

C A M B R I A

March 9, 2007

Ms. Donna Drogos
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Soil Gas Characterization Work Plan**
Allright Parking
1432 Harrison St., Oakland, California
Fuel Leak Case No. RO0000266
Cambria Project No. 540-0188



Dear Ms. Drogos:

On behalf of Sydney & Barbara Borsuk Trust and Sheila Siegel Trust, Cambria Environmental Technology, Inc. (Cambria) is pleased to present this *Soil Gas Characterization Work Plan* for the above referenced site. This is in response to our August 8, 2006 *Risk Assessment* and February 15, 2007 letter.

Pending your approval or after 60 calendar days, we proposed to characterize onsite soil gas. This will allow us to evaluate the potential for onsite risk from vapor intrusion.

The project has been ongoing for many years and this should be the final step to prepare documentation to achieve environmental regulatory closure. We appreciate your support for my client to obtain regulatory closure as soon as possible

Please call me at (510) 420-3307 if you have any questions regarding this report or the project.

Sincerely,

Cambria Environmental Technology, Inc.

Mark Jonas, P.G.
Senior Project Manager

**Cambria
Environmental
Technology, Inc.**

Enclosure: *Soil Gas Characterization Work Plan*

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

**SOIL GAS CHARACTERIZATION WORK PLAN
ALLRIGHT PARKING
1432 HARRISON STREET
OAKLAND, CALIFORNIA
Fuel Leak Case No. RO0000266**

March 9, 2007

Prepared for:

Sydney & Barbara Borsuk Trust, Shiela Siegel Trust

c/o: Mr. Mark Borsuk
1626 Vallejo Street
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Prepared by:

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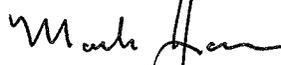
Cambria Project No. 540-0188

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



Christina McClelland
Staff Geologist



Mark Jonas, P.G.
Senior Project Manager

SOIL GAS CHARACTERIZATION WORK PLAN
 ALLRIGHT PARKING
 1432 HARRISON STREET
 OAKLAND, CALIFORNIA
 Fuel Leak Case No. RO0000266

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**SOIL GAS CHARACTERIZATION WORK PLAN
ALLRIGHT PARKING
1432 HARRISON STREET
OAKLAND, CALIFORNIA
Fuel Leak Case No. RO0000266**

March 9, 2007

1.0 INTRODUCTION



On behalf of Sydney & Barbara Borsuk Trust and Sheila Siegel Trust, Cambria Environmental Technology, Inc. (Cambria) is pleased to present this *Soil Gas Characterization Work Plan (Work Plan)* for the above referenced site. This is in response to our August 8, 2006 *Risk Assessment* and February 15, 2007 letter (Appendix A). Alameda County Environmental Health (ACEH) is the lead agency for this site. Presented in this *Work Plan* are site background, site characterization, proposed scope of work, and a quality assurance project plan.

2.0 SITE BACKGROUND

2.1. Site Description

The site is located at 1432 Harrison Street, in Oakland, California, as identified in Figure 1. It is currently operated as a commercial parking facility in downtown Oakland. The general area is mixed commercial and residential, but predominantly commercial. Prior to approximately 1988, the site was used to dispense gasoline from underground storage tanks (USTs), along with automobile repair and servicing. In 1993 the gasoline USTs were removed, along with the dispensers, associated piping, hydraulic lifts, and a sump. The site has a relatively flat topography and currently is paved with asphalt and concrete. Figure 2 presents an aerial photograph of the site and surrounding properties. Figure 3 provides a site map.

3.0 ENVIRONMENTAL SETTING

The site is located in the Coast Range Physiographic Province, characterized by northwest-southeast trending valleys and ridges. This region lies between the Pacific Ocean to the west and the Great Valley to the east. The oldest known bedrock in the Coast Range Province is marine sedimentary and volcanic rocks that from the Franciscan Assemblage. Geologic formations in the San Francisco Bay Region range in age from Jurassic to recent Holocene.

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3.1 Geology

The site is located to the west of the Oakland-Berkeley Hills on the East Bay Plain, which slopes gently to the west, towards San Francisco Bay. The San Francisco Bay is located in a broad depression in the Franciscan bedrock resulting from an east-west expansion between the San Andreas and Hayward fault systems. Unconsolidated sediments in the East Bay Plain vary in thickness, with some areas up 1,000 feet thick. From oldest to youngest, the unconsolidated sediments are 1/ Santa Clara Formation, 2/ Alameda Formation, 3/ Temescal Formation, and 4/ artificial fill. The Early Pleistocene Santa Clara Formation consists of alluvial fan deposits inter-fingered with lake, swamp, river channel, and flood plain deposits, ranging from 300 to 600 feet thick. The Late Pleistocene Alameda Formation was deposited primarily in an estuarine environment and consists of alluvial fan deposits bound by mud deposits on the top and bottom of the formation. The Alameda Formation ranges from 26 to 245 feet thick and is subdivided into the Yerba Buena Mud, San Antonio, Merritt, and Young Bay Mud Members. The Early Holocene Temescal Formation is an alluvial fan deposit consisting primarily of silts and clays with some gravel layers. The Temescal Formation ranges from 1 to 50 feet thick, thinning toward the bay. Below any sub-base and fill, shallow sand, silt, and clay at the site most likely are Temescal Formation.

The site lithology is heterogeneous consisting of interbedded lenses of silty sand, sand, and sandy silt to the maximum explored depth of 30 feet. Near the surface, fill includes gravel and concrete road base.

3.2 Hydrogeology

The site is located in the East Bay Plain Subbasin, Groundwater Basin No. 2-9.04 (DWR 2003). The East Bay Plain Subbasin is a northwest trending alluvial basin, bounded on the north by San Pablo Bay, on the east by the contact with Franciscan basement rock, and on the south by the Nile Cone Groundwater Basin. The East Bay Plain Subbasin extends beneath the San Francisco Bay to the west. The East Bay Plain Subbasin aquifer system consists of unconsolidated sediments of Quaternary age. These include the Santa Clara Formation, Alameda Formation, Temescal Formation, and artificial fill. In the project area most rainfall occurs between November and March. The average annual rainfall is approximately 23 inches.

Throughout most of the East Bay Plain, regional water level contours show that the direction of groundwater flow is generally east to west, towards San Francisco Bay, with some localized variation. Groundwater flow direction typically correlates to topography.

From 1860 to 1930 groundwater from the East Bay Plain was the major water supply of the East Bay, before Sierra water was imported into the area. By the late 1920's the groundwater supply was too small to meet the growing population and the wells often became contaminated by seepage or

saltwater intrusion. By 1929, East Bay Municipal Utility District (EBMUD) provided imported water to East Bay communities via the Mokelumne Aqueduct. This high-quality, reliable supply soon eliminated the need for local groundwater wells. In 1996, the Regional Board reviewed General Plans for Oakland and other communities. They found that Oakland and most other cities did not have any plans to develop local groundwater resources for drinking water, due to existing or potential saltwater intrusion, contamination, or poor or limited quality (Regional Board 1999).



First water in various borings was typically encountered around 20 feet (ft) below ground surface (bgs). Monitoring well completion data is presented in Table 1. Groundwater levels in these monitoring wells have historically ranged from approximately 18 to 21 ft bgs, as presented in Table 2. Groundwater beneath the site apparently flows primarily towards the north, with some apparently localized flow to the south. Figure 4 present groundwater levels for December 2006. Any vertical hydraulic gradients are currently undefined.

4.0 SITE INVESTIGATIONS AND ACTIVITIES

Environmental investigations and activities have been performed at the site since approximately 1990. The following provides groundwater and soil analytical results and sampling locations, along with a synopsis of previous environmental investigations and activities:

Analytical Results and Sampling Locations: Tables and figures in this report present groundwater and soil analytical results and sampling locations. Table 2 presents previous groundwater sampling results. Tables 3 and 4 provide soil results. Figure 4 presents relatively recent groundwater elevation data. Figures 5 and 6 present groundwater and soil sampling locations, respectively.

July 1990 through May 1993 - Soil Boring Investigations: In July and September 1990, Subsurface Consultants (SCI) of Oakland, California drilled six (6) soil borings near the gasoline USTs, the hydraulic lift area, and between these two areas. Soil samples were analyzed and petroleum hydrocarbons were detected. In January and February 1992, RGA Environmental Consulting of Emeryville, California drilled ten (10) soil borings and analyzed soil samples from various depths. In May 1993, Levine-Fricke, Inc. (Levine-Fricke) of Emeryville, California drilled two (2) soil borings near the gasoline UST area and analyzed soil samples down to a depth of 24.5 feet (ft) below ground surface (bgs).

December 1993 - Removal of USTs: In December 1993, Levine-Fricke removed two (2) underground storage tanks (USTs) from the site. The two (2) 1,000-gallon, single-walled, steel, gasoline USTs were located under the sidewalk on Harrison Street, with gasoline dispensers located about 20 ft east of the USTs. In addition, three hydraulic lifts, one vault, one washrack sump, and associated piping were reportedly excavated and removed from the site. A total of approximately 240 cubic yards of hydrocarbon-impacted soils were apparently removed from these areas.

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January 1994 – Installation of Monitoring Well: After filling the UST excavation, monitoring well MW-1 was installed by Levine-Fricke at the former gasoline tank area.

July 1994 - Subsurface Investigation: In July 1994, Levine-Fricke conducted a subsurface investigation to assess the extent of hydrocarbons in soil and groundwater. Two soil borings in Harrison Street were drilled and sampled. Two additional wells were installed: MW-2 in Harrison Street and MW-3 to the east in Alice Street.

July 1995 - Subsurface Investigation: In July 1995, Cambria conducted a subsurface investigation to further define the extent of hydrocarbons in soil and groundwater. Cambria drilled nine (9) soil borings to collect soil samples and three (3) boring to collect grab groundwater samples. Petroleum hydrocarbons were detected in both soil and groundwater.

August 1996 - Soil Vapor Extraction Test: In August 1996, Cambria conducted a soil vapor extraction test on existing groundwater monitoring wells MW-1 and 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.

October 1996 Subsurface Investigation: In October 1996, Cambria conducted an additional subsurface investigation to further define the extent of hydrocarbons in soil and groundwater. Five (5) soil borings were drilled and three (3) of the borings were converted to monitoring wells MW-4, MW-5, and MW-6. Two additional angled borings were drilled to assess the impact of hydrocarbons from two closed-in-place tanks located directly up-gradient of the site.

July 1999 – Coaxial Remediation Wells: In July 1999, Cambria installed four (4) coaxial remediation wells near the former gasoline USTs for vapor extraction and air sparging.

December 2001 – April 2005 Soil Vapor Extraction/Air Sparge Remediation: In December 2001, Cambria supervised the installation and initiated active remediation with a site-specific soil vapor extraction (VES) and air sparging (AS) system. The system ran under a Bay Area Air Quality Management District (BAAQMD) permit. System influent, mid-influent, and effluent vapor samples were collected and analyzed. On April 30, 2005 remediation using the VES/AS system ceased due to low influent vapor concentrations and hydrocarbon mass removal rates. During operation of the SVE/AS system, approximately 9,939 pounds of hydrocarbons were extracted from the site. On June 2, 2005, the SVE/AS system was removed from the property.

August 2006 – Risk Assessment: A Tier 1 and 2 risk assessment was performed using existing data. Based on this analysis, it was determined that there is no significant commercial risk for indoor and outdoor vapor inhalation from benzene in soil and/or groundwater. Also, there is no significant residential risk from outdoor vapor inhalation from benzene. Some elevated concentrations of

benzene in soil indicated that a potential may exist from indoor residential vapor inhalation. Currently no indoor residential receptors apparently exist in areas with elevated concentrations of benzene associated with the site. Because of this preliminary finding, we are proposing the soil gas characterization study presented in this *Work Plan*.

Groundwater Monitoring: Quarterly groundwater monitoring and sampling has been performed at the site since May 1994. Monitoring well construction details are presented in Table 1. Historical and recent groundwater analytical data are presented in Table 2.

5.0 HYDROCARBON DISTRIBUTION



5.1 Hydrocarbon Distribution in Soil

Prior to active VES/AS remediation between 2001 and 2005, elevated concentrations of gasoline-range hydrocarbons were detected in the vadose zone (approximately <20 ft bgs) soil, predominantly in the area of the former gasoline USTs and the former dispensers. Significant soil concentrations also appear to have existed below the vadose zone (>20 ft bgs), under saturated conditions. The vertical extent of hydrocarbons appears to significantly decrease by 30 ft bgs. Table 3 presents soil results for gasoline-range hydrocarbons. Soil sampling locations are presented in Figure 6. Current concentrations in soil are unknown but they should have decreased, since active remediation removed approximately 10,000 gallons of hydrocarbons from the former gasoline USTs and dispenser areas.

Elevated concentrations of Total Petroleum Hydrocarbons as diesel (TPHd) and Oil & Grease (O&G) in soil were detected near the former hydraulic lift area. Table 4 presents early TPHd and O&G results.

5.2 Hydrocarbon Distribution in Groundwater

Elevated concentrations of gasoline-range hydrocarbons have been previously detected in the monitoring wells located at the former gasoline USTs (MW-1) and downgradient (MW-2, MW-4, and MW-5). Concentrations in MW-1 decreased significantly apparently due to active VEW/AS remediation, but some rebound may have occurred post-remediation.

The downgradient extent, beyond MW-4 and MW-5, and cross-gradient extent to the southwest of Harrison Street is apparently undefined. These areas are very urbanized and subsurface characterization is difficult. To the east in Alice Street, cross-gradient well MW-3 and up-gradient well MW-6 did not have detectable concentration of gasoline-range hydrocarbons (except for very low levels in MW-6 in July 2000). Table 2 presents analytical results of petroleum hydrocarbons in groundwater. Figure 5 presents groundwater sampling locations.

6.0 PROPOSED SCOPE OF WORK

This section presents the scope of work for the soil gas investigation. The proposed soil gas sampling approach is to collect samples from six (6) locations throughout the property. Soil gas samples will be collected from 5 and 10 foot depths, unless high groundwater levels are present. Figure 7 presents the proposed soil gas sampling locations

6.1. Sampling Rationale

The rationale for soil gas sampling and analysis is to determine potential risk from vapor intrusion.

6.2. Pre-Sampling Preparations

Prior to performing on-site sampling activities, the proposed sampling approach will be approved, a site-specific Health and Safety Plan (HSP) will be prepared, utility clearance will be performed, and a boring permit will be submitted and approved.

6.2.1. Approval of Sampling Approach

This *Work Plan* presents the proposed scope of work for the sampling approach. The scope of work shall be approved by the ACEH prior to initiating field activities or 60 calendar days after submittal of this *Work Plan*, per California Code of Regulations, Title 23, Division 3, Chapter 16, §2722, (e).

6.2.2. Health and Safety Plan

A site-specific HSP will be prepared for the proposed field activities. The HSP will be maintained on-site during field work.

6.2.3. Utility Clearance

Prior to boring, the proposed boring locations will be marked with white paint and Underground Service Alert (USA) will be notified to perform a utility survey of USA members. Because of the limits of the USA survey, a utility locating service will be subcontracted to also perform an additional utility survey of those areas proposed for borehole sampling. This will help to identify subsurface utilities at boring locations. In addition, during boring a hand auger or air knife may be used to clear to a reasonable depth and to collect soil samples.

6.2.4. Permit

Based on regulatory requirements of the local agency, a soil boring permit will be obtained from Alameda County Public Works Agency.



6.3. Soil Gas Sampling Procedures

It is currently anticipated that six (6) boreholes will be used to collect soil vapor samples from approximately 5 and 10 feet bgs, based on DTSC guidelines. The 10 foot bgs sample will be collected unless relatively shallow groundwater is present. A GeoProbe® (or similar device) will be used to collect each soil vapor sample with a summa canister or for an on-site laboratory. After sampling activities are complete the boring will be properly closed with grout and capped with like material as the existing surface. Standard field procedures for hand auger soil borings, geoprobes, and collection of soil vapor samples are presented in Appendix B *Standard Field Procedures*. These procedures provide general field guidance. The actual approach may be modified. No soil samples will be collected, due to the potential for “short circuiting” the collection of a soil gas sample, resulting in a non-representative sampling results.

Soil vapor samples will be analyzed for Benzene using Analytical Method TO-15. The following Table 6-1 presents soil vapor analysis, sampling containers, preservation, detection limit, and holding time.

**Table 6-1
 Soil Vapor Analysis, Sampling Containers, Preservatives, Detection Limits, and Holding Times**

Analysis and Method	Sampling Containers	Preservatives	Detection Limit	Holding Times
Benzene (TO-15)	Summa Canister or On-Site Laboratory	Cold or On-Site Lab	~1 ppbv	14 days

6.4. Sample Documentation

Sampling containers will be labeled in the field with the job number, sampling location, date and time of sample, and requested analysis. A chain-of-custody record will be initiated and updated throughout handling of the samples and will accompany the samples to the laboratory.

6.5. Sampling Locations

Following borehole sampling, sampling locations will be defined based on field measurements from existing structures. Borehole sampling locations will be identified on a scaled figure.

6.6. Investigation Derived Waste

All investigation derived waste (IDW) will be temporarily stored on-site in sealed Department of Transportation-approved drums or other appropriate container(s). The drums will be labeled with the appropriate boring(s) identification number(s), date of collection, and nature of contents. All drummed IDW will be properly disposed of by the client.

7.0 REPORT

After receiving analytical results from the laboratory, a *Soil Gas Characterization Report* or a *Site Closure Request* will be provided with sampling methods, results, and conclusions.

8.0 QUALITY ASSURANCE PROJECT PLAN

This Quality Assurance Project Plan (QAPP) is intended to define procedures to facilitate the acquisition of accurate and reliable data.

8.1. Project Organization



Mark Borsuk, on behalf of the Sydney & Barbara Borsuk Trust and the Shiela Siegel Trust, is currently responsible for the site. Cambria works for this client to provide consulting and sampling services. Subcontractors would be used for drilling, soil gas sampling and analysis, and independent utility clearance. It is currently anticipated that California-certified Air Toxics Ltd. (DHS License #02110CA) will provide analytical services for soil gas. Alameda County Health Agency is the lead agency and will provide oversight for sampling activities. Documents will be sent to the client and the lead agency for their consideration. Underground Service Alert (USA) will be contacted prior to performing any subsurface activities.

Following are principal contacts for organization currently associated with the project:

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 Mark Borsuk
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Alameda County Public Works Agency
 James Yoo (for Drilling Permit)
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 Jamesy@acpwa.org
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Air Toxics Ltd.
 180 Blue Ravine Road, Suite B
 Folsom, CA 95630
 916/985-1000

Underground Service Alert
 1-800/227-2600

8.2. Quality Assurance Objectives

The overall quality assurance objective is to develop and implement procedures for field sampling, chain-of-custody, laboratory analysis, and reporting that will provide results that are defensible and reliable. Quality assurance objectives for accuracy, precision, and method detection limits, are discussed as follows:

Accuracy

The criterion for accuracy is a measurement of bias that exists in a measurement system. It refers to the degree of agreement of a measurement, X, with an accepted reference or true value, T, usually expressed as the difference between the two values, X-T. Accuracy can also be assessed by using percent bias and percent recovery information. Accuracy is difficult to measure for the entire data collection activity and specifically the sampling component. The criteria for accuracy is best addressed using laboratory matrix spikes.

Precision

The criterion for precision is a measure of the reproducibility of replicate analyses made under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements as compared to their average value. The overall precision of each data collection activity should take into account both field sampling precision and analytical precision. The specific criterion for precision for each parameter is detailed within the individual analytical test method. If groundwater is sampled, a blind duplicate ground water sample may be collected and assessed as a means of assessing both sampling and analytical reproducibility and as a measure of the data collection activity's precision. The duplicate sample would be analyzed for the same suite of analyses as the original sample. All results will be included in a report.

Method Detection Limits

Anticipated method detection limits are based on a relatively standard sample with a manageable amount of interference. The specific character of a sample with respect to high concentrations of multiple contaminants, can increase the actual detection limit above the anticipated method detection limit

8.3. Sampling Procedures

Sampling procedures are presented in Section 6.0 *Proposed Scope of Work*.

8.4. Sample Custody Procedures and Documentation

Chain-of-custody procedures and documentation are covered in Section 6.0 *Proposed Scope of Work*.

8.5. Field and Laboratory Calibration Procedures

Field Calibration Procedures

If a PID is used, it will be calibrated in the office or at an equipment supplier, prior to use in the field.

Laboratory Calibration Procedures

The analytical laboratory has calibration procedures as required by the current analytical Standard Methods and their own laboratory Quality Assurance/Quality Control (QA/QC) plan. The details associated with all the specific laboratory calibration procedures are available from the laboratory upon request.



8.6. Analytical Procedures

Analytical methods to be used are presented in Section 6.0 *Proposed Scope of Work*. Specific laboratory procedures associated with each method are available upon request.

8.7. Certified Analytical Laboratory

Pursuant to Health and Safety Code Section 25198, a state-certified laboratory will perform analytical services. For this project it is anticipated that Air Toxics Ltd a California-certified laboratory with Department of Health Services (DHS) License #02110CA, will perform soil gas analytical services.

8.8. Data Assessment and Corrective Actions

Data Assessment

Data assessment within the analytical laboratory is defined by the specific requirements for the standard analytical method and the laboratory's QA/QC program. Procedures for analytical accuracy, precision, and completeness are in laboratory documents, available upon request. Accuracy and precision are also discussed in Section 8.2 "Quality Assurance Objectives." Completeness of analytical data is a measure of the amount of valid data obtained from the measurement system compared with the amount that was expected under normal conditions.

The analytical laboratory Air Toxics will submit QC documentation with the analytical results. QC documentation typically includes a case narrative describing conformance; surrogate recoveries; spike amount(s), control limits, accuracy, and precision; calibration summaries; and a GC/MS internal standard summary.

Field data and analytical results will be evaluated by a Professional Geologist.

Corrective Actions

Unacceptable conditions or data, nonconformance with the QA procedures, or other deficiency may require corrective actions. A corrective action may be necessary if the nonconformance is of program significance. If required, the action to correct the nonconformance will be developed, initiated, and implemented.

Corrective action(s) may include:

- Reanalyzing the samples, if holding time permits.
- Resampling and reanalyzing.
- Evaluating and amending the sampling and analytical procedures.
- Accepting the data and acknowledging its level of uncertainty.

Necessary corrective actions will be documented.

8.9. Reporting Procedures

Reporting procedures for measurement of system performance and data quality are part of the laboratory's operating procedures and documentation is available upon request. Quality control documentation will be presented with analytical results from the laboratory.

8.10. Data Management

Laboratory data management, data reduction, and reporting requirements are in the laboratory's QA/QC program and operating procedures. Documentation from the laboratory is available upon request. Independent third-party (outside of Air Toxics) validation will not be performed. Air Toxics do perform an internal review of analytical and QC results prior to release of a data package signed by a laboratory representative.

Laboratory results and associated QC documentation will be presented in a report following field activities and sample analysis.

8.11. Internal Quality Control

Quality control is defined as the routine application of procedures for obtaining prescribed standards of performance. The procedures used for field work are discussed throughout this report, under Section 6.0 *Proposed Scope of Work*. Standards of performance are discussed in this section of the Work Plan. Laboratory documentation on standard analytical methods and the laboratory's QA/QC program is available upon request.

9.0 REFERENCES

Department of Water Resources, 2003. *California's Groundwater, Bulletin 118*.

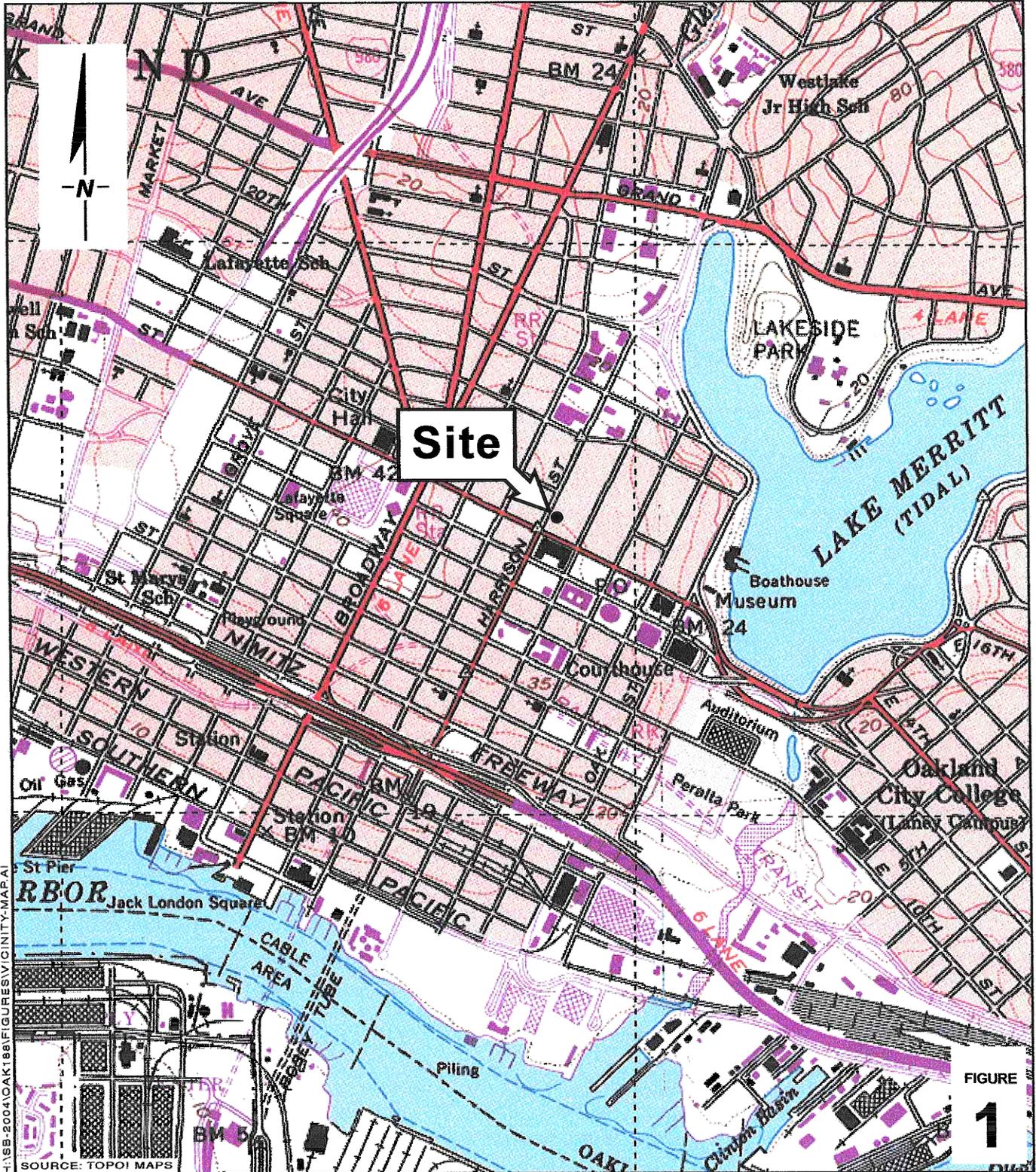
Regional Water Quality Control Board – San Francisco Bay Region (RWQCB-SFBR), 2005. *Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater*. Interim Final, Dated February 2005.

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



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FIGURES



H:\SB-2004\OAK\188\FIGURES\VICINITY-MAP.A1

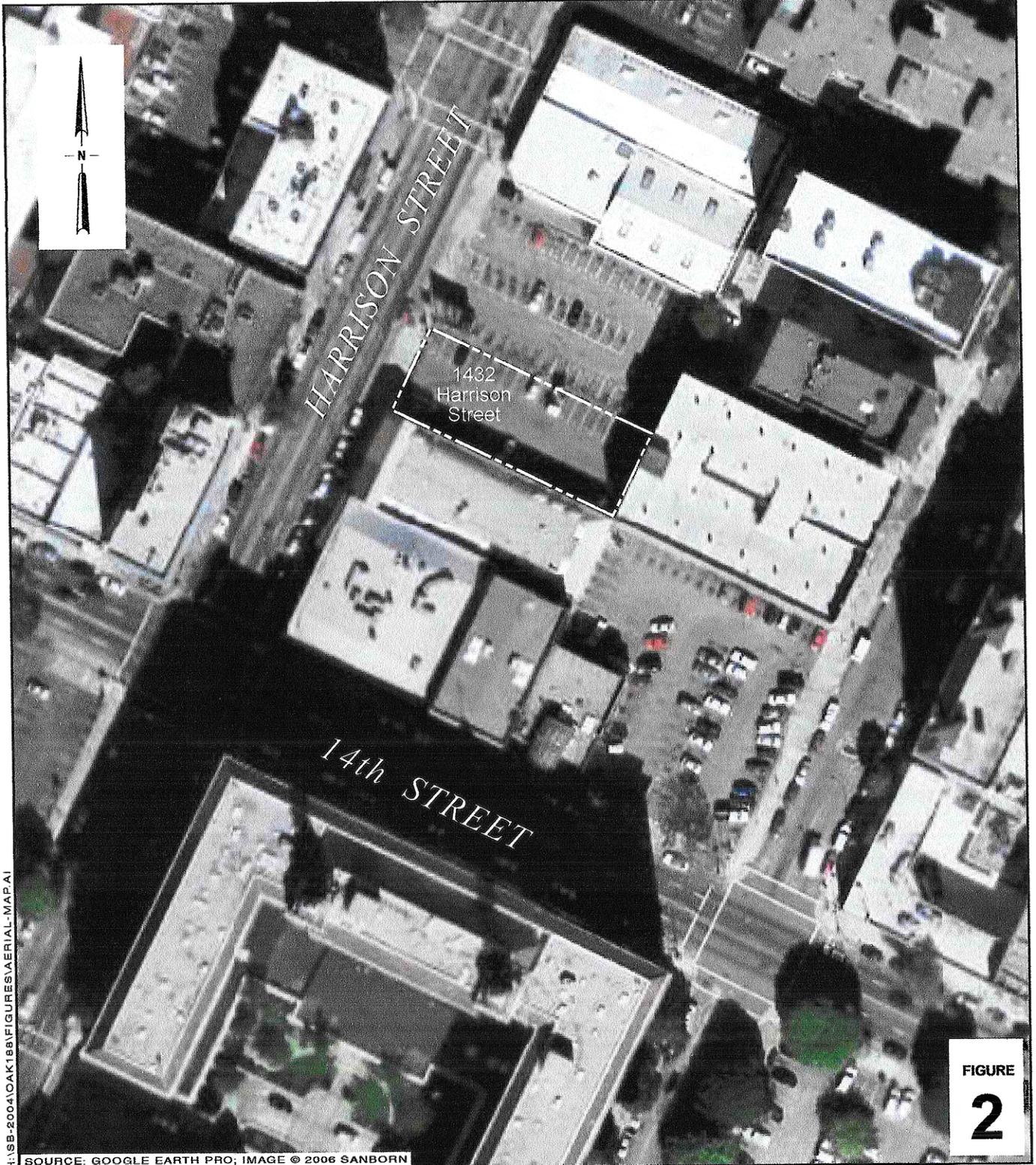
SOURCE: TOPOI MAPS

Borsuk
 1432 Harrison Street
 Oakland, California



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Vicinity Map



H:\SB-2004\0AK186\FIGURES\AERIAL-MAP.AI

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APPROXIMATE SCALE: 1" = 80'

Borsuk
1432 Harrison Street
Oakland, California



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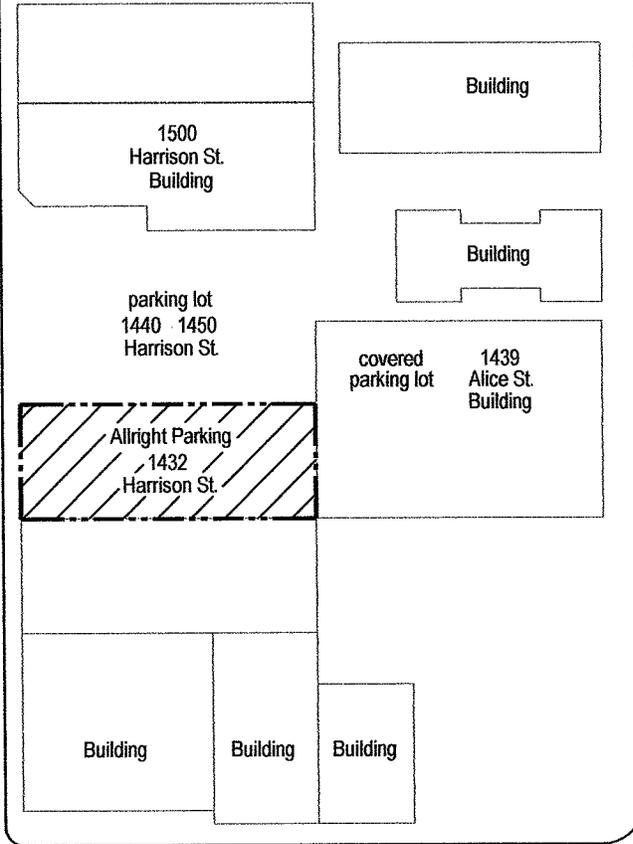
Aerial Map

HYBORSUKFIGURESIBORSUK_SITEPLAN.DWG

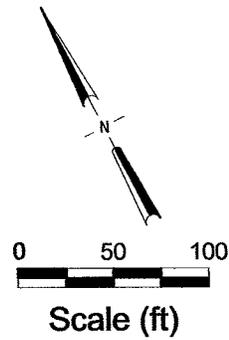
15th STREET

HARRISON STREET

ALICE STREET



14th STREET



FIGURE

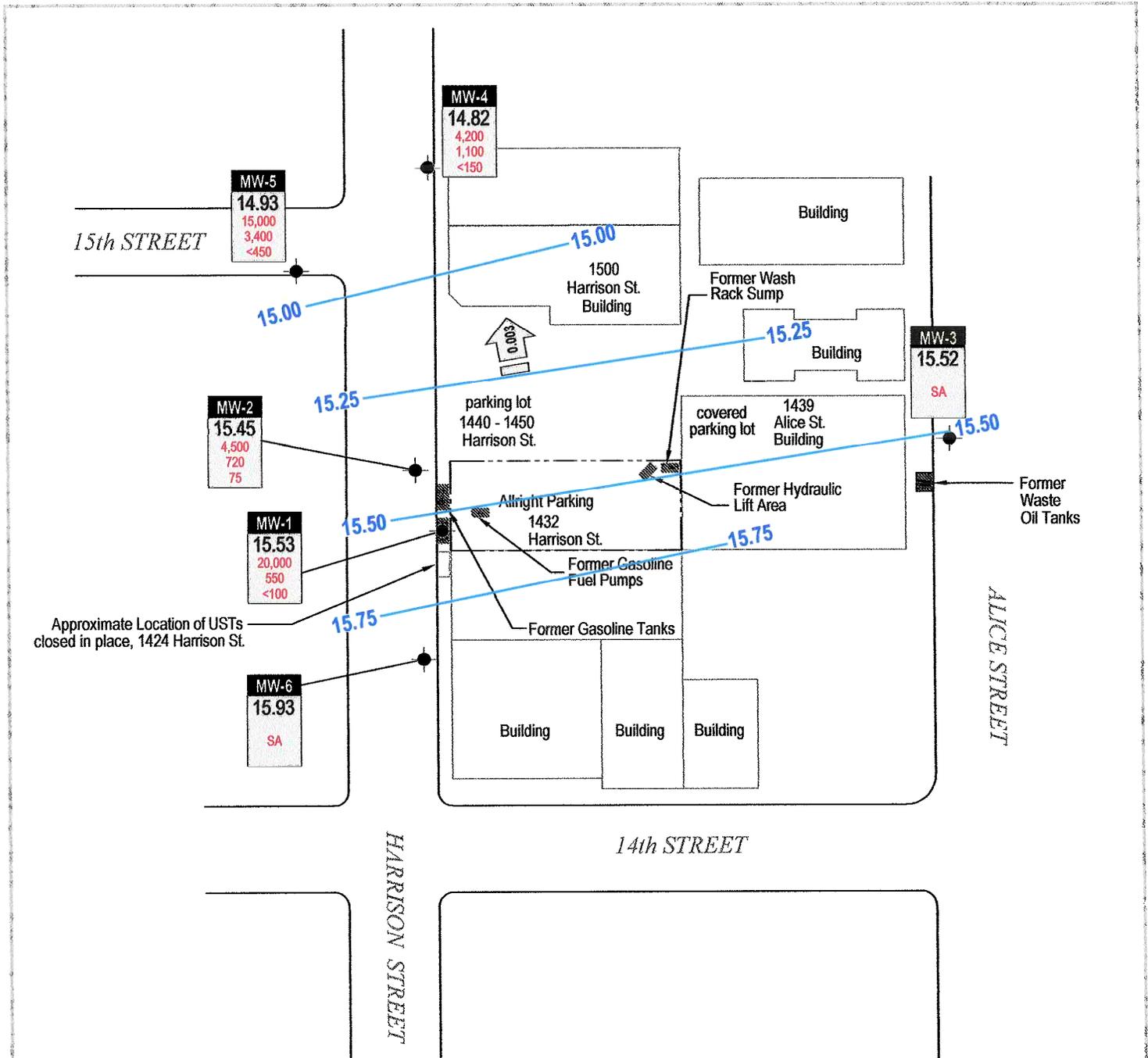
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Borsuk
 1432 Harrison Street
 Oakland, California



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Site Plan



EXPLANATION

- Groundwater monitoring well
- Groundwater elevation contour, in feet above mean sea level (dashed where inferred)
- Groundwater flow direction and gradient
- Well designation
- Groundwater elevation, in feet above mean sea level
- Hydrocarbons and MTBE in groundwater, in micrograms per liter
- Sampled Annually

Scale (ft)

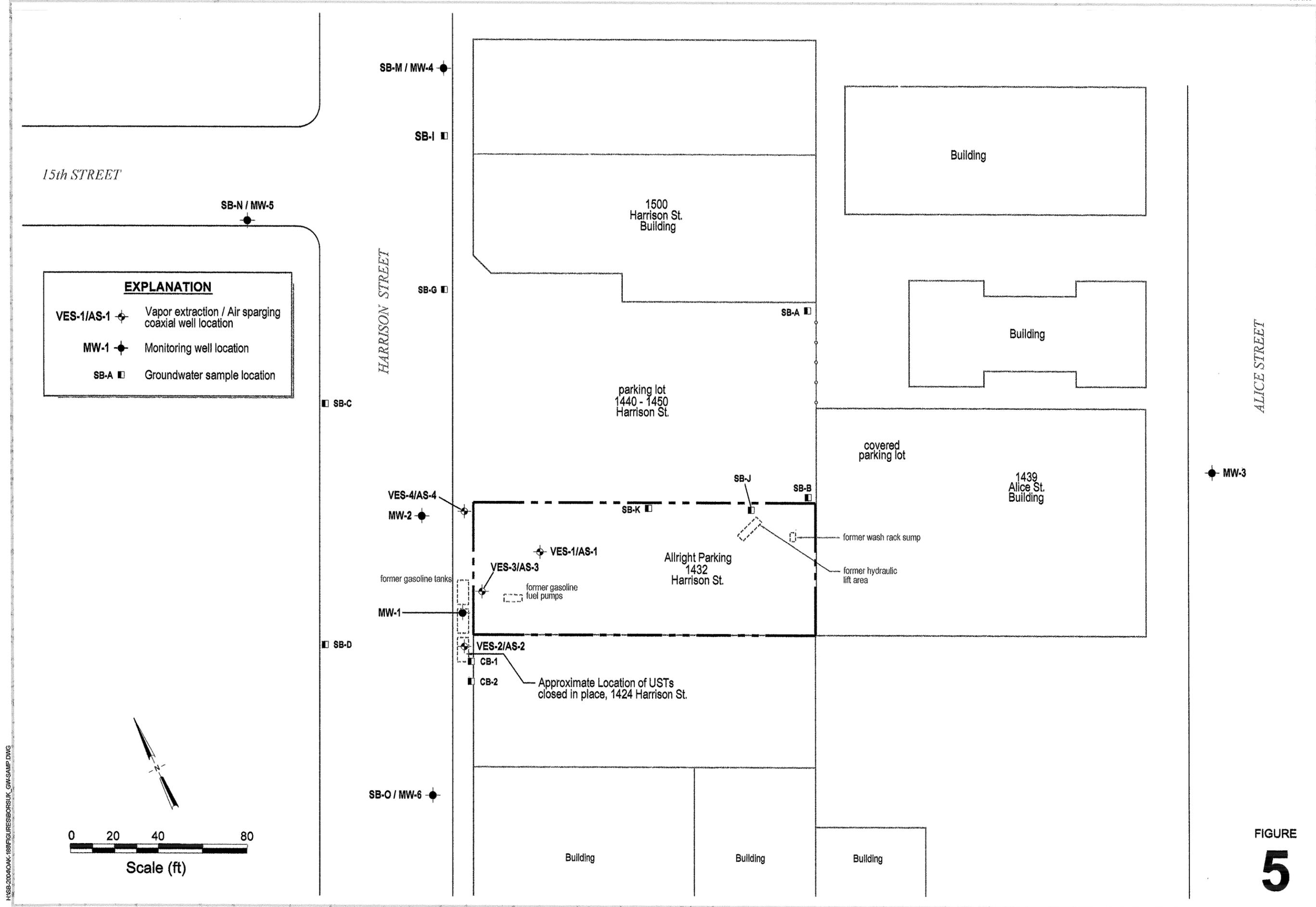
FIGURE 4

H:\BORS\K\FIGURES\2006\4006.DWG

Allright Parking
 1432 Harrison Street
 Oakland, California



**Groundwater Elevation and
 Hydrocarbon Concentration Map**
 December 29, 2006



EXPLANATION

- VES-1/AS-1 Vapor extraction / Air sparging coaxial well location
- MW-1 Monitoring well location
- SB-A Groundwater sample location

0 20 40 80
Scale (ft)

HARRISON STREET

ALICE STREET

FIGURE 5



H:\S\20\04\04\168\FIGURES\BORSUK_GW-SAMP.DWG

15th STREET

SB-N / MW-5

EXPLANATION

- VES-1/AS-1 Vapor extraction / Air sparging coaxial well location
- MW-1 Monitoring well location
- SB-H Soil sample location

SB-M / MW-4

HARRISON STREET

1500 Harrison St. Building

Building

SB-H

Building

parking lot 1440 - 1450 Harrison St.

ALICE STREET

covered parking lot

1439 Alice St. Building

VES-4/AS-4

MW-2

SB-F

B14

B5

B13

B15

B4

B16

former wash rack sump

former hydraulic lift area

LFSB2

VES-1/AS-1

Allright Parking 1432 Harrison St.

former gasoline tanks

B19

B23

former gasoline fuel pumps

B20

B17

B7

B22

LFSB1

B21

SB-L

VES-2/AS-2

Approximate Location of USTs closed in place, 1424 Harrison St.

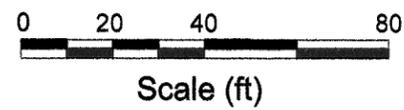
GW-1

SB-O / MW-6

Building

Building

Building

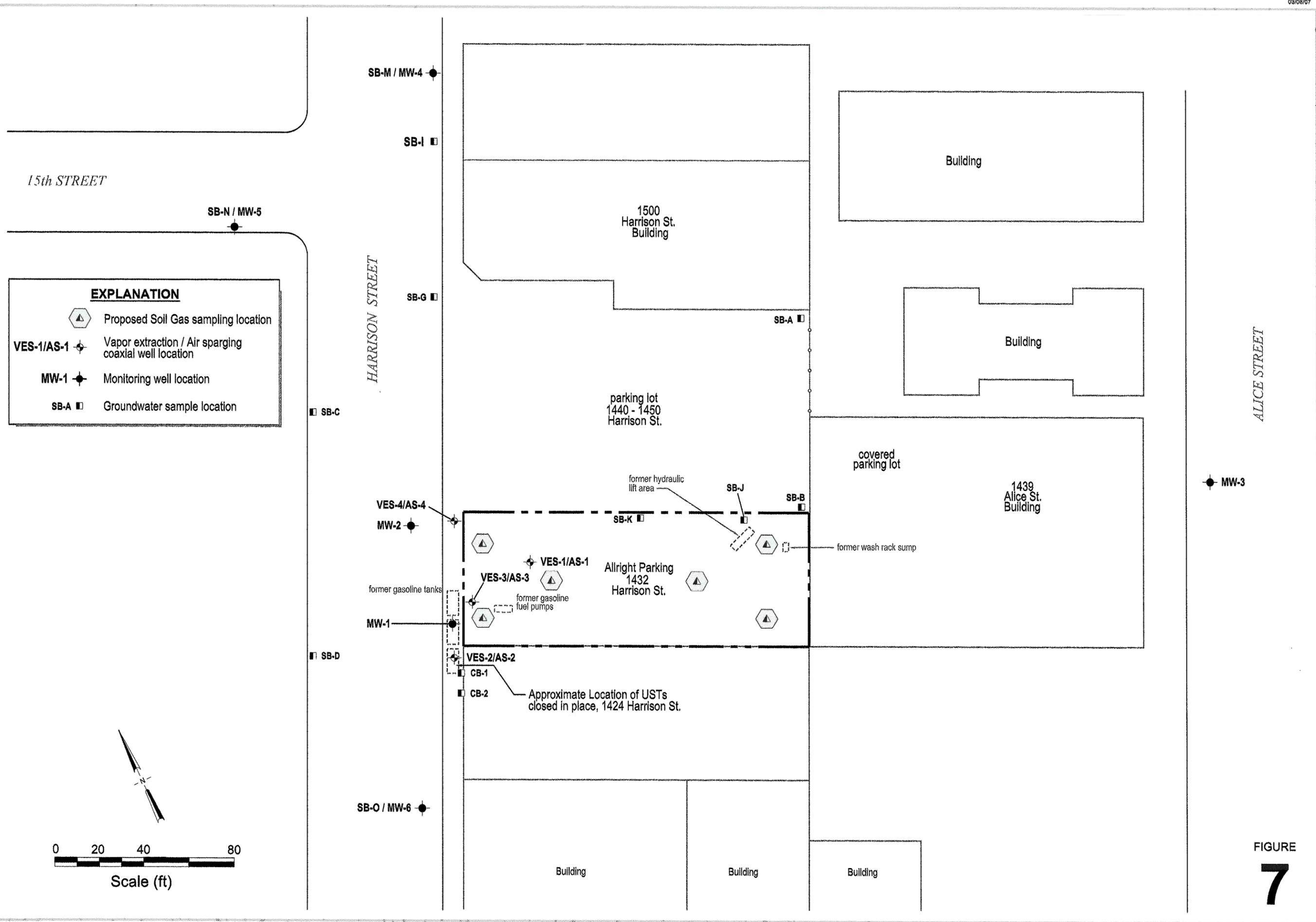


FIGURE

6



H:\SS-20\04\04-188\FIGURES\BORSUK_SOIL-SAMP.DWG



H:\SB-200\MOAK-18\FIGURES\BORSUK_PROP-SC.DWG

TABLES

CAMBRIA

Table 1. Well Completion Data - Allright Parking, 1432 Harrison Street, Oakland, California

Well No.	Installation Date	Boring Diameter (inch)	Well Diameter (inch)	Screen Size (inch)	TOC Elevation (ft-msl)	Total Depth (ft-bgs)	Surface Seal (ft-bgs)	Sand Pack Interval (ft-bgs)	Screened Interval (ft-bgs)
MW-1	1/12/1994	12	4	0.020	35.37*	27	0-14.5	14.5-27	16-26.5
MW-2	7/30/1994		2	0.010	35.21	26	0-9	9-26	11-26
MW-3	7/30/1994		2	0.010	34.01	25	0-13	13-25	15-25
MW-4	10/2/1996	8	2	0.010	33.75	25	0-13	13-25	15-25
MW-5	10/2/1996	8	2	0.010	34.63	30	0-12	12-30	14-29
MW-6	10/2/1996	8	2	0.010	35.89	30.5	0-12	30-Dec	14-29
VES-1 (VE)	7/23/1999	8	3	0.020	-	30	0-5	4.5-20	5-20
VES-1 (AS)			1	0.020	-		0-27.5	27.5-30	28-30
VES-2 (VE)	7/22/1999	8	3	0.020	-	29.5	0-4	4-20	5-20
VES-2 (AS)			1	0.020	-		0-27	27-29.5	27.5-29.5
VES-3 (VE)	7/23/1999	8	3	0.020	-	30	0-4	4-20	5-20
VES-3 (AS)			1	0.020	-		0-25	25-30	28-30
VES-4 (VE)	7/23/1999	8	3	0.020	-	29	0-4	4-20	5-20
VES-4 (AS)			1	0.020	-		0-26.5	26.5-28.5	27-29

ft-bgs feet below ground surface
ft-msl feet above mean sea level

CAMBRIA

Table 2. Groundwater Elevations and Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft amsl)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
					← (µg/L) →						
MW-2 Continued	9/28/1995	19.30	--	15.88	110,000	23,000	29,000	2,500	11,000	--	--
	12/20/1995	20.24	--	14.94	83,000	980	1,800	2,200	10,000	--	--
	3/26/1996	19.69	--	15.49	150,000	23,000	32,000	2,800	12,000	<200*	d
	6/20/1996	19.20	--	15.98	94,000	15,000	23,000	2,400	12,000	<200*	--
	9/26/1996	19.80	--	15.38	150,000	20,000	29,000	2,800	12,000	ND**	--
	10/28/1996	20.18	--	15.00	--	--	--	--	--	--	--
	12/12/1996	20.17	--	15.01	58,000	3,100	11,000	1,700	8,100	220*	--
	3/31/1997	19.67	--	15.51	38,000	6,000	7,900	690	3,300	ND*	--
	6/27/1997	19.68	--	15.50	62,000	13,000	16,000	1,300	6,000	ND*	--
	9/9/1997	20.20	--	14.98	81,000	16,000	18,000	1,800	8,600	ND***	--
	12/18/1997	19.80	--	15.38	110,000	18,000	26,000	2,200	9,500	ND***	--
	3/12/1998	18.07	--	17.11	120,000	16,000	26,000	2,200	9,400	ND***	--
	6/22/1998	18.29	--	16.89	38,000	9,800	9,500	1,500	6,000	--	--
	9/18/1998	19.09	--	16.09	68,000	12,000	16,000	1,400	5,900	--	--
	12/23/1998	19.67	--	15.51	180,000	16,000	22,000	2,200	8,300	--	--
	3/29/1999	18.97	--	16.21	16,600	1,380	1,920	373	1,840	--	--
	6/23/1999	18.25	--	16.93	41,000	10,000	9,400	1,100	5,000	--	--
	9/24/1999	19.60	--	15.58	40,600	4,880	3,490	1,090	4,560	--	--
	12/23/1999	20.21	--	14.97	61,900	6,710	9,320	1,150	5,360	--	--
	3/21/2000	18.93	--	16.25	98,000	14,000	21,000	1,600	6,900	<1600	a
7/3/2000	19.38	--	15.80	140,000	18,000	33,000	2,600	11,000	<200*	a	
9/7/2000	19.83	--	15.35	110,000	17,000	21,000	2,200	9,700	<100***	a,l	
12/5/2000	20.30	--	14.88	130,000	19,000	28,000	2,500	11,000	<200	a	
3/6/2001	19.57	--	15.61	32,000	3,400	3,400	580	2,500	<200	a	
6/8/2001	20.59	--	14.59	72,000	9,400	9,200	1,300	5,800	<200	a	
8/27/2001	21.79	--	13.39	110,000	17,000	28,000	2,600	11,000	<950	a	
10/25/2001	22.05	--	13.13	110,000	15,000	18,000	2,000	8,700	<350	a	
3/1/2002	21.80	--	13.38	3,100	370	180	62	330	<5.0*	a	
6/10/2002	22.83	--	12.35	7,800	2,000	1,100	76	570	<100*	a	
35.21	9/3/2002	22.03	--	13.18	21,000	2,400	2,900	320	1,400	<500	a
12/22/2002	22.70	--	12.51	630	48	56	19	82	<5.0	a	
1/23/2003	20.49	--	14.72	1,100	27	32	19	150	<25	a	
6/12/2003	21.03	--	14.18	10,000	2,100	1,600	150	660	<250	a	
7/23/2003	21.40	--	13.81	28,000	4,800	4,800	380	1,700	<500	a	
12/22/2003	19.33	--	15.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	
3/10/2004	19.33	--	15.88	3,100	460	290	38	240	<50	a	
6/16/2004	19.90	--	15.31	9,100	1,600	1,200	220	830	<400	a	
9/27/2004	22.08	--	13.13	14,000	2,800	490	340	1,600	<350	a	
12/22/2004	21.74	--	13.47	1,100	300	28	22	71	<15	a	
3/3/2005	19.60	--	15.61	340	12	4.4	9.1	28	<10	a	
6/9/2005	18.65	--	16.56	240	22	2.7	6.4	27	<10	a	
9/9/2005	19.27	--	15.94	7,800	1,100	170	380	690	<160	a	
12/20/2005	19.70	--	15.51	150	10	1.9	2.8	10	<5.0	a	
3/26/2006	18.51	--	16.70	2,200	93	19	66	130	<50	a	
6/23/2006	18.47	--	16.74	8,800	1,600	110	500	480	<500	a,m	
9/7/2006	18.97	--	16.24	29,000	4,800	280	940	1,000	<500	a	
12/29/2006	19.76	--	15.45	4,500	720	54	250	480	75*/<0.5***	a	
MW-3	8/1/1994	--	--	--	<50	<0.5	<0.5	<0.5	<2.0	--	--
33.97	12/21/1994	18.82	--	15.15	<50	<0.5	<0.5	<0.5	<0.5	--	--
	3/13/1995	17.86	--	16.11	<50	<0.5	<0.5	<0.5	<0.5	--	e
	7/7/1995	18.25	--	15.72	--	--	--	--	--	--	f,g
	9/28/1995	18.00	--	15.97	--	--	--	--	--	--	h
	12/20/1995	18.74	--	15.23	--	--	--	--	--	--	--
	3/26/1996	18.25	--	15.72	--	--	--	--	--	--	--
	6/20/1996	18.35	--	15.62	--	--	--	--	--	--	--
	9/26/1996	19.12	--	14.85	--	--	--	--	--	--	--
	10/28/1996	19.11	--	14.86	--	--	--	--	--	--	--
	12/12/1996	18.61	--	15.36	--	--	--	--	--	--	--
	3/31/1997	18.35	--	15.62	--	--	--	--	--	--	--
	6/27/1997	18.81	--	15.16	--	--	--	--	--	--	--
	9/9/1997	19.18	--	14.79	--	--	--	--	--	--	--
	12/18/1997	18.64	--	15.33	--	--	--	--	--	--	--
	3/12/1998	17.56	--	16.41	--	--	--	--	--	--	--
	6/22/1998	18.64	--	15.33	--	--	--	--	--	--	--
	9/18/1998	18.33	--	15.64	--	--	--	--	--	--	--
	12/23/1998	18.60	--	15.37	--	--	--	--	--	--	--
	3/29/1999	17.85	--	16.12	--	--	--	--	--	--	--
	6/23/1999	18.67	--	15.30	--	--	--	--	--	--	--
	9/24/1999	18.64	--	15.33	--	--	--	--	--	--	--
	12/23/1999	19.32	--	14.65	--	--	--	--	--	--	--
	3/21/2000	17.89	--	16.08	--	--	--	--	--	--	--
	7/3/2000	18.40	--	15.57	--	--	--	--	--	--	--

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Table 2. Groundwater Elevations and Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft amsl)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
MW-3 34.01 <i>Cont'd</i>	9/7/2000	18.75	--	15.22	--	--	--	--	--	--	--
	12/5/2000	19.03	--	14.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	18.12	--	15.85	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.02	--	13.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	8/27/2001	21.09	--	12.88	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	21.29	--	12.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	21.14	--	12.83	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	21.99	--	11.98	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.17	--	12.84	--	--	--	--	--	--	--
	12/22/2002	21.94	--	12.07	--	--	--	--	--	--	--
	1/23/2003	20.08	--	13.93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/12/2003	20.95	--	13.06	--	--	--	--	--	--	--
	7/23/2003	21.28	--	12.73	--	--	--	--	--	--	--
	12/22/2003	19.05	--	14.96	--	--	--	--	--	--	--
	3/10/2004	18.22	--	15.79	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/16/2004	18.82	--	15.19	--	--	--	--	--	--	--
	9/27/2004	21.03	--	12.98	--	--	--	--	--	--	--
	12/22/2004	20.69	--	13.32	--	--	--	--	--	--	--
	3/3/2005	17.94	--	16.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/9/2005	18.00	--	16.01	--	--	--	--	--	--	--
	9/9/2005	18.43	--	15.58	--	--	--	--	--	--	--
	12/20/2005	18.18	--	15.83	--	--	--	--	--	--	--
	3/26/2006	17.42	--	16.59	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
6/23/2006	17.77	--	16.24	--	--	--	--	--	--	--	
9/7/2006	18.20	--	15.81	--	--	--	--	--	--	--	
12/29/2006	18.49	--	15.52	--	--	--	--	--	--	--	
MW-4 33.75	10/28/1996	19.32	--	14.43	10,000	3,900	420	400	360	<200*	n
	12/12/1996	19.42	--	14.33	11,000	4,200	410	420	260	32*	--
	3/31/1997	18.67	--	15.08	ND	ND	ND	ND	ND	ND*	--
	6/27/1997	19.08	--	14.67	160	49	1.2	ND	5.9	ND*	--
	9/9/1997	19.33	--	14.42	7,400	5,000	410	230	470	33*	--
	12/18/1997	19.17	--	14.58	710	170	8.0	ND	39	ND***	--
	3/12/1998	17.68	--	16.07	1,300	410	21	ND	57	ND***	--
	6/22/1998	17.63	--	16.12	ND	ND	ND	ND	ND	--	--
	9/18/1998	18.58	--	15.17	ND	42	1.6	ND	4.8	--	--
	12/23/1998	19.01	--	14.74	1,900	1,000	76	50	120	--	--
	3/29/1999	18.35	--	15.40	ND	ND	ND	ND	ND	--	--
	6/23/1999	17.58	--	16.17	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.05	--	14.70	9,150	3,270	131	34	537	--	--
	12/23/1999	19.41	--	14.34	12,200	5,360	275	424	592	--	--
	3/21/2000	18.42	--	15.33	45,000	16,000	1,100	1,400	1,900	1400*/<35***	a,l
	7/3/2000	18.82	--	14.93	33,000	10,000	720	840	1,800	<200*	a
	9/7/2000	19.21	--	14.54	26,000	8,800	800	740	1,500	<50***	a,c,l
	12/5/2000	19.60	--	14.15	41,000	11,000	840	930	1,900	<200	a
	3/6/2001	18.24	--	15.51	1,100	400	5.7	<0.5	20	<5.0	a
	6/8/2001	20.91	--	12.84	92	19	<0.5	<0.5	1	<5.0	a
	8/27/2001	21.63	--	12.12	49,000	17,000	1700	1,700	3,200	<260	a
	10/25/2001	21.70	--	12.05	57,000	16,000	1,500	1,600	2,600	<300	a
	3/1/2002	21.53	--	12.22	400	140	2.3	<0.5	12	<5.0*	a
	6/10/2002	22.23	--	11.52	<50	2.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.85	--	11.90	31,000	9,700	300	650	1,100	<1,000	a
	12/22/2002	22.39	--	11.36	35,000	13,000	310	1,100	1,800	<1,500	a
	1/23/2003	20.61	--	13.14	51,000	18,000	430	1,500	2,200	<5.0***	a,l
	6/12/2003	21.20	--	12.55	80	12	<0.5	<0.5	1.0	<10	a
	7/23/2003	21.51	--	12.24	20,000	7,600	100	65	660	<250	a
	12/22/2003	19.60	--	14.15	26,000	9,500	200	380	1,100	<150	a
	3/10/2004	18.81	--	14.94	14,000	4,800	150	320	530	<400	a
	6/16/2004	19.32	--	14.43	2,800	1,100	24	17	100	<50	a
	9/27/2004	21.45	--	12.30	45,000	16,000	260	1,700	2,000	<25***	a
12/22/2004	21.15	--	12.60	29,000	10,000	160	890	1,200	<5.0***	a,j	
3/3/2005	18.60	--	15.15	18,000	6,400	98	500	610	<600	a	
6/9/2005	18.11	--	15.64	20,000	6,100	110	460	580	<500	a	
9/9/2005	18.65	--	15.10	17,000	6,400	100	470	730	<250	a	
12/20/2005	19.01	--	14.74	26,000	8,500	160	640	800	<120	a	
3/26/2006	17.84	--	15.91	1,900	700	22	49	85	<50	a	
6/23/2006	17.96	--	15.79	12,000	3,400	130	370	510	260	a	
9/7/2006	18.29	--	15.46	8,600	1,800	100	170	220	<210	a,i	
12/29/2006	18.93	--	14.82	4,200	1,100	120	150	280	<150*/<0.5***	a	
MW-5 34.63	10/28/1996	19.88	--	14.75	90	4.0	0.6	<0.50	<0.50	16*	
	12/12/1996	20.09	--	14.54	230	5.6	0.9	ND	0.9	3.6*	n
	3/31/1997	19.24	--	15.39	90	3.1	ND	ND	ND	ND*	...

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Table 2. Groundwater Elevations and Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft amsl)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg ←	Benzene	Toluene (µg/L)	Ethylbenzene	Xylenes	MTBE →	Notes
MW-5 Continued	6/27/1997	19.16	--	15.47	ND	ND	ND	ND	ND	ND*	--
	9/9/1997	19.93	--	14.70	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	19.77	--	14.86	ND	ND	ND	ND	ND	ND***	--
	3/12/1998	19.77	--	14.86	79	2.3	ND	0.8	ND	ND*	--
	6/22/1998	18.08	--	16.55	ND	ND	ND	ND	ND	--	--
	9/18/1998	19.12	--	15.51	ND	ND	ND	ND	ND	--	--
	12/23/1998	19.60	--	15.03	ND	0.8	0.9	ND	ND	--	--
	3/29/1999	18.88	--	15.75	ND	ND	ND	ND	ND	--	--
	6/23/1999	18.05	--	16.58	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.61	--	15.02	ND	ND	ND	ND	ND	--	--
	12/23/1999	20.01	--	14.62	ND	ND	ND	ND	ND	--	--
	3/21/2000	19.05	--	15.58	140	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/3/2000	19.40	--	15.23	85	8.1	3.1	1.6	7.8	<5.0*	k
	9/7/2000	19.62	--	15.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	a
	12/5/2000	20.25	--	14.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	19.07	--	15.56	91	5.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.77	--	13.86	290	22.0	0.8	<0.5	<0.5	<5.0	--
	8/27/2001	21.33	--	13.30	660	24.0	2.2	1.3	4.0	<25	a
	10/25/2001	21.62	--	13.01	55	3.5	<0.5	<0.5	<0.5	<5.0	a
	3/1/2002	21.49	--	13.14	200	1.9	0.69	<0.5	<0.5	<5.0*	a
	6/10/2002	22.15	--	12.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	a
	9/3/2002	21.50	--	13.13	60	1.9	<0.5	<0.5	0.77	<5.0	--
	12/22/2002	22.19	--	12.44	82	0.57	<0.5	0.68	<0.5	<5.0	a
	1/23/2003	20.27	--	14.36	<50	2.1	<0.5	<0.5	<0.5	<5.0	a
	6/12/2003	21.10	--	13.53	<50	0.88	<0.5	<0.5	<0.5	<5.0	--
	7/23/2003	21.47	--	13.16	<50	4.0	<0.5	<0.5	<0.5	<5.0	--
	12/22/2003	19.57	--	15.06	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/10/2004	19.61	--	15.02	990	200	2.9	4.0	20	<70	--
6/16/2004	20.15	--	14.48	250	42	<0.5	0.88	<0.5	<35	a	
9/27/2004	22.14	--	12.49	1,600	140	4.8	45	18	<110	a	
12/22/2004	21.81	--	12.82	<50	5.3	<0.5	<0.5	0.66	<5.0	--	
3/3/2005	19.35	--	15.28	2,000	330	4.4	63	39	<150	a	
6/9/2005	18.73	--	15.90	250	42	1.4	14	3.2	<5.0	a	
9/9/2005	19.30	--	15.33	2,000	390	5.0	71	38	<400	a	
12/20/2005	19.65	--	14.98	4,300	760	18	170	150	<35	a	
3/26/2006	18.58	--	16.05	1,600	460	3.3	35	32	<50	a	
6/23/2006	18.57	--	16.06	1,900	500	3.9	81	56	<17	a	
9/7/2006	18.98	--	15.65	8,800	1,900	12	350	220	<260	a,i	
12/29/2006	19.70	--	14.93	15,000	3,400	69	610	700	<450*/<0.5***	a	
MW-6 35.89 (annual sampling)	10/28/1996	20.02	--	15.87	<50	<0.50	<0.50	<0.50	<0.50	<2.0*	--
	12/12/1996	20.18	--	15.71	ND	ND	ND	ND	ND	ND*	n
	3/31/1997	19.81	--	16.08	--	--	--	--	--	--	--
	6/27/1997	19.76	--	16.13	--	--	--	--	--	--	--
	9/9/1997	20.06	--	15.83	ND	ND	ND	ND	ND	ND*	--
	12/18/1997	19.90	--	15.99	ND	ND	ND	ND	ND	--	--
	3/12/1998	18.00	--	17.89	ND	ND	ND	ND	ND	ND*	--
	6/22/1998	18.43	--	17.46	ND	ND	ND	ND	ND	--	--
	9/18/1998	19.10	--	16.79	ND	ND	ND	ND	ND	--	--
	12/23/1998	19.61	--	16.28	ND	ND	ND	ND	ND	--	--
	3/29/1999	18.92	--	16.97	ND	ND	ND	ND	ND	--	--
	6/23/1999	18.41	--	17.48	ND	ND	ND	ND	ND	--	--
	9/24/1999	19.61	--	16.28	ND	ND	ND	ND	ND	--	--
	12/23/1999	20.30	--	15.59	ND	ND	ND	ND	ND	--	--
	3/21/2000	18.97	--	16.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	7/3/2000	19.46	--	16.43	59	5.1	2.3	1.1	5.3	<5.0*	--
	9/7/2000	19.95	--	15.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	a
	12/5/2000	20.50	--	15.39	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/6/2001	19.54	--	16.35	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/8/2001	20.92	--	14.97	<50	<0.5	<0.5	<0.5	<0.5	<5.1	--
	8/27/2001	21.37	--	14.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	10/25/2001	21.59	--	14.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	3/1/2002	21.33	--	14.56	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	6/10/2002	21.97	--	13.92	<50	<0.5	<0.5	<0.5	<0.5	<5.0*	--
	9/3/2002	21.55	--	14.34	--	--	--	--	--	--	--
	12/22/2002	22.25	--	13.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	1/23/2003	20.47	--	15.42	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/12/2003	21.09	--	14.80	--	--	--	--	--	--	--
	7/23/2003	21.42	--	14.47	--	--	--	--	--	--	--
	12/22/2003	19.49	--	16.40	--	--	--	--	--	--	--
	3/10/2004	20.20	--	15.69	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/16/2004	20.73	--	15.16	--	--	--	--	--	--	--
	9/27/2004	22.88	--	13.01	--	--	--	--	--	--	--

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Table 2. Groundwater Elevations and Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Well ID Sample ID TOC (ft amsl)	Date	Depth to Groundwater (ft amsl)	SPH Thickness (feet)	Groundwater Elevation (feet)	TPHg ←	Benzene	Toluene (µg/L)	Ethylbenzene	Xylenes	MTBE →	Notes
MW-6 Continued	12/22/2004	22.53	--	13.36	--	--	--	--	--	--	--
	3/3/2005	19.87	--	16.02	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/9/2005	18.95	--	16.94	--	--	--	--	--	--	--
	9/9/2005	19.45	--	16.44	--	--	--	--	--	--	--
	12/20/2005	19.90	--	15.99	--	--	--	--	--	--	--
	3/26/2006	18.85	--	17.04	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	6/23/2006	18.57	--	17.32	--	--	--	--	--	--	--
	9/7/2006	19.13	--	16.76	--	--	--	--	--	--	--
	12/29/2006	19.96	--	15.93	--	--	--	--	--	--	--
Trip Blank	3/21/2000	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
	9/7/2000	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--

Abbreviations, Methods, & Notes

TOC = Top of casing elevation
ft amsl = feet above mean sea level
SPH = Separate-phase hydrocarbons
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method SW8015C
Benzene, toluene, ethylbenzene, and xylenes by EPA Method SW8021B
MTBE = Methyl tert-butyl ether
* = MTBE by EPA Method SW8021B
** = MTBE by EPA Method SW8240
*** = MTBE by EPA Method SW8260
l = Not confirmed with EPA method 8260B.
µg/L = micrograms per liter, equivalent to parts per billion
-- = Not sampled, not analyzed, or not applicable
<n = Not detected in sample above n µg/L
ND = Not detected above laboratory detection limit
x = Groundwater elevation adjusted for SPH by the relation:
Groundwater Elevation = TOC Elevation - Depth to Groundwater + (0.7 x SPH thickness)
= The wellhead elevation was raised by 0.41 feet when well MW-1 was connected to
the SVE system on October 31, 2003.
= The wellhead elevation was lowered by 0.41 feet when well MW-1 was disconnected from the SVE
system on April 30, 2005.
+ = Well de-watered during purging, no measurable water to sample.

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

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Table 3. Petroleum Hydrocarbon Soil Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Boring / Sample ID	Sample Depth (ft)	Sample Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
1 / 1@20.0'	20	07/25/90	6,300	99	490	110	610	--	
2 / 2@18.5'	18.5	07/25/90	9,300	98	900	190	1,100	--	
B5 / B5@22.5'	22.5	09/17/90	110	0.024	0.21	0.069	1.3	--	
B7 / B7@13'	13	09/21/90	<1	<0.005	<0.005	<0.005	<0.005	--	
B7 / B7@20'	20	09/21/90	2,500	3.5	34	33	130	--	
B8 / B8@22.5'	22.5	09/21/90	1,200	2.3	38	18	89	--	
B13 / B13-5'	5	01/21/92	83.2	<0.005	0.068	1.23	<0.005	--	
B13 / B13-15'	15	01/21/92	135	--	0.71	--	8.85	--	
B14 / B14-5'	5	01/21/92	<1	<0.005	--	--	--	--	
B14 / B14-15'	15	01/21/92	2.5	--	--	<0.005	--	--	
B19 / B19-5'	5	02/03/92	2.5	<0.005	<0.005	<0.005	0.01	--	
B20 / B20-5'	5	02/03/92	2.1	<0.005	0.03	<0.005	0.01	--	
B20 / B20-15'	15	02/03/92	2.5	<0.005	0.034	<0.005	<0.005	--	
B21 / B21-5'	5	02/05/92	2.1	<0.005	0.02	<0.005	0.01	--	
B21 / B21-10'	10	02/05/92	1.9	<0.005	0.021	<0.005	0.026	--	
B21 / B21-15'	15	02/05/92	2	<0.005	0.03	<0.005	<0.005	--	
B22 / B22-5'	5	02/05/92	42.3	<0.005	0.113	<0.005	2.13	--	
B22 / B22-10'	10	02/05/92	1,540	0.987	11.7	1.67	2.88	--	
B23 / B23-5'	5	02/05/92	2.5	<0.005	0.027	<0.005	<0.005	--	
B23 / B23-10'	10	02/05/92	3.3	<0.005	0.034	<0.005	<0.005	--	
LFSB1 / LFSB1-4.0	4	05/22/93	0.5	<0.005	0.01	<0.005	<0.005	--	
LFSB1 / LFSB1-14.0	14	05/22/93	<0.2	0.020	<0.005	<0.005	<0.005	--	
LFSB1 / LFSB1-24.5	24.5	05/22/93	8,800	210	980	160	750	--	
LFSB2 / LFSB2-9.5	9.5	05/22/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
LFSB2 / LFSB2-19.5	19.5	05/22/93	1,000	<0.2	9.4	16	68	--	
LFSB2 / LFSB2-24.5	24.5	05/22/93	6,100	91	320	120	410	--	
Sump 5.5H (3)	5.5	11/29/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
Hoist 1-8H	8	11/29/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
Hoist 2-9.5WH (2)	9.5	11/29/93	0.3	<0.005	<0.005	<0.005	<0.005	--	
Hoist 2-11.5H	11.5	11/29/93	970	2.9	14	4.2	24	--	

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Table 3. Petroleum Hydrocarbon Soil Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Boring / Sample ID	Sample Depth (ft)	Sample Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes
Hoist 2-9EH	9	11/29/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
E. Vault-6.5H	6.5	11/29/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
N. Vault-7H (4)	7	11/29/93	4.1	<0.005	<0.005	<0.005	23	--	
Vault-Base-9.5H (5)	9.5	11/29/93	380	0.05	0.69	0.22	2	--	
S. Tank-8FG	8	12/06/93	1,500	0.87	43	34	240	--	
S. Tank-8G	8	12/06/93	43	0.006	0.088	0.25	1.8	--	
N. Tank-7.5G	7.5	12/06/93	3,100	11	190	64	400	--	
N. Tank-8.5FG	8.5	12/06/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
PJ-2G	2	12/07/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
DSP-2G	2	12/07/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
E. Wall-3G	3	12/15/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
S. Wall-3G	3	12/15/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
N. Wall-3G	3	12/16/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
W. Wall-3-N	3	12/29/93	<0.2	<0.005	<0.005	<0.005	<0.005	--	
W. Wall-3-S	3	12/29/93	0.5	<0.005	<0.005	<0.005	<0.005	--	
MW-2 / MW-2-5'	5	07/30/94	<0.2	<0.005	<0.005	<0.005	<0.005	--	
MW-2 / MW-2-9.5'	9.5	07/30/94	<0.2	<0.005	<0.005	<0.005	<0.005	--	
MW-2 / MW-2-15'	15	07/30/94	<0.2	0.024	0.007	<0.005	<0.005	--	
GW-1 / GW-1-10'	10	07/30/94	<0.2	<0.005	<0.005	<0.005	<0.005	--	
GW-1 / GW-1-15'	15	07/30/94	<0.2	<0.005	<0.005	<0.005	<0.005	--	
SB-F / SB-F 20'	20.0	07/07/95	160	1.9	10	2.5	11	--	a
SB-H / SB-H 20'	20.0	07/07/95	350	4.0	16	5.3	25	--	a
SB-L / SB-L 20'	20.0	07/07/95	220	1.6	4.1	4.8	24	--	b,d
(MW-4) / SB-M 20.0'	20.0	10/02/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	
(MW-5) / SB-N 20.0'	20.0	10/02/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	
(MW-6) / SB-O 20.5'	20.5	10/03/96	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	
SB-P / SB-P 3.75'	3.75	10/03/96	3.8	<0.005	0.016	0.017	0.084	<0.05	
SB-P / SB-P 12.7'	12.7	10/03/96	1,500	0.55	14	25	100	2.0	b,d
SB-Q / SB-Q 3.75'	3.75	10/03/96	4.3	0.006	0.024	0.027	0.11	<0.02	g
SB-Q / SB-Q 9.6'	9.6	10/03/96	1,900	0.95	15	43	200	<1.4	b,d

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Table 3. Petroleum Hydrocarbon Soil Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Boring / Sample ID	Sample Depth (ft)	Sample Date	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Notes	
			← (mg/kg) →							
VES-1 / VES-1-16.5'	16.5	07/22/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
VES-1 / VES-1-21.5'	21.5	07/22/99	5,600	59	400	75	370	<10	a	
VES-1 / VES-1-30.5'	30.5	07/22/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
VES-2 / VES-2-16.5'	16.5	07/22/99	2.2	<0.005	0.018	<0.005	0.050	<0.05	g	
VES-2 / VES-2-26.5'	26.5	07/22/99	4,300	35	260	74	310	<10	a	
VES-2 / VES-2-30.0'	30.0	07/22/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
VES-3 / VES-3-15.5'	15.5	07/23/99	1.3	0.011	<0.005	<0.005	0.010	<0.05	a	
VES-3 / VES-3-20.5'	20.5	07/23/99	2,100	<0.50	66	56	280	<10	b,j	
VES-3 / VES-3-30.5'	30.5	07/23/99	1.4	0.062	0.25	0.039	0.16	<0.05	a	
VES-4 / VES-4-16.5'	16.5	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
VES-4 / VES-4-25.0'	25.0	07/23/99	7,600	150	490	170	640	32*	a	
VES-4 / VES-4-30.0'	30.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-1 / CB-1-10.0'	10.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-1 / CB-1-16.0'	16.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-1 / CB-1-20.0'	20.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-1 / CB-1-24.0'	24.0	07/23/99	1,500	2.3	6.8	12	58	<2	a	
CB-2 / CB-2-12.0'	12.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-2 / CB-2-15.0'	15.0	07/23/99	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05		
CB-2 / CB-2-20.5'	20.5	07/23/99	4.2	<0.005	0.010	0.007	0.025	<0.05	j	
CB-2 / CB-2-24.0'	24.0	07/23/99	4.8	0.006	<0.005	0.026	0.030	<0.05	j	

Notes:

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

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

MTBE = Methyl tert-butyl ether by modified EPA method 8020.

<n = not detected above n parts per million

a = unmodified or weakly modified gasoline is significant

b = heavier gasoline range compounds significant

d = gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline

g = strongly aged gasoline or diesel range compounds are significant

j = no recognizable pattern

* = MTBE result not confirmed by EPA Method 8260 analysis.

1990 through 1994 data tabulated from Table 1 in Levine Fricke's September 1, 1994, *Soil and Groundwater Investigation Report*, Harrison Street Garage, 1432-1434 Harrison Street, Oakland, California.

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Table 4. Other Soil Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Boring / Sample ID	Sample Depth (ft)	Sample Date	TPHd	Kerosene	Oil & Grease	PCBs	CL-HCs (mg/kg)	VOCs	Pb	Hg	Ni	Se	Soluble Pb ¹
													(mg/L)
2 / 2@18.5'	18.5	7/25/1990	--	--	--	--	--	--	--	--	--	--	0.21
B4 / B4@10'	10	9/17/1990	1,700	<100	6,300	--	--	--	--	--	--	--	--
B7 / B7@20'	20	9/21/1990	--	--	--	--	--	--	--	--	--	--	0.07
B13 / B13-5'	5	1/21/1992	1.63	--	--	0.245	--	ND	17.4	45.4	46.1	21.9	--
B13 / B13-15'	15	1/21/1992	<1	--	--	ND	--	ND	13.8	35.5	128.4	15.5	--
B14 / B14-5'	5	1/21/1992	<1	--	--	ND	--	ND	11.2	28.1	39.4	12.3	--
B14 / B14-15'	15	1/21/1992	17.3	--	--	ND	--	ND	13.2	32.8	376.2	15.3	--
B15 / B15-5'	5	1/30/1992	--	--	--	--	--	ND	26.6	29.4	56.6	9.02	--
B15 / B15-15'	15	1/30/1992	--	--	--	--	--	ND	16.7	33.2	72.3	15.5	--
B16 / B16-5'	5	1/30/1992	--	--	--	--	--	ND	14.3	44.9	60.3	15.2	--
B16 / B16-15'	15	1/30/1992	--	--	--	--	--	ND	10.2	34.7	48.4	8.81	--
B17 / B17-5'	5	2/3/1992	--	--	39.1	ND	--	ND	10.4	3.56	329.2	6.24 ^a	--
B19 / B19-5'	5	2/3/1992	28	--	--	--	--	--	--	--	--	--	--
B20 / B20-5'	5	2/3/1992	24	--	--	--	--	--	--	--	--	--	--
B20 / B20-15'	15	2/3/1992	<1	--	35.2	ND	--	--	10.4	2.48	224.8	<7.5	--
B21 / B21-5'	5	2/5/1992	16.7	--	--	--	--	--	--	--	--	--	--
B21 / B21-10'	10	2/5/1992	15.7	--	--	--	--	--	--	--	--	--	--
B21 / B21-15'	15	2/5/1992	22.7	--	--	--	--	--	--	--	--	--	--
B22 / B22-5'	5	2/5/1992	670	--	--	--	--	--	--	--	--	--	--
B22 / B22-10'	10	2/5/1992	175	--	--	--	--	--	--	--	--	--	--
B23 / B23-5'	5	2/5/1992	26	--	--	--	--	--	--	--	--	--	--
B23 / B23-10'	10	2/5/1992	<1	--	--	--	--	--	--	--	--	--	--

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Table 4. Other Soil Analytical Data - Allright Parking, 1432 Harrison Street, Oakland, California

Boring / Sample ID	Sample Depth (ft)	Sample Date	TPHd	Kerosene	Oil & Grease	PCBs	CL-HCs (mg/kg)	VOCs	Pb	Hg	Ni	Se	Soluble Pb ¹
													(mg/L)
Sump 5.5H (3)	5.5	11/29/1993	--	--	<10	ND	--	--	2	<0.06	50	<2	--
Hoist 1-8H	8	11/29/1993	--	--	<10	--	--	--	--	--	--	--	--
Hoist 2-9.5WH (2)	9.5	11/29/1993	--	--	17,000	--	--	--	--	--	--	--	--
Hoist 2-11.5H	11.5	11/29/1993	--	--	5,100	--	--	--	--	--	--	--	--
Hoist 2-9EH	9	11/29/1993	--	--	<10	--	--	--	--	--	--	--	--
E. Vault-6.5H	6.5	11/29/1993	--	--	<10	--	--	--	--	--	--	--	--
N. Vault-7H (4)	7	11/29/1993	--	--	1,700	--	--	--	--	--	--	--	--
Vault-Base-9.5H (5)	9.5	11/29/1993	--	--	14,000	--	--	--	--	--	--	--	--
S. Tank-8FG	8	12/6/1993	--	--	--	--	--	--	4	--	--	--	<0.5 ^b
S. Tank-8G	8	12/6/1993	--	--	--	--	--	--	4	--	--	--	<0.5 ^b
N. Tank-7.5G	7.5	12/6/1993	--	--	--	--	--	--	8	--	--	--	1.9 ^b
N. Tank-8.5FG	8.5	12/6/1993	--	--	--	--	--	--	4	--	--	--	<0.5 ^b

Notes:

1 = Unknown extraction method

a = Report concentration is lower than the detection limit

b = Concentrations reported are Organic Lead by DHS Method

ND - Not detected above laboratory reporting limits

-- = Not analyzed

PCB's - Polychlorinated biphenyls

VOCs = Volatile organic carbons

CL-HCs = Chlorinated hydrocarbons

Pb - Lead

Hg = Mercury

Ni = Nickel

Se = Selenium

All Data tabulated from Table 1 in Levine Fricke's September 1, 1994, *Soil and Groundwater Investigation Report*, Harrison Street Garage, 1432-1434 Harrison Street, Oakland, California.

APPENDIX A

Agency Correspondence

February 15, 2007

Ms. Donna Drogos
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Notification of Upcoming Work Plan for Soil Gas Characterization**
Allright Parking
1432 Harrison Street, Oakland, California 94612
Fuel Leak Case #RO0000266
Cambria Project #540-0188



Dear Ms. Drogos:

On behalf of the Sydney and Barbara Borsuk Trust & Sheila Siegel Trust, Cambria Environmental Technology, Inc. is notifying Alameda County Environmental Health (ACEH) that we will be submitting a *Work Plan for Soil Gas Characterization* for the subject site. This is a result of a recommendation made in an August 2006 *Risk Assessment*. Currently it is well beyond 60 days since submittal of the *Risk Assessment* and we have still not heard back from ACEH concerning this document or our recommendations. We plan to submit the *Work Plan for Soil Gas Characterization* within 30 days of submittal of this letter.

Please contact me for any reason at (510) 420-3307.

Sincerely,

Cambria Environmental Technology, Inc

Mark Jonas, P.G.
Senior Project Geologist



cc: Sydney and Barbara Borsuk Trust & Sheila Siegel Trust
c/o Mr. Mark Borsuk, 1626 Vallejo Street, San Francisco, CA 94123-5116
Mr. David Charter, Technical Review Unit, SWRCB, UST Cleanup Fund
P.O. Box 944212, Sacramento, CA 94244-2120

Cambria
Environmental
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5900 Hollis Street
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Emeryville, CA 94608
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APPENDIX B

Standard Field Procedures

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STANDARD FIELD PROCEDURES SOIL VAPOR SAMPLING DIRECT PUSH AND VAPOR POINT METHODS

This document describes Cambria Environmental Technology's standard field methods for soil vapor sampling. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil vapor samples are collected and analyzed to assess whether vapor-phase subsurface contaminants pose a threat to human health or the environment.

Direct Push Method for Soil Vapor Sampling

The direct push method for soil vapor sampling uses a hollow vapor probe, which is pushed into the ground, rather than augured, and the stratigraphy forms a vapor seal between the surface and subsurface environments ensuring that the surface and subsurface gases do not mix. Once the desired soil vapor sampling depth has been reached, the field technician installs disposable polyethylene tubing with a threaded adapter that screw into the bottom of the rods. The screw adapter ensures that the vapor sample comes directly from the bottom of the drill rods and does not mix with other vapor from inside the rod or from the ground surface. In addition, hydrated bentonite is placed around the sampling rod and the annulus of the boring to prevent ambient air from entering the boring. The operator then pulls up on the rods and exposes the desired stratigraphy by leaving an expendable drive point at the maximum depth. The required volume of soil vapor is then purged through the polyethylene tubing using a standard vacuum pump. The soil vapor can be sampled for direct injection into a field gas chromatograph, pumped into inert tedlar bags using a "bell jar" sampling device, or allowed to enter a Summa vacuum canister. Once collected, the vapor sample is transported under chain-of-custody to a state-certified laboratory. The ground surface immediately adjacent to the boring is used as a datum to measure sample depth. The horizontal location of each boring is measured in the field relative to a permanent on-site reference using a measuring wheel or tape measure. Drilling and sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent. Once the sampling is completed, the borings are filled to the ground surface with neat cement.

Shallow Soil Vapor Point Method for Soil Vapor Sampling

The shallow soil vapor point method for soil vapor sampling utilizes a hand auger or drill rig to advance a boring for the installation of a soil vapor sampling point. Once the boring is hand augered to the final depth, a 6-inch slotted probe, capped on either end with brass or Swagelok fittings, is placed within 12-inches of number 2/16 filter sand (Figure A). Nylon tubing of ¼-inch inner-diameter of known length is attached to the probe. A 2-inch to 12-inch layer of unhydrated bentonite chips is placed on top of the filter pack. Next pre-hydrated granular bentonite is then poured into the hole to approximately and topped with another 2-inch layer of unhydrated bentonite chips or concrete, depending if the boring will hold one probe or multiple probes. The tube is coiled and placed within a wellbox finished flush to the surface. Soil vapor samples will be collected no sooner than one week after installation of the soil-vapor points to allow adequate time for representative soil vapors to accumulate. Soil vapor sample collection will not be scheduled until after a minimum of three consecutive precipitation-free days and irrigation onsite has ceased. Figure B shows the soil vapor sampling apparatus. A measured volume of air will be purged from the tubing using a vacuum

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pump and a tedlar bag. Immediately after purging, soil-vapor samples will be collected using the appropriate size Summa canister with attached flow regulator and sediment filter. The soil-vapor points will be preserved until they are no longer needed for risk evaluation purposes. At that time, they will be destroyed by extracting the tubing, hand augering to remove the sand and bentonite, and backfilling the boring with neat cement. The boring will be patched with asphalt or concrete, as appropriate.

Vapor Sample Storage, Handling, and Transport

Samples are stored and transported under chain-of-custody to a state-certified analytic laboratory. Samples should never be cooled due to the possibility of condensation within the canister.