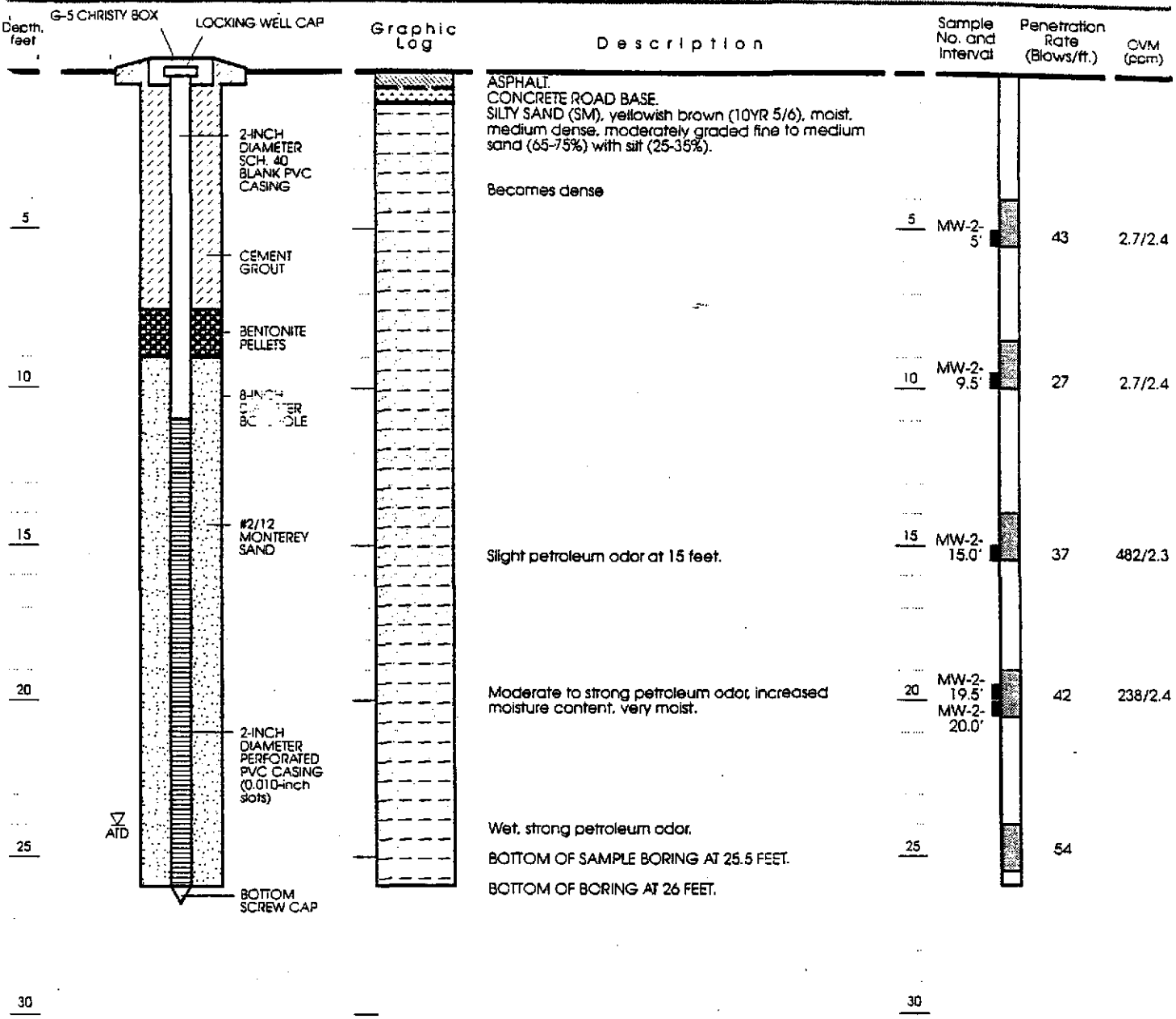
Approved by: J. Stanton RG 5714

Figure A4 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL MW-1 *(page 1 of 1)*

Project No. 2680.29

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

2680L001.JOS:MPM/JSM 083194



Date well drilled: July 30, 1994
Drilling company: Spectrum
Driller: John
Drilling Method: Hollow-Stem Auger
Hammer weight: 140 lbs.
LF Geologist: Tim Limbers

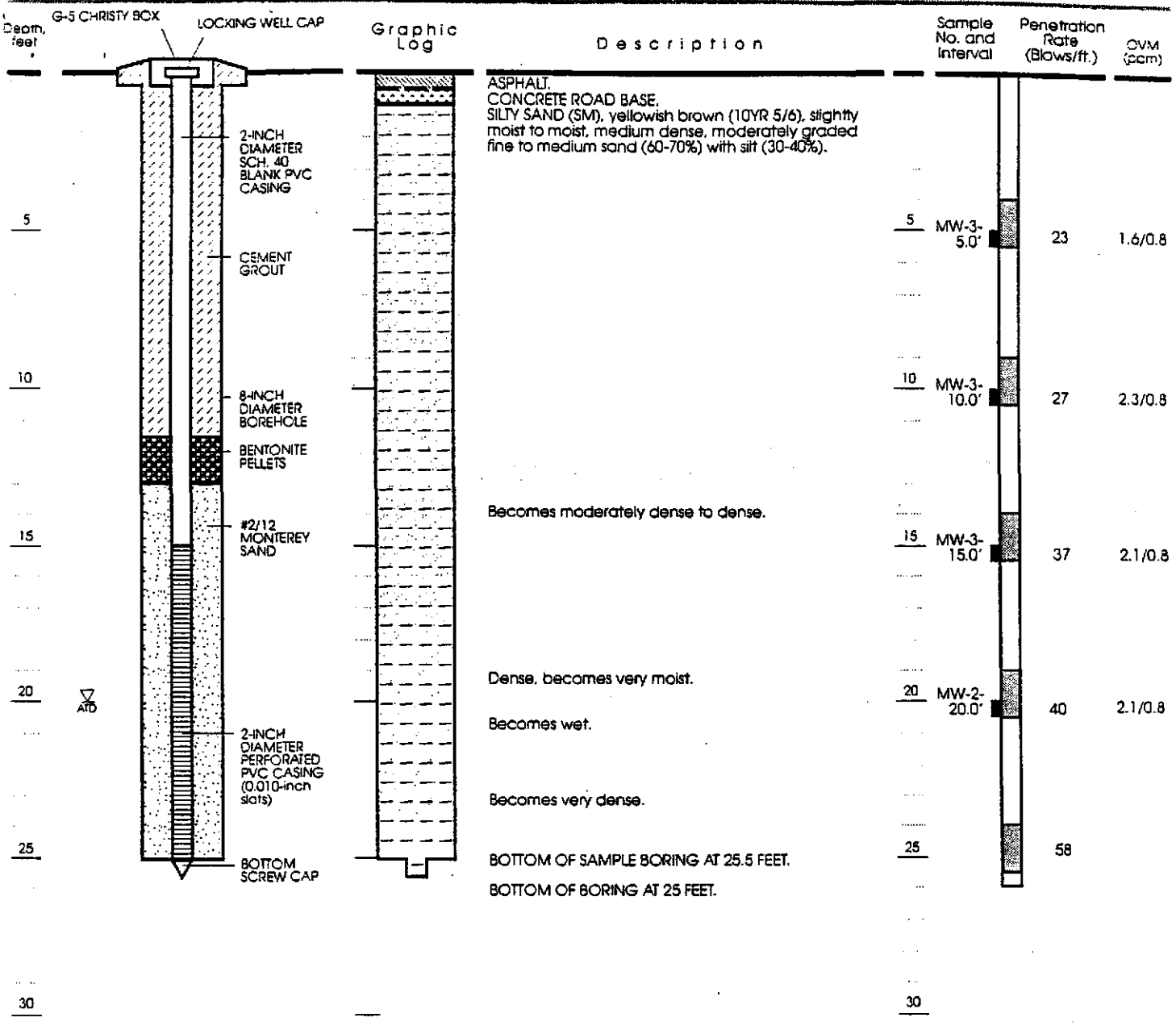
EXPLANATION

Clay
Silt
Sand
Gravel

MW-2-9.5' Modified California Sampler
Sample retained for possible chemical analysis
OVM (ppm) Organic vapor meter reading in parts per million
ATD First water encountered in borehole at time of drilling

Approved by: John Stanton RG 5714

Figure A5 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL MW-2 *(page 1 of 1)*



Date well drilled: July 30, 1994
Drilling company: Spectrum
Driller: John
Drilling Method: Hollow-Stem Auger
Hammer weight: 140 lbs.
LF Geologist: Tim Limbers

EXPLANATION

Clay
Silt
Sand
Gravel

MW-3-5.0' Modified California Sampler
Sample retained for possible chemical analysis
OVM (ppm) Organic vapor meter reading in parts per million
ATD First water encountered at time of drilling

Approved by: John Stevens RG 5714

Figure A6 : WELL CONSTRUCTION AND LITHOLOGY FOR WELL MW-3 *(page 1 of 1)*

Project No. 2680.40

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

2680L006.TLL.MPM 083194

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-A

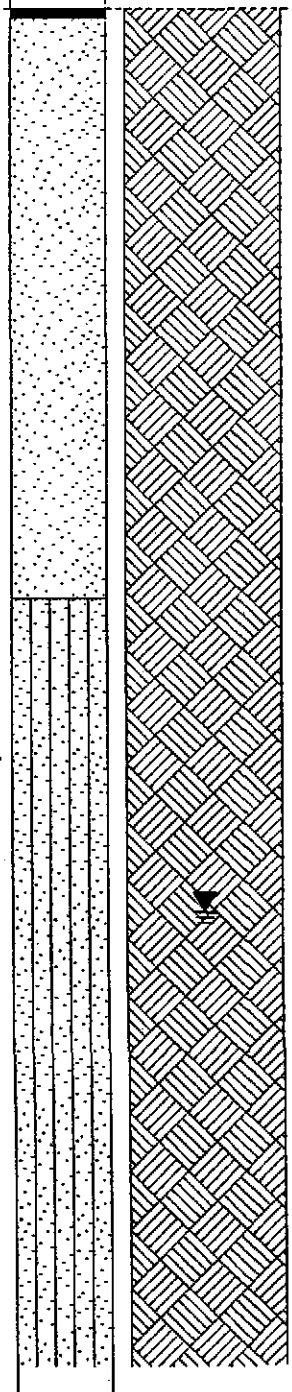
Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 2

Depth Feet	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				SAND;(SP); brown; dry; 5% silt, 95% fine to medium grained sand; high estimated hydraulic conductivity
5				
10				
				Silty SAND; (SM); tan-brown; moist; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity medium brown
15				
20				
25				
30				

TPHg (ppm) | Graphic Log | Boring Completion Graphics | Depth Feet | Additional Comments



Continued Next Page

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/6/95

Drilling Completed 7/6/95

Grout Type Portland Type I/II

Notes: Schwartz Lot

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-A

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 2 of 2

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
30			Continued from previous page				30	
35							35	Bottom of boring
40							40	
45							45	
50							50	
55							55	
60							60	

BOR 54188 8/14/95

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-B

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface						0	
			ASPHALT					
			SAND: (SP); brown; dry; 5% silt, 95% fine to medium grained sand; high estimated hydraulic conductivity					
5							5	
			Silty SAND: (SM); tan-brown; dry; 2% clay, 13% silt, 85% fine to medium sand; moderate estimated hydraulic conductivity					
10							10	
15							15	
20			moist				20	
25							25	
								Bottom of boring
30							30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/6/95

Drilling Completed 7/6/95

Grout Type Portland Type I/II

Notes: Schwartz Lot

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-C

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			ASPHALT
			GRAVELY FILL
			Silty SAND; (SM); brown; dry; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
5			
10			grey; damp to moist
15			
20			wet
25			
30			

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	Bottom of boring
30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/6/95

Drilling Completed 7/6/95

Grout Type Portland Type I/II

Notes: Harrison Street 50' north of MW-2

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-D

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
				GRAVELY FILL
5				Silty SAND; (SM); brown; dry; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
10				tan-brown
15				grey-brown; moist
20				brown with grey staining; wet
25				
30				

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	Bottom of boring
30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/6/95

Drilling Completed 7/6/95

Grout Type Portland Type I/II

Notes: Harrison Street 60' south of MW-2

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-E

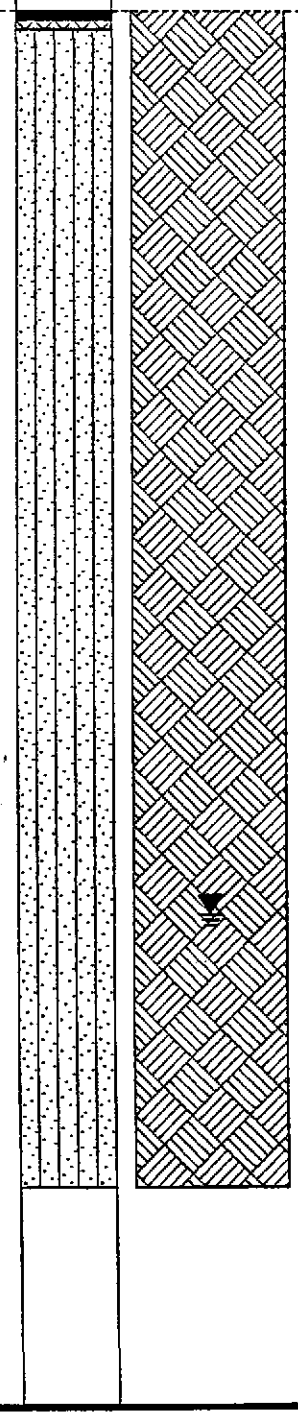
Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			ASPHALT
			GRAVELY FILL
			Silty SAND; (SM); brown; moist; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
5			
10			grey; wet
15			
20			
25			
30			

TPHg (ppm) | Graphic Log | Boring Completion Graphics



Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	Bottom of boring
30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/6/95

Drilling Completed 7/6/95

Grout Type Portland Type I/II

Notes: Harrison Street 62' south of MW-2

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-F

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				ASPHALT
5				Silty SAND; (SM); brown; moist; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
10				tan
15				
20				brown-grey; wet
25				
30				

TPHg (ppm): 160

Graphic Log

Boring Completion Graphics

Depth Feet: 0, 5, 10, 15, 20, 25, 30

Additional Comments: Bottom of boring

Driller Vironex	Drilling Started 7/7/95	Notes: Schwartz Lot
Logged By JME	Drilling Completed 7/7/95	
Water-Bearing Zones	Grout Type Portland Type I/II	

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-G

Location 1432 Harrison Street

Surface Elev. ~35 ft,

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			ASPHALT
			GRAVELY FILL
			Silty SAND; (SM); brown; dry; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
5			
10			grey; damp to moist
15			moist
20			moist-wet
25			
30			

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	
30	Bottom of boring

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Harrison Street 75' north of MW-2

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-H

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			ASPHALT
5			Silty SAND; (SM); brown; moist; 3% clay, 12% silt, 85% fine to medium grained sand; low plasticity; moderate estimated hydraulic conductivity
10			grey-brown; moist
15			grey
20			wet
25			
30			

TPHg (ppm): 350

Graphic Log

Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	Bottom of boring
30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Schwartz Lot

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-I

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			ASPHALT
			GRAVELY FILL
			Silty SAND; (SM); brown; dry; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity
5			
10			
15			moist
20			wet
25			
30			

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	Bottom of boring
30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Harrison Street 180' north of MW-2

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-J

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description
0	Ground Surface		
			CONCRETE
5			Silty SAND; (SM); medium-brown; moist; 2% clay, 13% silt, 85% fine to medium grained sand; low plasticity; moderate estimated hydraulic conductivity
10			grey-brown
15			medium-brown
20			wet
25			
30			

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth Feet	Additional Comments
0	
5	
10	
15	
20	
25	
30	Bottom of boring

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Borsuk Lot

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-K

Location 1432 Harrison Street

Surface Elev. ~35 ft.

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface						0	
			CONCRETE					
			Silty SAND; (SM); medium-brown; moist; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity					
5							5	
10							10	
15							15	
20			wet				20	
25							25	
								Bottom of boring
30							30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Borsuk Lot

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 003

Boring ID SB-L

Location 1432 Harrison Street

Surface Elev. ~35 ft,

Page 1 of 1

Depth Feet	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth Feet	Additional Comments
0	Ground Surface						0	
			CONCRETE					
			Silty SAND: (SM); dark-brown; wet; 2% clay, 13% silt, 85% fine to medium grained sand; moderate estimated hydraulic conductivity					
5							5	
10			grey-brown				10	
15							15	
20			grey				20	
				220				Bottom of boring
25							25	
30							30	

Driller Vironex

Logged By JME

Water-Bearing Zones

Drilling Started 7/7/95

Drilling Completed 7/7/95

Grout Type Portland Type I/II

Notes: Borsuk Sidewalk

BOR 54188 8/14/95

Cambria Environmental Technology, Inc.

Table 1. Soil Sample Analytic Data - 1432 Harrison Street, Oakland, California

Soil Boring/ (Monitoring Well)	Sampling Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	Methyl tert-butyl ether
		(Concentrations reported in parts per million.)					
SB-M/(MW-4)-20.0	10/02/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-N/(MW-5)-20.0	10/02/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-O/(MW-6)-20.5	10/03/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05
SB-P-3.75	10/03/96	3.8	<0.005	0.016	0.017	0.084	<0.05
SB-P-12.7	10/03/96	1500[a,b]	0.55	14	25	100	2.0
SB-Q-3.75	10/03/96	4.3[c]	0.006	0.024	0.027	0.11	<0.02
SB-Q-9.6	10/03/96	1900[a,b]	0.95	15	43	200	<1.4

Notes:

TPHg= Total purgeable petroleum hydrocarbons as gasoline by EPA method Modified 8015.

Benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA method 8020.

Methyl tert-butyl ether by modified EPA method 8020.

<x=not detected above x parts per million

[a] = Heavier gasoline range compounds significant

[b] = Gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline

[c] = Strongly aged gasoline or diesel range compounds are significant

DRILLING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task015

Well ID MW-4 Boring ID SB-M

Location 1432 Harrison Street, Oakland, CA

Surface Elev. N/A ft, Page 1 of 1

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				Asphalt
				Cement
				Silty SAND; (SM); light brown; dense; dry; 30% silt, 70% medium grained sand; no plasticity; moderate estimated permeability.
5				
10				Damp.
15				SAND; (SP); Moist; very dense; 10% silt, 90% medium grained sand; moderate to high estimated permeability. Brown/grey.
20				Grey; wet.
25				
30				
35				

TPHg (ppm): <1.0

Graphic Log / Well Construction Graphics

Depth (feet)	Well Construction Details
0	T.O.C. Elev.
5	
10	
15	
20	
25	Bottom of boring
30	
35	

Driller Gregg Drilling

Logged By Philip Gittens

Drilling Started 10/2/96

Drilling Completed 10/2/96

Construction Completed 10/2/96

Development Completed 10/24/96

Water Bearing Zones N/A

Development Yield N/A

Well Casing 2" Dia. 0' to 15'

Casing Type Schedule 40 PVC

Well Screen 2" Dia. 15' to 25'

Screen Type Schedule 40 PVC

Slot Size 0.010"

Drilling Mud N/A

Grout Type Portland I/II

Bentonite Seal 11' to 13'

Sand Pack 13' to 25'

Sand Pack Type #2/16 Sand

Static Water Level 19.32 ft Depth

Date 10/28/96

Notes: East side of Harrison Street, 37' north of 15th Street.

WELL 54188 12/11/96

Cambria Environmental Technology, Inc.

DRILLING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task015

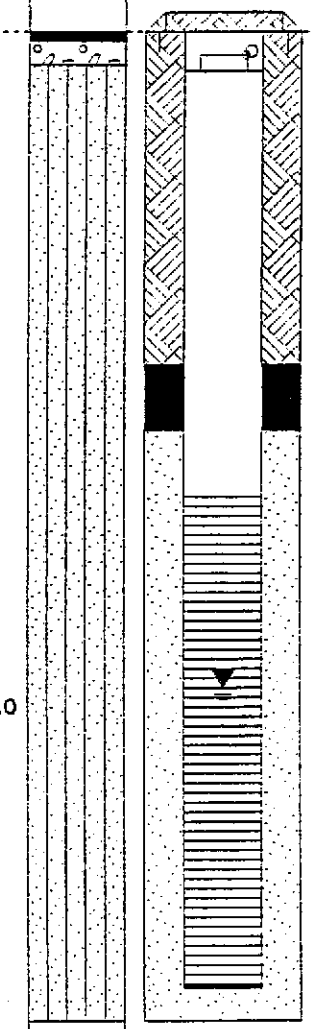
Well ID MW-5 Boring ID SB-N

Location 1432 Harrison Street, Oakland, CA

Surface Elev. N/A ft, Page 1 of 1

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description	TPHg (ppm)
0	Ground Surface				
				Asphalt / Cement	
				SAND; (SP); light brown; dry; 10% silt, 90% medium grained sand; no plasticity; moderate to high estimated permeability.	
5					
10				Silty SAND; (SM); light brown; dry; 20% silt, 80% medium grained sand; no plasticity; moderate to high estimated permeability.	
15				Moist.	
20				Grey; wet.	<1.0
25					
30					
35					

Graphic Log / Well Construction Graphics



Depth (feet)	Well Construction Details
0	T.O.C. Elev.
5	
10	
15	
20	
25	
30	Bottom of boring
35	

Driller Gregg Drilling	Development Yield N/A	Bentonite Seal 10' to 12'
Logged By Philip Gittens	Well Casing 2" Dia. 0' to 14'	Sand Pack 12' to 30'
Drilling Started 10/2/96	Casing Type Schedule 40 PVC	Sand Pack Type #2/16 Sand
Drilling Completed 10/2/96	Well Screen 2" Dia. 14' to 29'	Static Water Level 19.88 ft Depth
Construction Completed 10/2/96	Screen Type Schedule 40 PVC	Date 10/28/96
Development Completed 10/24/96	Slot Size 0.010"	Notes: South side of 15th Street,
Water Bearing Zones N/A	Drilling Mud N/A	41' west of Harrison St.
	Grout Type Portland I/II	

WELL 54188 12/11/96

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 015

Boring ID SB-O

Location 1432 Harrison Street, Oakland, CA

Surface Elev. N/A ft,

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				Asphalt
				Cement
				Silty SAND; (SM); orange/brown; damp; 20% silt, 80% medium grained sand; no plasticity; moderate to high estimated permeability.
5				
10				Light brown.
15				SAND; (SP); light brown; moist; 10% silt, 90% medium grained sand; non-plastic; high estimated permeability.
				Grey; 3% silt, 97% medium grained sand.
20				
25				Wet.
30				Grey/brown.
35				

TPHg (ppm): <1.0

Graphic Log

Boring Completion Graphics

Depth (feet)	Additional Comments
0	
5	
10	
15	
20	
25	
30	Bottom of boring
35	

Driller Gregg Drilling

Logged By Philip Gittens

Water-Bearing Zones N/A

Drilling Started 10/3/96

Drilling Completed 10/3/96

Grout Type Portland I/II

Notes: East side of Harrison Street, 81' north of 14th Street.

BOR 54188 12/12/96

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 015

Boring ID SB-P

Location 1432 Harrison Street, Oakland, CA

Surface Elev. N/A ft,

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface						0	
			Asphalt Cement					
			Silty SAND; (SM); grey; damp; 20% silt, 80% medium grained sand; no plasticity; moderate to high estimated permeability.	3.8				
5							5	
			Sandy SILT; (ML); grey; damp; 10% clay, 60% silt, 30% medium grained sand; medium plasticity; low to moderate estimated permeability.					
10							10	
				1,500				Bottom of boring
15							15	

Driller Gregg Drilling

Logged By Philip Gittens

Water-Bearing Zones N/A

Drilling Started 10/3/96

Drilling Completed 10/3/96

Grout Type Portland I/II

Notes: Boring located beneath UST closed in place at 1425 Harrison St.

BOR 54188 12/12/96

Cambria Environmental Technology, Inc.

BORING LOG

Client: Alvin H. Bacharach and Barbara Jean Borsuk

Project No: 54-188 Phase Task 015

Boring ID SB-Q

Location 1432 Harrison Street, Oakland, CA

Surface Elev. N/A ft,

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			
				Asphalt
				Cement
				Silty SAND: (SM); grey; damp; 20% silt, 80% medium grained sand; no plasticity; moderate to high estimated permeability.
5				
				Sandy SILT: (ML); grey; damp; 10% clay, 60% silt, 30% medium grained sand; medium plasticity; low to moderate estimated permeability.
10				
15				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
4.3			5	
1,900			10	Bottom of boring
			15	

Driller Gregg Drilling

Logged By Philip Gittens

Water-Bearing Zones N/A

Drilling Started 10/3/96

Drilling Completed 10/3/96

Grout Type Portland I/II

Notes: Boring located beneath UST closed in place at 1425 Harrison St.

BOR 54188 12/12/96

CAMBRIA

ATTACHMENT B

Soil Vapor Extraction Test Report

CAMBRIA

September 11, 1996

Mr. Tom Peacock
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Soil Vapor Extraction Test Report**
1432 Harrison Street
Oakland, CA

Dear Mr. Peacock:

Cambria Environmental Technology, Inc. (Cambria) performed a soil vapor extraction (SVE) test on behalf of Mr. Alvin H. Bacharach and Ms. Barbara Jean Borsuk on August 6, 1996 at the site referenced above (Figure 1). The test objective was to determine whether SVE could be used as a viable remediation alternative. Presented below are the SVE test procedures, test equipment, test results, conclusions and recommendations.

SOIL VAPOR EXTRACTION TESTING

SVE Test Procedures

Cambria performed SVE testing on two existing ground water monitoring wells for approximately 3 hours on each well. During testing, we measured the vapor extraction flow rate, the vacuum applied to the wellhead, and the vacuum influence in a nearby well. We also submitted bag samples of extracted vapor from each well for analysis for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and xylenes (BTEX). We selected wells MW-1 and MW-2 for SVE testing since they are located near the estimated hydrocarbon source area and have sufficient well screen available in the vadose zone. Prior to testing, we notified the Bay Area Air Quality Management District (BAAQMD) about the test procedures, scope of work and dates as required by the BAAQMD.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH:(510) 420-0700
FAX:(510) 420-9170

SVE Test Equipment

A VR Systems Model V3 internal combustion engine (ICE) was used to extract and treat soil vapor. A Foxboro Model 108 OVA Flame Ionization Detector (FID) was used to measure hydrocarbon concentrations in extracted vapor in the field. A TSI Model No. 8355 VelociCalc air mass flow meter was used to measure vapor extraction flow rates. A Thomas Industries Model No. 107CDC20 vacuum

pump was used to collect the vapor samples. Magnahelic differential pressure gauges were used to measure the vacuum applied at the subject wellhead and induced in the nearby monitoring well.

SVE Test Results

SVE testing results are presented in Tables 1 and 2, respectively. Analytic results for soil vapor are included in Attachment A. Although the analytic results are reported in micrograms per liter of air, we converted the readings to parts per million by volume (ppmv) to allow comparison to field instrumentation. As shown on Table 1, the TPHg concentrations in soil vapor ranged from 3,100 to 2,600 ppmv in well MW-1 and from 22,000 to 28,000 ppmv in well MW-2. The highest benzene concentration in extracted vapor was 590 ppmv in well MW-2.

Vapor extraction flow rates ranged from 1.0 to 2.2 standard cubic feet per minute (scfm) in well MW-1 under an applied vacuum ranging from 40 to 150 inches of water, resulting in a TPHg removal rate of 1 to 2 pounds per day (ppd). Vapor extraction flow rates ranged from 3.0 to 3.4 scfm in well MW-2 under an applied vacuum ranging from 40 to 150 inches of water, resulting in a TPHg removal rate of 21 to 31 ppd. Based on Levine Fricke's well logs, about three feet of well screen were available for vapor extraction in well MW-1 and about seven feet were available in well MW-2. This limited well screen may have affected the achievable vapor extraction flow rates. Well MW-2, with the most available well screen, had the highest vapor extraction flow rate. Although the relatively high applied vacuum most likely raised the water level within each test well, no water accumulated in the ICE water knockout container during testing.

The moderate vacuum required to induce vapor flow suggests that the subsurface consists of moderate permeability materials, which is consistent with the boring logs that show that the site is underlain by sand and silty sand.

Estimated SVE Radius of Influence

To determine the effective radius of influence, we compared the applied vacuum to the vacuum observed in nearby wells during SVE testing of well MW-1. We estimated the theoretical radius of influence according to the steady-state radial distribution equation by Johnson, et al .[1] As shown on Table 2, the theoretical radius of vacuum influence is about 44 ft.

---

1 P.C. Johnson, C.C. Stanley, M. W. Kemblowski, D.L. Byers, and J.D. Colthart, *A Practical Approach to the Design, Operation, and Monitoring of In Situ Soil Venting Systems*, Ground Water Monitoring and Review, Spring 1990

For comparison purposes, we also estimated the effective radius of influence according to Buscheck et al.[2] This approach first involves normalizing the vacuum data by dividing the vacuum observed at the wellhead and at the monitoring wells by the vacuum observed at the wellhead. The normalized vacuum data is then plotted on a log basis versus the distance to the vacuum influence monitoring wells. The effective radius of influence is frequently considered to be the distance corresponding to 1% of the normalized vacuum. Based on the influence data shown on Table 2 and presented in Figure 2, the estimated effective radius of influence ranges from about 25 to 31 ft. This radius of influence range is consistent with the estimate presented above using Johnson et al.

CONCLUSIONS

Test results indicate that SVE could effectively remove hydrocarbons from the subsurface soils, with an estimated radius of influence between 25 to 44 ft.

RECOMMENDATIONS

If active remediation is required, then short-term SVE combined with air sparging (AS) would probably be the most cost-effective solution for remediating this site since it is underlain by moderately permeable soils. SVE would remove the easily extractable hydrocarbons, while AS would increase volatilization of hydrocarbons in ground water. AS would also increase the levels of dissolved oxygen in ground water which would stimulate aerobic biodegradation of hydrocarbons. To increase achievable vapor extraction flow rates, we recommend installing vapor extraction wells with more well screen in the vadose zone than the existing monitoring wells.

2 T.E. Buscheck, T. R. Peargin, *A Summary of Nationwide Vapor Extraction System Performance Study*, November 1991.

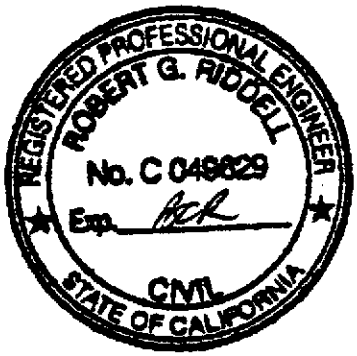
CLOSING

Cambria appreciates this opportunity to provide environmental consulting services for Mr. Alvin H. Bacharach and Ms. Barbara Jean Borsuk. Please call us if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

John Espinoza
Staff Engineer

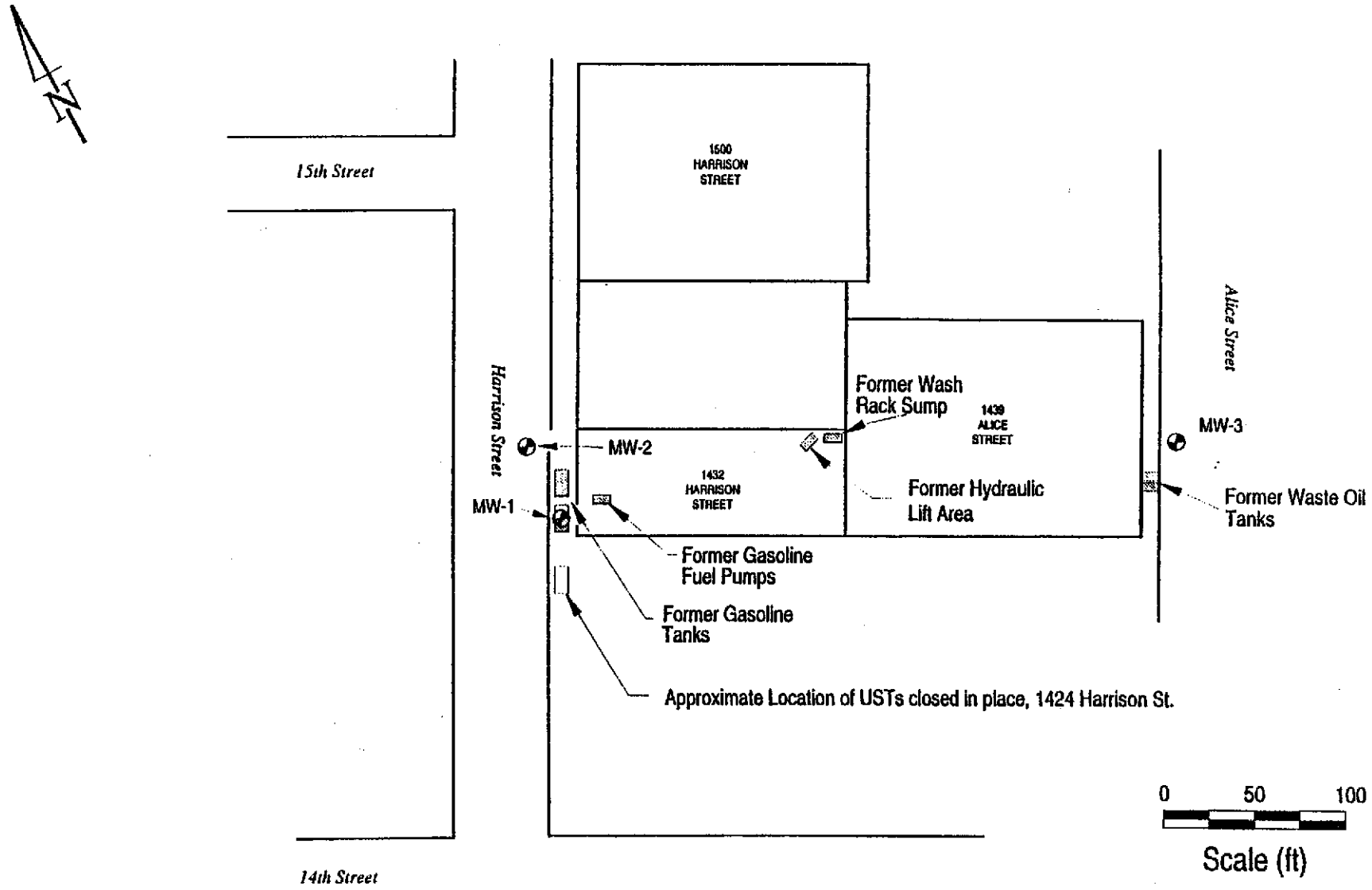
Bob Clark-Riddell, P.E.
Principal Engineer



F:\PROJECT\SB-2004\OAKL-188\FEASIBIL\SVE-RPT.WPD

Attachments: A - Analytic Results for Soil Vapor

cc: Mr. Mark Borsuk, 1626 Vallejo Street, San Francisco, CA 94123-5116



D:\PROJECTS\SB2004\OAKL-188\PROPBOR.DWG

CAMBRIA
Environmental Technology, Inc.

EXPLANATION

Ground Water Monitoring Well

Monitoring Well Locations

1432 Harrison Street
Oakland, California

FIGURE

1

Figure 2 - Effective Radius of Influence During MW-1 Testing

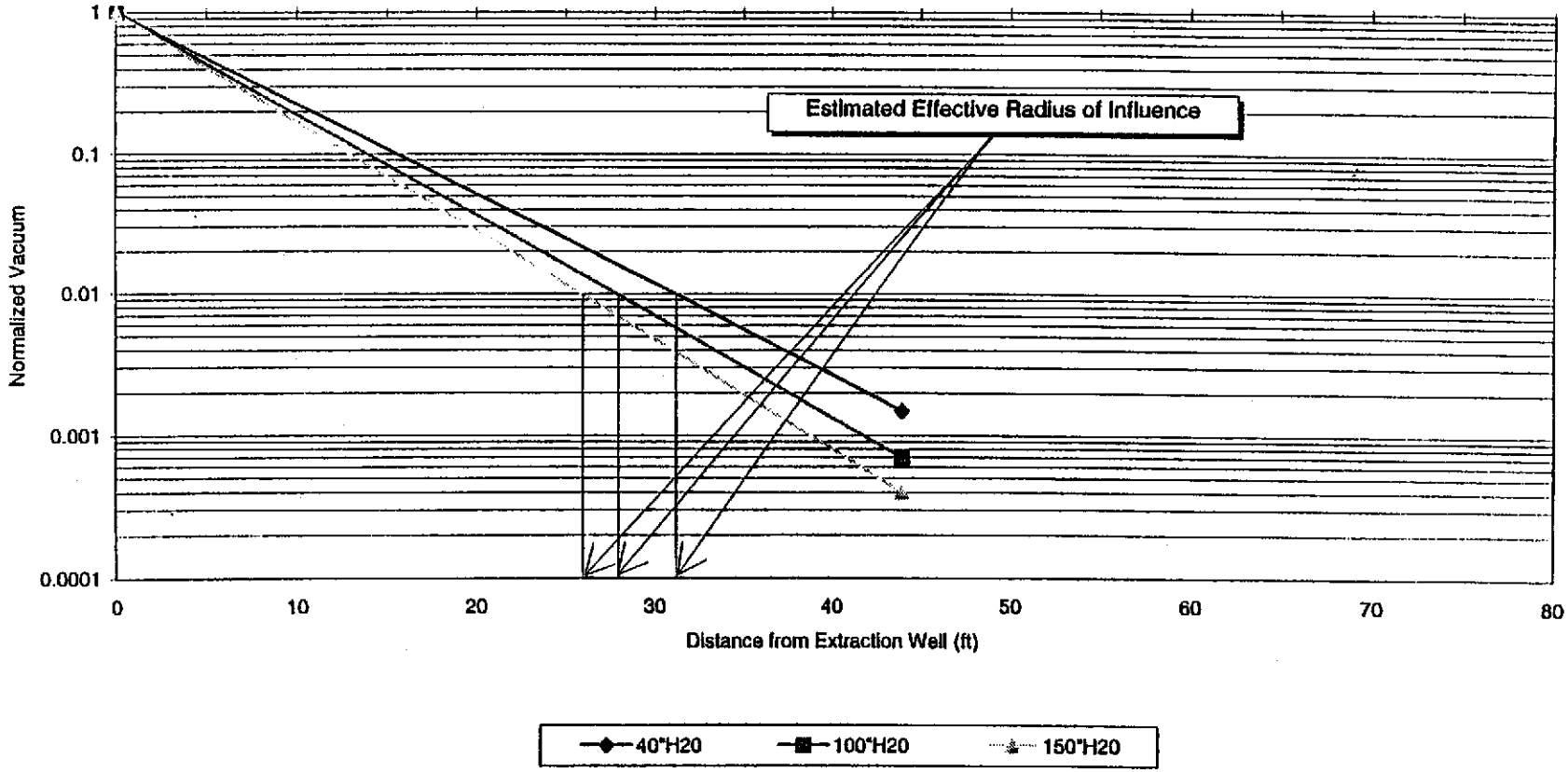


Table 1. SVE Test Results - 1432 Harrison Street, Oakland, California

Well	Date	Exposed Screen[1] (ft - ft)	Duration (hours)	Wellhead Vacuum[2] ("H20)	Flow Rate[3] (scfm)	Hydrocarbon Concentrations[4] (ppmv)			Hydrocarbon Removal[5] (lbs/day)	
						FID	TPHg	Benz	TPHg	Benz
MW-1	8/6/96	16-19	1	40	1.0	30,000	3,100	65	1	0.02
MW-1	8/6/96	16-19	2	150	2.2	30,000	2,600	55	2	0.04
MW-2	8/6/96	12-19	0.25	40	3.0	>100,000	22,000	310	21	0.27
MW-2	8/6/96	12-19	1.75	150	3.4	>100,000	28,000	590	31	0.58

Notes

1. The exposed screen interval is the depth between the top of screen and the depth to immiscible fluid measured prior to testing.

2. The wellhead vacuum is the vacuum measured at the wellhead.

3. The flow rate measured with an anemometer was converted to standard cubic feet per minute (scfm) based on pressure and temperature.

4. Total hydrocarbon oncentrations were measured in the field using a flame ionization detector (FID). TPHg and benzene concentrations were quantified in an analytic laboratory by modified EPA Method 8015 and EPA Method 8020, respectively. Concentrations reported as micrograms per liter in the laboratory report are converted to parts per million by volume (ppmv) by dividing by the molecular weight (78 for benzene and 86 for TPHg as Hexane), and multiplying by 24.45 (the volume one gram-mole of perfect gas occupies at standard temperature and pressure).

5. The hydrocarbon removal rate is based on the Bay Area Air Quality Management District's Procedures for Soil Vapor Extraction. Rate = concentration (ppmv) x flow rate (scfm) x 1 lb-mole/386ft^3 x molecular weight x 1440 min/day.

Table 2. Radius of Influence Data - 1432 Harrison Street, Oakland, California

Extraction Well	Monitoring Well	Rw (ft)	r (ft)	Pw ("H20)	Pw (psia)	P(r) ("H20)	P(r) (psia)	Estimated Ri (ft)[1]
MW-1	MW-2	0.167	44	40	13.256	0.06	14.694	44
MW-1	MW-2	0.167	44	100	11.096	0.07	14.694	44
MW-1	MW-2	0.167	44	150	9.296	0.06	14.694	44

Notes and Abbreviations

1 = Based on steady-state radial pressure distribution equation from "A Practical Approach to the Design, Operation, and Monitoring of In Situ Soil-Venting Systems", P.C. Johnson, C.C. Stanley, M.W. Kemblowski, D.L. Byers, and J.D. Cothart, Ground Water Monitor and Review, Spring 1990

$$Ri = \frac{Rw}{(r/Rw)^{**}[(1-(Patm/Pw)^{**}2)/(((P(r)/Pw)^{**}2)-1)]}$$

"H20 = Pressure measured in inches of water
Rw = Radius of extraction well (feet)
r = Distance of monitoring well from extraction well (feet)
Psia = Pounds per square inch absolute
Pw = Pressure at extraction well (psia or inches of water column, gauge)
P(r) = Pressure at monitoring well (psia or inches of water column, gauge)
Patm = Absolute atmospheric pressure (14.696 psia)
Ri = Radius of influence (feet)

CAMBRIA

ATTACHMENT C

Ground Water Sampling Report

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

November 20, 1997

Mark Borsuk
1626 Vallejo Street
San Francisco, CA 94123-5116

Site:
1432 Harrison Street
Oakland, California

Date:
September 9, 1997

GROUNDWATER SAMPLING REPORT 970909-S-2

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results, or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection and sample collection. Measurements include the total depth of the well and the depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, and temperature readings were obtained during sample collection.

STANDARD PRACTICES

Sampling Equipment

Samples were collected using bailers.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up and out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids, in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also where fuel hydrocarbons are involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow a non-purge sample collection protocol. The sampling methodology conforms to both State and Regional Water Quality Control Board standards for no purge sampling and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846 and T.E.G.D. which is published separately.

Sample Containers

Sample containers are supplied by the laboratory performing the analyses.

Sample Handling Procedures

Following collection, samples are promptly placed in an ice chest containing deionized ice or an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days, as jobs and projects often do.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under our standard chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date and signature of person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Legend Analytical Services in Santa Rosa, California. Legend is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1386.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody and the certified analytical report issued by the Hazardous Materials Testing Laboratory.

The following addresses have been listed here for your convenience:

Water Quality Control Board
San Francisco Bay Region
2101 Webster Street
Suite 500
Oakland, CA 94612
ATTN: Richard Hiett

Oakland Fire Prevention Bureau
One City Hall Plaza
Oakland, CA 94612
ATTN: Stanley Y. Chi

Please call if we can be of any further assistance.

Kent Brown

KEB/aa

attachments: table of well monitoring data
certified professional report and gradient map
certified analytical report
chain of custody

cc: Scott MacLeod
Cambria Environmental Technology, Inc.
1144 65th St., Suite C
Oakland, CA 94608

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1	MW-1	MW-1
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	4	4	4
Total Well Depth (ft.)	25.06	25.00	25.05
Depth To Water (ft.)	18.80	19.26	19.70
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	--	--	--
1 Case Volume (gal.)	NOT PURGED	NOT PURGED	NOT PURGED
Did Well Dewater?	--	--	--
Gallons Actually Evacuated	--	--	--
Purging Device	NONE	NONE	NONE
Sampling Device	BAILER	BAILER	BAILER
Time	14:04	14:50	14:00
Temperature (Fahrenheit)	66.2	76.2	71.4
pH	7.5	7.4	6.8
Conductivity (micromhos/cm)	420	400	900
BTS Chain of Custody	970331-Z3	970627-X2	970909-S2
BTS Sample I.D.	MW-1	MW-1	MW-1
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Analysis	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted			
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Laboratory Sample I.D.	274071	276433	278119
TPH Gasoline	160,000	130,000	99,000
Benzene	24,000	25,000	22,000
Toluene	39,000	36,000	27,000
Ethyl Benzene	1,900	2,000	1,600
Xylene Isomers	13,000	14,000	13,000
Methyl-tert-butyl ether	ND	ND	270

In the interest of clarity, an addendum has been added to the **TABLE** which lists analytical results in such a way that our field observations are presented together with the analytical results. This addendum is entitled a **SUMMARY OF CAR RESULTS.** As indicated by the title, the source documents for these numbers are the laboratory's certified analytical reports. These **certified analytical reports (CARs)** are generated by the laboratory as the sole official documents in which they issue their findings. Any discrepancy between the CAR and a tabular or text presentation of analytical values must be decided in favor of the CAR on the grounds that the CAR is the authoritative legal document.

TABLE OF WELL MONITORING DATA

Well I.D.	MW-2	MW-2	MW-2
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	2	2	2
Total Well Depth (ft.)	25.84	25.57	25.62
Depth To Water (ft.)	19.67	19.68	20.20
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	--	--	--
1 Case Volume (gal.)	NOT PURGED	NOT PURGED	NOT PURGED
Did Well Dewater?	--	--	--
Gallons Actually Evacuated	--	--	--
Purging Device	NONE	NONE	NONE
Sampling Device	BAILER	BAILER	BAILER
Time	13:53	14:36	13:45
Temperature (Fahrenheit)	67.4	69.0	73.2
pH	7.4	7.4	6.8
Conductivity (micromhos/cm)	440	440	1100
BTS Chain of Custody	970331-Z3	970627-X2	970909-S2
BTS Sample I.D.	MW-2	MW-2	MW-2
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Analysis	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX, MTBE, MTBE (8260)

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted

DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Laboratory Sample I.D.	274072	276434	278120
TPH Gasoline	38,000	62,000	81,000
Benzene	6,000	13,000	16,000
Toluene	7,900	16,000	18,000
Ethyl Benzene	690	1,300	1,800
Xylene Isomers	3,300	6,000	8,600
Methyl-tert-butyl ether	ND	ND/ND*	220/ND*

* MTBE confirmed by EPA 8260.

TABLE OF WELL MONITORING DATA

Well I.D.	MW-3	MW-3	MW-3
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	2	2	2
Total Well Depth (ft.)	23.90	23.87	23.88
Depth To Water (ft.)	18.35	18.81	19.18
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	GAUGE ONLY	GAUGE ONLY	GAUGE ONLY
1 Case Volume (gal.)			
Did Well Dewater?			
Gallons Actually Evacuated			
Purging Device			
Sampling Device			
Time			
Temperature (Fahrenheit)			
pH			
Conductivity (micromhos/cm)			
BTS Chain of Custody			
BTS Sample I.D.			
DOHS HMTL Laboratory			
Analysis			

TABLE OF WELL MONITORING DATA

Well I.D.	MW-4	MW-4	MW-4
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	2	2	2
Total Well Depth (ft.)	24.84	24.78	24.85
Depth To Water (ft.)	18.67	19.08	19.33
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	--	--	--
1 Case Volume (gal.)	NOT PURGED	NOT PURGED	NOT PURGED
Did Well Dewater?	--	--	--
Gallons Actually Evacuated	--	--	--
Purging Device	NONE	NONE	NONE
Sampling Device	BAILER	BAILER	BAILER
Time	13:44	14:22	13:17
Temperature (Fahrenheit)	65.8	68.0	69.4
pH	7.4	7.2	6.7
Conductivity (micromhos/cm)	560	480	1500
BTS Chain of Custody	970331-Z3	970627-X2	970909-S2
BTS Sample I.D.	MW-4	MW-4	MW-4
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Analysis	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted			
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Laboratory Sample I.D.	274073	276435	278121
TPH Gasoline	ND	160	7,400
Benzene	ND	49	5,000
Toluene	ND	1.2	410
Ethyl Benzene	ND	ND	230
Xylene Isomers	ND	5.9	470
Methyl-tert-butyl ether	ND	ND	33

TABLE OF WELL MONITORING DATA

Well I.D.	MW-5	MW-5	MW-5
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	2	2	2
Total Well Depth (ft.)	28.86	28.72	28.90
Depth To Water (ft.)	19.24	19.16	19.93
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	--	--	--
1 Case Volume (gal.)	NOT PURGED	NOT PURGED	NOT PURGED
Did Well Dewater?	--	--	--
Gallons Actually Evacuated	--	--	--
Purging Device	NONE	NONE	NONE
Sampling Device	BAILER	BAILER	BAILER
Time	13:24	14:08	13:05
Temperature (Fahrenheit)	63.4	69.8	65.8
pH	7.4	7.4	6.9
Conductivity (micromhos/cm)	700	720	1400
BTS Chain of Custody	970331-Z3	970627-X2	970909-S2
BTS Sample I.D.	MW-5	MW-5	MW-5
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Analysis	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE	TPH-GAS, BTEX & MTBE

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted			
DOHS HMTL Laboratory	LEGEND	LEGEND	LEGEND
Laboratory Sample I.D.	274074	276436	278122
TPH Gasoline	90	ND	ND
Benzene	3.1	ND	ND
Toluene	ND	ND	ND
Ethyl Benzene	ND	ND	ND
Xylene Isomers	ND	ND	ND
Methyl-tert-butyl ether	ND	ND	ND

TABLE OF WELL MONITORING DATA

Well I.D.	MW-6	MW-6	MW-6
Date Sampled	03/31/97	06/27/97	09/09/97
Well Diameter (in.)	2	2	2
Total Well Depth (ft.)	28.42	28.28	28.32
Depth To Water (ft.)	19.81	19.76	20.06
Free Product (in.)	--	--	NONE
Reason If Not Sampled	GAUGE ONLY	GAUGE ONLY	--
1 Case Volume (gal.)			NO PURGE
Did Well Dewater?			--
Gallons Actually Evacuated			--
Purging Device			NONE
Sampling Device			BAILER
Time			12:50
Temperature (Fahrenheit)			69.6
pH			7.8
Conductivity (micromhos/cm)			2000
BTS Chain of Custody			970909-S2
BTS Sample I.D.			MW-6
DOHS HMTL Laboratory			LEGEND
Analysis			TPH-GAS, BTEX & MTBE

S U M M A R Y O F C A R R E S U L T S in parts per billion unless otherwise noted

DOHS HMTL Laboratory	LEGEND
Laboratory Sample I.D.	278123
TPH Gasoline	ND
Benzene	ND
Toluene	ND
Ethyl Benzene	ND
Xylene Isomers	ND
Methyl-tert-butyl ether	ND

CAMBRIA

November 3, 1997

Kent Brown
Blaine Tech Services
1680 Rogers Ave.
San Jose, CA 95112

Re: **Third Quarter 1997 Monitoring Report**
1432 Harrison Street
Oakland, California
Cambria Project #18-214

Dear Mr. Brown:

As you requested, Cambria Environmental Technology, Inc. (Cambria) has summarized the results of the third quarter 1997 ground water sampling at the site referenced above. Presented below are sampling activities performed in the third quarter of 1997, the anticipated fourth quarter 1997 activities, and the hydrocarbon distribution in ground water.

THIRD QUARTER 1997 ACTIVITIES

Ground Water Sampling: On September 9, 1997, Blaine Tech Services (Blaine) gauged all site wells and collected ground water samples from site wells MW-1, MW-2, MW-4, MW-5, and MW-6. No sampling of site well MW-3 is required at this time. Ground water elevations are shown on Figure 1.

ANTICIPATED FOURTH QUARTER 1997 ACTIVITIES

Ground Water Sampling: Blaine will gauge all site wells and collect ground water samples from selected wells including MW-1, MW-2, MW-4, and MW-5. Cambria will prepare a ground water monitoring report summarizing the sampling data.

Corrective Action Plan: Cambria is preparing a *Corrective Action Plan (CAP)* for the site. We anticipate submitting the CAP for approval during the fourth quarter of 1997.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

CAMBRIA

HYDROCARBON DISTRIBUTION IN GROUND WATER

Ground water analytic data suggest that hydrocarbon concentrations are highest in wells MW-1 and MW-2, which are located near the former underground storage tank area. The cross gradient horizontal extent is defined to below or near method detection limits by wells MW-3 and MW-5. The southern down gradient extent is defined by MW-6, in which no hydrocarbons were detected during this sampling event. Hydrocarbon concentrations in well MW-4, installed fourth quarter 1996, continue to fluctuate. Continued monitoring of well MW-4 will assess whether the northern down gradient hydrocarbon extent is fully defined.

We appreciate this opportunity to provide environmental consulting services to Blaine Tech Services. Please call if you have any questions or comments.

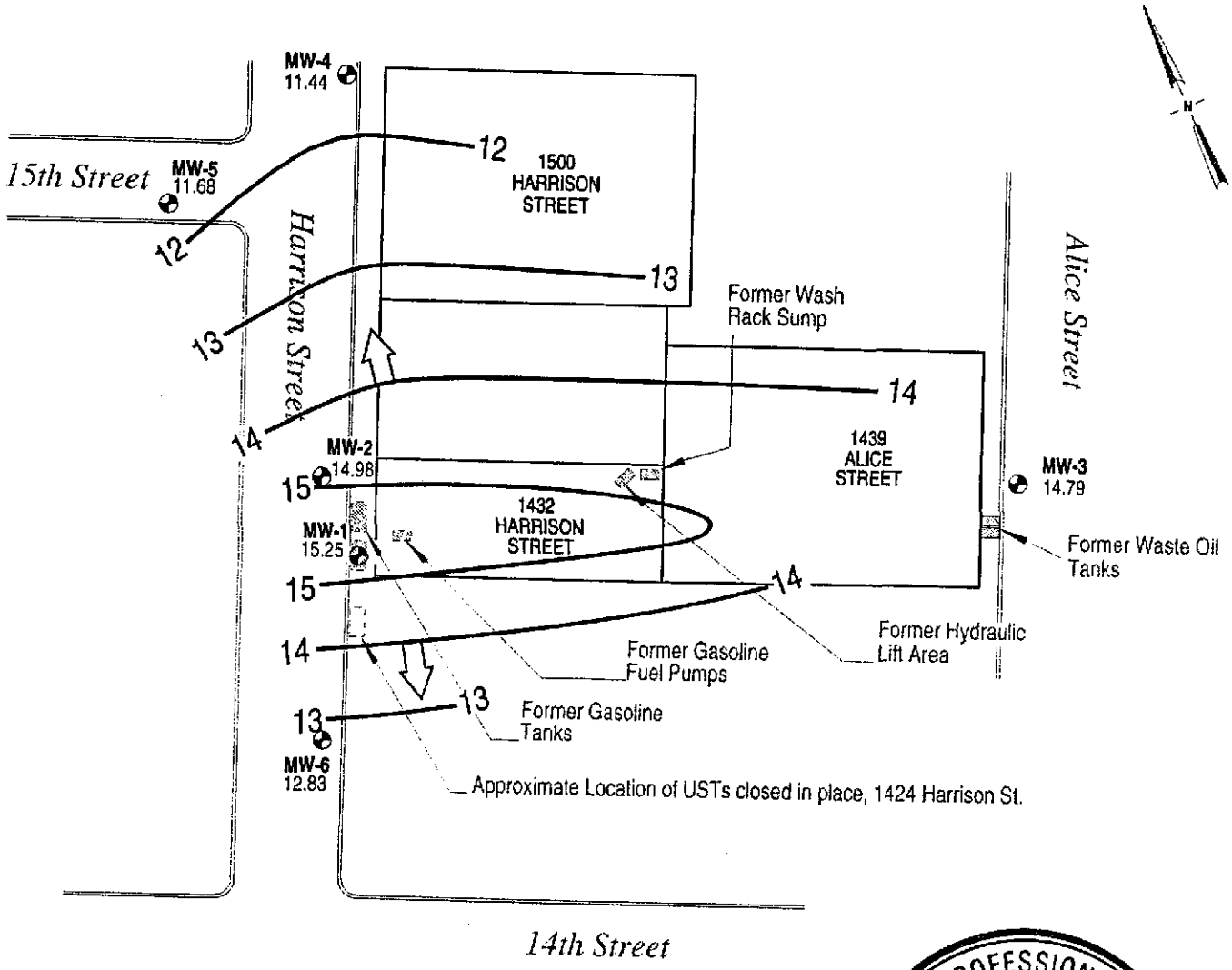
Sincerely,
Cambria Environmental Technology, Inc.

Maureen D. Feineman
Staff Geologist

Owen Ratchye, P.E.
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
OWEN C. RATCHYE
No. C47199
Exp. 12/31/99
CIVIL
STATE OF CALIFORNIA

F:\PROJECT\SB-2004\OAKL-188\QM\QM-3-97.WPD



EXPLANATION

- MW-3 — Ground Water Monitoring Well
- xx.xx — Ground Water Elevation, Feet Above Mean Sea Level (msl)
- Ground Water Contour, Feet Above Mean Sea Level (msl), Dashed Where Inferred
- Ground Water Flow Direction

REGISTERED PROFESSIONAL ENGINEER
ALLEN C. RATCHYE
No. C47149
Exp. 12/31/99
CIVIL
STATE OF CALIFORNIA

0 45 90
Scale (ft)

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

CAMBRIA
Environmental Technology, Inc.

1432 Harrison Street
Oakland, California

F:\PROJECT\SB-2004\OAK-188\FIGURES\SQM97-MP.DWG

Ground Water Elevation
Contours
September 9, 1997

FIGURE
1

LEGEND

Analytical Services

3636 N. Laughlin Road, Suite 110 Santa Rosa, California 95403 707.526.7200 Fax 707.541.2333 E-Mail: info@legendlab.com

Kent Brown
Blaine Tech Services
1680 Rogers Ave.
San Jose, CA 95112

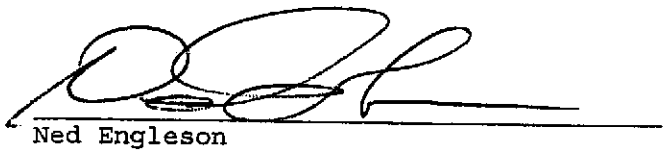
Date: 09/23/1997
LEGEND Client Acct. No: 43200
LEGEND Job No: 97.01598
Received: 09/11/1997

Client Reference Information

Harrison St. Garage/970909-S2

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Facsimile transmission of this report is non-confidential. If received in error, please contact sender immediately at the number listed and return the information to us by mail. Please refer to the enclosed "Key to Result Flags" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2313.

Submitted by:



Ned Engleson
Project Manager

Enclosure(s)

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-1
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278119

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
5030/M8015	--						09/15/1997	3898
DILUTION FACTOR*	100						09/15/1997	3898
as Gasoline	99		5.0	mg/L	5030		09/15/1997	3898
8020 (GC,Liquid)	--						09/15/1997	3898
Benzene	22,000	FI	500	ug/L	8020		09/19/1997	3899
Toluene	27,000	FI	500	ug/L	8020		09/19/1997	3899
Ethylbenzene	1,600		50	ug/L	8020		09/15/1997	3898
Xylenes (Total)	13,000		50	ug/L	8020		09/15/1997	3898
Methyl-tert-butyl ether	270		200	ug/L	8020		09/15/1997	3898
SURROGATE RESULTS	--						09/15/1997	3898
Bromofluorobenzene (SURR)	112			% Rec.	5030		09/15/1997	3898

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-2
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278120

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
5030/M8015	--						09/15/1997	3898
DILUTION FACTOR*	100						09/15/1997	3898
as Gasoline	81		5.0	mg/L	5030		09/15/1997	3898
8020 (GC,Liquid)	--						09/15/1997	3898
Benzene	16,000	FI	500	ug/L	8020		09/19/1997	3899
Toluene	18,000	FI	500	ug/L	8020		09/19/1997	3899
Ethylbenzene	1,800		50	ug/L	8020		09/15/1997	3898
Xylenes (Total)	8,600		50	ug/L	8020		09/15/1997	3898
Methyl-tert-butyl ether	220		200	ug/L	8020		09/15/1997	3898
SURROGATE RESULTS	112						09/15/1997	3898
Bromofluorobenzene (SURR)	SR			% Rec.	5030		09/15/1997	3898

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-2
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278120

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
8260 (GCMS, Liquid)								
DILUTION FACTOR*	10	MI					09/22/1997	4
Methyl-tert-butyl ether	ND		20	ug/L	8260		09/22/1997	4
SURROGATE RESULTS	--						09/22/1997	4
4-Bromofluorobenzene (SURR)	101			% Rec.	8260		09/22/1997	4
Toluene-d8 (SURR)	100			% Rec.	8260		09/22/1997	4
1,2-Dichloroethane-d4 (SURR)	112			% Rec.	8260		09/22/1997	4

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-4
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278121

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
5030/M8015	--						09/15/1997	3898
DILUTION FACTOR*	10						09/15/1997	3898
as Gasoline	7.4		0.50	mg/L	5030		09/15/1997	3898
8020 (GC,Liquid)	--						09/15/1997	3898
Benzene	5,000	FC	50	ug/L	8020		09/19/1997	3899
Toluene	410		5.0	ug/L	8020		09/15/1997	3898
Ethylbenzene	230		5.0	ug/L	8020		09/15/1997	3898
Xylenes (Total)	470		5.0	ug/L	8020		09/15/1997	3898
Methyl-tert-butyl ether	33		20	ug/L	8020		09/15/1997	3898
SURROGATE RESULTS	--						09/15/1997	3898
Bromofluorobenzene (SURR)	114			% Rec.	5030		09/15/1997	3898

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-5
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278122

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
5030/M8015	--						09/15/1997	3898
DILUTION FACTOR*	1						09/15/1997	3898
as Gasoline	ND		0.050	mg/L	5030		09/15/1997	3898
8020 (GC,Liquid)	--						09/15/1997	3898
Benzene	ND		0.50	ug/L	8020		09/15/1997	3898
Toluene	ND		0.50	ug/L	8020		09/15/1997	3898
Ethylbenzene	ND		0.50	ug/L	8020		09/15/1997	3898
Xylenes (Total)	ND		0.50	ug/L	8020		09/15/1997	3898
Methyl-tert-butyl ether	ND		2.0	ug/L	8020		09/15/1997	3898
SURROGATE RESULTS	--						09/15/1997	3898
Bromofluorobenzene (SURR)	113			% Rec.	5030		09/15/1997	3898

Ref: Harrison St. Garage/970909-S2

SAMPLE DESCRIPTION: MW-6
Date Taken: 09/09/1997
Time Taken:
LEGEND Sample No: 278123

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
5030/M8015	--						09/15/1997	3898
DILUTION FACTOR*	1						09/15/1997	3898
as Gasoline	ND		0.050	mg/L	5030		09/15/1997	3898
8020 (GC,Liquid)	--						09/15/1997	3898
Benzene	ND		0.50	ug/L	8020		09/15/1997	3898
Toluene	ND		0.50	ug/L	8020		09/15/1997	3898
Ethylbenzene	ND		0.50	ug/L	8020		09/15/1997	3898
Xylenes (Total)	ND		0.50	ug/L	8020		09/15/1997	3898
Methyl-tert-butyl ether	ND		2.0	ug/L	8020		09/15/1997	3898
SURROGATE RESULTS	--						09/15/1997	3898
Bromofluorobenzene (SURR)	115			% Rec.	5030		09/15/1997	3898

Ref: Harrison St. Garage/970909-S2

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
TPH (Gas/BTXE,Liquid)								
as Gasoline	99.6	0.498	0.50		mg/L	09/15/1997	aal	3898
Benzene	96.0	19.20	20.0		ug/L	09/15/1997	aal	3898
Toluene	92.7	18.54	20.0		ug/L	09/15/1997	aal	3898
Ethylbenzene	95.8	19.15	20.0		ug/L	09/15/1997	aal	3898
Xylenes (Total)	94.4	56.63	60.0		ug/L	09/15/1997	aal	3898
Methyl-tert-butyl ether	92.7	74.19	80.0		ug/L	09/15/1997	aal	3898
Bromofluorobenzene (SURR)	107.0	107	100		% Rec.	09/15/1997	aal	3898
TPH (Gas/BTXE,Liquid)								
as Gasoline	95.6	0.478	0.50		mg/L	09/19/1997	aal	3899
Benzene	101.8	20.36	20.0		ug/L	09/19/1997	aal	3899
Toluene	98.3	19.65	20.0		ug/L	09/19/1997	aal	3899
Ethylbenzene	101.6	20.31	20.0		ug/L	09/19/1997	aal	3899
Xylenes (Total)	100.6	60.38	60.0		ug/L	09/19/1997	aal	3899
Methyl-tert-butyl ether	98.4	78.71	80.0		ug/L	09/19/1997	aal	3899
Bromofluorobenzene (SURR)	115.0	115	100		% Rec.	09/19/1997	aal	3899

Ref: Harrison St. Garage/970909-S2

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
8260 (GCMS, Liquid)								
Methyl-tert-butyl ether	111.0	11.1	10.0		ug/L	09/22/1997	jde	4
4-Bromofluorobenzene (SURR)	104.0	104	100		% Rec.	09/22/1997	jde	4
Toluene-d8 (SURR)	99.0	99	100		% Rec.	09/22/1997	jde	4
1,2-Dichloroethane-d4 (SURR)	107.0	107	100		% Rec.	09/22/1997	jde	4

Ref: Harrison St. Garage/970909-S2

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
TPH (Gas/BTXE,Liquid)							
as Gasoline	ND	0.050		mg/L	09/15/1997	aal	3898
Benzene	ND	0.50		ug/L	09/15/1997	aal	3898
Toluene	ND	0.50		ug/L	09/15/1997	aal	3898
Ethylbenzene	ND	0.50		ug/L	09/15/1997	aal	3898
Xylenes (Total)	ND	0.50		ug/L	09/15/1997	aal	3898
Methyl-tert-butyl ether	ND	2.0		ug/L	09/15/1997	aal	3898
Bromofluorobenzene (SURR)	111			% Rec.	09/15/1997	aal	3898
TPH (Gas/BTXE,Liquid)							
as Gasoline	ND	0.050		mg/L	09/19/1997	aal	3899
Benzene	ND	0.50		ug/L	09/19/1997	aal	3899
Toluene	ND	0.50		ug/L	09/19/1997	aal	3899
Ethylbenzene	ND	0.50		ug/L	09/19/1997	aal	3899
Xylenes (Total)	ND	0.50		ug/L	09/19/1997	aal	3899
Methyl-tert-butyl ether	ND	2.0		ug/L	09/19/1997	aal	3899
Bromofluorobenzene (SURR)	107			% Rec.	09/19/1997	aal	3899

Ref: Harrison St. Garage/970909-S2

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
8260 (GCMS, Liquid)							
Methyl-tert-butyl ether	ND	2.0		ug/L	09/22/1997	jde	4
4-Bromofluorobenzene (SURR)	102			% Rec.	09/22/1997	jde	4
Toluene-d8 (SURR)	101			% Rec.	09/22/1997	jde	4
1,2-Dichloroethane-d4 (SURR)	97			% Rec.	09/22/1997	jde	4

Ref: Harrison St. Garage/970909-S2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
TPH (Gas/BTXE,Liquid)												278204
as Gasoline	96.8	102.8	5.9	0.50	ND	0.484	0.514		mg/L	09/15/1997	3898	278204
Benzene	115.5	113.2	2.0	3.86	ND	4.46	4.37		ug/L	09/15/1997	3898	278204
Toluene	99.5	104.7	5.0	36.63	ND	36.43	38.36		ug/L	09/15/1997	3898	278204
Bromofluorobenzene (SURR)	111.0	114.0	2.7	100	108	111	114		% Rec.	09/15/1997	3898	278204

Ref: Harrison St. Garage/970909-S2

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
8260 (GCMS, Liquid)												278234
Methyl-tert-butyl ether	93.1	107.0	13.8	10.0	ND	9.31	10.7		ug/L	09/22/1997	4	278234
4-Bromofluorobenzene (SURR)	102.0	105.0	2.9	100	98	102	105		% Rec.	09/22/1997	4	278234
Toluene-d8 (SURR)	97.0	99.0	2.0	100	93	97	99		% Rec.	09/22/1997	4	278234
1,2-Dichloroethane-d4 (SURR)	100.0	105.0	4.9	100	92	100	105		% Rec.	09/22/1997	4	278234

5054

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 970909-S2

CLIENT MARK BORSUK

SITE HARRISON ST. GARAGE

1432 HARRISON ST.

OAKLAND, CA

LAB LEGEND

DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

INVOICE & REPORT TO:
BLAINE TECH SERVICES
ATTN: KENT BROWN

*NOTE: MW-2 ONLY, MTBE CONFIRMATION BY 8260

SAMPLE I.D.	MATRIX S=SOIL W=H2O	CONTAINERS TOTAL		C=COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TPH-GAS, BTEX, MTBE	8260 (*SEE NOTE)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW1	W	3	VOTS		X					
MW2	W	#6			X	X				
MW4	W	3			X					
MW5	W	3			X					
MW6	W	3			X					

CUSTODY SEALED
Date 9-10-97 Time 1800 Initials JK
SEAL INTACT?
Yes ✓ No ____ Initials LLG

SAMPLING COMPLETED	DATE	TIME
	9-9-97	1930

SAMPLING PERFORMED BY

RESULTS NEEDED NO LATER THAN

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
ST—M	9-9-97	1530	Florence Rapp	9-10-97	1503
Florence Rapp	9-10-97	1800	M Davis	9/11/97	0754

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #