CAMBRIA

RO433

August 26, 2002

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Re: **Subsurface Investigation Report and Corrective Action Plan**
Former Shell Service Station
1230 14th Street
Oakland, California
Incident #: 97088250
Cambria Project #: 244-0233

Dear Mr. Chan,

Cambria Environmental Technology, Inc. (Cambria) is submitting this *Subsurface Investigation Report and Corrective Action Plan* on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell). The investigation was conducted in accordance with our May 23, 2002 *Subsurface Investigation Work Plan* which was approved by Alameda County Health Care Services Agency (ACHCSA) in a letter dated May 29, 2002. The objective of the investigation was to further define the lateral extent of the dissolved gasoline plume in groundwater downgradient of the site, to assess the extent of residual hydrocarbons in the former underground storage tank (UST) area, and to gather information in preparation for final remedial action at the site. Below are summaries of the site background, investigation procedures, investigation results, and conclusions.

SITE BACKGROUND

Site Location: This former Shell-branded service station is located at the northeast corner of the intersection of 14th Street and Union Street in Oakland (Figures 1 and 2). There is an abandoned station building and a pump island canopy on the site, and much of the property is unpaved. Gas station operations at the site ceased in 1993. The surrounding area is mixed residential-industrial.

February 1991 Soil Borings: On February 2, 1991, Tank Protect Engineering (TPE) of Northern California advanced soil borings SB-1, SB-2, and SB-3. Maximum concentrations of 1,600 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPHg) and 18 ppm benzene were detected in the soil sample collected at 10.5 feet below grade (fbg) in boring SB-3, located immediately downgradient of the gasoline USTs.

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August 1993 Tank Removal and Sampling: On August 24, 1993, TPE supervised the removal of two 7,500-gallon unleaded USTs, one 7,500-gallon leaded UST, one 8,000-gallon leaded UST and one 550-gallon waste-oil tank from the site. Soil samples were collected at depths ranging from 8.5 to 12.0 fbg from the floor of the excavation and from beneath the fill end of the waste oil tank. TPHg and benzene were detected at concentrations ranging from 1.3 milligrams per kilogram (mg/kg) to 18,000 mg/kg and from <5.0 mg/kg to 11,000 mg/kg, respectively. Total petroleum hydrocarbons as diesel and oil and grease were detected in the waste-oil tank pit at 1,200 ppm and 7,700 ppm, respectively. Maximum concentrations of 13 ppm TPHg and 0.007 ppm benzene were detected in soil samples collected beneath the product dispensers. On September 17, 1993, TPE filed a UST Unauthorized Release Form.

November 1995 Piping Removal and Tank Pit Re-Sampling: On November 27, 1995, Cambria collected eight soil samples from the open tank pit at the ends of the former USTs and six soil samples beneath the former product piping. TPHg was detected in all tank pit samples at concentrations ranging from 570 mg/kg to 5,600 mg/kg. Benzene was detected in the tank pit samples at concentrations ranging from <0.5 mg/kg to 72 mg/kg. TPHg was detected in two product piping samples at concentrations of 46 mg/kg and 3,100 mg/kg, and benzene was detected at concentrations ranging from <0.005 mg/kg to 30 mg/kg.

March 1996 Subsurface Investigation: On March 6 - 8, 1996, Cambria advanced 11 soil borings on site. Four borings were converted to groundwater monitoring wells (MW-1 through MW-4), two borings were converted to combined air-sparge and soil-vapor-extraction (SVE) wells (VW/AS-1, VW/AS-3), and two borings were converted to combined SVE and groundwater monitoring wells (VW/MW-2, VW/MW-4). The remaining borings were backfilled with neat cement.

1997 Oxygen Releasing Compound (ORC) Installation: Cambria installed ORCs in wells MW-1, VW/MW-2, and VW/MW-4 on March 25, 1997.

October 2000 SVE Testing: On October 16, 2000, Cambria performed SVE testing to determine the viability of SVE at the site. Although groundwater interfered with the SVE testing, Cambria concluded that SVE might be an effective method to remove hydrocarbons from soils above the groundwater table. However, no hydrocarbons have been detected in unsaturated soil samples during subsequent investigations.

December 2000 Subsurface Investigation: On December 11, 2000, Cambria advanced five soil borings (GP-1 through GP-5) to depths ranging from 16 to 20.5 fbg. Soil samples were collected from each boring at 5-foot intervals, and groundwater samples were collected when groundwater was encountered. No TPHg, benzene or methyl tertiary butyl ether (MTBE) was detected in any of the soil samples. TPHg was detected in groundwater samples from GP-1 and GP-3 at

concentrations of 11 and 4,400 parts per billion (ppb), respectively. Benzene was detected in groundwater from GP-1 and GP-3 at concentrations of 11 and 4,400 ppb, respectively. MTBE was only detected in groundwater collected from boring GP-1 at 0.067 ppb (EPA Method 8260).

September 2001 Subsurface Investigation: On September 27, 2001, Cambria installed three monitoring wells (MW-5 through MW-7), each to a depth of 20 feet. Two soil samples were collected from the tank pit boring (MW-5) for chemical analysis. TPHg was detected at concentrations of 3.9 ppm and 790 ppm at depths of 9.5 and 14.5 feet. Benzene was detected at a concentration of 2.7 ppm at a depth of 14.5 feet. Groundwater samples were collected from the new wells during the regularly scheduled quarterly monitoring event on December 6, 2001. TPHg was detected at concentrations of 31,000 ppb, 76 ppb and 1800 ppb in wells MW-5, MW-6, and MW-7, respectively. Benzene was detected at concentrations of 3,000 ppb, 5.7 ppb and 390 ppb in the respective wells. No MTBE was detected in any of the soil or groundwater samples from the new wells.

March 2002 Risk-Based Corrective Action (RBCA) Report: Cambria prepared a RBCA analysis based on the City of Oakland's RBCA guidance document and using historical soil and groundwater data. Due to is carcinogenic effects, the primary chemical of concern (COC) at this site is benzene in groundwater,. Based on the predominantly sand/sandy silt/silty-sand stratigraphy observed in soil borings drilled at the site, Cambria selected the "sandy silts" soil type option for input for the analysis. Based on the parameters used for the evaluation, the evaluation results indicated that residual hydrocarbons at this site would not pose a significant health risk to onsite or offsite occupants. In a meeting between ACHCSA, Shell and Cambria on May 6, 2002, ACHCSA expressed concern over the parameters used for the risk assessment, and requested that further investigation be conducted at the site.

June 2002 Mobile Groundwater Extraction (GWE Vac Ops): Beginning in June 2002, Cambria began semi-monthly GWE vac ops from MW-5 in an attempt to reduce hydrocarbon concentrations in groundwater in the suspected source area as an interim remedial measure. As of [redacted] pounds of TPHg and [redacted] pounds of [redacted] were removed from the subsurface by GWE vac ops.

OFFSITE WATER WELL RESEARCH

Door-to-Door Well Survey: On July 23, 2002, Cambria conducted a door-to-door well survey that included the residential block north-northeast (downgradient) of the site. The purpose of the door-to-door survey was to determine whether there are any active water wells or basements in the survey area. A questionnaire with a return envelope was left at dwellings where residents

were not available during the survey. A response to the survey was obtained from 23 of the 36 properties included in the survey. None of the respondents indicated the presence of a water well on the site. [redacted] Copies of the well survey questionnaire and assessor's map for the study area are included as Attachment A. Survey results are summarized in Table 1.

DeFremery Park Well Research: Cambria has completed its further research into the potential existence of a water well in DeFremery Park, previously identified as water well number six. Cambria has been unable to confirm the existence of any irrigation or other water well at that park, located at 1651 Adeline Street, Oakland (Figure 1). Cambria has directed verbal and written inquiries to Mr. James Abercrombie, Supervisor of City of Oakland Parks and Recreation, Area One. See copy of registered letter to Mr. Abercrombie dated June 24, 2002 and confirmation receipt dated June 25, 2002, presented as Attachment B. Mr. Abercrombie indicated that he has no knowledge of any irrigation or other well at that park.

ADDITIONAL SOIL AND GROUNDWATER PLUME DEFINITION

To further assess the extent of impacted soil in both the vadose and saturated zones, Cambria advanced nine borings (S-10 through S-18) in and near the former tank pit (Figure 2). Soil samples were collected at approximately 2.5-foot intervals for chemical analysis. Grab groundwater samples were also collected from each boring. To further define the extent of impacted groundwater downgradient of the site, Cambria advanced four hand-auger borings on adjacent offsite properties to collect grab-groundwater samples (Figure 3).

The procedures for this investigation, described in Cambria's approved work plan, are summarized below. Analytical results for soil are summarized in Tables 2 and 3, and certified laboratory reports are presented as Attachment C. Cambria's Standard Field Procedures for Envirocore® Sampling and Hand Auger Soil Borings are presented as Attachment D. Copies of well permits are included as Attachment E.

Drilling Dates: June 7, June 10, 2002 (onsite)
July 23, 2002 (offsite)

Drilling Company: Gregg Drilling of Martinez, California (Gregg) (C-57 License #485165).

Personnel Present: Melody Munz, Project Engineer, Cambria (June 7 and 10, 2002)
Don Pearson, Driller, Gregg (June 7 and 10, 2002)

Carman Garcia, Driller, Gregg (June 7 and 10, 2002)
Jorge Torres, Driller of Gregg Drilling (June 7 and 10, 2002)
Jason Gerke, Staff Scientist, Cambria (July 23, 2002)

Permits: Alameda County Public Works Agency Permit Number W02-0603, W02-0604, W02-0605 (Attachment E).

Drilling Methods: Two-inch hydraulic-push equipped with an Envirocore® sampler, (Borings S-10 through S-18); hand-held bucket auger (HA-1 through HA-4).

Soil Sampling: Soil samples were collected at approximately 2.5-foot intervals from each of the onsite borings.

Groundwater Sampling: Grab groundwater samples were collected from all on- and off-site borings.

Number of Borings: Thirteen: S-10 through S-18 and HA-1 through HA-4 (Figures 2 and 3).

Boring Depths: Direct-push borings S-10 through S-17 [redacted] ing from 22 to 30 fbg. [redacted] o equ[redacted]a [redacted] o a depth of 14 fbg [redacted] of [redacted].

Sediment Lithology: Soil encountered in the borings consisted predominantly of sand and silty sand to the total explored depth of 30 fbg. Approximately 9-10 feet of fill consisting of gravelly sand was encountered in the tank pit borings (S-10 through S-18).

Groundwater Depths: Groundwater was encountered at approximately 13 to 15 fbg during drilling activities. During onsite soil boring activities, the static groundwater levels in wells MW-5 and MW-7 were 11.06 fbg and 11.97 fbg, respectively.

Backfill Method: All borings were backfilled with neat cement grout to match the existing grade.

Chemical Analyses: Groundwater and selected soil samples from each boring were analyzed by a State-certified laboratory for TPHg, benzene, toluene, ethylbenzene and xylenes (BTEX), by EPA Method 8260B. Selected soil samples

were analyzed for pH, total organic carbon, alkalinity, total iron, trivalent chromium and hexavalent chromium.

To characterize soil cuttings from the borings for disposal, four brass tubes of soil were collected, then composited and analyzed by the analytical laboratory for TPHg, BTEX and MTBE by Method 8260B, and total threshold limit concentration lead.

Soil Handling: Soil cuttings produced from the borings were stockpiled at the site and will be transported to Forward Landfill in Manteca, California for disposal. Disposal confirmation will be provided at a later date.

INVESTIGATION RESULTS

Hydrocarbon Distribution in Soil: During the current investigation, no benzene was detected in any of the unsaturated soil samples, including surface soil sample S-18 collected near the east end of the southern-most former pump island. TPHg was detected at a concentration of 2.3 ppm in one unsaturated sample, S-15 at 10 fbg. No other analytes were detected in the unsaturated samples.

Groundwater was encountered at approximately 13 to 15 fbg during drilling activities. [redacted]. In the saturated soil samples from this boring, TPHg and benzene concentrations attenuate vertically to 1.9 ppm and 0.047 ppm, respectively, at 24.5 fbg. Given that the hydrocarbons were detected in saturated soil samples only, we believe that the results represent hydrocarbons present in groundwater, as well as sorbed to soil and thus are not directly comparable to unsaturated soil sample or groundwater sample results. Analytical results for the current soil samples are summarized in Tables 2 and 3. A copy of the laboratory analytical report for the current investigation is included as Attachment C. Historical soil analytical results are summarized in Table 4. Cross-sectional drawings showing TPHg and benzene concentrations in soil are provided as Figures 4 through 7.

Hydrocarbon Distribution in Groundwater: Previous site investigation data and quarterly groundwater monitoring results indicate that the hydrocarbon plume is defined by non-detect concentrations around the perimeter of the site, and is localized in and near the former tank pit area.

During the current investigation, no benzene was detected in any of the grab-groundwater samples collected from any of the offsite hand-auger borings. However, TPHg was detected at very low concentrations of 55 ppb and 85 ppb in hand-auger borings HA-1 and HA-2, respectively, on the property adjacent (east) of the site.

Results from the current investigation of the tank pit area indicated the maximum concentrations of 260,000 ppb TPHg and 15,000 ppb benzene were detected in the grab groundwater sample collected from boring GP-4. Results indicate that hydrocarbon concentrations in groundwater plume are highest on the western side of the tank pit. The hydrocarbon plume appears to be confined to within 10 feet to the west, 10 feet to the south, 15 feet to the east and 30 feet to the north of the tank pit area. Analytical results obtained from the saturated soil samples indicate that vertically, the hydrocarbon concentrations attenuate to very low concentrations within 10 feet of the static groundwater level. The maximum hydrocarbon concentrations at or below 20 fbg were 600 ppm TPHg and 2 ppm benzene detected at 20 fbg in boring GP-10. Neither TPHg nor benzene was detected in the 22.5 fbg sample from the same boring. These results are consistent with published observations that the vertical extent of hydrocarbon impact below the "smear zone" is no more than 10 feet[1]. At this site, the smear zone is estimated to be approximately 2 feet, based on groundwater fluctuations of 9 to 13 fbg. Laboratory analytical results for the grab groundwater samples are summarized in Table 5, and a copy of the laboratory analytical results is presented as Attachment C. Groundwater monitoring well concentrations are included as Attachment F.

REMEDIAL ALTERNATIVES DISCUSSION

Remedial Objectives

The primary COC at this site is benzene in groundwater, due to its carcinogenic effects. Previous site investigation data and quarterly groundwater monitoring results indicate that the benzene plume is defined by non-detect concentrations around the perimeter of the site, and is localized in and near the former tank pit area. Based on the current subsurface conditions, we believe that the remedial objective should be to reduce benzene concentrations in groundwater to levels considered protective of human health and the environment in the shortest time frame feasible.

Proposed Cleanup Goals

Proposed cleanup levels are included in this corrective action plan as required by Section 2725(d)(3) and (g)(1) of California's Underground Storage Tank Regulations. As stated

[1] ASTM E-1943-98: Standard Guide for Remediation of Ground Water by Natural Attenuation at Petroleum Release Sites, August 1998.

above, the primary COC at the site is benzene in groundwater. The proposed cleanup goal for this site is the City of Oakland's established risk-based screening level (RBSL) for benzene. Cambria's March 2002 RBCA determined that the only potentially completed, and most conservative, exposure pathway would be the residential inhalation of indoor air vapors from groundwater pathway and utilized the Oakland Tier 2 RBSL established for "sandy silts" soil type for this pathway. However, in a letter dated May 20, 2002 ACHCSA expressed concern about the soil type used. Since the RBSL for this exposure pathway for the alternate soil type, "Merritt Sands," is lower, Cambria recommends using [redacted] of indoor air [redacted] the site.

Remedial Alternative Evaluation

To meet the remedial objectives of reducing benzene concentrations in groundwater, several alternatives are available. These alternatives include air sparging, monitored natural attenuation (MNA), barrier system, SVE, GWE, dual-phase or vacuum-enhanced GWE (DVE), and in-situ oxidation. The alternatives were evaluated against their ability to meet the proposed cleanup goal, their feasibility, their cost, and their ability to remediate the site in the shortest time frame feasible.

Air Sparging: Air sparging is commonly used to treat organic compounds such as benzene. In particular, "biosparging" of low volumes of air enhances biodegradation of hydrocarbons over time. Given the short time frame objective for the site, air sparging is not considered a practical remedial option for this site.

MNA: As with most fuel hydrocarbon plumes where there is no ongoing source, natural processes are expected to continue to degrade the hydrocarbon plume, and concentrations in the heart of the plume will eventually decline. A cursory review of groundwater data indicates that benzene concentrations in groundwater are attenuating with time. However, as with air sparging, due to the short time frame objective for remediation, MNA is not considered a practical remedial option for this site.

Barrier System: Installation of a slurry wall or groundwater interception trench could control migration of the plume in the downgradient direction. However, given current onsite and offsite conditions, the expense of slurry wall or groundwater interception trench installation is not warranted at this site.

SVE: Although Cambria's October 2000 SVE testing suggested that SVE might be an effective method to remove hydrocarbons from unsaturated soils, there is no current indication of residual

hydrocarbon impact to unsaturated soil. Also, SVE will not directly remediate hydrocarbons in groundwater. Therefore SVE is not considered a viable remedial alternative for the site.

Mobile GWE and DVE: Mobile GWE vacuum-truck operations (vac ops) consists of lowering dedicated stingers into selected monitoring wells and extracting fluids using a vacuum truck. DVE is the process of applying high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance GWE from the saturated zone. Low groundwater yields and mass removal rates observed during mobile GWE conducted at the site since June 2002 suggest that this technique would have to continue over an extended period of time in order to remove substantial hydrocarbon mass and to reach the cleanup goals for the site.

In-Situ Oxidation Using Fenton's Reagent/Hydrogen Peroxide: Hydrogen peroxide (H_2O_2) is an oxidizer commonly used in the environmental industry to remediate hydrocarbon-impacted soil and groundwater by directly oxidizing carbonaceous material found in gasoline constituents. The H_2O_2 in the presence of iron, reacts with hydrocarbons, breaking the bonds of these compounds into carbon dioxide and water.

RECOMMENDATION

Cambria recommends conducting a 5-day in-situ field test to determine the actual site-specific effect of the H_2O_2 treatment while expediting site remediation by destroying onsite organic compounds. It is expected that the H2O2 treatment will be sufficient to remediate the site to the cleanup goal. Upon completion of the 5-day treatment, Cambria will collect grab groundwater samples to evaluate the efficacy of the test. In addition to analysis for TPHg and BTEX, samples will also be analyzed for total chromium and hexavalent chromium, per ACHCHA request, to verify that site conditions do not allow for the creation of hexavalent chromium from the treatment process. The necessity of additional treatment, if any, will be determined from those results.

As reported by the Interstate Technology and Regulatory Cooperation Work Group in the June 2001 *Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminated Soil and Groundwater*:

> This process involves free radical generation and direct oxidation with hydrogen peroxide. Hydrogen peroxide, which can be delivered at depth using lance permeation or soil mixing techniques or injected water amendments, is an effective oxidizing agent. However, to achieve the desired contaminant reductions in a reasonable time, a metal

catalyst is required. Iron is most commonly used, and, when mixed with hydrogen peroxide, the catalyst is known as Fenton's reagent. The basic reaction is as follows:

$$H_2O_2 + Fe^{+2} \rightarrow Fe^{+3} + OH^- + OH^\bullet$$

The process is well documented for producing hydroxyl radicals by the reaction of hydrogen peroxide and ferrous iron (Fe^{+2}). The hydroxyl radicals ($OH^\bullet$) serve as very powerful, effective, and nonspecific oxidizing agents, second only to fluorine in oxidizing power. Many reactions occur during the oxidation of a contaminant, and either ferrous or ferric iron can react with the peroxide to produce oxidizing radicals.

The Fenton process is relatively fast acting, taking only days or weeks. The contaminants are treated in situ, converted to innocuous and/or natural occurring compounds [e.g. H_2O, CO_2, O_2 halide ions]. By acting/reacting upon the contaminant in place, the reagent serves to eliminate the possibility of vertical movement of the contaminant other than that resulting from the act of vertical injection itself, which is often a concern with other remediation technologies. As a side benefit, aerobic biodegradation of contaminants can benefit from the presence of O_2 released during H_2O_2 decomposition, if large quantities of reagent need to be applied.

In commercial applications of Fenton's reagent, a mixture of approximately 5-35% H_2O_2 (wt./wt.) is applied. The initial weight (or equivalent volume) of H_2O_2 and ferrous ions is based on contaminant levels, subsurface characteristics, soil and/or groundwater volume to be treated, and the specific stoichiometry of H_2O_2: Fe^{2+} determined during a laboratory study. Sometimes, additional reagent may be applied to account for heterogeneity of the medium and unanticipated rate of decomposition of H_2O_2 to provide additional contact time for the contaminants. If the natural pH of the contaminated zone is not low enough for efficient hydroxyl radical generation, acids may be added to adjust the pH of the subsurface prior to the Fenton's reagent application.

Additional references are :

- Yin and Allen, *In Situ Chemical Treatment*, GWRTAC Technology Evaluation Report TE-99-01, July 1999
- *Fenton's Reagent*, Innovative Technology Summary Report DOE/EM-0484, October 1999
- *Field Applications of In Situ Remediation Technologies: Chemical Oxidation*, USEPA 542-R-98-008, September 1998

These references are available from the USEPA website (www.clu-in.org). Cambria believes that in-situ oxidation will remediate benzene in groundwater at the site cost-effectively while meeting the remedial objective of effecting remediation quickly.

Based on the subsurface investigation results, Cambria estimates that approximately 80 pounds of TPHg and approximately 5 pounds of benzene remain in groundwater in and immediately downgradient of the former tank pit area. During the in-situ field test, approximately 11,200 gallons of H_2O_2 and catalyst will be injected in to 56 injection points, on approximately 4-foot centers, spaced over a 30 foot by 30 foot area in and near the tank pit. Calculations of the estimated hydrocarbon mass remaining and estimated quantity of chemicals to be injected are presented as Attachment G. The proposed in-situ field test treatment area is shown in Figure 8.

CONCLUSIONS

The current investigation confirms that the hydrocarbons plume is concentrated in groundwater in and near the former tank pit area. To expedite remediation of the hydrocarbons remaining on site, Cambria recommends proceeding with the in-situ oxidation field test/remedial action described in this report.

Cambria will schedule the in-situ field test upon approval from ACHCSA. Cambria will submit a corrective action report within 60 days of completion of the field work.

CLOSING

If you have any questions or comments, please call Melody Munz at (510) 420-3324.

420-3332

Sincerely,
Cambria Environmental Technology, Inc.

Matthew W. Derby
for
Melody Munz
Project Engineer

M. Derby

Matthew W. Derby, P.E.
Senior Project Engineer

Figures:
1 – Vicinity/Area Well Survey Map
2 - Onsite Soil Boring Locations
3 - Downgradient Area Map
4 - TPHg Soil Concentrations - A-A'
5 - Benzene Soil Concentrations - A-A'
6 - TPHg Soil Concentrations - B-B'
7 - Benzene Soil Concentrations B-B'
8 - Proposed In-situ Oxidation Field Test Area

Tables:
1 - Door-to-Door Survey Results
2 - Soil Analytical Results
3 - Soil Analytical Results – Additional Analyses
4 - Historical Soil Analytical Results
5 - Groundwater Analytical Results

Attachments:
A - Door-to-door Survey Questionnaire
B - Correspondence with City of Oakland Parks and Recreation
C - Certified Laboratory Reports
D - Standard Field Procedures for Envirocore® Sampling and Hand Auger Soil Borings
E - Soil Boring Permits
F - Groundwater Monitoring Well Concentrations
G - In-situ Oxidation Estimates – Hydrocarbon Mass / Chemical Quantities

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869
Tom Saberi, 1045 Airport Boulevard, Suite 12, South San Francisco, CA 94080
Matthew Dudley, Sedgwick, Detert, Moran, & Arnold, 1 Embarcadero Center, 16th Floor, San Francisco, CA 94111-3628

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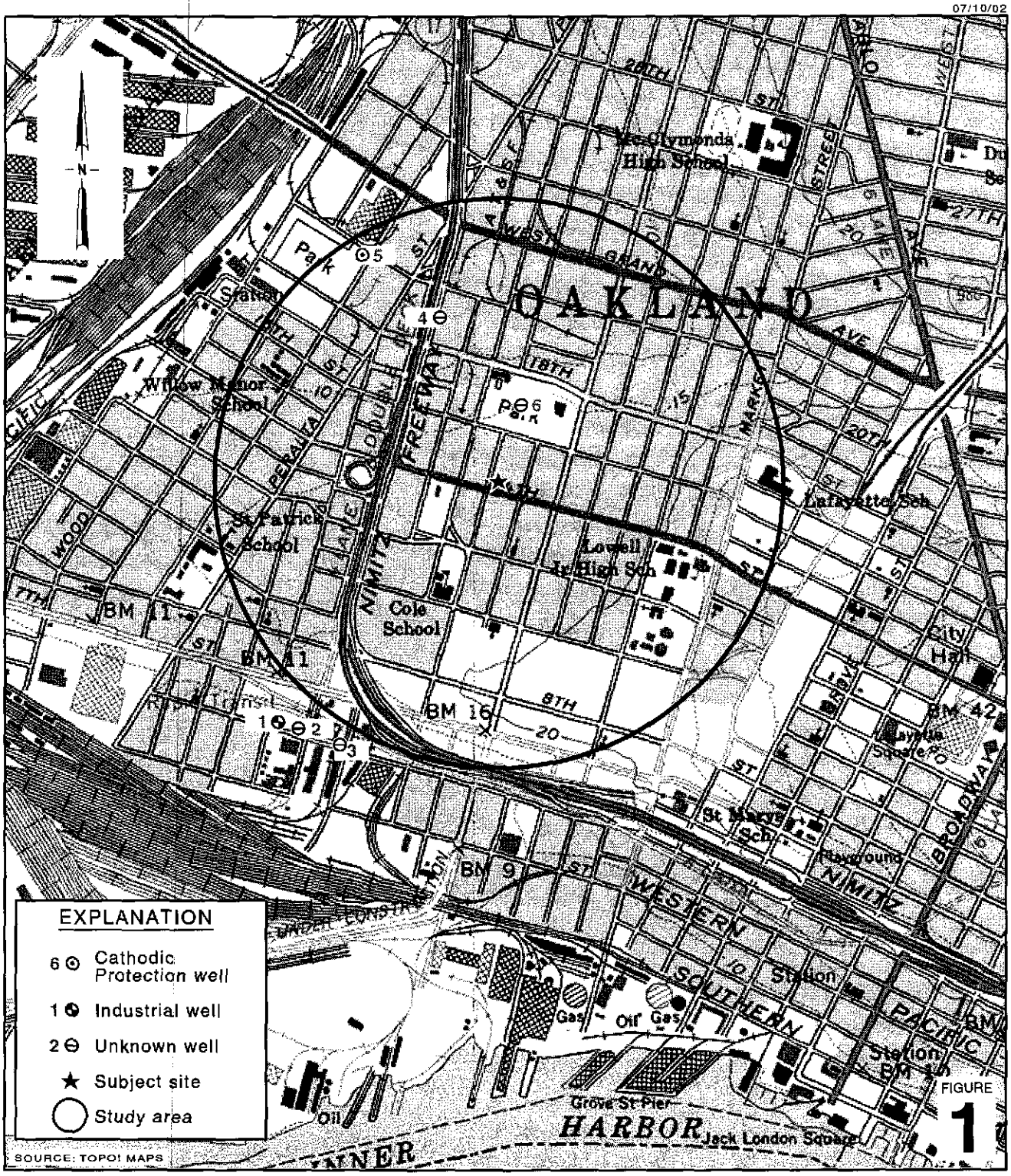
07/10/02



G:\OAKLAND\1230-14TH\FIGURES\VIC-WELL-SURVEY.AI

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Former Shell Service Station
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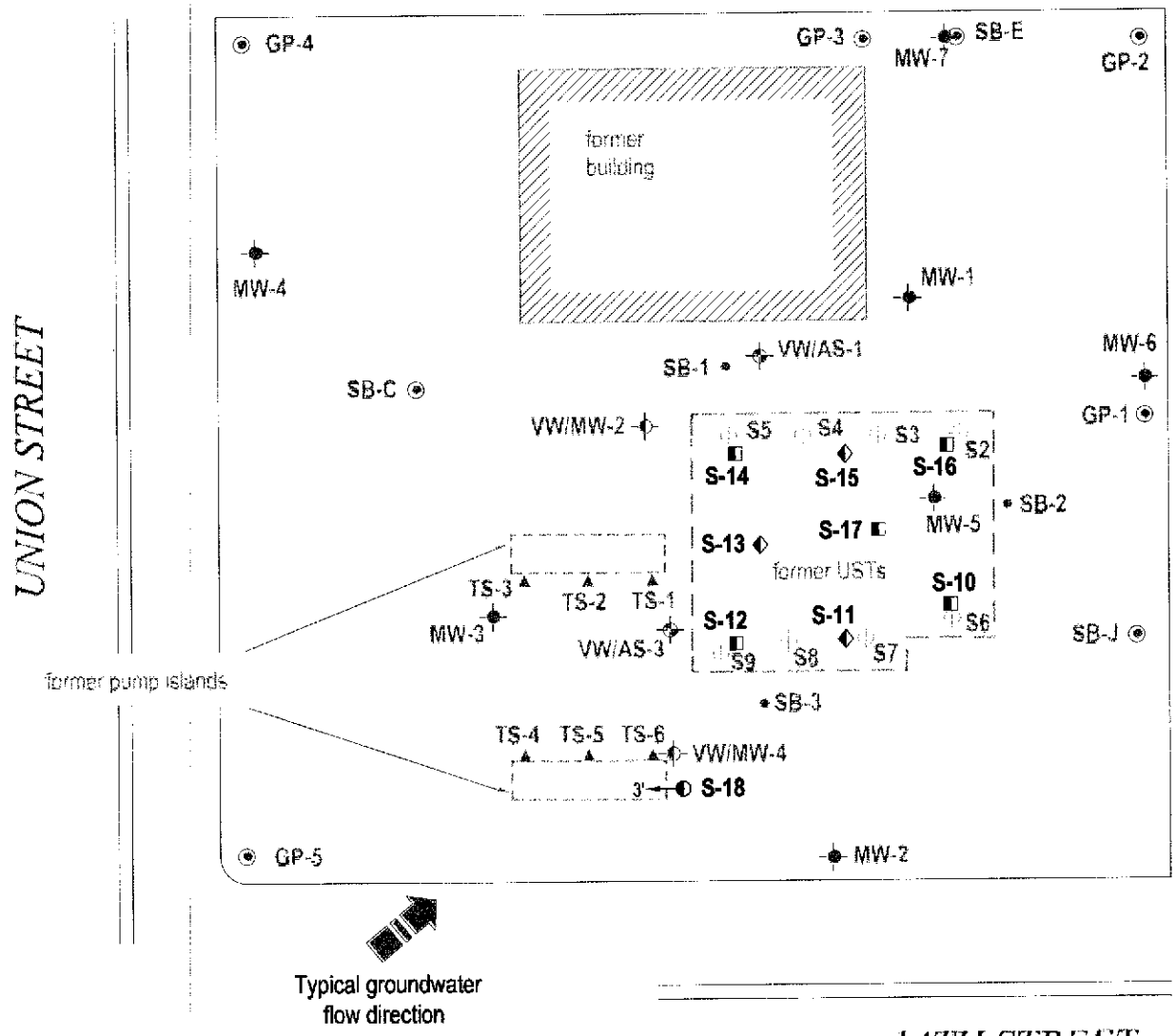
Vicinity/Area Well Survey Map
(1/2-Mile Radius)



EXPLANATION

S-11 ◆	Deeper soil boring location (06/07/02)
S-12 ■	Soil boring location (06/7-10/02)
S-18 3' —●	Slanted soil boring location and target depth
SB-1 •	Soil boring location (2/91)
TS-1 ▲	Product piping sample (11/95)
S2-15.0 ▮	Tank Pit grab soil sample (1995)
SB-C ◉	Soil boring location (3/96)
GP-1 ◉	Soil boring location (12/00)
MW-1 ⊕	Monitoring well location
VW/AS-1 ⊕	Combination air sparge/soil vapor extraction well
VW/MW-2 ⊕	Combination soil vapor extraction well/monitoring well

N

0 10 20

Scale (ft)

FIGURE **2**

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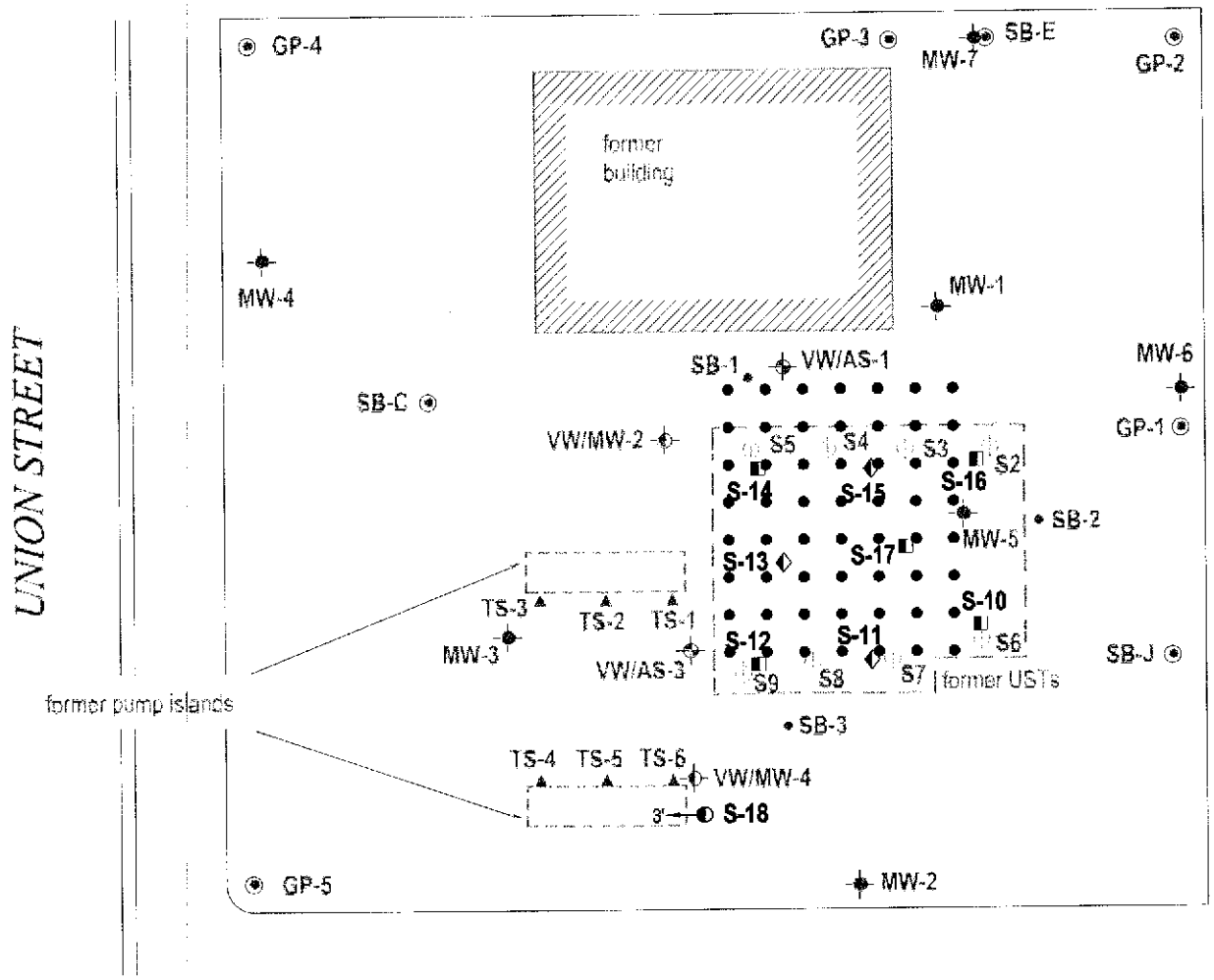
Onsite Soil Boring Locations



EXPLANATION

- Proposed injection location
- **S-11** Deeper soil boring location (06/07/02)
- **S-12** Soil boring location (06/7-10/02)
- **S-18** 3' Slanted soil boring location and target depth
- SB-1 Soil boring location (2/91)
- TS-1 Product piping sample (11/95)
- S2-15.0 Tank Pit grab soil sample (1995)
- SB-C Soil boring location (3/96)
- GP-1 Soil boring location (12/00)
- MW-1 Monitoring well location
- VW/AS-1 Combination air sparge/soil vapor extraction well
- VW/MW-2 Combination soil vapor extraction well/monitoring well

Typical groundwater flow direction

N

0 10 20

Scale (ft)

FIGURE

8

G:\OAKLAND\1230-14TH\FIGURES\PROP-INJECT-LOC.DWG

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Incident #97088250

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Proposed In-Situ Oxidation Field Test Area

08/12/02

EXPLANATION

- HA-1 ⊕ Hand augur location (07/23/02)
- S-14 ◧ Soil boring location (06/07,10/02)
- S-11 ◆ Deeper soil boring location (06/07/02)
- 3' —◐ Proposed slanted soil boring showing slant direction and target depth
- SB-1 • Soil boring location (2/91)
- TS-1 ▲ Product piping sample (11/95)
- S2-15.0 — Tank Pit grab soil sample (1995)
- SB-C ◉ Soil boring location (3/96)
- GP-1 ◉ Soil boring location (12/00)
- MW-1 ⊕ Monitoring well location
- VW/AS-1 ⊕ Combination air sparge/soil vapor extraction well
- VW/MW-2 ⊕ Combination soil vapor extraction well/monitoring well

Downgradient Area Map

UNION STREET

MAGNOLIA STREET

14TH STREET

1430-32 Union St.

1426 Union St.

1418-20 Union St.

1419 Magnolia St.

1216 14th St.

1210 14th St.

1204-06-08 14th St.

former station
1230 14th St.

former USTs

former pump islands

HA-1 ⊕
HA-2 ⊕
HA-3 ⊕
HA-4 ⊕

MW-1 MW-2 MW-3 MW-4 MW-5 MW-6 MW-7
GP-1 GP-2 GP-3 GP-4 GP-5
SB-1 SB-2 SB-3 SB-5 SB-6
VW/AS-1 VW/AS-3 VW/MW-2 VW/MW-4
TS-1 TS-2 TS-3 TS-4 TS-5 TS-6
S1 S2 S3 S4 S5 S6 S7
S-10 S-11 S-12 S-13 S-14 S-15 S-16 S-17 S-18

Typical groundwater flow direction

N

0 15 30 60
Scale (ft)

FIGURE
3

Former Shell Service Station
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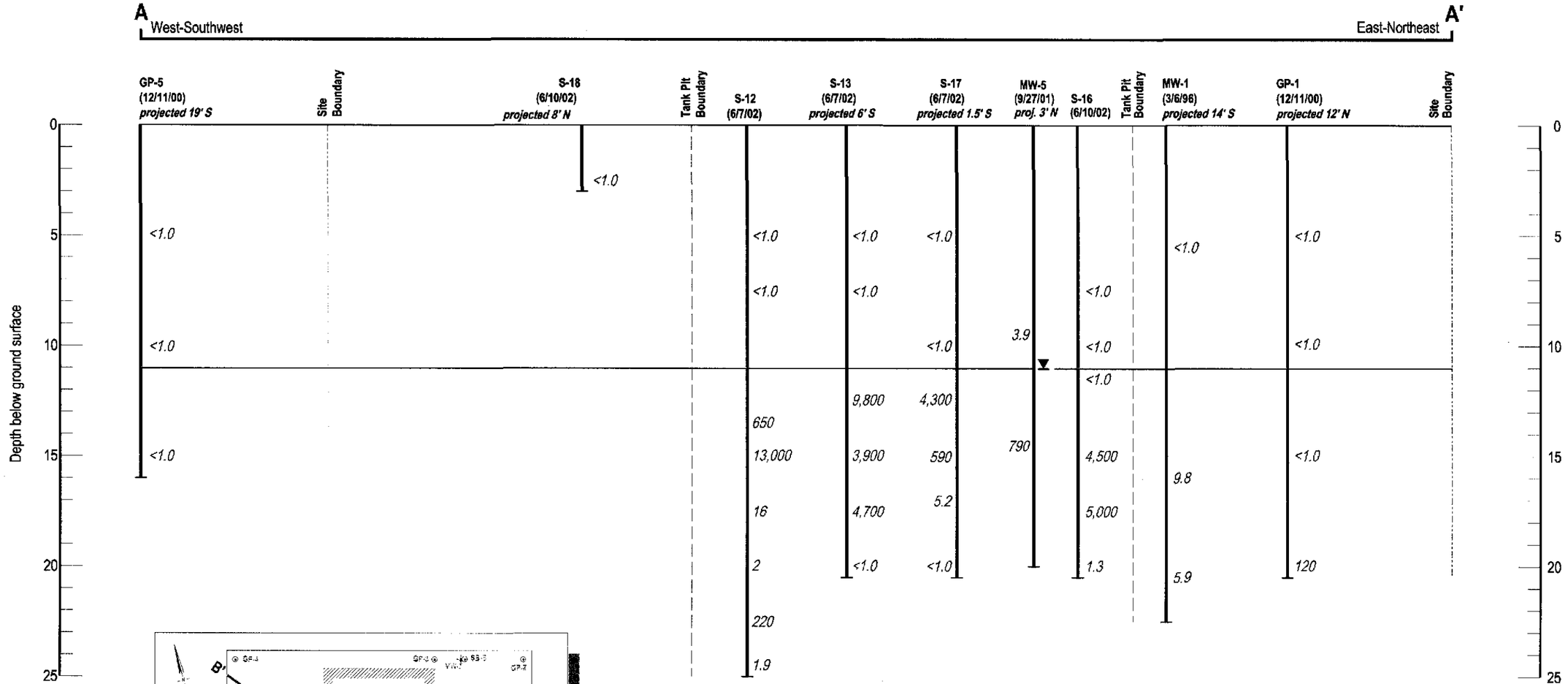
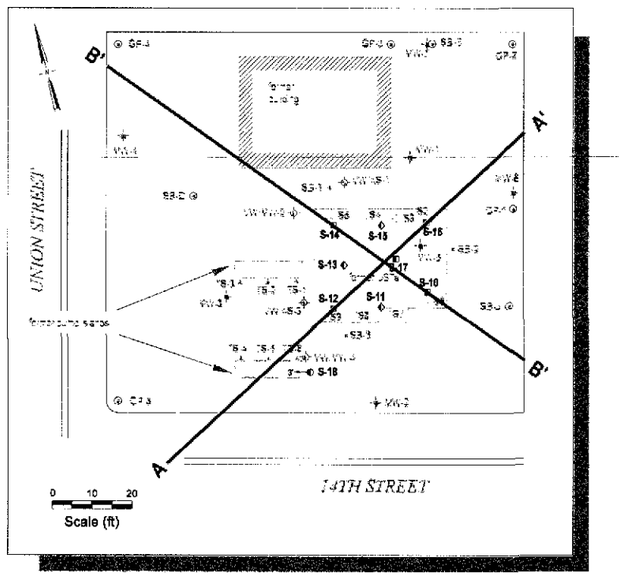
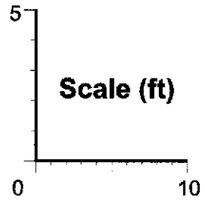
08/22/02

TPHg Soil Concentrations
A - A'







EXPLANATION

GP-5	Soil boring ID
(12/11/00)	Sample date
projected 19' S	Boring location relative to A - A'
<1.0	TPHg concentration in soil, in ppm
▼	Static Depth of Groundwater (06/07/02)

Soil Boring

Bottom of boring

FIGURE

4

Former Shell Service Station
1230 14th Street
Oakland, California
Incident #97088250

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G:\OAKLAND\1230-14TH\FIGURES\TPHG-X-SECT-A.DWG

08/22/02

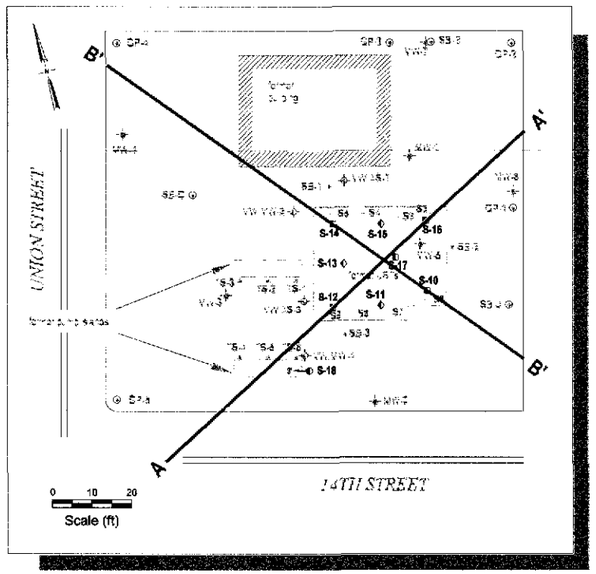
Benzene Soil Concentrations
A - A'

A — West-Southwest

A' — East-Northeast

GP-5 (12/11/00) *projected 19' S*	Site Boundary	S-18 (6/10/02) *projected 8' N*	Tank Pit Boundary	S-12 (6/7/02)	S-13 (6/7/02) *projected 6' S*	S-17 (6/7/02) *projected 1.5' S*	MW-5 (9/27/01) *proj. 3' N*	S-16 (6/10/02)	Tank Pit Boundary	MW-1 (3/6/96) *projected 14' S*	GP-1 (12/11/00) *projected 12' N*	Site Boundary
		<0.005										
<0.0050				<0.005	<0.005	<0.005				<0.0025	<0.0050	
				<0.005	<0.005			<0.005				
<0.0050						<0.005	<0.0050	<0.005			<0.0050	
								<0.005				
<0.0050				5.7	26	0.64	2.7	<1.0		1.9	<0.0050	
				130	37	0.41		<1.0				
				0.65	6.5	0.57						
				0.058	0.028	<0.005		0.12		0.89	<0.020	
				1.3								
				0.047								

Depth below ground surface: 0, 5, 10, 15, 20, 25



5
Scale (ft)
0 10

EXPLANATION

GP-5 (12/11/00) *projected 19' S*	Soil boring ID; Sample date; Boring location relative to A - A'
<0.0050	Benzene concentration in soil, in ppm
▼	Static Depth of Groundwater (06/07/02)
	Soil Boring
	Bottom of boring

FIGURE

5

Former Shell Service Station
1230 14th Street
Oakland, California
Incident #97088250

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G:\OAKLAND\1230-14TH\PIC\FIGURES\BENZ-X-SECT-A.DWG

08/22/02

TPHg Soil Concentrations B - B'

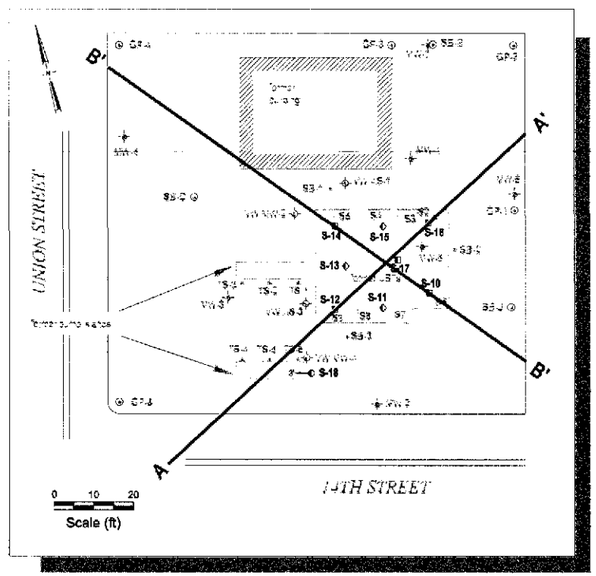
B Northwest — Southeast B'

GP-4 (12/11/00) *projected 5' W*	MW-4 (3/8/96) *projected 12.5' E*	SB-C (3/8/96) *projected 14' E*	VW/MW-2 (3/7/96) *projected 4' E*	SB-1 (2/91) *proj. 7' W*	S-14 (6/7/02)	S-15 (6/10/02) *proj. 7' W*	S-17 (6/10/02) *proj. 2' W*	S-10 (6/7/02)	Tank Pit Boundary	SB-J (3/8/96) *projected 9' W*	Site Boundary
<1.0				11	<1.0	<1.0	<1.0	<1.0			
					<1.0	<1.0					
			<1.0		<1.0			<1.0			
<1.0	<1.0		<1.0	4.6		2.3	<1.0	<1.0		<1.0	
		<1.0			<1.0						
					670	<1.0	4,300	1,700			
<1.0		1.9		7.5	1,100	1,200	590	4,300			
					3.8	24	5.2	<1.0			
			2.9		4	270	<1.0	690			
								<1.0			
								<1.0			

Depth below ground surface: 0, 5, 10, 15, 20, 25

Site Boundary

Tank Pit Boundary



5 — Scale (ft) — 0 10

EXPLANATION

GP-4	Soil boring ID
(12/11/00)	Sample date
projected 5' W	Boring location relative to B - B'
<1.0	TPHg concentration in soil, in ppm
▼	Static Depth of Groundwater (06/07/02)
	Soil Boring
	Bottom of boring

FIGURE

6

Former Shell Service Station
1230 14th Street
Oakland, California
Incident #97088250

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G:\OAKLAND\1230-14TH\FIGURES\TPHG-X-SECT-B.DWG

08/22/02

Benzene Soil Concentrations
B - B'

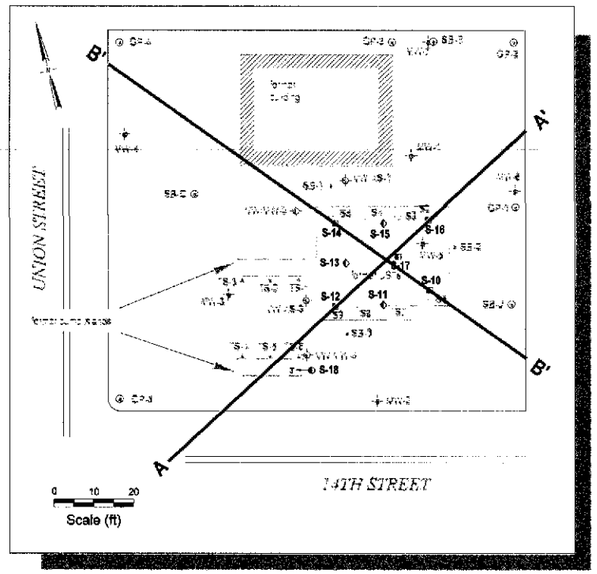
B Northwest — Southeast B'

GP-4 (12/11/00) *projected 5' W*	MW-4 (3/8/96) *projected 12.5' E*	SB-C (3/8/96) *projected 14' E*	VW/MW-2 (3/7/96) *projected 4' E*	SB-1 (2/91) *proj. 7' W*	S-14 (6/7/02)	S-15 (6/10/02) *proj. 7' W*	S-17 (6/10/02) *proj. 2' W*	S-10 (6/7/02)	Tank Pit Boundary	SB-J (3/8/96) *projected 9' W*	Site Boundary
<0.0050				0.014	<0.005	<0.005	<0.005	<0.005			
					<0.005	<0.005					
			<0.0025		<0.005			<0.005			
<0.0050	<0.0025		0.0032	0.15		<0.005	<0.005	<0.005		<0.0025	
		<0.0025			<0.005						
					<0.25	<0.005	0.64	1.2			
<0.0050		0.022		2.1	0.88	1.9	0.41	4.3			
					0.1	1.3	0.57	0.012			
					0.39	0.51	<0.005	2			
			0.47					<0.005			
								<0.005			

Depth below ground surface: 0, 5, 10, 15, 20, 25

Site Boundary

Tank Pit Boundary



5
Scale (ft)
0 10

EXPLANATION

GP-4	Soil boring ID
(12/11/00)	Sample date
projected 5' W	Boring location relative to B - B'
<0.0050	Benzene concentration in soil, in ppm
▼	Static Depth of Groundwater (06/07/02)
	Soil Boring
	Bottom of boring

FIGURE
7

Former Shell Service Station
1230 14th Street
Oakland, California
Incident #97088250

CAMBRIA

G:\OAKLAND\1230-14TH\FIGURES\BENZ-X-SECT-B.DWG

Need cover map

CAMBRIA

Table 1. Door-to-Door Survey Results - Former Shell Service Station, Incident #97088250, 1230 14th Street, Oakland, CA

Name	Address	Response Received	Well Onsite (#wells)	Well ID #	Well Use	Basement	Sump Pump
Harris	1418-1420 Union [2]	x	0			1/2 unfinished	no
Grobelny	1426 Union	x	0			1/2 finished	no
	1430 Union						
	1434-36 Union	x	0			no	no
Roberts	1504 Union	x	0			concrete	no
Mack	1508-10 Union	x	0			--	--
Robinson	1520 Union	x	0			concrete	no
	1528-30 Union	x	--			--	--
Comm-Air Mechanical	1266 14th Street	x	0			no	no
	1210 14th Street						
	1204-06-08 14th Street						
Jones	1216 14th Street[2]	x	0			no	no
	1415 Magnolia						
Mackey	1419 Magnolia	x	0			no	no
Scott	1421-23 Magnolia	x	0			no	no
Pector	1424 Magnolia	x	0			yes	yes
Sweeny	1427 Magnolia	x	0			no	no
	1501Magnolia						
	1509 Magnolia						
Donald	1515 Magnolia	x	0			concrete	no
Fong	1521 Magnolia	x	0			no	no
	1527 Magnolia						
	1533 Magnolia						
Lee	1539 Magnolia	x	0			no	no
	1519-21 16th Street						
	1525-27 16th Street	x	0			no	no
	1529-31 16th Street						
	1532 Magnolia						
Quiyan	1522 Magnolia	x	0			no	no
Robinson	1518-16 Magnolia	x	0			dirt floor	no
	1512 Magnolia						
Miles	1508 Magnolia	x	0			partial	no
Bowie	1504 Magnolia [1]		0				no
Parkinson	1420 Magnolia	x	0			concrete	yes
Rambo	1416 Magnolia	x	0			no	no
	1410 Magnolia						

Survey conducted on July 23, 2002

-- Survey response received, however no response to this item was indicated

[1] Owner/tenant at 1504 Magnolia indicated that "there was a well on his property when we moved here 17 years ago. A few years ago, the City had me sign it. They inspected it and said it was OK."

[2] Property adjacent to subject site

Table 2 Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes
			←			(ppm)	→
S-10 5.0-5.5	6/7/2002	5.0	<1.0	<.005	<.005	<.005	<.005
S-10 8.5-9.0	6/7/2002	8.5	<1.0	<.005	<.005	<.005	<.005
S-10 10-10.5	6/7/2002	10.0	<1.0	<.005	<.005	<.005	<.005
S-10 12.5-13	6/7/2002	12.5	1,700	1.2	6.3	25	120
S-10 15-15.5	6/7/2002	15.0	4,300	4.3	46	57	470
S-10 17.5-18	6/7/2002	17.5	<1.0	0.012	0.012	0.012	0.062
S-10 20-20.5	6/7/2002	20.0	690	2	9.1	11	56
S-10 22.5-23	6/7/2002	22.5	<1.0	<.005	<.005	<.005	<.005
S-10 24.5-25	6/7/2002	24.5	<1.0	<.005	<.005	<.005	<.005
S-11 5-5.5	6/7/2002	5.0	<1.0	<.005	<.005	<.005	<.005
S-11 7.5-8	6/7/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-11 10.5-11	6/7/2002	10.5	<1.0	<.005	<.005	<.005	<.005
S-11 12.5-13	6/7/2002	12.5	1,400	3.7	26	21	140
S-11 15-15.5	6/7/2002	15.5	3,200	8.6	55	42	230
S-11 17.5-18	6/7/2002	17.5	330	1.3	5.9	4.2	24
S-11 20-20.5	6/7/2002	20.0	<1.0	0.015	0.018	<0.005	0.019
S-11 22.5-23	6/7/2002	22.5	<1.0	0.019	0.045	0.015	0.092
S-11 24.5-25	6/7/2002	24.5	<1.0	0.01	0.023	0.062	0.037
S-11 26-26.5	6/7/2002	26.0	<1.0	<.005	<.005	<.005	<.005
S-11 28.5-29	6/7/2002	28.5	<1.0	<.005	<.005	<.005	<.005

Table 2 Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes
			←			(ppm)	→
S-12 5-5.5	6/7/2002	5.0	<1.0	<.005	<.005	<.005	<.005
S-12 7.5-8	6/7/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-12 13.5-14	6/7/2002	13.5	650	5.7	30	12	64
S-12 15-15.5	6/7/2002	15.0	13,000	130	740	290	1,500
S-12 17.5-18	6/7/2002	17.5	16	0.65	2.1	0.42	2.3
S-12 20-20.5	6/7/2002	20.0	2	0.058	0.19	0.049	0.29
S-12 22.5-23	6/7/2002	22.5	220	1.3	9	4.2	24
S-12 24.5-25	6/7/2002	24.5	1.9	0.047	0.2	0.052	0.26
S-13 5-5.5	6/7/2002	5.0	<1.0	<.005	<.005	<.005	<.005
S-13 7.5-8	6/7/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-13 12.5-13	6/7/2002	12.5	9,800	26	310	130	1,100
S-13 15-15.5	6/7/2002	15.0	3,900	37	180	76	360
S-13 17.5-18	6/7/2002	17.5	4,700	6.5	130	59	580
S-13 20-20.5	6/7/2002	20.0	<1.0	0.028	0.0085	<0.005	0.068
S-14 5.5-6	6/10/2002	5.5	<1.0	<.005	<.005	<.005	<.005
S-14 7.5-8	6/10/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-14 9-9.5	6/10/2002	9.0	<1.0	<.005	<.005	<.005	<.005
S-14 11.5-12	6/10/2002	11.5	<1.0	<.005	<.005	<.005	0.0078
S-14 12.5-13	6/10/2002	12.5	670	<0.25	0.71	5.4	19
S-14 15-15.5	6/10/2002	15.0	1,100	0.88	25	22	120
S-14 17.5-18	6/10/2002	17.5	3.8	0.1	0.3	0.89	0.48
S-14 20-20.5	6/10/2002	20.0	4	0.39	0.51	0.12	0.5

Table 2 Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes
			←			(ppm)	→
S-15 5-5.5	6/10/2002	5.0	<1.0	<.005	<.005	<.005	0.011
S-15 7.5-8	6/10/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-15 10-10.5	6/10/2002	10.0	2.3	<.005	<.005	<.005	<.005
S-15 12.5-13	6/10/2002	12.5	<1.0	<.005	<.005	<.005	0.032
S-15 15-15.5	6/10/2002	15.0	1,200	1.9	4.3	22	110
S-15 17.5-18	6/10/2002	17.5	24	1.3	1.9	0.4	1.9
S-15 20-20.5	6/10/2002	20.0	270	0.51	3.5	4.2	21
S-16 7.5-8	6/10/2002	7.5	<1.0	<.005	<.005	<.005	<.005
S-16 10-10.5	6/10/2002	10.0	<1.0	<.005	<.005	<.005	<.005
S-16 11.5-12	6/10/2002	11.5	<1.0	<.005	<.005	<.005	<.005
S-16 15-15.5	6/10/2002	15.0	4,500	<1.0	4	94	460
S-16 17.5-18	6/10/2002	17.5	5,000	<1.0	23	76	360
S-16 20-20.5	6/10/2002	20.0	1.3	0.12	0.0088	0.08	0.08
S-17 5-5.5	6/10/2002	5.0	<1.0	<.005	<.005	<.005	<.005
S-17 10-10.5	6/10/2002	10.0	<1.0	<.005	<.005	<.005	<.005
S-17 12.5-13	6/10/2002	12.5	4,300	0.64	6.8	48	340
S-17 15-15.5	6/10/2002	15.0	590	0.41	5.8	11	58
S-17 17.5-18	6/10/2002	17.0	5.2	0.57	0.073	0.16	0.66
S-17 20-20.5	6/10/2002	20.0	<1.0	<.005	<.005	<.005	0.013
S-18 2.5-3	6/10/2002	2.5	<1.0	<.005	<.005	<.005	<.005
Max. concentration detected in soil above 10.5 fbg:			2.3	0	0	0	0.011
Maximum concentration detected:			13,000	130	740	290	1,500
ID of max concentration sample:			S-12 15-15.5	S-12 15-15.5	S-12 15-15.5	S-12 15-15.5	S-12 15-15.5

ppm = parts per million (milligrams per kilogram).
TPHg = Total Petroleum Hydrocarbons as gasoline, analyzed by EPA Method 8260B.
Benzene, toluene, ethylbenzene, and xylene analyzed by EPA Method 8260B.
MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B.

Table 3: Soil Analytical Results - Additional Analyses - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	pH	Total Organic Carbon	Alkalinity as $CaCO_3$	Total Iron	Trivalent Chromium	Hexavalent Chromium
			←			(ppm)	→	
S-12 15-15.5	6/7/2002	15.0	8.05	570	300	13,700	39.8	ND
S-13-12.5-13	6/7/2002	12.5	8.39	720	330	12,700	40.0	ND
S-16 17.5-18	6/10/2002	17.5	7.75	340	640	16,200	58.1	ND
S-17 12.5-13	6/10/2002	12.5	7.87	530	290	14,500	42.6	ND
Reporting Limit			0.01	40	5	50	2.5	0.8

ppm = parts per million (milligrams per kilogram).
TPHg = Total Petroleum Hydrocarbons as gasoline, analyzed by EPA Method 8260B.
Benzene, toluene, ethylbenzene, and xylene analyzed by EPA Method 8260B.
MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B.

Table 3: Soil Analytical Results - Additional Analyses - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	pH	Total Organic Carbon	Alkalinity as $CaCO_3$	Total Iron	Trivalent Chromium	Hexavalent Chromium
			←			(ppm)	→	
S-12 15-15.5	6/7/2002	15.0	8.05	570	300	13,700	39.8	ND
S-13-12.5-13	6/7/2002	12.5	8.39	720	330	12,700	40.0	ND
S-16 17.5-18	6/10/2002	17.5	7.75	340	640	16,200	58.1	ND
S-17 12.5-13	6/10/2002	12.5	7.87	530	290	14,500	42.6	ND
Reporting Limit			0.01	40	5	50	2.5	0.8

ppm = parts per million (milligrams per kilogram).
TPHg = Total Petroleum Hydrocarbons as gasoline, analyzed by EPA Method 8260B.
Benzene, toluene, ethylbenzene, and xylene analyzed by EPA Method 8260B.
MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B.

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			mg/kg (ppm)						
MW-5-9.5	9/27/2001	9.5	**3.9**	<0.0050	<0.0050	**0.0069**	**0.019**	<0.50	--
MW-5-14.0	9/27/2001	14.5	**790**	**2.7**	**30**	**11**	**67**	<1.0	--
GP-1-5	12/11/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-1-10	12/11/2000	10.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-1-15	12/11/2000	15.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-1-20	12/11/2000	20.0	**120**	<0.020	**0.022**	**0.64**	**1.1**	<0.020	--
GP-2-5	12/11/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-2-10.5	12/11/2000	10.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-2-15	12/11/2000	15.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-3-5	12/11/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-3-10.0	12/11/2000	10.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-3-15.0	12/11/2000	15.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-4-5	12/11/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-4-10	12/11/2000	10.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-4-15	12/11/2000	15.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-5-5	12/11/2000	5.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			← mg/kg (ppm) →						
GP-5-10	12/11/2000	10.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
GP-5-15	12/11/2000	15.0	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	--
SB-A/(MW-1)-10.5	03/06/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	160
SB-A/(MW-1)-16.0	03/06/96	16.0	9.8	1.9	0.4	0.22	1.1	--	57
SB-A/(MW-1)-20.5	03/06/96	20.5	5.9	0.89	0.049	0.19	0.25	--	80
SB-B/(MW-2)-10.5	03/06/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-B/(MW-2)-16.0	03/06/96	16.0	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-C-11.75	03/06/96	11.8	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-C-15.5	03/06/96	15.5	1.9	0.022	0.12	0.086	0.32	--	--
SB-D/(MW-3)-10.5	03/06/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-D/(MW-3)-15.5	03/06/96	15.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-E-10.5	03/06/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	<50

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			mg/kg (ppm)						
SB-E-16.0	03/06/96	16.0	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	200
SB-F(VW/AS)-1-5.5	03/07/96	5.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-F(VW/AS-1)-10.5	03/07/96	10.5	62	0.97	4.2	1.4	8.0	--	--
SB-F(VW/AS-1)-15.5	03/07/96	15.5	7.4	1.7	0.44	0.2	0.6	--	--
SB-F(VW/AS-1)-20.5	03/07/96	20.5	20	2.6	1.7	0.5	2.0	--	--
SB-G(VW/MW-2)-8.5	03/07/96	8.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-G(VW/MW-2)-10.5	03/07/96	10.5	<1.0	0.0032	<0.0025	<0.0025	<0.0025	--	--
SB-G(VW/MW-2)-20.5	03/07/96	20.5	2.9	0.47	0.34	0.15	0.57	--	--
SB-H(VW/AS-3)-8.5	03/07/96	8.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-H(VW/AS-3)-10.5	03/07/96	10.5	<1.0	0.018	<0.0025	<0.0025	0.014	--	--
SB-H(VW/AS-3)-21.0	03/07/96	21.0	1.0	0.047	0.016	0.0037	0.017	--	--
SB-I(VW/MW-4)-5.5	03/08/96	5.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-I(VW/MW-4)-8.5	03/08/96	8.5	80	0.14	0.33	1.3	5.2	--	--

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			← mg/kg (ppm) →						
SB-I(VW/MW-4)-15.5	03/08/96	15.5	3.4	0.23	0.093	0.1	0.42	--	--
SB-J-10.5	03/08/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
SB-K(MW-4)-10.5	03/08/96	10.5	<1.0	<0.0025	<0.0025	<0.0025	<0.0025	--	--
TS-1-4.0	11/27/1995	4	<1.0	<0.0050	0.005	<0.0050	<0.0050	--	--
TS-2-2.0	11/27/1995	2	<1.0	<0.0050	0.0057	<0.0050	0.0075	--	--
TS-3-3.0	11/27/1995	3	<1.0	<0.0050	<0.0050	<0.0050	0.0069	--	--
TS-4-3.0	11/27/1995	3	<0.005	0.011	0.038	0.0073	0.043	--	--
TS-5-2.5	11/27/1995	2.5	46	<0.10	<0.10	<0.10	2	--	--
TS-6-3.0	11/27/1995	3	3,100	30	<6.0	33	230	--	--
Tankpit Excavation Samples									
S2-15.0	11/27/1995	15	3,600	<6.0	140	78	430	--	--
S3-15.0	11/27/1995	15	1,000	7.6	33	19	100	--	--
S4-15.0	11/27/1995	15	5,600	72	280	110	580	--	--

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			mg/kg (ppm)						
S5-15.0	11/27/1995	15	2,800	36	160	64	350	--	--
S6-15.0	11/27/1995	15	3,800	<6.0	<6.0	76	350	--	--
S7-15.0	11/27/1995	15	570	<0.50	<0.50	4.9	13	--	--
S8-15.0	11/27/1995	15	3,200	60	200	69	350	--	--
S9-15.0	11/27/1995	15	5,100	62	260	110	570	--	--
SB1-6-6.5	2/21/1991	6.0	11	0.014	0.37	0.22	1.2	--	--
SB1-10.5-11	2/21/1991	10.5	4.6	0.15	0.5	0.13	0.68	--	--
SB1-15.5-16	2/21/1991	15.5	7.5	2.1	1.8	0.18	1.1	--	--
SB2-6-6.5	2/21/1991	6.0	<1.0	<.0050	<.0050	<.0050	0.034	--	--
SB2-10.5-11	2/21/1991	10.5	1.8	0.062	0.038	0.035	0.085	--	--
SB2-15.5-16	2/21/1991	15.5	6.1	1.2	1.4	0.15	0.8	--	--
SB3-6-6.5	2/21/1991	6.0	<1.0	0.038	0.0054	0.015	0.034	--	--
SB3-10.5-11	2/21/1991	10.5	1,600	18	98	35	190	--	--
SB3-15.5-16	2/21/1991	15.5	2.4	0.31	0.21	0.064	0.35	--	--

Table 4: Historical Soil Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Petroleum Oil and Grease
			← mg/kg (ppm) →						

Abbreviations and Notes:
ppm = parts per million (milligrams per kilogram).
TPHg = Total Petroleum Hydrocarbons as gasoline, analyzed by EPA Method 8015 in 3/6/96 event; by EPA Method 8260B for susequent events.
Benzene, toluene, ethylbenzene, and xylene analyzed by EPA Method 8020 in 3/6/96 event; by EPA Method 8260B for subsequent events
MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B.
Petroleum oil and grease (POG) by Standard Method 5520.

-- = Not sampled
ppm=parts per million
<x=not detected above x ppm

G:\Oakland 1230 14th\2002 Site Investigation\[1230 14th Site Investigation Tables.xls]Table 4-Historical Soil Data

Table 5: Groundwater Analytical Results - Former Shell-branded Service Station, 1230 14th St., Oakland, California
Incident #97088250

Sample ID	Date	Depth to Water (fbg)	TPHg	Benzene	Toluene	Ethyl-benzene	Xylenes
			← (ppm) →				
S-10 W	6/7/2002	17	34,000	760	940	930	5,200
S-11 W	6/7/2002	22	78,000	2,000	7,000	2,600	14,000
S-12 W	6/7/2002	18	180,000	9,600	28,000	49,000	28,000
S-13 W	6/7/2002	17.0	22,000	2,400	850	900	1,900
S-14 W	6/10/2002	17.0	260,000	6,900	49,000	6,200	35,000
S-15 W	6/10/2002	17.0	130,000	15,000	15,000	4,100	20,000
S-16 W	6/10/2002	17.0	70,000	940	2,100	3,200	15,000
S-17 W	6/10/2002	17.0	69,000	2,600	1,000	1,900	13,000
HA-1	7/23/2002	14.0	55	<0.5	<0.5	<0.5	1.2
HA-2	7/23/2002	14.0	83	<0.5	0.77	0.52	2.8
HA-3	7/23/2002	15.0	<50	<0.5	<0.5	<0.5	<0.5
HA-4	7/23/2002	15.0	<50	<0.5	<0.5	<0.5	<0.5

Abbreviations and Notes:

ppm = parts per million (milligrams per kilogram).

TPHg = Total Petroleum Hydrocarbons as gasoline, analyzed by EPA Method 8260B.

Benzene, toluene, ethylbenzene, and xylene analyzed by EPA Method 8260B.

MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B.

ATTACHMENT A

Door-to-door Survey Questionnaire

WELL SURVEY QUESTIONNAIRE

July 22, 2002

Dear Resident,

The following is an independent public health questionnaire regarding the possible existence of wells on your street. The reason for this survey is to establish a list of potential receptors that may be affected by a gasoline spill from the former Shell station at 1230 14th Street in Oakland. The results of this questionnaire will be used to determine whether the water in the well on your property (should one exist) needs to be tested for the presence of hydrocarbons or Methyl tert-Butyl Ether (MTBE). Testing would be free of charge. Please fill out the following information to the best of your knowledge. If you do not know, just mark it "UNKNOWN". Even if you do not have a well, please fill out the information for questions 1 through 3. Should you have any questions, please contact Melody Munz of Cambria Environmental Technology, Inc. at (510) 420-3324 or Barney Chan at Alameda County Health Care Services Agency at (510) 567-6765. Thank you for your cooperation.

1) Tenant name:_____ Phone No._____

Address:_____

2) Owner name (if other than tenant):_____
Phone:_____ Address_____

3) a) Is there a well on the property?: (circle one) yes no I don't know

4) Number of wells:_____ 5) Well diameter:_____

6) Well depth:_____

7) Well material: (circle one): PVC plastic steel brick/clay other_____

8) Date of Installation:_____

9) Frequency of use:_____

10) Use of water from well:_____
(circle one): water landscaping monitoring groundwater household use other (list above)

11) Basement with sump pump: (circle one) YES NO

Thank you for your assistance. Please return this questionnaire in the enclosed stamped envelope. We would appreciate a response by August 15, 2002. If you have any other information regarding wells in the area, please note this in the comment section. Feel free to continue your comments on the other side of this sheet. Once again, if you have any questions, please contact Melody Munz at Cambria Environmental: (510) 420-3324.

Comments:

_____

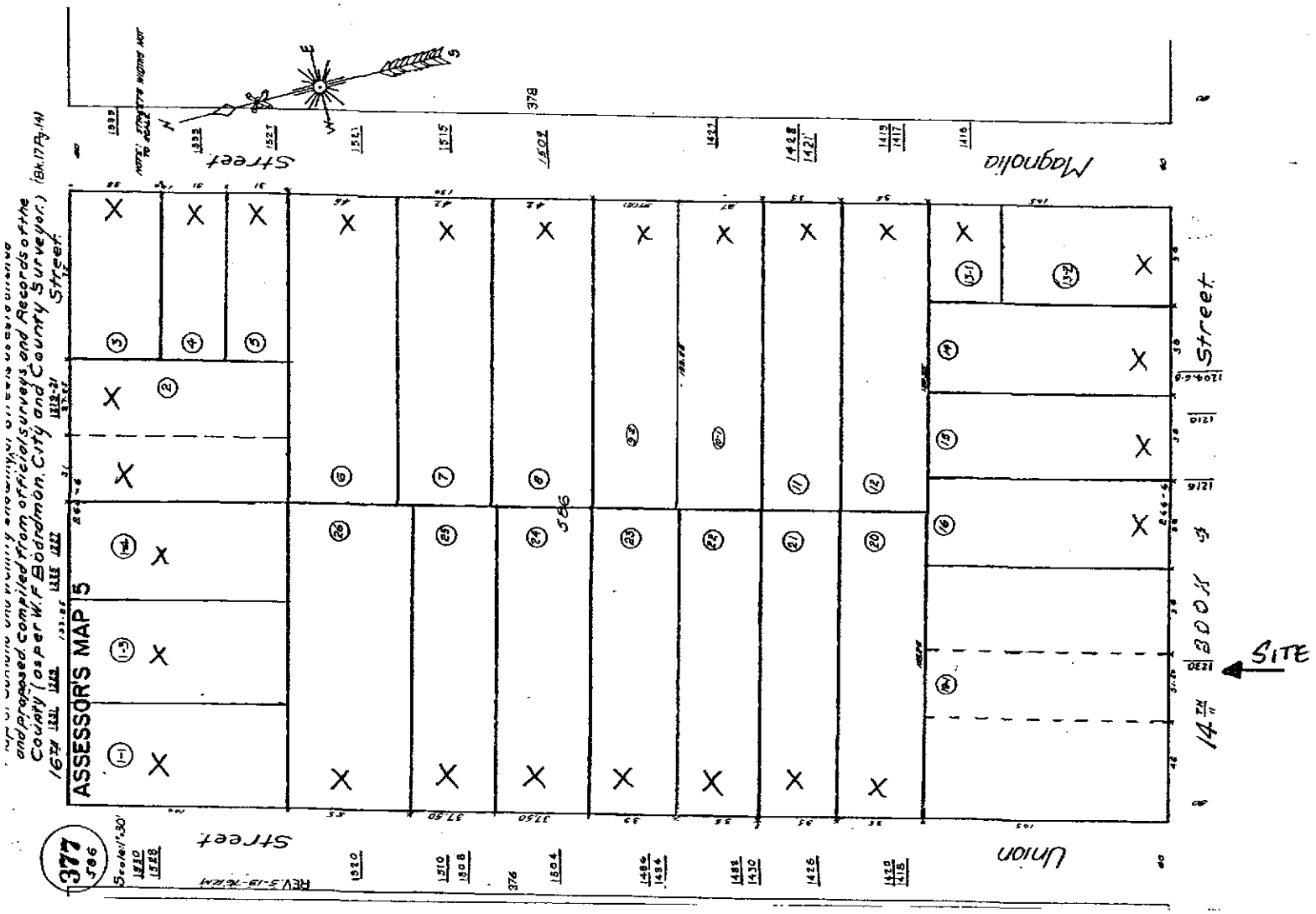
_____

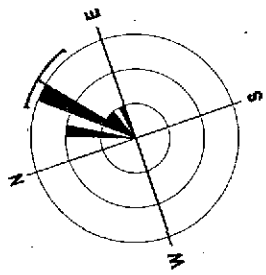
_____

_____

_____

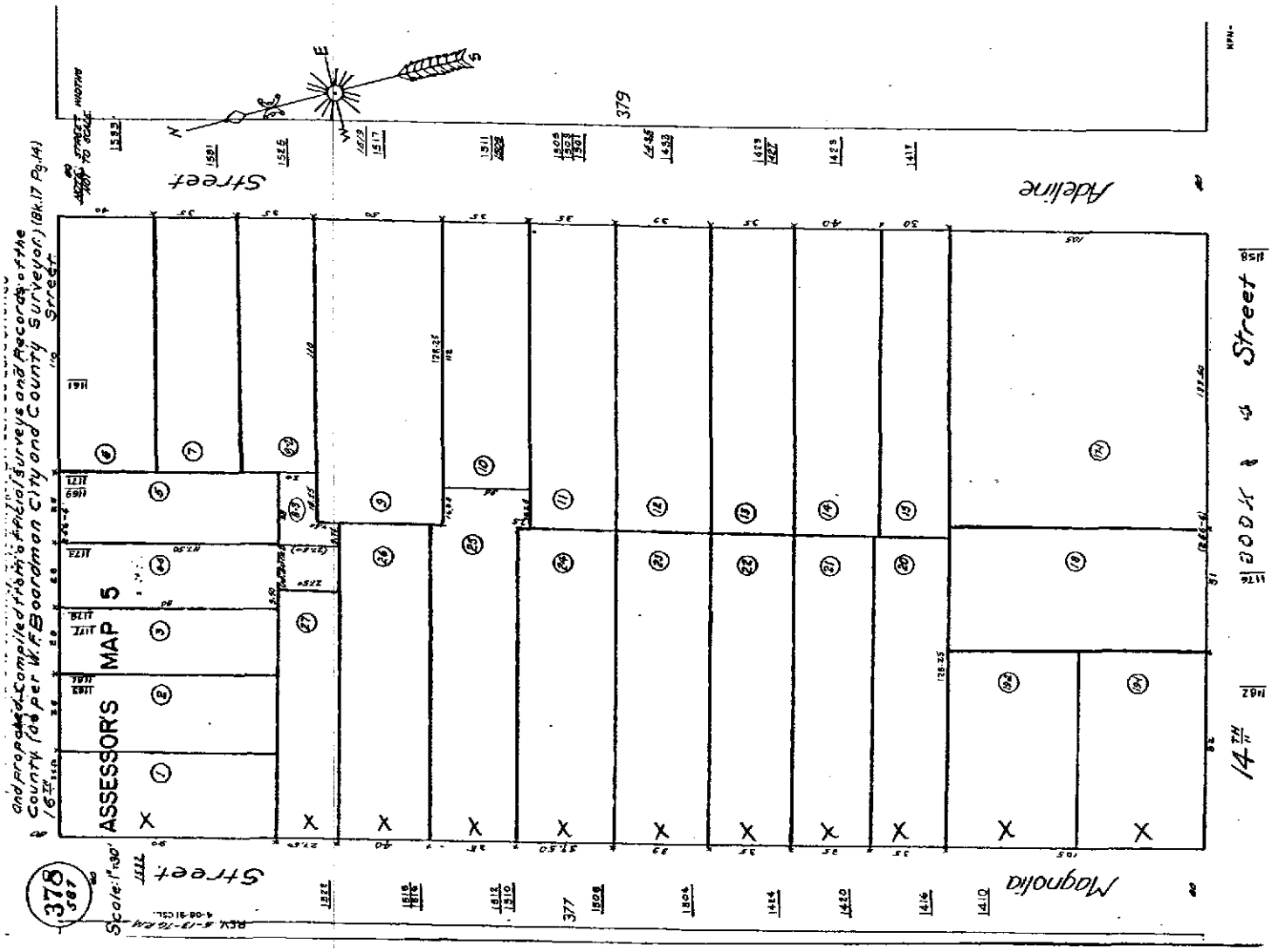
_____





Groundwater Flow Direction
(3Q00 through 2Q02)

X Properties included in July 23, 2002 Door-to-Door Well Survey



X Properties included in July 23, 2002 Door-to-Door Well Survey

ATTACHMENT B

Correspondence with City of Oakland Parks and Recreation

June 24, 2002

Mr. James Abercrombie
Area 1 Supervisor
City of Oakland Parks and Recreation
1520 Lakeside Drive
Oakland, California 94612

Re: **DeFremery Park – irrigation well**

Dear Mr. Abercrombie:

On behalf of Shell Oil Products US, Cambria Environmental Technology, Inc. (Cambria) is investigating the existence (or non-exisitence) of an irrigation well in DeFremery Park, located at 1651 Adeline Street, Oakland. Well number 6 in the attached figure and described on the attached well record is the well under investigation.

This letter is to confirm our May 22, 2002 telephone conversation in which you indicated that, to your knowledge, no irrigation or other well has been sited (or used) at DeFremery Park since 1975.

If this is an accurate summary of our conversation, would you please sign below and return this letter to me in the enclosed envelope. There is also space below to add any comments or additional details that may have come to light since our conversation. A copy is enclosed for your records.

Please call me at (510) 420-3324 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc

Melody Munz
Project Engineer

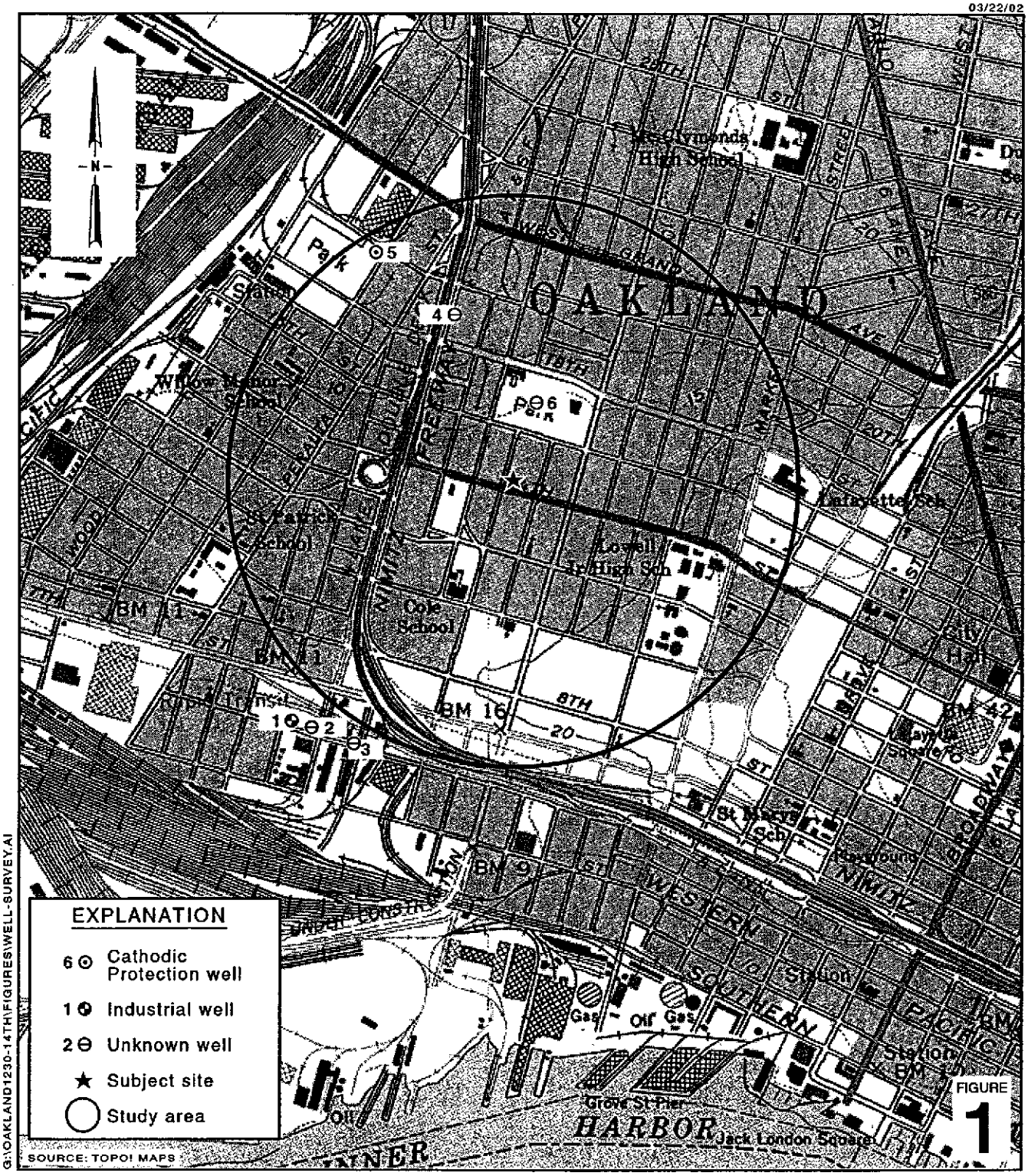
Attachments: Figure 1 – Area Well Survey
DWR well record – DeFremery Park

_____, _____
James Abercrombie Date

Comments:_____

_____

_____



Former Shell Service Station
1230 14th Street
Oakland, California
Incident #97088250

CAMBRIA

Area Well Survey
(1/2-Mile Radius)

CONFIDENTIAL

[1S/4W-27K]

01-931

Job 1000. City of Oakland,
Board of Park Commissioners
Mell Schramsberg Park.

LOG OF WELL.

Brown sand				8 feet
Yellow sand	8	to	27	"
Good water sand	27	"	29	"
Sand & hardpan in streaks	29	"	33	"
Brown sandy clay	33	"	40	"
Water sand	40	"	46	"
Blue cementy gravel, tight	46	"	48	"
Blue clay	48	"	50	"
Brown clay	50	"	53	"
Brown sandy clay	53	"	56	"
Brown sticky clay	56	"	77	"
Blue sand	77	"	79	"
Blue clay	79	"	88	"
Broken brown rock, with little gravel	88	"	90	"
Blue hardpan	90	"	91	"
Brown clay & gravel	91	"	99	"
Yellow clay	99	"	111	"
Blue sand	111	"	112	"
Yellow sand, some water	112	"	118	"
Yellow clay	118	"	123	"
Hard cementy gravel	123	"	127	"
Yellow clay	127	"	133	"
Hard white clay	133	"	137	"

120 feet 12" No. 14 R. H. Double Casing,
1 - 12" No. 14 R. H. Double Starter 16 feet long
60 feet machine perforations (Chisel slot cracked)
1 - 12" No. 12 two ply, butt welded reband.

Aug.6-1928 137 feet 8" No. 14 R. H. Collar Casing placed in well. Bottom of well plugged. Gravel between 8" & 12" Casings.
Work done by C. W. Gough, 1201 - East 12th. Street, Oakland.

Foreman F. Burfeind.

Job finished September 6 - 1927.

... area of the shipping label.

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UNITED STATES POSTAL SERVICE

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Weight lbs 0 ozs 3		COD Fee / Insurance Fee
No Delivery ☐ Weekend ☐ Holiday	Acceptance Clerk Initials	Total Postage & Fees $ 12.45

EO900028785US

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CUSTOMER INFORMATION

FROM: PHONE ________

MELODY MUNZ
Cambria Environmental
1144 65TH ST., SUITE B
OAKLAND CA 94608

TO: PHONE ________

MR. JAMES ABERCROMBIE
City of Oak. Parks & Rec.
1520 LAKESIDE DR
OAKLAND CA 94612-4521

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ATTACHMENT C

Certified Laboratory Reports

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Melody Munz
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

Subject : 4 Water Samples and 34 Soil Samples
Project Name : 1230 14th Street, Oakland
Project Number : 244-0233-012
P.O. Number : 97088250

Dear Ms. Munz,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Subject : 4 Water Samples and 34 Soil Samples
Project Name : 1230 14th Street, Oakland
Project Number : 244-0233-012
P.O. Number : 97088250

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples S-13W, S-10W, S-11W, S-12W for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-10W** Matrix : Water Lab Number : 26840-01
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**760**	10	ug/L	EPA 8260B	6/14/2002
Toluene	**940**	10	ug/L	EPA 8260B	6/14/2002
Ethylbenzene	**930**	10	ug/L	EPA 8260B	6/14/2002
Total Xylenes	**5200**	10	ug/L	EPA 8260B	6/14/2002
Methyl-t-butyl ether (MTBE)	**< 100**	100	ug/L	EPA 8260B	6/14/2002
TPH as Gasoline	**34000**	1000	ug/L	EPA 8260B	6/14/2002
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	6/14/2002
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	6/14/2002

Sample : **S-11W** Matrix : Water Lab Number : 26840-02
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2000**	25	ug/L	EPA 8260B	6/14/2002
Toluene	**7000**	25	ug/L	EPA 8260B	6/14/2002
Ethylbenzene	**2600**	25	ug/L	EPA 8260B	6/14/2002
Total Xylenes	**14000**	25	ug/L	EPA 8260B	6/14/2002
Methyl-t-butyl ether (MTBE)	**< 250**	250	ug/L	EPA 8260B	6/14/2002
TPH as Gasoline	**78000**	2500	ug/L	EPA 8260B	6/14/2002
Toluene - d8 (Surr)	98.7		% Recovery	EPA 8260B	6/14/2002
4-Bromofluorobenzene (Surr)	96.9		% Recovery	EPA 8260B	6/14/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-12W** Matrix : Water Lab Number : 26840-03
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**9600**	50	ug/L	EPA 8260B	6/14/2002
Toluene	**28000**	200	ug/L	EPA 8260B	6/14/2002
Ethylbenzene	**4900**	50	ug/L	EPA 8260B	6/14/2002
Total Xylenes	**28000**	50	ug/L	EPA 8260B	6/14/2002
Methyl-t-butyl ether (MTBE)	**< 500**	500	ug/L	EPA 8260B	6/14/2002
TPH as Gasoline	**180000**	5000	ug/L	EPA 8260B	6/14/2002
Toluene - d8 (Surr)	98.2		% Recovery	EPA 8260B	6/14/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/14/2002

Sample : **S-13W** Matrix : Water Lab Number : 26840-04
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2400**	10	ug/L	EPA 8260B	6/14/2002
Toluene	**850**	10	ug/L	EPA 8260B	6/14/2002
Ethylbenzene	**900**	10	ug/L	EPA 8260B	6/14/2002
Total Xylenes	**1900**	10	ug/L	EPA 8260B	6/14/2002
Methyl-t-butyl ether (MTBE)	**< 100**	100	ug/L	EPA 8260B	6/14/2002
TPH as Gasoline	**22000**	1000	ug/L	EPA 8260B	6/14/2002
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	6/14/2002
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	6/14/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-10-5.0-5.5** Matrix : Soil Lab Number : 26840-05
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	6/17/2002

Sample : **S-10-8.5-9.0** Matrix : Soil Lab Number : 26840-06
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	97.0		% Recovery	EPA 8260B	6/18/2002

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Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-10-10-10.5** Matrix : Soil Lab Number : 26840-07
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	97.3		% Recovery	EPA 8260B	6/17/2002

Sample : **S-10-12.5-13** Matrix : Soil Lab Number : 26840-08
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.2**	0.25	mg/Kg	EPA 8260B	6/19/2002
Toluene	**6.3**	0.25	mg/Kg	EPA 8260B	6/19/2002
Ethylbenzene	**25**	0.25	mg/Kg	EPA 8260B	6/19/2002
Total Xylenes	**120**	1.0	mg/Kg	EPA 8260B	6/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**1700**	50	mg/Kg	EPA 8260B	6/19/2002
Toluene - d8 (Surr)	94.8		% Recovery	EPA 8260B	6/19/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/19/2002

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Project Number : **244-0233-012**

Sample : **S-10-15-15.5** Matrix : Soil Lab Number : 26840-09
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**4.3**	0.25	mg/Kg	EPA 8260B	6/18/2002
Toluene	**46**	0.25	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**57**	0.25	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**470**	2.5	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**4300**	100	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	95.9		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	98.6		% Recovery	EPA 8260B	6/18/2002

Sample : **S-10-17.5-18** Matrix : Soil Lab Number : 26840-10
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.012**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**0.012**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**0.012**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**0.062**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	99.8		% Recovery	EPA 8260B	6/17/2002

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Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-10-20-20.5** Matrix : Soil Lab Number : 26840-11
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2.0**	0.050	mg/Kg	EPA 8260B	6/20/2002
Toluene	**9.1**	0.050	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**11**	0.050	mg/Kg	EPA 8260B	6/20/2002
Total Xylenes	**56**	0.050	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/20/2002
TPH as Gasoline	**690**	50	mg/Kg	EPA 8260B	6/19/2002
Toluene - d8 (Surr)	91.6		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	98.2		% Recovery	EPA 8260B	6/20/2002

Sample : **S-10-22.5-23** Matrix : Soil Lab Number : 26840-12
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**< 0.010**	0.010	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	97.3		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/18/2002

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Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-10-24.5-25** Matrix : Soil Lab Number : 26840-13
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	98.9		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/17/2002

Sample : **S-11 5-5.5** Matrix : Soil Lab Number : 26840-14
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	98.8		% Recovery	EPA 8260B	6/17/2002

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Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-11 7.5-8** Matrix : Soil Lab Number : 26840-15
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	98.6		% Recovery	EPA 8260B	6/17/2002

Sample : **S-11 10.5-11** Matrix : Soil Lab Number : 26840-16
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	95.5		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/18/2002

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Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-11 12.5-13** Matrix : Soil Lab Number : 26840-17
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**3.7**	0.25	mg/Kg	EPA 8260B	6/19/2002
Toluene	**26**	0.25	mg/Kg	EPA 8260B	6/19/2002
Ethylbenzene	**21**	0.25	mg/Kg	EPA 8260B	6/19/2002
Total Xylenes	**140**	1.0	mg/Kg	EPA 8260B	6/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**1400**	50	mg/Kg	EPA 8260B	6/19/2002
Toluene - d8 (Surr)	96.5		% Recovery	EPA 8260B	6/19/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/19/2002

Sample : **S-11 15-15.5** Matrix : Soil Lab Number : 26840-18
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**8.6**	0.25	mg/Kg	EPA 8260B	6/18/2002
Toluene	**55**	0.25	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**42**	0.25	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**230**	0.25	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**3200**	200	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	97.1		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	99.0		% Recovery	EPA 8260B	6/18/2002

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Sample : **S-11 17.5-18** Matrix : Soil Lab Number : 26840-19
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.3**	0.025	mg/Kg	EPA 8260B	6/20/2002
Toluene	**5.9**	0.025	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**4.2**	0.025	mg/Kg	EPA 8260B	6/20/2002
Total Xylenes	**24**	0.050	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/20/2002
TPH as Gasoline	**330**	5.0	mg/Kg	EPA 8260B	6/23/2002
Toluene - d8 (Surr)	93.2		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	6/20/2002

Sample : **S-11 20-20.5** Matrix : Soil Lab Number : 26840-20
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.015**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**0.018**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**0.019**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/18/2002

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Project Name : **1230 14th Street, Oakland**
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Sample : **S-11 22.5-23** Matrix : Soil Lab Number : 26840-21
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.019**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**0.045**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**0.015**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**0.092**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	95.3		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/18/2002

Sample : **S-11 24.5-25** Matrix : Soil Lab Number : 26840-22
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.010**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**0.023**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**0.0062**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**0.037**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	111		% Recovery	EPA 8260B	6/17/2002

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Sample : **S-11 26-26.5** Matrix : Soil Lab Number : 26840-23
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Total Xylenes	**0.010**	0.005	mg/Kg	EPA 8260B	6/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/19/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/19/2002
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	6/19/2002

Sample : **S-11 28.5-29** Matrix : Soil Lab Number : 26840-24
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	6/17/2002

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Project Number : **244-0233-012**

Sample : **S-12 5-5.5** Matrix : Soil Lab Number : 26840-25
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/19/2002
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	6/19/2002
4-Bromofluorobenzene (Surr)	96.5		% Recovery	EPA 8260B	6/19/2002

Sample : **S-12 7.5-8** Matrix : Soil Lab Number : 26840-26
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	105		% Recovery	EPA 8260B	6/18/2002

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Project Name : **1230 14th Street, Oakland**
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Sample : **S-12 13.5-14** Matrix : Soil Lab Number : 26840-27
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**5.7**	0.25	mg/Kg	EPA 8260B	6/21/2002
Toluene	**30**	0.25	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**12**	0.25	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**64**	0.25	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**650**	20	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	6/21/2002

Sample : **S-12 15-15.5** Matrix : Soil Lab Number : 26840-28
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**130**	2.5	mg/Kg	EPA 8260B	6/21/2002
Toluene	**740**	5.0	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**290**	2.5	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**1500**	5.0	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**13000**	200	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	107		% Recovery	EPA 8260B	6/21/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-12 17.5-18** Matrix : Soil Lab Number : 26840-29
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.65**	0.025	mg/Kg	EPA 8260B	6/20/2002
Toluene	**2.1**	0.025	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**0.42**	0.025	mg/Kg	EPA 8260B	6/20/2002
Total Xylenes	**2.3**	0.050	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/20/2002
TPH as Gasoline	**16**	5.0	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/20/2002

Sample : **S-12 20-20.5** Matrix : Soil Lab Number : 26840-30
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.058**	0.005	mg/Kg	EPA 8260B	6/20/2002
Toluene	**0.19**	0.005	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**0.049**	0.005	mg/Kg	EPA 8260B	6/20/2002
Total Xylenes	**0.29**	0.010	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/20/2002
TPH as Gasoline	**2.1**	1.0	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	99.0		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/20/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-12 22.5-23** Matrix : Soil Lab Number : 26840-31
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.3**	0.050	mg/Kg	EPA 8260B	6/18/2002
Toluene	**9.2**	0.050	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**4.2**	0.050	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**24**	0.10	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**220**	5.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/18/2002

Sample : **S-12 24.5-25** Matrix : Soil Lab Number : 26840-32
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.047**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**0.20**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**0.052**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**0.26**	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**1.9**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	99.1		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	98.6		% Recovery	EPA 8260B	6/18/2002

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-13 5-5.5** Matrix : Soil Lab Number : 26840-33
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	98.8		% Recovery	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	98.3		% Recovery	EPA 8260B	6/17/2002

Sample : **S-13 7.5-8** Matrix : Soil Lab Number : 26840-34
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**< 0.010**	0.010	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	96.7		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/18/2002

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KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-13 12.5-13** Matrix : Soil Lab Number : 26840-35
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**26**	0.25	mg/Kg	EPA 8260B	6/18/2002
Toluene	**310**	2.5	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**130**	0.25	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**1100**	2.5	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**9800**	200	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	96.7		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	98.0		% Recovery	EPA 8260B	6/20/2002

Sample : **S-13 15-15.5** Matrix : Soil Lab Number : 26840-36
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**37**	0.25	mg/Kg	EPA 8260B	6/19/2002
Toluene	**180**	1.0	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**76**	0.25	mg/Kg	EPA 8260B	6/19/2002
Total Xylenes	**360**	1.0	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/19/2002
TPH as Gasoline	**3900**	100	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	93.4		% Recovery	EPA 8260B	6/19/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	6/19/2002

Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 26840
Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-13 17.5-18** Matrix : Soil Lab Number : 26840-37
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**6.5**	0.25	mg/Kg	EPA 8260B	6/18/2002
Toluene	**130**	1.0	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**59**	0.25	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	**580**	2.5	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	**4700**	100	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	87.1		% Recovery	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/18/2002

Sample : **S-13 20-20.5** Matrix : Soil Lab Number : 26840-38
Sample Date :6/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.028**	0.005	mg/Kg	EPA 8260B	6/20/2002
Toluene	**0.0085**	0.005	mg/Kg	EPA 8260B	6/20/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/20/2002
Total Xylenes	**0.068**	0.005	mg/Kg	EPA 8260B	6/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/20/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/20/2002
Toluene - d8 (Surr)	98.3		% Recovery	EPA 8260B	6/20/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/20/2002

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Report Number : 26840

Date : 6/24/2002

QC Report : Method Blank Data

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/18/2002
Toluene	< 0.005	0.005	mg/Kg	EPA 8260B	6/18/2002
Ethylbenzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/18/2002
Total Xylenes	< 0.005	0.005	mg/Kg	EPA 8260B	6/18/2002
Methyl-t-butyl ether (MTBE)	< 0.5	0.5	mg/Kg	EPA 8260B	6/18/2002
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/18/2002
Toluene - d8 (Surr)	102		%	EPA 8260B	6/18/2002
4-Bromofluorobenzene (Surr)	97.5		%	EPA 8260B	6/18/2002
Benzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/17/2002
Toluene	< 0.005	0.005	mg/Kg	EPA 8260B	6/17/2002
Ethylbenzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/17/2002
Total Xylenes	< 0.005	0.005	mg/Kg	EPA 8260B	6/17/2002
Methyl-t-butyl ether (MTBE)	< 0.5	0.5	mg/Kg	EPA 8260B	6/17/2002
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/17/2002
Toluene - d8 (Surr)	99.2		%	EPA 8260B	6/17/2002
4-Bromofluorobenzene (Surr)	96.8		%	EPA 8260B	6/17/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/15/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/15/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/15/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/15/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	6/15/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/15/2002
Toluene - d8 (Surr)	98.1		%	EPA 8260B	6/15/2002
4-Bromofluorobenzene (Surr)	101		%	EPA 8260B	6/15/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

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KIFF ANALYTICAL, LLC

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Report Number : 26840

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 6/24/2002

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	26840-05	<0.0050	0.0394	0.0396	0.0383	0.0380	mg/Kg	EPA 8260B	6/18/02	97.3	95.8	1.48	70-130	25
Toluene	26840-05	<0.0050	0.0394	0.0396	0.0367	0.0368	mg/Kg	EPA 8260B	6/18/02	93.1	92.9	0.215	70-130	25
Tert-Butanol	26840-05	<0.0050	0.197	0.198	0.194	0.190	mg/Kg	EPA 8260B	6/18/02	98.6	96.0	2.66	70-130	25
Methyl-t-Butyl Ether	26840-05	<0.0050	0.0394	0.0396	0.0420	0.0414	mg/Kg	EPA 8260B	6/18/02	107	104	2.08	70-130	25
Benzene	26840-33	<0.0050	0.0394	0.0394	0.0388	0.0392	mg/Kg	EPA 8260B	6/17/02	98.4	99.5	1.06	70-130	25
Toluene	26840-33	<0.0050	0.0394	0.0394	0.0372	0.0374	mg/Kg	EPA 8260B	6/17/02	94.4	95.1	0.686	70-130	25
Tert-Butanol	26840-33	<0.0050	0.197	0.197	0.184	0.191	mg/Kg	EPA 8260B	6/17/02	93.5	97.2	3.91	70-130	25
Methyl-t-Butyl Ether	26840-33	<0.0050	0.0394	0.0394	0.0412	0.0398	mg/Kg	EPA 8260B	6/17/02	105	101	3.50	70-130	25
Benzene	26846-01	<0.50	19.6	19.6	21.0	21.0	ug/L	EPA 8260B	6/15/02	107	107	0.327	70-130	25
Toluene	26846-01	<0.50	19.6	19.6	19.8	19.8	ug/L	EPA 8260B	6/15/02	101	101	0.0496	70-130	25
Tert-Butanol	26846-01	<5.0	97.9	98.1	110	109	ug/L	EPA 8260B	6/15/02	112	111	0.650	70-130	25
Methyl-t-Butyl Ether	26846-01	110	19.6	19.6	105	105	ug/L	EPA 8260B	6/15/02	0.00	0.00	0.00	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 26840

Date : 6/24/2002

QC Report : Laboratory Control Sample (LCS)

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0370	mg/Kg	EPA 8260B	6/18/02	94.6	70-130
Toluene	0.0370	mg/Kg	EPA 8260B	6/18/02	90.5	70-130
Tert-Butanol	0.185	mg/Kg	EPA 8260B	6/18/02	81.1	70-130
Methyl-t-Butyl Ether	0.0370	mg/Kg	EPA 8260B	6/18/02	78.2	70-130
Benzene	0.0398	mg/Kg	EPA 8260B	6/17/02	99.0	70-130
Toluene	0.0398	mg/Kg	EPA 8260B	6/17/02	92.9	70-130
Tert-Butanol	0.199	mg/Kg	EPA 8260B	6/17/02	96.1	70-130
Methyl-t-Butyl Ether	0.0398	mg/Kg	EPA 8260B	6/17/02	81.8	70-130
Benzene	40.0	ug/L	EPA 8260B	6/14/02	107	70-130
Toluene	40.0	ug/L	EPA 8260B	6/14/02	101	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/14/02	102	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/14/02	97.4	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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KIFF ANALYTICAL

720 Olive Drive, Suite D

Davis, CA 95616

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SHELL Chain Of Custody Record

Shell Project Manager to be Invoiced: Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

26840

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/7/02

PAGE: 1 of 5

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Cambria Environmental	CETO	1230 14th Street, Oakland	T0600101691

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1144 65th Street, Oakland	shelloaklandedf@cambria-env.com	510-420-9700	shelloaklandedf@cambria-env.com	244-0233-012

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:
Melody Munz	510-420-3324	510-420-9170	mmunz@cambria-env.com

SAMPLER NAME(S) (Print):

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes
	S-10 W	6/7/02	10:30	Water	4	X	X	X																		4x40ml VOAs (no pres) 01
	S-11 W	6/7/02	11:55	Water	4	X	X	X																		" 02
	S-12 W	6/7/02	1:50	Water	4	X	X	X																		" 03
	S-13W	6/7/02	3:25	Water	4	X	X	X																		" 04

	Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
1	[signature]	SECURE LOCATION - CAMBRIA - HOLLIS	6/7/02	
2				
3		[signature] KIFF	06/10/02	1320

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced: Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

26840

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/7/02

PAGE: 2 of 5

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Cambria Environmental	CETO	1230 14th Street, Oakland	T0600101691

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1144 65th Street, Oakland	shelloaklandedf@cambria-env.com	510-420-9700	shelloaklandedf@cambria-env.com	244-0233-012

PROJECT CONTACT (Hardcopy or PDF Report to): Melody Munz

TELEPHONE:	FAX:	E-MAIL:
510-420-3324	510-420-9170	mmunz@cambria-env.com

SAMPLER NAME(S) (Print): MELODY MUNZ

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (48-___)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	S-10-5.0-5.5	6/7/02	9:30	Soil	1	X	X	X																		05
	S-10-8.5-9.0		9:35	Soil																						06
	S-10-10-10.5		9:40																							07
	S-10-12.5-13		10:00																							08
	S-10-15-15.5 *		10:05																							09
	S-10-17.5-18		10:15																							10
	S-10-20-20.5		10:20																							11
	S-10-22.5-23		10:25																							12
	S-10-24.5-25		10:30																							13

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
(CAMBRIA - HOLLIS) SECURE LOCATION		6/7/02	4:50 pm
	Kiff	061002	1320

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced: Karen Petryna

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT: HOUSTON

Z6840

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/7/02

PAGE: 3 of 5

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Cambria Environmental	CETO	1230 14th Street, Oakland	T0600101691

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1144 65th Street, Oakland	shelloaklandedf@cambria-env.com	510-420-9700	shelloaklandedf@cambria-env.com	244-0233-012

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:
Melody Munz	510-420-3324	510-420-9170	mmunz@cambria-env.com

SAMPLER NAME(S) (Print): MELODY MUNZ

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-_____)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	S-11 5-5.5	6/7/02	11:04	Soil	1	X	X	X																		14
	S-11 7.5-8		11:08																							15
	S-11 10.5-11		11:10																							16
	S-11 12.5-13		11:10																							17
	S-11 15-15.5		11:18																							18
	S-11 17.5-18		11:25																							19
	S-11 20-20.5		11:30																							20
	S-11 22.5-23		11:35																							21
	S-11 24.5-25		11:40																							22
	S-11 26-26.5		11:45																							23

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
M. Munz	SECURE LOCATION - CAMBRIA HOLLIS.	6/7/02.	4:5pm
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	Harold Bueno KIFF	061002	1320

KIFF ANALYTICAL

720 Olive Drive, Suite D

Davis, CA 95616

(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

Karen Petryna

Z6840

INCIDENT NUMBER (IF SHELL) 97088825 0

DATE: 6/7/02

PAGE: 4 of 5

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Cambria Environmental	CETO	1230 14th Street, Oakland	T0600101691

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1144 65th Street, Oakland	shelloaklandedf@cambria-env.com	510-420-9700	shelloaklandedf@cambria-env.com	244-0233-012

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:	SAMPLER NAME(S) (Print):	LAB USE ONLY
Melody Munz	510-420-3324	510-420-9170	mmunz@cambria-env.com	M. MUNZ	

TURNAROUND TIME (BUSINESS DAYS):

☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (48-)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	S-11 28.5-29	6/7/02	11:50	Soil	1	X	X	X																		24
	S-12 5-5.5		13:00																							25
	S-12 7.5-8		13:00																							26
	S-12 13.5-14		13:10																							27
	S-12 15-15.5		13:13																							28
	S-12 17.5-18		1:39																							29
	S-12 20-20.5		1:39																							30
	S-12 22.5-23		1:45																							31
	S-12 24.5-25		1:45			X	X	X																		32

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	SECURE LOCATION - CAMBRIA - HOLLIS	6/7/02	4:50pm
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	Harold Brown KIFF	061002	1320

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be Invoiced:

☑ SCIENCE & ENGINEERING
☐ TECHNICAL SERVICES
☐ CRMT HOUSTON

Karen Petryna

26840

INCIDENT NUMBER (ES ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/7/02

PAGE: 5 of 5

SAMPLING COMPANY:	Cambria Environmental
LOG CODE:	CETO
SITE ADDRESS (Street and City):	1230 14th Street, Oakland
GLOBAL ID NO.:	T0600101691
ADDRESS:	1144 65th Street, Oakland
EDF DELIVERABLE TO (Responsible Party or Designee):	shelloaklandedf@cambria-env.com
PHONE NO.:	510-420-9700
E-MAIL:	shelloaklandedf@cambria-env.com
CONSULTANT PROJECT NO.:	244-0233-012
PROJECT CONTACT (Hardcopy or PDF Report to):	Melody Munz
SAMPLER NAME(S) (Print):	M. MUNZ
TELEPHONE:	510-420-3324
FAX:	510-420-9170
E-MAIL:	mmunz@cambria-env.com
LAB USE ONLY	

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: ____________

GC/MS MTBE CONFIRMATION: HIGHEST ______ HIGHEST per BORING ______ ALL ______

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes / TEMPERATURE ON RECEIPT C°
	S-13 5-5.5	6/7/02	14:15	Soil	1	x	x	x																		33
	S-13 7.5-8		14:45																							34
	S-13 12.5-13		14:45																							35
	S-13 15-15.5		14:55																							36
	S-13 17.5-18		15:00																							37
	S-13 20.20.5		15:10																							38

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
M. Munz	SECURE LOCATION (CAMBRIA HOLLIS)	6/7/02	4:50pm.
	Harold Bruce KIFF	061002	1320

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Melody Munz
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

Subject : 4 Water Samples and 29 Soil Samples
Project Name : 1230 14th Street, Oakland
Project Number : 244-0233-012
P.O. Number : 97088250

Dear Ms. Munz,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Subject : 4 Water Samples and 29 Soil Samples
Project Name : 1230 14th Street, Oakland
Project Number : 244-0233-012
P.O. Number : 97088250

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples S-17-W, S-16-W, S-15-W, S-14-W for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample.

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-14-5.5-6'** Matrix : Soil Lab Number : 26868-01
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	6/22/2002

Sample : **S-14-7.5-8'** Matrix : Soil Lab Number : 26868-02
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	91.6		% Recovery	EPA 8260B	6/22/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-14-9-9.5'** Matrix : Soil Lab Number : 26868-03
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.010**	0.010	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	92.3		% Recovery	EPA 8260B	6/22/2002

Sample : **S-14-11.5-12'** Matrix : Soil Lab Number : 26868-04
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**0.0078**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	93.2		% Recovery	EPA 8260B	6/22/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-14-12.5-13'** Matrix : Soil Lab Number : 26868-05
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.25**	0.25	mg/Kg	EPA 8260B	6/24/2002
Toluene	**0.71**	0.25	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**5.4**	0.25	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**19**	0.25	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**670**	20	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	99.2		% Recovery	EPA 8260B	6/24/2002

Sample : **S-14-15.0-15.5** Matrix : Soil Lab Number : 26868-06
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.88**	0.25	mg/Kg	EPA 8260B	6/24/2002
Toluene	**25**	0.25	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**22**	0.25	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**120**	1.0	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**1100**	50	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	95.9		% Recovery	EPA 8260B	6/24/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-14-17.5-18** Matrix : Soil Lab Number : 26868-07
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.10**	0.005	mg/Kg	EPA 8260B	6/24/2002
Toluene	**0.30**	0.005	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**0.089**	0.005	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**0.48**	0.005	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**3.8**	1.0	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	98.5		% Recovery	EPA 8260B	6/24/2002

Sample : **S-14-20-20.5** Matrix : Soil Lab Number : 26868-08
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.39**	0.005	mg/Kg	EPA 8260B	6/24/2002
Toluene	**0.51**	0.005	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**0.12**	0.005	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**0.50**	0.005	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**4.0**	1.0	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	6/24/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-15-5-5.5** Matrix : Soil Lab Number : 26868-09
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**0.011**	0.010	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	106		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	92.0		% Recovery	EPA 8260B	6/22/2002

Sample : **S-15-7.5-8.** Matrix : Soil Lab Number : 26868-10
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	90.9		% Recovery	EPA 8260B	6/22/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 26868
Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-15-10-10.5** Matrix : Soil Lab Number : 26868-11
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/24/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**2.3**	1.0	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	98.5		% Recovery	EPA 8260B	6/24/2002

Sample : **S-15-12.5-13.** Matrix : Soil Lab Number : 26868-12
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Total Xylenes	**0.032**	0.005	mg/Kg	EPA 8260B	6/23/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/23/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/23/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/23/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/23/2002

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Project Number : **244-0233-012**

Sample : **S-15-15.-15.5** Matrix : Soil Lab Number : 26868-13
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.9**	0.25	mg/Kg	EPA 8260B	6/24/2002
Toluene	**43**	0.25	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**22**	0.25	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**110**	0.25	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**1200**	20	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	99.1		% Recovery	EPA 8260B	6/24/2002

Sample : **S-15-17.5-18** Matrix : Soil Lab Number : 26868-14
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.3**	0.025	mg/Kg	EPA 8260B	6/24/2002
Toluene	**1.9**	0.025	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**0.40**	0.025	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**1.9**	0.050	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**24**	5.0	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	99.6		% Recovery	EPA 8260B	6/24/2002

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Project Number : **244-0233-012**

Sample : **S-15-20-20.5** Matrix : Soil Lab Number : 26868-15
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.51**	0.050	mg/Kg	EPA 8260B	6/24/2002
Toluene	**3.5**	0.050	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**4.2**	0.050	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**21**	0.050	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**270**	5.0	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	97.2		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	98.6		% Recovery	EPA 8260B	6/24/2002

Sample : **S-16-7.5-8** Matrix : Soil Lab Number : 26868-16
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/23/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/23/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/23/2002
Toluene - d8 (Surr)	103		% Recovery	EPA 8260B	6/23/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	6/23/2002

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Project Number : **244-0233-012**

Sample : **S-16-10-10.5** Matrix : Soil Lab Number : 26868-17
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	105		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	99.3		% Recovery	EPA 8260B	6/22/2002

Sample : **S-16-11.5-12** Matrix : Soil Lab Number : 26868-18
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	6/22/2002

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Sample : **S-16-15-15.5** Matrix : Soil Lab Number : 26868-19
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene	**4.0**	1.0	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**94**	1.0	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**460**	2.5	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**4500**	50	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	98.6		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/22/2002

Sample : **S-16-17.5-18** Matrix : Soil Lab Number : 26868-20
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/24/2002
Toluene	**23**	1.0	mg/Kg	EPA 8260B	6/24/2002
Ethylbenzene	**76**	1.0	mg/Kg	EPA 8260B	6/24/2002
Total Xylenes	**360**	1.0	mg/Kg	EPA 8260B	6/24/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/24/2002
TPH as Gasoline	**5000**	50	mg/Kg	EPA 8260B	6/24/2002
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	6/24/2002
4-Bromofluorobenzene (Surr)	99.7		% Recovery	EPA 8260B	6/24/2002

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Sample : **S-16-20-20.5** Matrix : Soil Lab Number : 26868-21
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.12**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**0.0088**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**0.080**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**0.080**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**1.3**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/21/2002

Sample : **S-17-5-5.5** Matrix : Soil Lab Number : 26868-22
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	96.5		% Recovery	EPA 8260B	6/21/2002

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Sample : **S-17-10-10.5** Matrix : Soil Lab Number : 26868-23
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	97.4		% Recovery	EPA 8260B	6/21/2002

Sample : **S-17-12.5-13** Matrix : Soil Lab Number : 26868-24
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.64**	0.25	mg/Kg	EPA 8260B	6/21/2002
Toluene	**6.8**	0.25	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**48**	0.25	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**340**	1.0	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**4300**	100	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	99.4		% Recovery	EPA 8260B	6/21/2002

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Sample : **S-17-15-15.5** Matrix : Soil Lab Number : 26868-25
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.41**	0.10	mg/Kg	EPA 8260B	6/22/2002
Toluene	**5.8**	0.10	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	**11**	0.10	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	**58**	0.25	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	**590**	10	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	6/22/2002

Sample : **S-17-17.5-18** Matrix : Soil Lab Number : 26868-26
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.57**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**0.073**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**0.16**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**0.66**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**5.2**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	6/21/2002

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Sample : **S-17-20-20.5** Matrix : Soil Lab Number : 26868-27
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**0.013**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	96.6		% Recovery	EPA 8260B	6/21/2002

Sample : **S-18-2.5-3'** Matrix : Soil Lab Number : 26868-28
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	6/21/2002

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Sample : **S-16-12.5-13** Matrix : Soil Lab Number : 26868-29
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	**< 0.010**	0.010	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	99.4		% Recovery	EPA 8260B	6/21/2002

Sample : **S-14-W** Matrix : Water Lab Number : 26868-30
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**6900**	100	ug/L	EPA 8260B	6/16/2002
Toluene	**49000**	200	ug/L	EPA 8260B	6/17/2002
Ethylbenzene	**6200**	100	ug/L	EPA 8260B	6/16/2002
Total Xylenes	**35000**	100	ug/L	EPA 8260B	6/16/2002
Methyl-t-butyl ether (MTBE)	**< 1000**	1000	ug/L	EPA 8260B	6/16/2002
TPH as Gasoline	**260000**	10000	ug/L	EPA 8260B	6/16/2002
Toluene - d8 (Surr)	102		% Recovery	EPA 8260B	6/16/2002
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	6/16/2002

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Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233-012**

Sample : **S-15-W** Matrix : Water Lab Number : 26868-31
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**15000**	50	ug/L	EPA 8260B	6/16/2002
Toluene	**15000**	50	ug/L	EPA 8260B	6/16/2002
Ethylbenzene	**4100**	50	ug/L	EPA 8260B	6/16/2002
Total Xylenes	**20000**	50	ug/L	EPA 8260B	6/16/2002
Methyl-t-butyl ether (MTBE)	**< 500**	500	ug/L	EPA 8260B	6/16/2002
TPH as Gasoline	**130000**	5000	ug/L	EPA 8260B	6/16/2002
Toluene - d8 (Surr)	99.6		% Recovery	EPA 8260B	6/16/2002
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	6/16/2002

Sample : **S-16-W** Matrix : Water Lab Number : 26868-32
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**940**	10	ug/L	EPA 8260B	6/15/2002
Toluene	**2100**	10	ug/L	EPA 8260B	6/15/2002
Ethylbenzene	**3200**	10	ug/L	EPA 8260B	6/15/2002
Total Xylenes	**15000**	25	ug/L	EPA 8260B	6/16/2002
Methyl-t-butyl ether (MTBE)	**< 100**	100	ug/L	EPA 8260B	6/15/2002
TPH as Gasoline	**70000**	1000	ug/L	EPA 8260B	6/15/2002
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	6/15/2002
4-Bromofluorobenzene (Surr)	109		% Recovery	EPA 8260B	6/15/2002

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Sample : **S-17-W** Matrix : Water Lab Number : 26868-33
Sample Date :6/10/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2600**	20	ug/L	EPA 8260B	6/15/2002
Toluene	**1000**	20	ug/L	EPA 8260B	6/15/2002
Ethylbenzene	**1900**	20	ug/L	EPA 8260B	6/15/2002
Total Xylenes	**13000**	25	ug/L	EPA 8260B	6/16/2002
Methyl-t-butyl ether (MTBE)	**< 200**	200	ug/L	EPA 8260B	6/15/2002
TPH as Gasoline	**69000**	2000	ug/L	EPA 8260B	6/15/2002
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	6/15/2002
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	6/15/2002

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Date : 6/25/2002

QC Report : Method Blank Data

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/21/2002
Toluene	< 0.005	0.005	mg/Kg	EPA 8260B	6/21/2002
Ethylbenzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/21/2002
Total Xylenes	< 0.005	0.005	mg/Kg	EPA 8260B	6/21/2002
Methyl-t-butyl ether (MTBE)	< 0.5	0.5	mg/Kg	EPA 8260B	6/21/2002
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/21/2002
Toluene - d8 (Surr)	100		%	EPA 8260B	6/21/2002
4-Bromofluorobenzene (Surr)	98.5		%	EPA 8260B	6/21/2002
Benzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/22/2002
Toluene	< 0.005	0.005	mg/Kg	EPA 8260B	6/22/2002
Ethylbenzene	< 0.005	0.005	mg/Kg	EPA 8260B	6/22/2002
Total Xylenes	< 0.005	0.005	mg/Kg	EPA 8260B	6/22/2002
Methyl-t-butyl ether (MTBE)	< 0.5	0.5	mg/Kg	EPA 8260B	6/22/2002
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	6/22/2002
Toluene - d8 (Surr)	103		%	EPA 8260B	6/22/2002
4-Bromofluorobenzene (Surr)	97.8		%	EPA 8260B	6/22/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	6/16/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	6/16/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	6/16/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	6/16/2002
Toluene - d8 (Surr)	102		%	EPA 8260B	6/16/2002
4-Bromofluorobenzene (Surr)	102		%	EPA 8260B	6/16/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 26868

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	26868-28	<0.0050	0.0395	0.0399	0.0405	0.0398	mg/Kg	EPA 8260B	6/21/02	102	99.7	2.74	70-130	25
Toluene	26868-28	<0.0050	0.0395	0.0399	0.0373	0.0358	mg/Kg	EPA 8260B	6/21/02	94.4	89.7	5.08	70-130	25
Tert-Butanol	26868-28	<0.0050	0.198	0.200	0.184	0.194	mg/Kg	EPA 8260B	6/21/02	93.1	97.1	4.17	70-130	25
Methyl-t-Butyl Ether	26868-28	<0.0050	0.0395	0.0399	0.0438	0.0440	mg/Kg	EPA 8260B	6/21/02	111	110	0.610	70-130	25
Benzene	26866-09	<0.50	20.0	19.5	20.5	20.1	ug/L	EPA 8260B	6/15/02	102	103	0.753	70-130	25
Toluene	26866-09	<0.50	20.0	19.5	20.4	20.0	ug/L	EPA 8260B	6/15/02	102	103	0.634	70-130	25
Tert-Butanol	26866-09	1500	100	97.5	1860	1860	ug/L	EPA 8260B	6/15/02	369	373	1.04	70-130	25
Methyl-t-Butyl Ether	26866-09	49	20.0	19.5	75.6	74.8	ug/L	EPA 8260B	6/15/02	132	131	0.721	70-130	25
Benzene	26868-17	<0.0050	0.0398	0.0384	0.0438	0.0416	mg/Kg	EPA 8260B	6/24/02	110	108	1.58	70-130	25
Toluene	26868-17	<0.0050	0.0398	0.0384	0.0437	0.0413	mg/Kg	EPA 8260B	6/24/02	110	108	2.05	70-130	25
Tert-Butanol	26868-17	<0.0050	0.199	0.192	0.226	0.213	mg/Kg	EPA 8260B	6/24/02	114	111	2.39	70-130	25
Methyl-t-Butyl Ether	26868-17	<0.0050	0.0398	0.0384	0.0409	0.0395	mg/Kg	EPA 8260B	6/24/02	103	103	0.219	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 26868

QC Report : Laboratory Control Sample (LCS)

Date : 6/25/2002

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233-012**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0370	mg/Kg	EPA 8260B	6/21/02	104	70-130
Toluene	0.0370	mg/Kg	EPA 8260B	6/21/02	100	70-130
Tert-Butanol	0.185	mg/Kg	EPA 8260B	6/21/02	93.1	70-130
Methyl-t-Butyl Ether	0.0370	mg/Kg	EPA 8260B	6/21/02	108	70-130
Benzene	40.0	ug/L	EPA 8260B	6/15/02	105	70-130
Toluene	40.0	ug/L	EPA 8260B	6/15/02	107	70-130
Tert-Butanol	200	ug/L	EPA 8260B	6/15/02	103	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	6/15/02	107	70-130
Benzene	0.0391	mg/Kg	EPA 8260B	6/22/02	93.8	70-130
Toluene	0.0391	mg/Kg	EPA 8260B	6/22/02	98.8	70-130
Tert-Butanol	0.196	mg/Kg	EPA 8260B	6/22/02	99.0	70-130
Methyl-t-Butyl Ether	0.0391	mg/Kg	EPA 8260B	6/22/02	89.7	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced:
☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON
Karen Petryna
26868

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0
SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/10/02
PAGE: 1 of 4

SAMPLING COMPANY:	LOG CODE:	SITE ADDRESS (Street and City):	GLOBAL ID NO.:
Cambria Environmental	CETO	1230 14th Street, Oakland	T0600101691

ADDRESS:	EDF DELIVERABLE TO (Responsible Party or Designee):	PHONE NO.:	E-MAIL:	CONSULTANT PROJECT NO.:
1144 65th Street, Oakland	shelloaklandedf@cambria-env.com	510-420-9700	shelloaklandedf@cambria-env.com	244-0233-012

PROJECT CONTACT (Hardcopy or PDF Report to):	TELEPHONE:	FAX:	E-MAIL:
Melody Munz	510-420-3324	510-420-9170	mmunz@cambria-env.com

SAMPLER NAME(S) (Print): MMUNZ.

LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS):
☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (6) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	S-14 - 5.5-6'	6/10/02	8:45	Soil	1	X	X	X																		01
	S-14 - 7.5-8'		8:45																							02
	S-14 - 9-9.5'		8:50																							03
	S-14 - 11.5-12'		8:50																							04
	S-14 - 12.5-13'		8:50																							05
	S-14 - 15.0-15.5		8:55																							06
	S-14 - 17.5-18		9:05																							07
	S-14 - 20-20.5		9:08																							08
	S-15 - 5-5.5		9:30			X	X	X																		09
	S-15 - 7.5-8.		9:35			X	X	X																		10

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	SECURE LOCATION - CAMBRIA - HOLLIS	6/10/02	1:55
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) Laurel Burch KIFF	Date: 061102	Time: 1545

K ANALYTICAL

720 Olive Drive, Suite D

Davis, CA 95616

(530) 297-4800 (530) 297-4803 fax

SH' . Chain Of Custody Record

Shell Project Manager to be Invoiced:

- [x] SCIENCE & ENGINEERING
- [ ] TECHNICAL SERVICES
- [ ] CRMT HOUSTON

Karen Petryna

26868

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/10/02

SAMPLING COMPANY: Cambria Environmental	LOG CODE: CETO
SITE ADDRESS (Street and City): 1230 14th Street, Oakland	GLOBAL ID NO.: T0600101691
ADDRESS: 1144 65th Street, Oakland	
EDF DELIVERABLE TO (Responsible Party or Designee): shelloaklandedf@cambria-env.com	PHONE NO.: 510-420-9700
E-MAIL: shelloaklandedf@cambria-env.com	CONSULTANT PROJECT NO.: 244-0233-012
PROJECT CONTACT (Hardcopy or PDF Report to): Melody Munz	SAMPLER NAME(S) (Print): M. Munz
TELEPHONE: 510-420-3324	FAX: 510-420-9170
E-MAIL: mmunz@cambria-env.com	LAB USE ONLY:

TURNAROUND TIME (BUSINESS DAYS): [x] 10 DAYS [ ] 5 DAYS [ ] 72 HOURS [ ] 48 HOURS [ ] 24 HOURS [ ] LESS THAN 24 HOURS

[ ] LA - RWQCB REPORT FORMAT [ ] UST AGENCY: ____________

GC/MS MTBE CONFIRMATION: HIGHEST ______ HIGHEST per BORING ______ ALL ______

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED [ ]

REQUESTED ANALYSIS

FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-____)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	S-15-10-10.5	6/10/02	9:40	Soil	1	x	x	x																		11
	S-15-12.5-13.	↓	9:45	↓	↓	↓	↓	↓																		12
	S-15-15.-15.5	↓	9:45	↓	↓	↓	↓	↓																		13
	S-15-17.5-18	↓	9:45	↓	↓	↓	↓	↓																		14
	S-15-20-20.5	↓	9:45	↓	↓	↓	↓	↓																		15
	S-16-7.5-8	↓	10:25	↓	↓	↓	↓	↓																		16
	S-16-10-10.5	↓	10:28	↓	↓	↓	↓	↓																		17
	S-16-11.5-12	↓	10:33	↓	↓	X	X	X																		18
	S-16-15-15.5	↓	10:45	↓	↓	X	X	X																		19
	S-16-17.5-18	↓	10:45	↓	↓	X	X	X																		20

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
M. Munz	Secure Location (Cambria-Hous	6/10/02	1:55
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) [signature] KiFF	061002	1545

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced:

- ☑ SCIENCE & ENGINEERING
- ☐ TECHNICAL SERVICES
- ☐ CRMT HOUSTON

Karen Petryna

26868

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/10/02

PAGE: 3 of 4

SAMPLING COMPANY: Cambria Environmental	LOG CODE: CETO
SITE ADDRESS (Street and City): 1230 14th Street, Oakland	GLOBAL ID NO.: T0600101691
ADDRESS: 1144 65th Street, Oakland	
EDF DELIVERABLE TO (Responsible Party or Designee): shelloaklandedf@cambria-env.com	PHONE NO.: 510-420-9700
E-MAIL: shelloaklandedf@cambria-env.com	CONSULTANT PROJECT NO.: 244-0233-012
PROJECT CONTACT (Hardcopy or PDF Report to): Melody Munz	SAMPLER NAME(S) (Print): M. MUNZ
TELEPHONE: 510-420-3324	FAX: 510-420-9170
E-MAIL: mmunz@cambria-env.com	LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: ______

GC/MS MTBE CONFIRMATION: HIGHEST ______ HIGHEST per BORING ______ ALL ______

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-___)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes / TEMPERATURE ON RECEIPT C°
	S-16-20-20.5	6/10/02	10:55	Soil	1	X	X	X																		21
	S-17-5-5.5	↓	11:10	↓	↓	↓	↓	↓																		22
	S-17-10-10.5	↓	11:15	↓	↓	↓	↓	↓																		23
	S-17-12.5-13	↓	11:20	↓	↓	↓	↓	↓																		24
	S-17-15-15.5	↓	11:20	↓	↓	↓	↓	↓																		25
	S-17-17.5-18	↓	11:30	↓	↓	↓	↓	↓																		26
	S-17-20-20.5	↓	11:40	↓	↓	↓	↓	↓																		27
	S-18-2.5-3'	6/10/02	12:20	Soil	1	x	x	x																		28
	S-16-12.5-13	↓	10:38	↓	1	x	x	x																		29

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
M. Munz	SECURE LOCATION CAMBRIA-[illegible]	6/10/02	1:55
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) Daniel Bruce KIFF	Date: 06/11/02	Time: 1545

KIFF ANALYTICAL

720 Olive Drive, Suite D
Davis, CA 95616
(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be Invoiced:

- ☑ SCIENCE & ENGINEERING
- ☐ TECHNICAL SERVICES
- ☐ CRMT HOUSTON

Karen Petryna

26868

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: 6/10/02

PAGE: 4 of 4

SAMPLING COMPANY: Cambria Environmental	LOG CODE: CETO
SITE ADDRESS (Street and City): 1230 14th Street, Oakland	GLOBAL ID NO.: T0600101691
ADDRESS: 1144 65th Street, Oakland	
EDF DELIVERABLE TO (Responsible Party or Designee): shelloaklandedf@cambria-env.com	PHONE NO.: 510-420-9700
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PROJECT CONTACT (Hardcopy or PDF Report to): Melody Munz	SAMPLER NAME(S) (Print): M. MUNZ
TELEPHONE: 510-420-3324	FAX: 510-420-9170
E-MAIL: mmunz@cambria-env.com	LAB USE ONLY

TURNAROUND TIME (BUSINESS DAYS): ☑ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: ______

GC/MS MTBE CONFIRMATION: HIGHEST ______ HIGHEST per BORING ______ ALL ______

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (4B-___)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	FIELD NOTES: Container/Preservative or PID Readings or Laboratory Notes / TEMPERATURE ON RECEIPT C°
	S-14-W	6/10/02	9:20	Water	4	X	X	X																		4x 40ml VOAs. 30
	S-15-W	↓	9:49	↓	↓	↓	↓	↓																		31
	S-16-W	↓	11:00	↓	↓	↓	↓	↓																		32
	S-17-W	↓	11:45	↓	↓	↓	↓	↓																		33

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature]	(CAMBRIA-HOLLIS) SECURE LOCATION	6/10/02	1:55
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) [signature] K, FT	Date: 061102	Time: 1545

Calscience
Environmental
Laboratories, Inc.

July 16, 2002

Joel Kiff
Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Subject: **Calscience Work Order No.: 02-07-0404**
Client Reference: 1230 14th Street, Oakland

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 7/11/02 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Michael J. Crisostomo
Quality Assurance Manager

Calscience
Environmental
Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical	Date Sampled:	06/07/02
720 Olive Drive, Suite D1	Date Received:	07/11/02
Davis, CA 95616-4740	Date Extracted:	07/11/02
	Date Analyzed:	07/12/02
	Work Order No.:	02-07-0404
Attn: Joel Kiff	Method:	EPA 6010B
RE: 1230 14th Street, Oakland	Page 1 of 1	

All concentrations are reported in mg/kg (ppm).

Sample Number	Cr (III) Concentration	Reporting Limit
S-12 15-15.5	39.8	2.50
S-13 12.5-13	40.0	2.50

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: Total Digestion
Method: EPA 6010B

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
S-12 15-15.5	02-07-0404-1	06/07/02	Solid	07/11/02	07/12/02	020711ca1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	39.8	2.5	10		mg/kg	Iron	13700	50	10		mg/kg

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
S-13 12.5-13	02-07-0404-2	06/07/02	Solid	07/11/02	07/12/02	020711ca1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	40.0	2.5	10		mg/kg	Iron	12700	50	10		mg/kg

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	097-01-002-3,495	N/A	Solid	07/11/02	07/11/02	020711LCS1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	ND	0.250	1		mg/kg	Iron	ND	5.00	1		mg/kg

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 9045C

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-12 15-15.5	02-07-0404-1	Solid	06/07/02	N/A	07/11/02	20711PHD2

Parameter	Result	RL	DF	Qual	Units
pH	8.05	0.01	1		pH unit

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-13 12.5-13	02-07-0404-2	Solid	06/07/02	N/A	07/11/02	20711PHD2

Parameter	Result	RL	DF	Qual	Units
pH	8.39	0.01	1		pH unit

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received:	07/11/02
Work Order No:	02-07-0404
Preparation:	N/A
Method:	SM 2320B

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-12 15-16.5	02-07-0404-1	Solid	06/07/02	07/11/02	07/11/02	20711AlkD1

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	300	5.0	1		mg/Kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-13 12.5-13	02-07-0404-2	Solid	06/07/02	07/11/02	07/11/02	20711AlkD1

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	330	5.0	1		mg/Kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 9060

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-12 15-15.5	02-07-0404-1	Solid	06/07/02	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	570	40	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-13 12.5-13	02-07-0404-2	Solid	06/07/02	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	720	40	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-05-036-1,047	Solid	N/A	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	ND	40	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 7196A

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-12 15-15.5	02-07-0404-1	Solid	06/07/02	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-13 12.5-13	02-07-0404-2	Solid	06/07/02	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-06-001-1,328	Solid	N/A	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 7/11/2002
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 9045C

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
S-13/12.5-13	Solid	PH 1	N/A	07/21/02	20721PHD2

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	8.39	8.43	0	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 7/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: SM 2320B

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
02-07-0400-1	Solid	PH 1	07/11/02	07/11/02	102118KD1

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	640	670	5	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 9060

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
02-07-0400-1	Solid	TOC 1	N/A	07/16/02	20715TOC51

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Total Organic Carbon	118	116	70-130	1	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 9060

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-036-1,047	Solid	TOC 1	07/18/02	NONE	20715TOCL1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Total Organic Carbon	800	790	99	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: Total Digestion
Method: EPA 6010B

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
02-07-0366-1	Solid	ICP 3300	07/11/02	07/12/02	071102MS1

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium (Total)	97	94	75-125	3	0-20	
Iron	4X	4X	75-125	4X	0-20	Q

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: Total Digestion
Method: EPA 6010B

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-002-3,495	Solid	ICP 3300	07/11/02	020711-I	020711LCS1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Chromium (Total)	50.0	50.6	101	80-120	
Iron	50.0	53.5	107	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 7196A

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
S-13 12.5-13	Solid	UV 2	N/A	07/11/02	20711CR91

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Hexavalent Chromium	95	95	70-130	0	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0404
Preparation: N/A
Method: EPA 7196A

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-001-1,328	Solid	UV 2	07/11/02	NONE	20711CRL1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Hexavalent Chromium	20	18	91	80-120	

Calscience Environmental Laboratories, Inc.

GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 02-07-0404

Qualifier	Definition
ND	Not detected at indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the sample concentration exceeding the spike concentration by a factor of four or greater.

7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 • FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

Date 070902

Incident No. 97088250

Page 1 of 1

LABORATORY CLIENT: Kiff Analytical, LLC		CLIENT PROJECT NAME / NUMBER: 1230 14th Street, Oakland	P.O. NO.: 26840
ADDRESS: 720 Olive Drive Suite D		PROJECT CONTACT: Joel Kiff	LAB USE ONLY 07-0240
CITY: Davis	STATE: CA ZIP: 95616	SAMPLER(S): (SIGNATURE)	COOLER RECEIPT TEMP: °C
TEL: 530-297-4800	FAX: 530-297-4803 E-MAIL:		

TURNAROUND TIME Due July 17, 2002
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please send COELT EDD to inbox@kiffanalytical.com
T0600101691 CETO

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT	TPH (G)	TPH (D) or	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	VOCs (5035 / 8260B) EnCore	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	EDB / DBCP (504.1) or (8011)	CAM, T22 METALS (6010B)	PNAs (8310)	VOCs (TO-14A) or (TO-15)	CH4 / TGNMO (25.1)	FIXED GASES (25.1) or (D1946)	pH	Total Organic Carbon	Alkalinity	Total Iron	Trivalent Chromium
1	S-12 15-15.5		060102		SO	1																X	X	X	X	X
2	S-13 @5-13		060702		SO	1																X	X	X	X	X

Relinquished by: (Signature) Kris A. Kiff / KIFF ANALYTICAL	Received by: (Signature)	Date: 071002	Time: 1405
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received for Laboratory by: (Signature) Brian Cabrera	Date: 7/10/02	Time: 10:55

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Yellow and Pink copies respectively.

10/01/00 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 02-[0][7]-[0][4][0][4]

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Kiff **DATE:** 7/16/02

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

4 °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: BH

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact): _____ Not Applicable (N/A): ✓

Initial: BH

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: BH

COMMENTS:

Calscience
Environmental
Laboratories, Inc.

July 16, 2002

Joel Kiff
Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Subject: **Calscience Work Order No.:** **02-07-0400**
Client Reference: **1230 14th Street, Oakland**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 7/11/02 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager

Michael J. Crisostomo
Quality Assurance Manager

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical	Date Sampled:	06/10/02
720 Olive Drive, Suite D1	Date Received:	07/11/02
Davis, CA 925616-4740	Date Extracted:	07/11/02
	Date Analyzed:	07/12/02
	Work Order No.:	02-07-0400
Attn: Joel Kiff	Method:	EPA 6010B
RE: 1230 14th Street, Oakland	Page 1 of 1	

All concentrations are reported in mg/kg (ppm).

Sample Number	Cr (III) Concentration	Reporting Limit
S-16-17.5-18	58.1	2.50
S-17-12.5-13	42.6	2.50

ND denotes not detected at indicated reportable limit.

Each sample was received by CEL chilled, intact, and with chain-of-custody attached.

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: Total Digestion
Method: EPA 6010B

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
S-16-17.5-16	02-07-0400-1	06/10/02	Solid	07/11/02	07/12/02	020711ics1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	58.1	2.5	10		mg/kg	Iron	16200	50	10		mg/kg

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
S-17-12.5-13	02-07-0400-2	06/10/02	Solid	07/11/02	07/12/02	020711ics1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	42.6	2.5	10		mg/kg	Iron	14500	50	10		mg/kg

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	097-01-002-3,495	N/A	Solid	07/11/02	07/11/02	020711LCS1

Parameter	Result	RL	DF	Qual	Units	Parameter	Result	RL	DF	Qual	Units
Chromium (Total)	ND	0.250	1		mg/kg	Iron	ND	5.00	1		mg/kg

RL - Reporting Limit . DF - Dilution Factor . Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 9045C

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-16-17.5-13	02-07-0400-1	Solid	06/10/02	N/A	07/11/02	20711PHD2

Parameter	Result	RL	DF	Qual	Units
pH	7.75	0.01	1		pH unit

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-17-12.5-13	02-07-0400-2	Solid	06/10/02	N/A	07/11/02	20711PHD2

Parameter	Result	RL	DF	Qual	Units
pH	7.87	0.01	1		pH unit

RL - Reporting Limit, DF - Dilution Factor, Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: SM 2320B

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-16-17.5-18	02-07-0400-1	Solid	06/10/02	07/11/02	07/11/02	20711AlkD1

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	640	5.0	1		mg/Kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-17-12.5-13	02-07-0400-2	Solid	06/10/02	07/11/02	07/11/02	20711AlkD1

Parameter	Result	RL	DF	Qual	Units
Alkalinity, Total (as CaCO3)	290	5.0	1		mg/Kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 9060

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-16-17.5-16	02-07-0400-1	Solid	06/10/02	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	340	40	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-17-12.5-13	02-07-0400-2	Solid	06/10/02	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	530	40	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-03-036-1,047	Solid	N/A	N/A	07/15/02	20715TOCL1

Parameter	Result	RL	DF	Qual	Units
Total Organic Carbon	ND	40	1		mg/kg

RL - Reporting Limit . DF - Dilution Factor . Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

ANALYTICAL REPORT

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 7196A

Project: 1230 14th Street, Oakland

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-16-17.5-15	02-07-0400-1	Solid	06/10/02	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
S-17-12.5-13	02-07-0400-2	Solid	06/10/02	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

Client Sample Number	Lab Sample Number	Matrix	Date Collected	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	099-05-001-1,328	Solid	N/A	N/A	07/11/02	20711CRL1

Parameter	Result	RL	DF	Qual	Units
Hexavalent Chromium	ND	0.80	1		mg/kg

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 7/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 9045C

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
02-07-0484-2	Solid	PH 1	N/A	07/11/02	20713PH02

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	6.8	8.43	21	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 7/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: SM 2320B

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared:	Date Analyzed:	Duplicate Batch Number
[illegible]	Solid	PH 1	07/11/02	[illegible]	[illegible]

Parameter	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Alkalinity, Total (as CaCO3)	640	870	5	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 9060

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
S-16-17.5-18	Solid	TOC 1	N/A	07/15/02	207151OCS1

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Total Organic Carbon	118	116	70-130	1	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 9060

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-036-1,047	Solid	TOC 1	07/16/02	NONE	20716TOCL1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Total Organic Carbon	800	790	99	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: Total Digestion
Method: EPA 6010B

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
02-07-0386-1	Solid	ICP 3300	07/11/02	07/12/02	071102MS1

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium (Total)	97	94	75-125	3	0-20	
Iron	4X	4X	75-125	4X	0-20	Q

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: Total Digestion
Method: EPA 6010B

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
097-01-002-3,495	Solid	ICP 3300	07/11/02	020711-1	020711LCS1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Chromium (Total)	50.0	50.5	101	80-120	
Iron	50.0	53.5	107	80-120	

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 7196A

Project: 1230 14th Street, Oakland

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
02-07-0404-2	Solid	UV 2	N/A	07/11/02	20711CR01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Hexavalent Chromium	95	95	70-130	0	0-25	

Calscience Environmental Laboratories, Inc.

Quality Control - Laboratory Control Sample

Kiff Analytical
720 Olive Drive, Suite D1
Davis, CA 95616-4740

Project: 1230 14th Street, Oakland

Date Received: 07/11/02
Work Order No: 02-07-0400
Preparation: N/A
Method: EPA 7196A

Quality Control Sample ID	Matrix	Instrument	Date Analyzed	Lab File ID	LCS Batch Number
099-05-001-1,329	Solid	UV 2	07/11/02	NONE	20711CRL1

Parameter	Conc Added	Conc Recovered	%Rec	%Rec CL	Qualifiers
Hexavalent Chromium	20	18	91	80-120	

Calscience Environmental Laboratories, Inc.

GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 02-07-0400

Qualifier	Definition
ND	Not detected at indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the sample concentration exceeding the spike concentration by a factor of four or greater.

7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501

CALSCIENCE ENVIRONMENTAL LABORATORIES, INC.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 • FAX: (714) 894-7501

CHAIN OF CUSTODY RECORD

Date 070902

Incident No. 97088250

Page 1 of 1

LABORATORY CLIENT: Kiff Analytical, LLC	CLIENT PROJECT NAME / NUMBER: 1230 14th Street, Oakland
ADDRESS: 720 Olive Drive Suite D	P.O. NO.: 26868
CITY Davis STATE CA ZIP 95616	PROJECT CONTACT: Joel Kiff
TEL: 530-297-4800 FAX: 530-297-4803 E-MAIL	LAB USE ONLY 07-0900
	SAMPLER(S): (SIGNATURE)
	COOLER RECEIPT TEMP = °C

TURNAROUND TIME Due July 17, 2002
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___.

SPECIAL INSTRUCTIONS
Please send COELT EDD to inbox@kiffanalytical.com
T0600101691 CETO

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	LOCATION/DESCRIPTION	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH (G)	TPH (D) or ___	BTEX / MTBE (8021B)	HALOCARBONS (8021B)	VOCs (8260B)	VOCs (5035 / 8260B) EnCore	SVOCs (8270C)	PEST (8081A)	PCBs (8082)	EDB / DBCP (504.1) or (8011)	CAC, T22 METALS (6010B)	PNAs (8310)	VOCs (TO-14A) or (TO-15)	CH4 / TGNMO (25.1)	FIXED GASES (25.1) or (D1946)	pH	Total Organic Carbon	Alkalinity	Total Iron	Trivalent Chromium
1	S-16-17.5-18		061002		SO	1																X	X	X	X	X
2	S-17-12.5-13		061002		SO	1																X	X	X	X	X

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
[signature] / KIFF ANALYTICAL		071002	1405
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received for Laboratory by: (Signature) [signature]	Date: 7/11/02	Time: 10:55

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Yellow and Pink copies respectively.

10/01/00 Revision

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 02-07-0400

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: Kiff **DATE:** 7/11/02

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_____ Chilled, cooler with temperature blank provided.
_____ Chilled, cooler without temperature blank.
_____ Chilled and placed in cooler with wet ice.
_____ Ambient and placed in cooler with wet ice.
_____ Ambient temperature.
_____ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

4 °C Temperature blank.
_____ °C IR thermometer.
_____ Ambient temperature.

Initial: BH

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: _____ No (Not Intact): _____ Not Applicable (N/A): ✓

Initial: BH

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers for analyses requested	✓		
Proper preservation noted on sample label(s)			✓
VOA vial(s) free of headspace			✓
Tedlar bag(s) free of condensation			✓

Initial: BH

COMMENTS:

KIFF ANALYTICAL LLC

Report Number : 27649
Date : 7/28/2002

Melody Munz
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

Subject : 4 Water Samples
Project Name : 1230 14th Street, Oakland
Project Number : 244-0233
P.O. Number : 97088250

Dear Ms. Munz,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

Joel Kiff

KIFF ANALYTICAL LLC

Report Number : 27649
Date : 7/28/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233**

Sample : **HA-1** Matrix : Water Lab Number : 27649-01
Sample Date :7/23/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Total Xylenes	**1.2**	0.50	ug/L	EPA 8260B	7/26/2002
TPH as Gasoline	**55**	50	ug/L	EPA 8260B	7/26/2002
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	7/26/2002
4-Bromofluorobenzene (Surr)	94.8		% Recovery	EPA 8260B	7/26/2002

Sample : **HA-2** Matrix : Water Lab Number : 27649-02
Sample Date :7/23/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Toluene	**0.77**	0.50	ug/L	EPA 8260B	7/26/2002
Ethylbenzene	**0.52**	0.50	ug/L	EPA 8260B	7/26/2002
Total Xylenes	**2.8**	0.50	ug/L	EPA 8260B	7/26/2002
TPH as Gasoline	**83**	50	ug/L	EPA 8260B	7/26/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/26/2002
4-Bromofluorobenzene (Surr)	95.2		% Recovery	EPA 8260B	7/26/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL LLC

Report Number : 27649
Date : 7/28/2002

Project Name : **1230 14th Street, Oakland**
Project Number : **244-0233**

Sample : **HA-3** Matrix : Water Lab Number : 27649-03
Sample Date :7/23/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/26/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/26/2002
4-Bromofluorobenzene (Surr)	93.0		% Recovery	EPA 8260B	7/26/2002

Sample : **HA-4** Matrix : Water Lab Number : 27649-04
Sample Date :7/23/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	7/26/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	7/26/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	7/26/2002
4-Bromofluorobenzene (Surr)	92.4		% Recovery	EPA 8260B	7/26/2002

Approved By: Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27649

Date : 7/28/2002

QC Report : Method Blank Data

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/27/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/27/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/27/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/27/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	7/27/2002
Toluene - d8 (Surr)	99.8		%	EPA 8260B	7/27/2002
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	7/27/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27649

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 7/28/2002

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene	27619-01	<0.50	19.9	19.8	19.3	19.3	ug/L	EPA 8260B	7/26/02	96.9	97.7	0.822	70-130	25
Toluene	27619-01	<0.50	19.9	19.8	19.4	19.6	ug/L	EPA 8260B	7/26/02	97.4	99.2	1.78	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

Report Number : 27649

QC Report : Laboratory Control Sample (LCS)

Date : 7/28/2002

Project Name : **1230 14th Street, Oakland**

Project Number : **244-0233**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	7/26/02	96.5	70-130
Toluene	40.0	ug/L	EPA 8260B	7/26/02	96.8	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

720 Olive Drive, Suite D Davis, CA 95616 530-297-4800

KIFF ANALYTICAL

720 Olive Drive, Suite D

Davis, CA 95616

(530) 297-4800 (530) 297-4803 fax

SHELL Chain Of Custody Record

Shell Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING Karen Petryna

☐ TECHNICAL SERVICES

☐ CRMT HOUSTON

27649

INCIDENT NUMBER (S&E ONLY): 9 7 0 8 8 2 5 0

SAP or CRMT NUMBER (TS/CRMT):

DATE: July 23, 2002

PAGE: 1 of 1

SAMPLING COMPANY: Cambria Environmental Technology	LOG CODE: CETO	SITE ADDRESS (Street and City): 1230 14th Street, Oakland	GLOBAL ID NO.: T0600101691
ADDRESS: 1144-65TH Street, Oakland, CA 94608		EDF DELIVERABLE TO (Responsible Party or Designee): shelloaklandedf@cambria-env.com	PHONE NO.:
PROJECT CONTACT (Hardcopy or PDF Report to): Melody Munz		E-MAIL:	CONSULTANT PROJECT NO.: 244-0233
TELEPHONE: 510-420-3324	FAX: 510-420-9170	E-MAIL: mmunz@cambria-env.com	SAMPLER NAME(S) (Print): Jason K. Gerke

TURNAROUND TIME (BUSINESS DAYS):

☐ 10 DAYS ☐ 5 DAYS ☐ 72 HOURS ☐ 48 HOURS ☐ 24 HOURS ☐ LESS THAN 24 HOURS

☐ LA - RWQCB REPORT FORMAT ☐ UST AGENCY: _____

GC/MS MTBE CONFIRMATION: HIGHEST _____ HIGHEST per BORING _____ ALL _____

SPECIAL INSTRUCTIONS OR NOTES: CHECK BOX IF EDD IS NOT NEEDED ☐

cc lab report to: jgerke@cambria-env.com

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	TPH - Gas, Purgeable	BTEX	MTBE (8021B - 5ppb RL)	MTBE (8260B - 0.5ppb RL)	Oxygenates (5) by (8260B)	Ethanol (8260B)	Methanol	EDB & 1,2-DCA (8260B)	EPA 5035 Extraction for Volatiles	VOCs Halogenated/Aromatic (8021B)	TRPH (418.1)	Vapor VOCs BTEX / MTBE (TO-15)	Vapor VOCs Full List (TO-15)	Vapor TPH (ASTM 3416m)	Vapor Fixed Gases (ASTM D1946)	Test for Disposal (48-)		TPH - Diesel, Extractable (8015m)		MTBE (8260B) Confirmation, See Note	TEMPERATURE ON RECEIPT C°
	HA-1	7/22/02	1100	water	3	X	X																			-01
	HA-2	↓	1200	water	3	X	X																			-02
	HA-3		1730	water	3	X	X																			-03
	HA-4	↓	1800	water	3	X	X																			-04

FIELD NOTES:

Container/Preservative or PID Readings or Laboratory Notes

Relinquished by: (Signature) Jason Gerke	Received by: (Signature) "Secure Location"	Date: 7/23/02 Time: 1745
Relinquished by: (Signature)	Received by: (Signature)	Date: Time:
Relinquished by: (Signature)	Received by: (Signature) John Cuttle / Kiff Analytical	Date: 072402 Time: 1255

DISTRIBUTION: White with final report, Green to File, Yellow and Pink to Client

10/16/00 Revision

Q&Q Graphic (714) 898-9702

ATTACHMENT D

Standard Field Procedures for Envirocore® Sampling and Hand Auger Soil Borings

STANDARD FIELD PROCEDURES FOR ENVIROCORE® SAMPLING

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

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate groundwater depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e., sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate moisture content,
- Observed odor and/or discoloration,
- Other significant observations (i.e., cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Sampling

The Envirocore® (dual-tube) system consists of a segmented casing with an internal sampler which is driven hydraulically into the subsurface. The casing and the sampler are driven simultaneously in three-foot increments. Continuous sample cores are collected by the sampler in 1.5-inch diameter sample tubes which are either 6-inch long stainless steel or 3-foot long butyrate. 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 steam-cleaned or washed prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate, Alconox® or an equivalent EPA-approved detergent, and double rinsed with de-ionized water.

Hydrocarbon Field Screening

When hydrocarbons are a chemical of concern, soil samples are field screened for the presence of hydrocarbon vapors. After a soil sample has been collected, soil from the remaining tubing is placed inside a sealed plastic bag and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable GasTech® or photoionization detector measures volatile hydrocarbon vapor concentrations in the bag's headspace, extracting the vapor through a slit in the plastic bag. The measurements are used along with the field observations, odors, stratigraphy and groundwater depth to select soil samples for analysis.

Soil Sample Storage, Handling and Transport

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

Grab Groundwater Sampling

Groundwater samples are collected from the open borehole using bailers, advancing disposable Tygon® tubing into the borehole and extracting groundwater using a diaphragm pump, or using a hydro-punch style sampler with a bailer or tubing. The groundwater samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4° C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all hydrocarbon sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory quality assurance/quality control (QA/QC) blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

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

CAMBRIA

STANDARD FIELD PROCEDURES FOR HAND-AUGER SOIL BORINGS

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

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Hand-auger borings are typically drilled using a hand-held bucket auger to remove soil to the desired sampling depth. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the augered hole. The vertical location of each soil sample is determined using a tape measure. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

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

Sample Storage, Handling and Transport

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

Field Screening

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

Water Sampling

Water samples, if they are collected from the boring, are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

The borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

8/9/02

ATTACHMENT E

Soil Boring Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1230 14th STREET
OAKLAND, CA. 94607

CLIENT
Name SHELL OIL PRODUCTS
Address P.O. BOX 7869 Phone
City BURBANK, CA Zip

APPLICANT
Name CAMBRIA ENVIRONMENTAL TECHNOLOGY INC.
MELODY MUNZ Fax (510) 420-9170
Address 1144 65th St. Suite B Phone (510) 420-3324
City OAKLAND, CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring		Well Destruction	
		SOIL BORINGS	X

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		Auger	
Cable		Other	X GEOPROBE (DIRECT PUSH)		

DRILLER'S NAME GREGG DRILLING.

DRILLER'S LICENSE NO. C57 485165

WELL PROJECTS
Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Owner's Well Number ____

GEOTECHNICAL PROJECTS
Number of Borings 9 Maximum
Hole Diameter 2 in. Depth 35 ft.

ESTIMATED STARTING DATE JUNE 7, 2002
ESTIMATED COMPLETION DATE JUNE 10, 2002

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE M. Munz DATE June 3, 2002

PLEASE PRINT NAME MELODY MUNZ

phone: (510) 420-3324
fax: (510) 420-9170

FOR OFFICE USE
PERMIT NUMBER W02-0603
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED ____ DATE 6-7-02

Rev.3-04-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANT: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 1216 14th STREET
OAKLAND, CA. 94607

CLIENT
Name SHELL OIL PRODUCTS US
Address P.O. Box 7869 Phone
City BURBANK CA Zip

APPLICANT
Name CAMBRIA ENVIRONMENTAL
Address 1144 65th STREET STE B Phone (510) 420-9170
City OAKLAND CA Zip 94608 (510) 420-9374

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection		General	
Water Supply		Contamination	
Monitoring		Well Destruction	
		SOIL BORINGS	X

PROPOSED WATER SUPPLY WELL USE

New Domestic		Replacement Domestic	
Municipal		Irrigation	
Industrial		Other	

DRILLING METHOD:

Mud Rotary		Air Rotary		HAND Auger X
Cable		Other		

DRILLER'S NAME
DRILLER'S LICENSE NO.

WELL PROJECTS
Drill Hole Diameter in. Maximum
Casing Diameter in. Depth ft.
Surface Seal Depth ft. Owner's Well Number

GEOTECHNICAL PROJECTS
Number of Borings 3 Maximum
Hole Diameter 3 in. Depth 15 ft.

ESTIMATED STARTING DATE JUNE 17
ESTIMATED COMPLETION DATE JUNE 21

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE DATE 6/3/02

PLEASE PRINT NAME MELODY MUNZ

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER W02-0604
WELL NUMBER
APN

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole above zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED DATE 6-7-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 ELMHURST ST. HAYWARD CA. 94544-1395
PHONE (510) 670-6633 James Yoo
FAX (510)782-1939

APPLICANTS: PLEASE ATTACH A SITE MAP FOR ALL DRILLING PERMIT APPLICATIONS
DESTRUCTION OF WELLS OVER 45 FEET REQUIRES A SEPARATE PERMIT APPLICATION

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT: 1420 UNION STREET
OAKLAND, CA 94607

CLIENT
Name: Shell Oil Products
Address: P.O. Box 7249 Phone:
City: Burbank, CA Zip:

APPLICANT
Name: CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC. Fax: (510) 420-9170
Address: 1144 65th St. Phone: (510) 420-3324
City: OAKLAND, CA. Zip: 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☐
Monitoring	☐	Well Destruction	☐
		Soil Borings	X

PROPOSED WATER SUPPLY WELL USE

New Domestic	☐	Replacement Domestic	☐
Municipal	☐	Irrigation	☐
Industrial	☐	Other	☐

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Hand Auger	X
Cable	☐	Other	☐		

DRILLER'S NAME:

DRILLER'S LICENSE NO.:

WELL PROJECTS
Drill Hole Diameter: in. Maximum
Casing Diameter: in. Depth: ft.
Surface Seal Depth: ft. Owner's Well Number:

GEOTECHNICAL PROJECTS
Number of Borings:
Hole Diameter: 3 in. Maximum Depth: 15 ft.

ESTIMATED STARTING DATE: June 17, 2002
ESTIMATED COMPLETION DATE: June 21, 2002

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE: [signature] DATE: 06/03/02

PLEASE PRINT NAME: MELODY MUNZ

Rev.3-04-02

FOR OFFICE USE
PERMIT NUMBER: W02-0605
WELL NUMBER:
APN:

PERMIT CONDITIONS
Circled Permit Requirements Apply

A. GENERAL
1. A permit application should be submitted so as to arrive at the ACPWA office five days prior to proposed starting date.
2. Submit to ACPWA within 60 days after completion of permitted original Department of Water Resources-Well Completion Report.
3. Permit is void if project not begun within 90 days of approval date

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL
Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings.

E. CATHODIC
Fill hole anode zone with concrete placed by tremie.

F. WELL DESTRUCTION
Send a map of work site. A separate permit is required for wells deeper than 45 feet.

G. SPECIAL CONDITIONS

NOTE: One application must be submitted for each well or well destruction. Multiple borings on one application are acceptable for geotechnical and contamination investigations.

APPROVED: [signature] DATE: 6-7-02

ATTACHMENT F

Groundwater Monitoring Well Concentrations

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #746684
www.blainetech.com

April 26, 2002

Karen Petryna
Shell Oil Products US
P.O. Box 7869
Burbank, CA 91510-7869

Second Quarter 2002 Groundwater Monitoring at
Former Shell Service Station
1230 14th Street
Oakland, CA

Monitoring performed on April 17, 2002

Groundwater Monitoring Report **020417-DA-1** .

This report covers the routine monitoring of groundwater wells at this Former Shell facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,

Leon Gearhart
Project Coordinator

LG/jt

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Anni Kreml
Cambria Environmental Technology, Inc.
1144 65th Street, Ste. C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Former Shell Service Station
1230 14th Street
Oakland, CA
Wic #204-5508-3103

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1	03/25/1996	37,000	7,400	1,500	720	3,300	<500	NA	18.58	9.53	9.05	NA
MW-1	06/21/1996	35,000	9,900	460	340	3,500	890	NA	18.58	10.72	7.86	NA
MW-1	09/26/1996	19,000	8,200	510	780	790	<250	NA	18.58	12.88	5.70	NA
MW-1	12/19/1996	27,000	120	1,200	1,400	2,800	<100	NA	18.58	12.59	5.99	NA
MW-1	12/19/1996	32,000	12,000	1,300	1,600	3,100	830	NA	18.58	12.59	5.99	NA
MW-1	03/25/1997	39,000	13,000	1,600	840	3,100	730	NA	18.58	11.10	7.48	1.2
MW-1	06/26/1997	NA	NA	NA	NA	NA	NA	NA	18.58	12.42	6.16	NA
MW-1	09/26/1997	NA	NA	NA	NA	NA	NA	NA	18.58	13.31	5.27	0.8
MW-1	12/05/1997	NA	NA	NA	NA	NA	NA	NA	18.58	12.65	5.93	0.3
MW-1	02/19/1998	16,000	5,500	450	500	800	<500	NA	18.58	6.46	12.12	2.4
MW-1	06/08/1998	NA	NA	NA	NA	NA	NA	NA	18.58	6.62	11.96	1.2
MW-1	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.58	11.83	6.75	2.8
MW-1	12/28/1998	NA	NA	NA	NA	NA	NA	NA	18.58	12.01	6.57	2.6
MW-1	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.58	9.15	9.43	2.2
MW-1	06/30/1999	NA	NA	NA	NA	NA	NA	NA	18.58	11.22	7.36	3.8
MW-1	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.58	11.89	6.69	3.0
MW-1	12/27/1999	34,800	8,660	953	956	2,770	<1,000	NA	18.58	13.55	5.03	2.4/2.1
MW-1	01/21/2000	40,600	14,700	1,850	1,210	3,670	<500	NA	18.58	13.42	5.16	2.8
MW-1	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.58	8.11	10.47	0.4
MW-1	04/17/2000	NA	NA	NA	NA	NA	NA	NA	18.58	9.78	8.80	3.0/3.4
MW-1	04/18/2000	18,300	8,060	543	528	872	<50.0	NA	18.58	NA	NA	NA
MW-1	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.58	13.11	5.47	5.2
MW-1	10/17/2000	15,800	6,720	435	587	887	351	<66.7	18.58	12.61	5.97	1.2/0.8
MW-1	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.58	12.94	5.64	0.3
MW-1	04/27/2001	1,400	650	28	58	48	NA	<10	18.58	10.73	7.85	1.8/2.1
MW-1	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.58	12.00	6.58	1.8
MW-1	12/06/2001	4,500	1,500	85	160	210	NA	<50	18.58	10.53	8.05	2.5/2.9

WELL CONCENTRATIONS
Former Shell Service Station
1230 14th Street
Oakland, CA
Wic #204-5508-3103

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.58	9.33	9.25	0.1
MW-1	**04/17/2002**	**230**	**12**	**<0.50**	**4.6**	**2.5**	**NA**	**<5.0**	**18.58**	**10.49**	**8.09**	**6.3/5.3**
MW-2	03/25/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	8.19	9.71	NA
MW-2	06/21/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	9.94	7.96	NA
MW-2	09/26/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	12.15	5.75	NA
MW-2	12/19/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	17.90	11.70	6.20	NA
MW-2	03/25/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	9.25	8.65	1.8
MW-2	06/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	11.36	6.54	2.4
MW-2	09/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	12.56	5.34	1.1
MW-2	09/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	12.56	5.34	1.1
MW-2	12/05/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	11.15	6.75	0.7
MW-2	02/19/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	17.90	5.61	12.29	2.7
MW-2	06/08/1998	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	17.90	5.58	12.32	3.2
MW-2	08/25/1998	NA	NA	NA	NA	NA	NA	NA	17.90	10.67	7.23	1.7
MW-2	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	17.90	11.65	6.25	0.4/0.8
MW-2	03/26/1999	NA	NA	NA	NA	NA	NA	NA	17.90	8.60	9.30	0.7
MW-2	06/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	17.90	10.30	7.60	2.3
MW-2	09/30/1999	NA	NA	NA	NA	NA	NA	NA	17.90	10.77	7.13	1.9
MW-2	12/27/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	17.90	12.21	5.69	0.7/0.7
MW-2	03/07/2000	NA	NA	NA	NA	NA	NA	NA	17.90	7.13	10.77	1.1
MW-2	04/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	17.90	8.35	9.55	1.8/1.8
MW-2	09/21/2000	NA	NA	NA	NA	NA	NA	NA	17.90	11.76	6.14	2.1
MW-2	10/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	17.90	11.80	6.10	0.9/0.6
MW-2	01/09/2001	NA	NA	NA	NA	NA	NA	NA	17.90	12.14	5.76	0.7
MW-2	04/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	17.90	9.85	8.05	1.1/0.9
MW-2	07/03/2001	NA	NA	NA	NA	NA	NA	NA	17.90	11.20	6.70	1.2

WELL CONCENTRATIONS
Former Shell Service Station
1230 14th Street
Oakland, CA
Wic #204-5508-3103

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	12/06/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	17.90	10.77	7.13	3.9/2.1
MW-2	01/23/2002	NA	NA	NA	NA	NA	NA	NA	17.90	8.64	9.26	2.5
MW-2	**04/17/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**17.90**	**9.61**	**8.29**	**3.5/5.2**
MW-3	03/25/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	8.47	9.71	NA
MW-3	06/21/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	10.40	7.78	NA
MW-3	09/26/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	12.45	5.73	NA
MW-3	12/19/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	18.18	12.14	6.02	NA
MW-3	03/25/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	9.54	8.64	2.2
MW-3	06/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	11.66	6.52	3.6
MW-3	09/26/1997	<50	<0.50	<050	<0.50	<0.50	<2.5	NA	18.18	12.85	5.33	1.1
MW-3	12/05/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	11.44	6.74	0.6
MW-3	02/19/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.18	6.78	11.40	3.6
MW-3	06/08/1998	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	18.18	6.82	11.36	3.8
MW-3	06/08/1998	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	18.18	6.82	11.36	3.8
MW-3	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.18	11.09	7.09	1.2
MW-3	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	18.18	11.84	6.34	0.9/0.6
MW-3	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.18	8.57	9.61	0.8
MW-3	06/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	18.18	10.61	7.57	4.8
MW-3	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.18	11.53	6.65	1.4
MW-3	12/27/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	18.18	12.35	5.83	1.4/2.5
MW-3	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.17	7.36	10.81	5.8
MW-3	04/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	19.3	NA	18.17	8.39	9.78	6.5/5.1
MW-3	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.17	12.01	6.16	3.0
MW-3	10/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	18.17	12.10	6.07	2.0/1.0
MW-3	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.17	12.43	5.74	1.9
MW-3	04/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	18.17	10.10	8.07	2.3/2.4

WELL CONCENTRATIONS
Former Shell Service Station
1230 14th Street
Oakland, CA
Wic #204-5508-3103

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-3	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.17	11.45	6.72	1.4
MW-3	12/06/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	18.17	11.07	7.10	2.8/3.9
MW-3	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.17	8.89	9.28	3.1
MW-3	**04/17/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**18.17**	**9.92**	**8.25**	**3.7/3.2**
MW-4	03/25/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	9.20	8.81	NA
MW-4	06/21/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	10.25	7.76	NA
MW-4	09/26/1996	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	12.29	5.72	NA
MW-4	12/19/1996	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	18.01	12.47	5.54	NA
MW-4	03/25/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	9.44	8.57	1.8
MW-4	06/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	11.57	6.44	6.2
MW-4 (D)	06/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	11.57	6.44	6.2
MW-4	09/26/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	12.75	5.26	2.1
MW-4	12/05/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	11.37	6.64	1.0
MW-4 (D)	12/05/1997	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	11.37	6.64	1.0
MW-4	02/19/1998	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	18.01	5.59	12.42	6.5
MW-4	06/08/1998	<50	<0.30	<0.30	<0.30	<0.60	<10	NA	18.01	5.65	12.36	2.6
MW-4	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.01	10.98	7.03	2.4
MW-4	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	<2.00	NA	18.01	11.83	6.18	1.3/1.2
MW-4	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.01	8.40	9.61	1.9
MW-4	06/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	18.01	10.53	7.48	7.6
MW-4	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.01	11.03	6.98	2.6
MW-4	12/27/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<5.00	NA	18.01	12.53	5.48	1.9/0.8
MW-4	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.01	7.00	11.01	6.5
MW-4	04/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	18.01	8.57	9.44	5.1/5.1
MW-4	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.01	12.05	5.96	3.0
MW-4	10/17/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	18.01	11.96	6.05	5.5/1.2

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-4	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.01	12.33	5.68	2.1
MW-4	04/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<0.50	18.01	9.96	8.05	5.3/3.8
MW-4	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.01	11.35	6.66	4.5
MW-4	12/06/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	18.01	10.99	7.02	10.23/6.5
MW-4	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.01	8.80	9.21	8.8
MW-4	**04/17/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**18.01**	**9.75**	**8.26**	**7.0/5.1**
MW-5	12/03/2001	NA	NA	NA	NA	NA	NA	NA	18.47	11.86	6.61	NA
MW-5	12/06/2001	31,000	3,000	2,000	1,100	3,000	NA	<50	18.47	11.40	7.07	3.1/3.2
MW-5	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.47	9.24	9.23	0.9
MW-5	**04/17/2002**	**33,000**	**3,800**	**2,400**	**1,300**	**4,400**	**NA**	**<200**	**18.47**	**10.35**	**8.12**	**5.3/3.8**
MW-6	12/03/2001	NA	NA	NA	NA	NA	NA	NA	18.84	12.19	6.65	NA
MW-6	12/06/2001	76	5.7	3.8	1.4	7.0	NA	<5.0	18.84	11.70	7.14	6.3/6.1
MW-6	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.84	9.57	9.27	8.7
MW-6	**04/17/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**18.84**	**10.73**	**8.11**	**9.8/9.1**
MW-7	12/03/2001	NA	NA	NA	NA	NA	NA	NA	19.20	12.66	6.54	NA
MW-7	12/06/2001	1,800	390	<2.0	6.2	<2.0	NA	<20	19.20	12.20	7.00	3.9/3.8
MW-7	01/23/2002	NA	NA	NA	NA	NA	NA	NA	19.20	10.00	9.20	9.4
MW-7	**04/17/2002**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**19.20**	**11.21**	**7.99**	**8.8/7.3**
VW/MW-2	03/25/1996	13,000	900	920	180	1,500	<250	NA	18.30	9.04	9.26	NA
VW/MW-2	06/21/1996	27,000	4,100	1,100	1,400	3,200	700	NA	18.30	10.48	7.82	NA
VW/MW-2	09/26/1996	27,000	5,300	1,900	980	2,200	<500	NA	18.30	12.52	5.78	NA
VW/MW-2 (D)	09/26/1996	29,000	5,800	2,200	1,100	2,500	<250	NA	18.30	12.52	5.78	NA
VW/MW-2	12/19/1996	50,000	6,200	5,100	1,700	5,600	590	NA	18.30	12.42	5.88	NA

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VW/MW-2	03/25/1997	210	5.6	<0.50	0.52	<0.50	14	NA	18.30	9.83	8.47	2.0
VW/MW-2 (D)	03/25/1997	250	1.7	0.58	0.51	<0.50	4.7	NA	18.30	9.83	8.47	2.0
VW/MW-2	06/26/1997	NA	NA	NA	NA	NA	NA	NA	18.30	12.43	5.87	NA
VW/MW-2	09/26/1997	NA	NA	NA	NA	NA	NA	NA	18.30	12.98	5.32	0.9
VW/MW-2	12/05/1997	NA	NA	NA	NA	NA	NA	NA	18.30	12.20	6.10	0.4
VW/MW-2	02/19/1998	<50	1.5	<0.50	<0.50	0.71	<2.5	NA	18.30	5.83	12.47	3.6
VW/MW-2	06/08/1998	NA	NA	NA	NA	NA	NA	NA	18.30	5.80	12.50	1.0
VW/MW-2	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.30	11.72	6.58	4.8
VW/MW-2	12/28/1998	NA	NA	NA	NA	NA	NA	NA	18.30	11.69	6.61	2.7
VW/MW-2	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.30	8.75	9.55	2.8
VW/MW-2	06/30/1999	NA	NA	NA	NA	NA	NA	NA	18.30	10.72	7.58	4.7
VW/MW-2	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.30	12.24	6.06	4.9
VW/MW-2	12/27/1999	13,500	1,330	1,310	490	1,400	<250	NA	18.30	13.92	4.38	2.1/1.9
VW/MW-2	01/21/2000	12,100	2,200	1,080	429	1,120	<250	NA	18.30	13.26	5.04	2.8
VW/MW-2	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.28	7.87	10.41	3.7
VW/MW-2	04/17/2000	NA	NA	NA	NA	NA	NA	NA	18.28	9.65	8.63	3.7/4.1
VW/MW-2	04/18/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	18.28	NA	NA	NA
VW/MW-2	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.28	12.75	5.53	6.2
VW/MW-2	10/17/2000	4,070	763	589	214	501	<50.0	NA	18.28	12.21	6.07	0.8/0.7
VW/MW-2	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.28	12.51	5.77	0.7
VW/MW-2	04/27/2001	80	5.7	<0.50	2.7	4.9	NA	<0.50	18.28	10.21	8.07	2.3/2.8
VW/MW-2	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.28	11.60	6.68	0.6
VW/MW-2	12/06/2001	160	1.7	1.0	1.8	4.6	NA	<5.0	18.28	11.15	7.13	3.7/2.3
VW/MW-2	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.28	9.07	9.21	0.5
VW/MW-2	**04/17/2002**	**<50**	**2.1**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**18.28**	**10.11**	**8.17**	**4.9/4.4**
VW/MW-4	03/25/1996	83,000	6,500	7,000	2,000	11,000	<250	NA	18.14	8.45	9.69	NA

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VW/MW-4 (D)	03/25/1996	84,000	6,400	7,000	2,100	12,000	<250	NA	18.14	8.45	9.69	NA
VW/MW-4	06/21/1996	110,000	14,000	15,000	3,700	17,000	1,700	NA	18.14	10.38	7.76	NA
VW/MW-4 (D)	06/21/1996	100,000	12,000	12,000	2,900	13,000	<1,000	NA	18.14	10.38	7.76	NA
VW/MW-4	09/26/1996	52,000	13,000	2,700	2,100	3,200	<500	NA	18.14	12.43	5.71	NA
VW/MW-4	12/19/1996	75,000	15,000	6,600	3,000	7,600	<1,250	NA	18.14	11.87	6.27	NA
VW/MW-4	03/25/1997	56,000	4,700	1,500	2,500	6,300	580	NA	18.14	9.60	8.54	2.4
VW/MW-4	06/26/1997	NA	NA	NA	NA	NA	NA	NA	18.14	12.36	5.78	NA
VW/MW-4	09/26/1997	NA	NA	NA	NA	NA	NA	NA	18.14	12.82	5.32	0.4
VW/MW-4	12/05/1997	NA	NA	NA	NA	NA	NA	NA	18.14	12.15	5.99	0.3
VW/MW-4	02/19/1998	4,100	320	40	44	520	<50	NA	18.14	5.85	12.29	1.8
VW/MW-4 (D)	02/19/98	4,300	340	44	47	540	<50	NA	18.14	5.85	12.29	1.8
VW/MW-4	06/08/1998	NA	NA	NA	NA	NA	NA	NA	18.14	5.87	12.27	1.8
VW/MW-4	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.14	10.96	7.18	2.5
VW/MW-4	12/28/1998	NA	NA	NA	NA	NA	NA	NA	18.14	11.28	6.86	0.9
VW/MW-4	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.14	8.45	9.69	1.9
VW/MW-4	06/30/1999	NA	NA	NA	NA	NA	NA	NA	18.14	9.70	8.44	3.6
VW/MW-4	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.14	11.78	6.36	2.6
VW/MW-4	12/27/1999	33,900	3,740	2,000	1,130	5,090	587	NA	18.14	12.63	5.51	0.4/0.2
VW/MW-4	01/21/200	13,900	1,560	568	227	1,990	<500	21.0a	18.14	13.07	5.07	1.0
VW/MW-4	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.13	7.82	10.31	0.9
VW/MW-4	04/17/2000	NA	NA	NA	NA	NA	NA	NA	18.13	9.18	8.95	1.4/1.9
VW/MW-4	04/18/2000	757	103	8.59	30.8	84.2	<25.0	NA	18.13	NA	NA	NA
VW/MW-4	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.13	12.18	5.95	5.0
VW/MW-4	10/17/2000	8,360	2,060	391	468	1,170	147	NA	18.13	12.03	6.10	0.7/0.8
VW/MW-4	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.13	12.42	5.71	0.9
VW/MW-4	04/27/2001	7,100	2,300	50	460	250	NA	<10	18.13	10.13	8.00	1.0/1.4
VW/MW-4	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.13	11.42	6.71	1.2

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VW/MW-4	12/06/2001	7,700	750	90	300	350	NA	<25	18.13	11.02	7.11	2.5/1.9
VW/MW-4	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.13	8.89	9.24	0.4
VW/MW-4	**04/17/2002**	**4,800**	**760**	**27**	**240**	**150**	**NA**	**<25**	**18.13**	**9.89**	**8.24**	**4.7/5.1**
VW/AS-1	03/25/1996	NA	NA	NA	NA	NA	NA	NA	18.60	8.98	9.62	NA
VW/AS-1	06/21/1996	NA	NA	NA	NA	NA	NA	NA	18.60	10.95	7.65	NA
VW/AS-1	09/26/1996	NA	NA	NA	NA	NA	NA	NA	18.60	12.98	5.62	NA
VW/AS-1	12/19/1996	NA	NA	NA	NA	NA	NA	NA	18.60	12.67	5.93	NA
VW/AS-1	03/25/1997	NA	NA	NA	NA	NA	NA	NA	18.60	10.12	8.48	NA
VW/AS-1	06/26/1997	NA	NA	NA	NA	NA	NA	NA	18.60	12.34	6.26	NA
VW/AS-1	09/26/1997	NA	NA	NA	NA	NA	NA	NA	18.60	13.40	5.20	NA
VW/AS-1	12/05/1997	NA	NA	NA	NA	NA	NA	NA	18.60	11.96	6.64	5.2
VW/AS-1	02/19/1998	NA	NA	NA	NA	NA	NA	NA	18.60	6.22	12.38	1.3
VW/AS-1	06/08/1998	NA	NA	NA	NA	NA	NA	NA	18.60	6.20	12.40	1.0
VW/AS-1	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.60	11.59	7.01	1.6
VW/AS-1	12/28/1998	NA	NA	NA	NA	NA	NA	NA	18.60	11.74	6.86	1.3
VW/AS-1	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.60	9.20	9.40	1.3
VW/AS-1	06/30/1999	NA	NA	NA	NA	NA	NA	NA	18.60	11.08	7.52	2.1
VW/AS-1	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.60	11.94	6.66	1.9
VW/AS-1	12/27/1999	8,940	2,000	95.7	1,200	570	606	NA	18.60	11.01	7.59	1.6/1.8
VW/AS-1	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.59	7.35	11.24	NA
VW/AS-1	04/17/2000	NA	NA	NA	NA	NA	NA	NA	18.59	9.08	9.51	1.9/2.0
VW/AS-1	04/18/2000	20,800	6,550	1,220	2,270	1,720	<250	NA	18.59	NA	NA	NA
VW/AS-1	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.59	11.98	6.61	2.1
VW/AS-1	10/17/2000	38,400	7,240	5,980	1,960	5,730	534	72.4	18.59	12.62	5.97	2.5/1.0
VW/AS-1	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.59	13.03	5.56	1.9
VW/AS-1	04/27/2001	34,000	8,000	2,100	2,500	2,000	NA	<25	18.59	10.71	7.88	2.9/2.1

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VW/AS-1	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.59	12.03	6.56	2.0
VW/AS-1	12/06/2001	6,000	990	35	820	59	NA	<25	18.59	11.63	6.96	1.2/0.8
VW/AS-1	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.59	9.34	9.25	0.9
VW/AS-1	**04/17/2002**	**12,000**	**2,900**	**57**	**1,400**	**98**	**NA**	**<200**	**18.59**	**10.41**	**8.18**	**3.3/2.9**
VW/AS-3	03/25/1996	NA	NA	NA	NA	NA	NA	NA	18.17	8.50	9.67	NA
VW/AS-3	06/21/1996	NA	NA	NA	NA	NA	NA	NA	18.17	10.42	7.75	NA
VW/AS-3	09/26/1996	NA	NA	NA	NA	NA	NA	NA	18.17	12.49	5.68	NA
VW/AS-3	12/19/1996	NA	NA	NA	NA	NA	NA	NA	18.17	12.28	5.89	NA
VW/AS-3	03/25/1997	NA	NA	NA	NA	NA	NA	NA	18.17	9.61	8.56	NA
VW/AS-3	06/26/1997	NA	NA	NA	NA	NA	NA	NA	18.17	11.80	6.37	NA
VW/AS-3	09/26/1997	NA	NA	NA	NA	NA	NA	NA	18.17	12.89	5.28	NA
VW/AS-3	12/05/1997	NA	NA	NA	NA	NA	NA	NA	18.17	11.38	6.79	1.8
VW/AS-3	02/19/1998	NA	NA	NA	NA	NA	NA	NA	18.17	6.24	11.93	1.3
VW/AS-3	06/08/1998	NA	NA	NA	NA	NA	NA	NA	18.17	6.25	11.92	1.2
VW/AS-3	08/25/1998	NA	NA	NA	NA	NA	NA	NA	18.17	11.43	6.74	1.3
VW/AS-3	12/28/1998	NA	NA	NA	NA	NA	NA	NA	18.17	11.63	6.54	1.7
VW/AS-3	03/26/1999	NA	NA	NA	NA	NA	NA	NA	18.17	8.92	9.25	1.5
VW/AS-3	06/30/1999	NA	NA	NA	NA	NA	NA	NA	18.17	10.71	7.46	2.5
VW/AS-3	09/30/1999	NA	NA	NA	NA	NA	NA	NA	18.17	11.78	6.39	1.5
VW/AS-3	12/27/1999	488	47.9	2.60	16.9	8.50	35.4	NA	18.17	12.57	5.60	1.5/2.1
VW/AS-3	03/07/2000	NA	NA	NA	NA	NA	NA	NA	18.14	4.82	13.32	NA
VW/AS-3	04/17/2000	NA	NA	NA	NA	NA	NA	NA	18.14	8.69	9.45	2.0/2.4
VW/AS-3	04/18/2000	3,110	871	<5.00	141	56.8	78.2	NA	18.14	NA	NA	NA
VW/AS-3	09/21/2000	NA	NA	NA	NA	NA	NA	NA	18.14	11.65	6.49	2.5
VW/AS-3	10/17/2000	7,730	2,700	<50.0	542	344	<250	42.1	18.14	12.13	6.01	1.6/1.0
VW/AS-3	01/09/2001	NA	NA	NA	NA	NA	NA	NA	18.14	12.51	5.63	2.2

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VW/AS-3	04/27/2001	14,000	3,900	62	690	560	NA	46	18.14	10.20	7.94	2.8/1.6
VW/AS-3	07/03/2001	NA	NA	NA	NA	NA	NA	NA	18.14	11.55	6.59	2.6
VW/AS-3	12/06/2001	5,000	1,200	19	380	320	NA	<50	18.14	11.10	7.04	0.9/1.1
VW/AS-3	01/23/2002	NA	NA	NA	NA	NA	NA	NA	18.14	8.93	9.21	1.1
VW/AS-3	**04/17/2002**	**17,000**	**5,000**	**<25**	**1,100**	**390**	**NA**	**<250**	**18.14**	**10.00**	**8.14**	**3.2/3.2**

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to April 27, 2001, analyzed by EPA Method 8015.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to April 27, 2001, analyzed by EPA Method 8020.
MTBE = Methyl-tertiary-butyl ether
TOC = Top of Casing Elevation
GW = Groundwater
DO = Dissolved Oxygen
NA = Not applicable
ug/L = Parts per billion
ppm = Parts per million
msl = Mean sea level
ft = Feet
<n = Below detection limit
D = Duplicate sample
n/n = Pre-purge/Post-purge DO Readings

Notes:
a = Sample was analyzed outside of the EPA recommended holding time.
Site surveyed November 1, 2001 by Virgil Chavez Land Surveying of Vallejo, California.

ATTACHMENT G

In-situ Oxidation Estimates
Hydrocarbon Mass Remaining
Chemical Quantities

Hydrogen Peroxide Treatment: Estimated Chemical Injection Quantities

The site, 30 ft. X 30 ft. is 900 square feet. Average treatment zone is 12 ft. to 28 ft. = 16 ft.

Assuming 16 ft of treatment (top of water is at 12 ft.; ranging from 9-13 feet below ground surface)

Assumptions: 900 sq. ft. X 16 ft. = 14,400 cubic feet X 10% effective porosity = 1,620 cubic feet of treatment spaces (voids), where impacted water resides).

1,440 cubic feet X 7.5 gallons/cubic foot = 10,800 gallons in the pore spaces.

On a 4 foot spacing (assume 4' X 4 ' treatment "box"; 900/16 = 56 ports. Typical spacing needs to be anywhere from 3 to 10 feet apart. Since hydrogen peroxide reacts very rapidly (1 minute to 20 minutes); the reaction must occur in a short radius away from the injection port, before the peroxide is completely spent. Therefore, 3 to 5 feet are recommended. In this case, with a coarse gravel as part of the lithology, 4 foot spacing seems reasonable. In the field, it will be obvious how quickly the reactions are occurring and how many gallons can be placed in each injection port. Therefore, the information gained in the field will allow FAST-TEK to modify the field injection port layout, as the project proceeds.

56 ports at 200 gallons per port = 11,200 gallons injected; which is close to the 10,800 gallons in the pore spaces at 10% effective porosity.

It is uncertain whether each port will take 100 gallons or 200 gallons. The injection pressures will be anywhere from 200 to 600 psi. We do not want to push the contaminants, but rather we want to have the treatment chemicals contact with the target chemicals and react. FAST-TEK estimates that it will take about 0.75 to 1 hour per injection port. This time includes drilling the borehole, as well as injecting 100 to 200 gallons at 5 to 10 gallons per minute. The range in pumping rates and injection pressures reflect subsurface variations in lithology, porosity and permeability.

In the laboratory, hydrocarbons (free product) requires 4 lbs. of hydrogen peroxide at 100% for destruction of 1 lb. of hydrocarbon. It is estimated that 10 gallons of hydrogen peroxide at 15% peroxide will destroy about 1 gallon of free product in the laboratory. In the field, it is estimated to be 5 to 50 times that amount of hydrogen peroxide that might be needed to oxidize 1 gallon of free product.

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Date: August 13, 2002

Estimated Hydrocarbon Mass Remaining in Groundwater- Former Shell Service Station, Incident #97088250
1230 14th Street, Oakland, CA

Analyte	Analyte Concentration in Groundwater (ppb)	Estimated Total Volume (ft^3)	Estimated Pore Volume (ft^3)	Estimated Pore Volume (gallons)	Estimated Mass Remaining (pounds)
Benzene	15,000	522	172	1,288	0.2
Benzene	10,000	24,705	8,153	60,991	5.1
Benzene	1,000	25,547	8,431	63,069	0.5
				Total Benzene:	**5.8**
TPHg	260,000	1,150	380	2,839	6.2
TPHg	200,000	2,645	873	6,530	10.9
TPHg	100,000	27,646	9,123	68,250	56.9
TPHg	10,000	12,817	4,229	31,641	2.6
				Total TPHg:	**76.6**

Estimated mass calculated from the formula: volume extracted (gal) x concentration (mg/L) x ($g/10^6 ug$) x (1 pound/453.6g) x (3.785 L/ 1 gal)

Assumptions:

1. Porosity = 0.33
2. Concentration assumed to extend from 11 fbg to 22.5 fbg, homogeneously