EQUILON
ENTERPRISES LLC
Shell & Texaco Working Together

MAY 0 8 2002

May 6, 2002

ENV HEALTH

Alameda County ~~Water District~~
~~43885 South Grimmer Boulevard~~
Fremont, ~~California 94538~~

R0487

RE: EQUILON ENTERPRISES LLC / Equiva Services LLC dba SHELL OIL PRODUCTS US

Dear Sir or Madam:

The Shell purchase of Texaco's interest in Equilon Enterprises LLC and Equiva Services LLC has been approved by government authorities and was completed in early February.

Please be advised that effective March 1, 2002, Equilon Enterprises LLC and Equiva Services LLC will begin doing business as (DBA) "Shell Oil Products US." Since Equilon Enterprises LLC will remain the owner and/or the responsible Party of remediation activities at 105 5th Street, Oakland, California, no changes are needed or requested for permits.

If you have any questions please contact Ms. Karen Petryna at 559.645.9306.

Yours truly,

for

Karen Petryna
Sr. Environmental Engineer

CAMBRIA

RO487

May 6, 2002

Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California, 94502-6577

Re: **Subsurface Investigation Report/ Second Quarter 2002 Monitoring Report/ Groundwater Extraction Evaluation Report**
Shell-branded Service Station
105 5th Street
Oakland, California
Incident # 98995757
Cambria Project # 244-0472

Dear Mr. Chan:

Cambria Environmental Technology, Inc. (Cambria) is submitting this *Subsurface Investigation Report/ Second Quarter 2002 Monitoring Report/ Groundwater Extraction Evaluation Report* on behalf of Shell Oil Products US (Shell). The investigation was conducted on March 7 and 8, 2002, in accordance with the recommendations presented in the Alameda County Health Care Services Agency (ACHCSA) letter dated January 4, 2002. The purpose of the investigation was to further define the onsite and offsite extent of hydrocarbon and oxygenate-impacted soil and groundwater. Semi-monthly mobile groundwater extraction (GWE) was performed at the site from November 2001 through April 2002, in accordance with the proposals presented in Cambria's July 17, 2001 *Dual-Phase Vacuum Extraction Test Report.* Presented below are summaries of the site background, investigation procedures, investigation results, GWE evaluation, conclusions, and recommendations.

SITE BACKGROUND

Site Location: The site is an active Shell-branded service station located at the western corner of the 5th Street and Oak Street intersection in Oakland, California (Figure 1). The site is surrounded by commercial properties. The service station layout consists of an underground gasoline storage tank (UST) complex, two dispenser islands, and a service station kiosk.

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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1996 Upgrade Activities: During November and December of 1996, Armer/Norman & Associates of Walnut Creek, California (Armer/Norman) removed five gasoline dispensers, two diesel dispensers, associated piping and inactive piping to a former diesel fuel dispenser. Armer/Norman replaced the gasoline and diesel dispensers and associated piping with additional secondary containment. On November 27, 1996, Cambria collected soil samples 5 feet below grade (fbg) beneath the seven dispenser locations and the inactive diesel fuel piping prior to replacement. Sample locations from all past investigations are shown on Figure 2. After receiving analytical results indicating the presence of hydrocarbons, Shell filed an Underground Storage Tank Unauthorized Release Site Report with the ACHCSA.

1998 Upgrade Activities: In February 1998, Paradiso Mechanical of San Leandro, California installed secondary containment on the turbine sumps. Since secondary containment had previously been added to the dispensers, no additional dispenser upgrade activities were performed. Cambria inspected the tank pit on February 26, 1998, and no field indications of hydrocarbons, such as staining or odor, were observed.

1998 Subsurface Investigation: On July 23, 1998, Cambria advanced three borings in the assumed downgradient direction from existing dispensers and two borings in the assumed upgradient direction from the existing dispensers (SB-1 through SB-5). The soil borings were advanced to depths of 11.0 to 12.0 fbg (Figure 2).

1999 Monitoring Well Installations: On May 14, 1999, Cambria installed three groundwater monitoring wells (MW-1, MW-2 and MW-3) to a depth of 25 fbg (Figure 2).

2000 Remedial Activities: Monthly mobile dual-phase vapor extraction (DVE), using wells MW-2 and MW-3, was initiated at the site on April 21, 2000 to remediate methyl tert butyl ether (MTBE) in soil and groundwater. DVE is the process of applying a high vacuum through an airtight well seal to simultaneously extract soil vapors from the vadose zone and enhance groundwater extraction from the saturated zone. A stinger is lowered into the well to draw down the water table and increase the unsaturated area available for soil vapor extraction. Mobile DVE utilitizes a vacuum truck as an extraction device, moisture separator, and temporary storage tank. Extracted soil vapors pass through the vacuum truck tank, and are abated through carbon filtration. Abatement of the extracted soil vapors through carbon filtration was determined to be inadequate. Therefore, mobile DVE was discontinued after October 26, 2000.

2001 Offsite Subsurface Investigation: On February 12, 2001, Cambria advanced three soil borings (SB-6 and SB-7) and converted one into a groundwater monitoring well (MW-4) constructed to a depth of 25 fbg (Figure 2).

2001 DVE Pilot Test: On March 20, 2001, Cambria performed individual short-term DVE testing of MW-2 and MW-3. For each test, groundwater and vapor samples were collected for laboratory analysis. Vapor extraction data from the DVE pilot test indicated vapor-phase petroleum hydrocarbon recovery is possible, although expected recovery rates are relatively low. GWE data from the DVE pilot test suggested liquid-phase petroleum hydrocarbon recovery is feasible. Based on the test data and conclusions presented, Cambria recommended conducting semi-monthly GWE from backfill well T-1 for a period of 6 months by means of a vacuum truck. Details of the DVE pilot test are presented in Cambria's July 17, 2001 *Dual-Phase Vacuum Extraction Pilot Test Report*.

Groundwater Depth and Flow Direction: Since groundwater monitoring was initiated in November of 1999, depth to groundwater has ranged from 4.5 to 6.5 fbg. The groundwater gradient is generally to the southeast. Groundwater elevation contours from the second quarter 2002 and a rose diagram showing historic groundwater flow directions are presented on Figure 2.

INVESTIGATION PROCEDURES

Cambria advanced five Geoprobe® borings offsite (SB-8 through SB-12) and installed one groundwater monitoring well onsite (MW-5) to further define the extent of hydrocarbon-impacted soil and groundwater. Monitoring well and soil boring locations are shown on Figure 2. Specific procedures for this investigation are summarized below. Analytical results for soil are summarized in Table 1, and certified laboratory reports are presented as Attachment A. Analytical results for grab groundwater samples are summarized in Table 2, and certified laboratory reports are presented as Attachment A. The Blaine Tech Services (Blaine) *Second Quarter 2002 Groundwater Monitoring Report* containing well development data and analytical results for groundwater is presented as Attachment B. This quarterly sampling was performed on April 12, 2002 to allow for completion and development of all new wells. Soil boring logs and well completion details, and Cambria's Standard Field Procedures for Monitoring Well Installation are presented as Attachments C and D, respectively. A copy of the well permit is included as Attachment E. The Department of Water Resources (DWR) well completion report is included as Attachment F. Well head elevation and latitude/ longitude survey reports are presented as Attachment G.

Drilling Dates: March 7 and 8, 2002.

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

Personnel Present: Shannon Couch, Senior Staff Geologist, of Cambria

Permits: Alameda County Public Works Agency Permits #s W02-0069 and W02-0070(Attachment E).

Drilling Method: Ten-inch hollow-stem auger and Geoprobe® hydraulic push.

Soil Sampling Method: Soil samples were collected from each of the borings for lithologic logging purposes to the total depth of the borings. Only a capillary fringe soil sample and a grab groundwater sample were collected from each of the borings to be submitted for chemical analysis. Soil samples from MW-5 were collected every 5-feet and submitted for chemical analysis.

Number of Wells: One (MW-5) (Figure 2).

Number of Borings: Five (SB-8 through SB-12) (Figure 2)

Well Depth: 24.0 fbg (MW-5) (Attachment C).

Boring Depths: 14.0 fbg, 16.0 fbg, 18.0 fbg, 20 fbg, and 22 fbg for soil borings SB-8 through SB-12 respectively (Attachment C).

Sediment Lithology: Soil encountered in the borings consisted primarily of interbedded sand and silty sand to the total explored depth of 24 fbg. (Attachment C).

Groundwater Depths: Groundwater depths in the all site wells as measured by Blaine on April 12, 2002 ranged from 5.14 fbg (MW-2) to 7.49 fbg (MW-4).

Well Materials: Well MW-5 was constructed using 4-inch diameter Schedule 40 PVC casing with 0.010-inch slotted screen. The wells were completed with a filter pack of Monterey #2/12 sand from the bottom of the boring to approximately 1.5 feet above the top of the screened casing. Approximately 1.5 feet of bentonite was placed above the filter pack, and Portland neat cement was poured above the bentonite to 1 fbg. A flush-mounted, traffic-rated well box was installed in concrete to protect the well and complete the well to grade (Attachments C and D).

Screened Interval: Well MW-5 was screened from 4.0 fbg to 24.0 fbg. (Attachment C).

Well Elevation Survey The top of casing elevations and latitude/longitude horizontal locations for new and existing wells were surveyed by Virgil Chavez Land Surveying of Vallejo, California on April 18, 2002. (Attachment G).

Well Development and Sampling: Blaine developed all new wells on March 29, 2002 using surge-block agitation and pump evacuation. Blaine gauged and sampled all site wells on April 12, 2002 (Attachment B).

Chemical Analyses: Soil and groundwater samples from the borings were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, total xylenes (BTEX), and MTBE by EPA Method 8260B.

Groundwater in all wells was sampled by Blaine for TPHg, BTEX, and MTBE by EPA Method 8260B (Attachment B).

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 and well were transported by Manley & Sons Trucking, Inc. of Sacramento, California to Forward Landfill in Manteca, California for disposal on April 11, 2002 (Attachment H).

INVESTIGATION RESULTS

Chemical Results in Soil: TPHg was only detected in soil samples MW-5-5.0 and MW-5-15.0 at concentrations of 300 parts per million (ppm) and 9.6 ppm, respectively. Benzene was only detected in soil sample MW-5-5.0 at a concentration of 0.039 ppm. MTBE was only detected in sample SB-9-7.5 at a concentration of 5.4 ppm. Soil analytical results are summarized in Table 1, and the certified laboratory analytical reports are presented in Attachment A.

Chemical Results in Groundwater: TPHg was only detected in samples SB-8-H2O and SB-11-H2O at concentrations of 170 parts per billion (ppb) and 110 ppb, respectively. MTBE was only detected in samples SB-10-H2O through SB-12-H2O at concentrations of 1,400 ppb, 7,900 ppb, 710 ppb, and 31 ppb, respectively. Benzene was not detected in groundwater samples from SB-8 through SB-12 (Table 2). TPHg and benzene were detected in groundwater samples collected from MW-5 during groundwater sampling by Blaine on April 12, 2002 at concentrations of 25 ppb and 1,600 ppb, respectively. MTBE was detected in well MW-5 at a concentration of 570 ppb. Complete groundwater analytical results for soil borings SB-8 through SB-12 are summarized in Table 2, and the certified laboratory analytical reports are included in Attachment A. Benzene and MTBE concentrations are shown on Figure 2.

GWE EVALUATION

Beginning on November 26, 2001, Shell initiated semi-monthly mobile GWE at the site using tank backfill well T-1. Mobile GWE consists of lowering dedicated stingers into selected monitoring wells and extracting fluids using a vacuum truck. The volume of extracted fluid is recorded and used to calculate the quantity of aqueous-phase hydrocarbons and oxygenates removed from the subsurface. Water volumes produced from the well ranged from 5,200 to 2,700 gallons per event. After 11 events, a total of 44,184 gallons of water was pumped from tank backfill well T-1 by GWE. Individual GWE-event details and cumulative groundwater-extraction data are presented in Table 3. A table with this information was presented with quarterly monitoring reports submitted during the GWE program.

Calculation of Mass Removed: Cambria estimates that 4.09 gallons of total purgeable petroleum hydrocarbons (TPPH), 0.09 gallons of benzene, and 37.06 gallons of MTBE were removed from the subsurface by GWE. These mass calculations are approximate and are based on the volume of groundwater extracted per event and the concentration in wells T-1 and MW-3 closest in time to the respective extraction events. Table 3 presents GWE event-specific data and cumulative mass-removal data over time for TPPH, benzene and MTBE. The mass and volume removal formulas are also presented on the table.

GWE Effectiveness: Data from the last three groundwater-monitoring events using the groundwater extraction well and wells adjacent to the probable source area (UST complex) indicate decreasing MTBE concentration trends (Attachment B). Before the start of GWE from T-1, a concentration of 180,000 micrograms per liter (µg/L) MTBE was detected in well MW-3, located closest to the UST complex. At the end of six months of semi-monthly GWE from T-1, a concentration of 78,000 µg/L MTBE was detected in MW-3, and a concentration of 57,000 µg/L

MTBE was detected in T-1. Figure 3 presents the effect of GWE on MTBE concentrations on wells MW-3 and T-1 over time.

CONCLUSIONS

Past investigations and groundwater monitoring at the site have revealed impacted soil and groundwater in the vicinity of the product dispenser islands and the UST complex. As stated in Cambria's June 7, 2001 *Offsite Subsurface Investigation* report, impacted groundwater from the site may have infiltrated sewer and storm drain trenches in Oak Street and flowed preferentially within the more permeable backfill. The purpose of this investigation was to further define the lateral extent of hydrocarbons and oxygenates in groundwater downgradient of the product dispenser islands and upgradient of the sewer and storm drain trenches in Oak Street. Cambria's March 2002 investigation identified 1,600 ppb TPHg, 25 ppb benzene and 570 ppb MTBE in groundwater samples collected from MW-5, located downgradient of product dispenser islands. The concentrations of MTBE detected in MW-5 are significantly less than those detected in wells MW-2, T-1 and MW-3, all located near the UST complex.

This investigation also identified TPHg, benzene, and MTBE in soil and groundwater samples collected upgradient and adjacent to the underground conduits in Oak Street (Tables 1 and 2, Figure 2). TPHg, MTBE and benzene in groundwater are defined on the southeast side of the Oak Street conduits by the non-detection of analytes in well MW-4, and benzene is defined upgradient of the Oak Street conduits by non-detection in soil borings SB-8 through SB-12. Given the presence of MTBE upgradient of the Oak Street conduits, the absence of analytes downgradient of the Oak Street conduits, and detections in groundwater samples collected from borings SB-11 and SB-12, it appears that the underground conduits in Oak Street may be serving as preferential pathways for MTBE. The significant lateral attenuation of MTBE demonstrated in the five soil borings placed upgradient, adjacent to, and downgradient of potential site source areas suggests that MTBE migration along the conduits is not extensive.

Cambria estimated the mass transport of MTBE within the Oak Street utility corridors using conservative assumptions about the utility construction and location. For this assessment, we have used a protocol established by the San Francisco Regional Water Quality Control Board (SFRWQCB) for a similar situation at the San Francisco International Airport (SFIA) (staff comments dated July 16, 1998, signed by Mr. Steven Morse, Chief of the Toxics Cleanup Division, addressed to the SFIA Consolidated Tenant Group).

This simplified procedure assumes that utility backfill materials are more permeable than the native soils surrounding the utilities and that the higher-permeability backfill intercepts and then redirects hydrocarbon-impacted groundwater downgradient to a discharge point. The calculations assume that the entire width of the plume is intercepted by the utility and that the impacted groundwater plume will be diluted by recharged clean groundwater in increments equal to the distance it travels within the utility corridor. The protocol developed for SFIA assumes that the dilution attenuation factor (DAF) is directly proportional to the distance between the downgradient edge of the plume and the discharge point, in increments of the plume width. In other words, if the plume is 100-ft wide across the intercepting trench and the distance to the discharge point is 1,000 ft, the DAF is equal to 10.

The recent average MTBE concentration in groundwater from soil borings SB-8 through SB-12 (located at the southeast side of the site) is 2,009 ppb, and the plume width at this point is conservatively estimated at 255 ft. Using this plume characteristic and the distance to the Inner Oakland Harbor of 1,800 ft, the DAF prior to discharge at the Inner Oakland Harbor is 7, producing a final discharge concentration of 287 ppb. In August 2000, the SFRWQCB published interim final risk-based screening levels (RBSLs) for application in the San Francisco Bay region. The recommended RBSL for MTBE to protect aquatic life is 8,000 ppb. Therefore, impact to Inner Oakland Harbor by MTBE is not considered to be of immediate concern.

1810 ≈ 7
255

2000 ≈ 300
7

Only three quarters of groundwater monitoring have provided GWE effectiveness data. Given the decrease in MTBE concentrations in wells MW-3 and T-1, semi-monthly mobile GWE appears to be effective. However, given the low permeability of local sediments and the presence of underground utility conduits in Oak Street, capture of offsite MTBE in groundwater is not considered practical.

RECOMMENDATIONS

Upgradient definition is provided by non-detection of MTBE and benzene in groundwater at well MW-1 and soil boring SB-8. Downgradient definition is provided by non-detection of MTBE and benzene in groundwater at MW-4 and SB-6 and SB-7, and significant lateral attenuation from SB-9 to SB-12. At this time, Cambria recommends installing a monitoring well in the vicinity of soil boring SB-12 to monitor potential migration to the nearest sensitive receptor. This monitoring well will be constructed similarly to offsite monitoring well MW-4.

Concentrations of MTBE and benzene in groundwater at well MW-5 are significantly lower than those at T-1, MW-3 and MW-2, suggesting that the dispensers are not acting as a source of MTBE in groundwater. Well MW-5 will be added to the quarterly groundwater monitoring

program to establish analyte concentrations and groundwater flow direction trends. Since GWE has lowered MTBE concentrations in wells around the UST complex, Cambria also recommends an additional six months of semi-monthly mobile GWE from T-1. After another six months of GWE, Cambria will re-evaluate GWE effectiveness in decreasing MTBE concentrations adjacent to the UST complex.

CLOSING

Please call James Loetterle at (510) 420-3336 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Shannon Couch
Senior Staff Geologist

Diane M. Lundquist
Principal Engineer

Figures:
1 - Vicinity/Well Survey Map
2 - Groundwater Elevation Contour Map
3 - MTBE Concentrations and Mass Removal

Tables:
1 - Soil Analytical Data
2 - Grab Groundwater Analytical Data
3 - Groundwater Extraction- Mass Removal Data

Attachments:
A- Laboratory Analytical Reports for Soil Samples and Grab Groundwater Samples
B - Blaine Tech Services *Second Quarter 2002 Groundwater Monitoring Report*
C - Soil Boring Logs and Well Completion Details
D - Standard Field Procedures for Monitoring Well Installation
E - Well Permits
F - DWR Well Completion Reports
G - Well Elevation Survey Results
H - Disposal Confirmation

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

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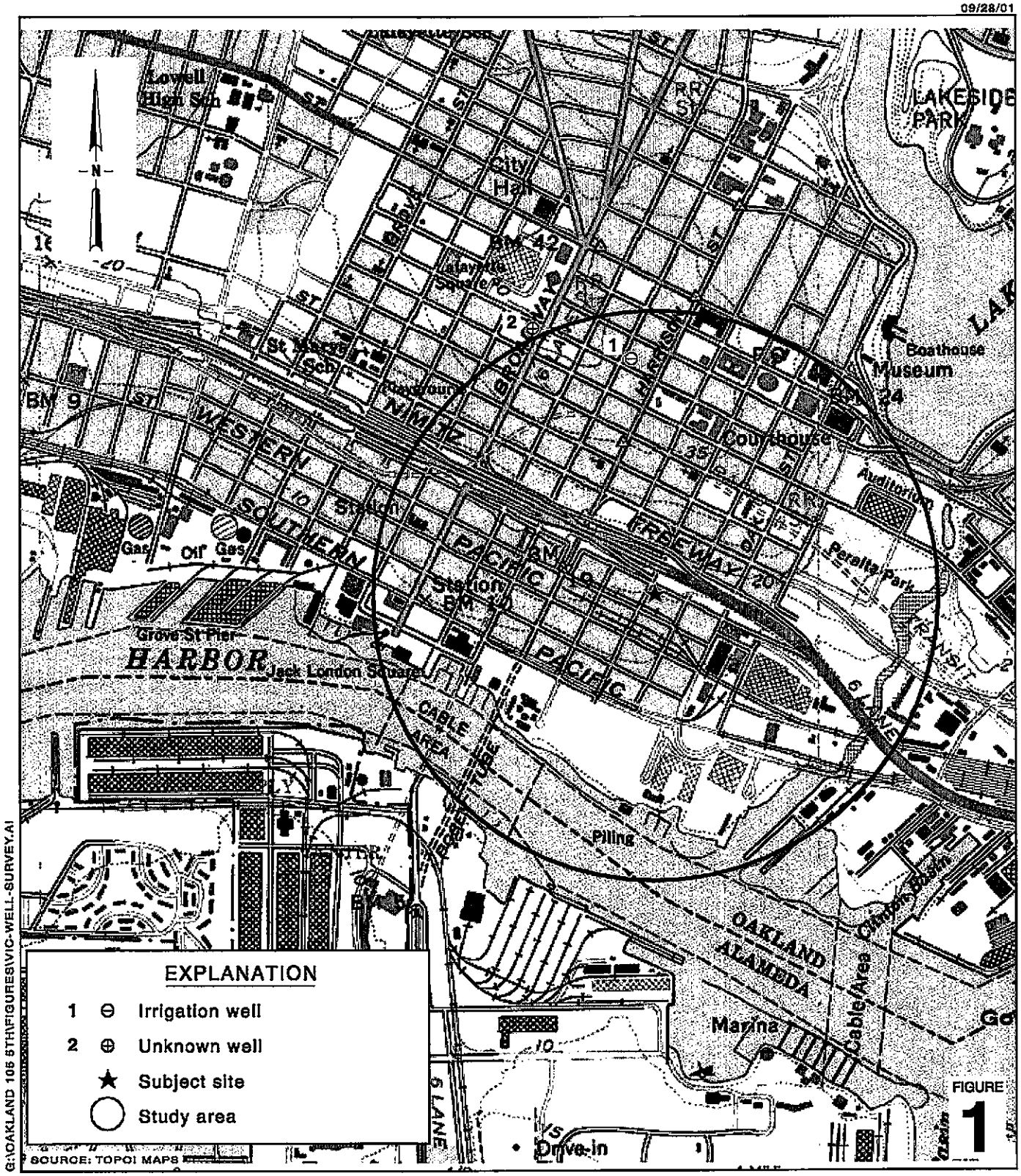
09/28/01



G:\OAKLAND 105 5TH\FIGURES\VIC-WELL-SURVEY.AI

FIGURE 1

Shell-branded Service Station
105 Fifth Street
Oakland, California
Incident# 98995757

CAMBRIA

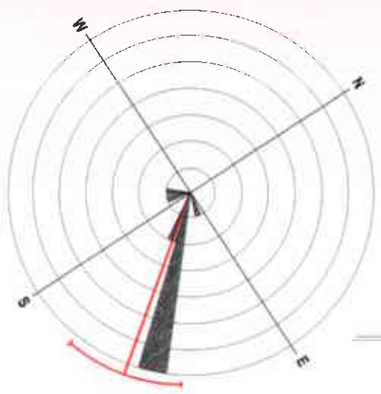
Vicinity / Well Survey Map

(1/2 Mile Radius)

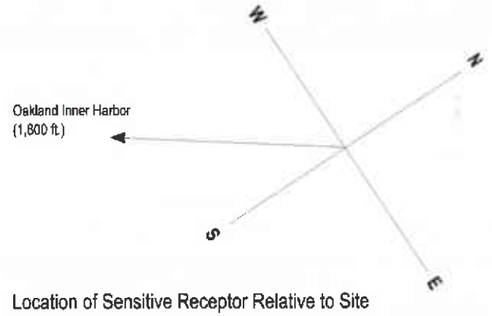
06/06/02

Groundwater Elevation Contour Map

April 12, 2002



Groundwater Flow Direction
(07/23/99 to 04/12/02)



Location of Sensitive Receptor Relative to Site
(Oakland Inner Harbor - 1,800 ft. S 36° W)

EXPLANATION

- Proposed monitoring well location
- MW-1 — Monitoring well location
- T-1 — Tank backfill well location
- SB-1 — Soil boring location (7/98)
- SB-6 — Soil boring location (2/01)
- SB-8 — Soil boring location (3/02)
- D-1 — Soil sample location
- NS — Not surveyed
- Groundwater flow direction
- xx.xx — Groundwater elevation contour, in feet above mean sea level (msl), approximately located, dashed where inferred
- Well / ELEV / Benzene / MTBE — Well designation; Groundwater elevation, in feet above msl; Benzene and MTBE concentrations are in parts per billion and are analyzed by EPA Method 8260.
- SB-8 / Benzene / MTBE — Soil boring designation (sampled 3/7-8/02); Grab groundwater benzene and MTBE concentrations are in parts per billion and are analyzed EPA Method 8260.
- Storm drain line
- Sanitary sewer line
- Flow direction
- MH — Manhole
- Storm drain inlet
- fbg — Feet below grade

All utility locations are approximate. Utility information was reported by Cambria during June 2001.

CAMBRIA

Shell-branded Service Station
105 Fifth Street
Oakland, California
Incident #9899577

FIGURE
2

G:\OAKLAND\ 105 ST-5\FIGURES\2QM02.MP DWG

G:\OAKLAND1\SFIFTH\FIGURES\2QM02-MTBE.AI

Dual-phase Vapor/Total Fluids Extraction Effect on MTBE Concentration

Wells MW-3 and T-1

Date	Depth to Water in feet (MW-3)
07/23/1999	6.43
11/01/1999	6.48
01/05/2000	6.35
04/07/2000	5.91
07/26/2000	5.83
10/28/2000	17.51
01/30/2001	11.43
04/17/2001	6.57
07/09/2001	6.12
10/23/2001	6.25
01/07/2002	5.05

EXPLANATION

- Dual-phase Vapor Extraction Cumulative MTBE mass removed
- Groundwater Extraction Cumulative MTBE mass removed
- MTBE Concentration (MW-3)
- MTBE Concentration (T-1)
- Log. (MTBE Concentration MW-3 and T-1)

FIGURE 3

MTBE Concentrations and Mass Removal

Wells MW-3 and T-1

Shell-branded Service Station

105 5th Street

Oakland, California

Incident #98995757

CAMBRIA

05/01/02

Table 1. Soil Analytical Data - Shell-branded Service Station - 105 5th Street, Oakland, California - Incident # 98995757

Sample ID	Depth (feet)	TPHg	MTBE (8020)	Benzene	Toluene	Ethylbenzene	Total Xylenes
		← (Concentrations reported in mg/Kg) →					
March 7 and 8, 2002 Samples:							
SB-8-8.0	8.0	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
SB-9-7.5	7.5	**5.0**	**5.4**	<0.05	<0.05	<0.05	<0.05
SB-10-8.0	8.0	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
SB-11-7.5	7.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
SB-12-8.0	8.0	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
MW-5-5.0	5.0	**300**	<0.5	**0.039**	**0.039**	**2.9**	**6.0**
MW-5-10.0	10.0	<1.0	<0.5	<0.005	<0.005	**0.0096**	**0.016**
MW-5-15.0	15.0	**9.6**	<0.5	<0.005	<0.005	**0.15**	**0.39**
MW-5-20.0	20.0	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005
MW-5-23.5	23.5	<1.0	<0.5	<0.005	<0.005	<0.005	<0.005

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8260B.
MTBE = Methyl tert-butyl ether by EPA Method 8260B.
Benzene, ethylbenzene, toluene, total xylenes by EPA Method 8260B.
mg/L = micrograms per Liter.
<n = Below detection limit of n mg/L

Table 2. Grab Groundwater Analytical Data - Shell-branded Service Station - 105 5th Street, Oakland, California - Incident # 98995757

Sample ID	Depth (feet)	TPHg	MTBE (8260)	Benzene	Toluene	Ethylbenzene	Total Xylenes
		← (Concentrations reported in micrograms per liter) →					
March 7 and 8, 2002 Samples:							
SB-8-H2O	14.0	**170**	<5.0	<0.50	<0.50	<0.50	<0.50
SB-9-H2O	16.0	<500	**1,400**	<5.0	<5.0	<5.0	<5.0
SB-10-H2O	18.0	<500	**7,900**	<5.0	<5.0	<5.0	<5.0
SB-11-H2O	20.0	**110**	**710**	<0.50	<0.50	<0.50	<0.50
SB-12-H2O	22.0	<50	**31**	<0.50	<0.50	<0.50	<0.50

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B.
MTBE = Methyl tertiary butyl ether, analyzed by EPA Method 8260B
Benzene, ethylbenzene, toluene, total xylenes analyzed by EPA Method 8260B.
<x = Below detection limit of x micrograms per liter.

Table 3: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995757, 105 Fifth Street, Oakland, California

					TPPH			Benzene			MTBE		
Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
04/21/00	MW-2	150	150	04/07/00	4,940	0.00618	0.00618	659	0.00082	0.00082	41,800	0.05232	0.05232
04/28/00	MW-2	100	250	04/07/00	4,940	0.00412	0.01031	659	0.00055	0.00137	41,800	0.03488	0.08720
05/05/00	MW-2	310	560	04/07/00	4,940	0.01278	0.02308	659	0.00170	0.00308	41,800	0.10813	0.19532
05/12/00	MW-2	350	910	04/07/00	4,940	0.01443	0.03751	659	0.00192	0.00500	41,800	0.12208	0.31740
06/02/00	MW-2	257	1,167	04/07/00	4,940	0.01059	0.04811	659	0.00141	0.00642	41,800	0.08964	0.40704
07/06/00	MW-2	334	1,501	04/07/00	4,940	0.01377	0.06187	659	0.00184	0.00825	41,800	0.11650	0.52354
09/12/00	MW-2	312	1,813	07/26/00	5,010	0.01304	0.07492	409	0.00106	0.00932	54,300	0.14137	0.66491
10/26/00	MW-2	56	1,869	07/26/00	5,010	0.00234	0.07726	409	0.00019	0.00951	54,300	0.02537	0.69028
04/21/00	MW-3	100	100	04/07/00	<1,000	0.00042	0.00042	853	0.00071	0.00071	283,000	0.23615	0.23615
04/28/00	MW-3	100	200	04/07/00	<1,000	0.00042	0.00083	853	0.00071	0.00142	283,000	0.23615	0.47229
05/05/00	MW-3	50	250	04/07/00	<1,000	0.00021	0.00104	853	0.00036	0.00178	283,000	0.11807	0.59036
05/12/00	MW-3	150	400	04/07/00	<1,000	0.00063	0.00167	853	0.00107	0.00285	283,000	0.35422	0.94458
06/02/00	MW-3	550	950	04/07/00	<1,000	0.00229	0.00396	853	0.00391	0.00676	283,000	1.29880	2.24338
07/06/00	MW-3	528	1,478	04/07/00	<1,000	0.00220	0.00617	853	0.00376	0.01052	283,000	1.24685	3.49023
08/16/00	MW-3	849	2,327	07/26/00	<20,000	0.07084	0.07701	<200	0.00071	0.01123	**320,000**	2.26699	5.75722
09/12/00	MW-3	188	2,515	07/26/00	<20,000	0.01569	0.09270	<200	0.00016	0.01139	**320,000**	0.50200	6.25922
10/26/00	MW-3	156	2,671	07/26/00	<20,000	0.01302	0.10571	<200	0.00013	0.01152	**320,000**	0.41655	6.67577
11/26/01	T-1*	2,700	2,700	10/23/01	**<50,000**	0.56324	0.56324	**<250**	0.00282	0.00282	**180,000**	4.05536	4.05536
12/10/01	T-1*	2,750	5,450	10/23/01	**<50,000**	0.57367	1.13692	**<250**	0.00287	0.00568	**180,000**	4.13046	8.18581
12/26/01	T-1*	2,800	8,250	10/23/01	**<50,000**	0.58410	1.72102	**<250**	0.00292	0.00861	**180,000**	4.20556	12.39137
01/09/01	T-1	5,184	13,434	01/07/02	**<20,000**	0.43257	2.15359	**310**	0.01341	0.02201	**92,000**	3.97966	16.37103
01/23/02	T-1	4,250	17,684	01/07/02	**<20,000**	0.35464	2.50823	**310**	0.01099	0.03301	**92,000**	3.26264	19.63367
02/06/02	T-1	4,000	21,684	01/07/02	**<20,000**	0.33377	2.84200	**310**	0.01035	0.04336	**92,000**	3.07072	22.70439
02/20/02	T-1	3,000	24,684	01/07/02	**<20,000**	0.25033	3.09233	**310**	0.00776	0.05112	**92,000**	2.30304	25.00743
03/06/02	T-1	4,500	29,184	01/07/02	**<20,000**	0.37550	3.46783	**310**	0.01164	0.06276	**92,000**	3.45456	28.46200
03/20/02	T-1	5,000	34,184	01/07/02	**<20,000**	0.41722	3.88505	**310**	0.01293	0.07569	**92,000**	3.83840	32.30040

Table 3: Groundwater Extraction - Mass Removal Data - Shell-branded Service Station, Incident #98995757, 105 Fifth Street, Oakland, California

Date Purged	Well ID	Volume Pumped (gal)	Cumulative Volume Pumped (gal)	Date Sampled	TPPH Concentration (ppb)	TPPH Removed (pounds)	TPPH Removed To Date (pounds)	Benzene Concentration (ppb)	Benzene Removed (pounds)	Benzene Removed To Date (pounds)	MTBE Concentration (ppb)	MTBE Removed (pounds)	MTBE Removed To Date (pounds)
					TPPH			**Benzene**			**MTBE**		
04/03/02	T-1	5,200	39,384	04/12/02	**<5,000**	0.10848	3.99353	**230**	0.00998	0.08567	**57,000**	2.47327	34.77367
04/17/02	T-1	4,800	44,184	04/12/02	**<5,000**	0.10013	4.09366	**230**	0.00921	0.09488	**57,000**	2.28302	37.05669
Total Gallons Extracted:			**48,724**		**Total Pounds Removed:**		**4.27663**			**0.11591**			**44.42273**
					Total Gallons Removed:		**0.70109**			**0.01588**			**7.16496**

Abbreviations & Notes:

TPPH = Total purgeable hydrocarbons as gasoline
MtBE = Methyl tert-butyl ether
ppb = Parts per billion
gal = Gallon
* = Concentrations for tank backfill well T-1 estimated from nearest monitoring well MW-3.
Mass removed based on the formula: volume extracted (gal) x Concentration (µg/L) x (g/10^6µg) x (pound/453.6g) x (3.785 L/gal)
Volume removal data based on the formula: density (in gms/cc) x 9.339 (ccxlbs/gmsxgals)
TPPH, benzene analyzed by EPA Method 8015/8020
TPPH, benzene MTBE analyzed by EPA Method 8260 are in bold font, all other results analyzed by EPA Method 8020.
Concentrations based on most recent groundwater monitoring results
Groundwater extracted by vacuum trucks provided by Phillips Services. Water disposed of at a Martinez Refinery.
If concentration is less than the laboratory detection limit, one half of the detection limit concentration is used in the mass removal calculation.

ATTACHMENT A

Laboratory Analytical Reports for Soil Samples
And
Grab Groundwater Samples

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Shannon Couch
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

Subject : 5 Water Samples and 10 Soil Samples
Project Name : 105 5th Street, Oakland, Ca
Project Number : 244-0472
P.O. Number : 98995757

Dear Ms. Couch,

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

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Subject : 5 Water Samples and 10 Soil Samples
Project Name : 105 5th Street, Oakland, Ca
Project Number : 244-0472
P.O. Number : 98995757

Case Narrative

Matrix Spike/Matrix Spike Duplicate Results associated with samples SB-12-H2O, SB-9-H2O, SB-10-H2O for the analyte Methyl-t-butyl ether were affected by the analyte concentrations already present in the un-spiked sample. Hydrocarbons reported as TPH as Gasoline do not exhibit a typical Gasoline chromatographic pattern for samples SB-8-H2O and SB-11-H2O.

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **SB-8-8.0** Matrix : Soil Lab Number : 25286-01
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	96.8		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	3/19/2002

Sample : **SB-9-7.5** Matrix : Soil Lab Number : 25286-02
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.050**	0.050	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.050**	0.050	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**< 0.050**	0.050	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**< 0.050**	0.050	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**5.4**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 5.0**	5.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	91.6		% Recovery	EPA 8260B	3/19/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **SB-10-8.0** Matrix : Soil Lab Number : 25286-03
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	96.9		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	102		% Recovery	EPA 8260B	3/19/2002

Sample : **SB-11-7.5** Matrix : Soil Lab Number : 25286-04
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/18/2002
Toluene - d8 (Surr)	97.9		% Recovery	EPA 8260B	3/18/2002
4-Bromofluorobenzene (Surr)	92.2		% Recovery	EPA 8260B	3/18/2002

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **SB-12-8.0** Matrix : Soil Lab Number : 25286-05
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/18/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/18/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/18/2002
Toluene - d8 (Surr)	92.5		% Recovery	EPA 8260B	3/18/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	3/18/2002

Sample : **SB-8-H2O** Matrix : Water Lab Number : 25286-06
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
TPH as Gasoline	**170**	50	ug/L	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	98.9		% Recovery	EPA 8260B	3/20/2002

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **SB-9-H2O** Matrix : Water Lab Number : 25286-07
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Toluene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Ethylbenzene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Total Xylenes	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**1400**	50	ug/L	EPA 8260B	3/20/2002
TPH as Gasoline	**< 500**	500	ug/L	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	94.7		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	103		% Recovery	EPA 8260B	3/20/2002

Sample : **SB-10-H2O** Matrix : Water Lab Number : 25286-08
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Toluene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Ethylbenzene	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Total Xylenes	**< 5.0**	5.0	ug/L	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**7900**	250	ug/L	EPA 8260B	3/21/2002
TPH as Gasoline	**< 500**	500	ug/L	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	99.7		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	95.2		% Recovery	EPA 8260B	3/20/2002

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **SB-11-H2O** Matrix : Water Lab Number : 25286-09
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**710**	10	ug/L	EPA 8260B	3/20/2002
TPH as Gasoline	**110**	50	ug/L	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	104		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	98.4		% Recovery	EPA 8260B	3/20/2002

Sample : **SB-12-H2O** Matrix : Water Lab Number : 25286-10
Sample Date :3/7/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**31**	5.0	ug/L	EPA 8260B	3/20/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	95.1		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	3/20/2002

Approved By: Joel Kiff

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KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **MW-5-5.0** Matrix : Soil Lab Number : 25286-11
Sample Date :3/8/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.039**	0.025	mg/Kg	EPA 8260B	3/20/2002
Toluene	**0.039**	0.025	mg/Kg	EPA 8260B	3/20/2002
Ethylbenzene	**2.9**	0.025	mg/Kg	EPA 8260B	3/20/2002
Total Xylenes	**6.0**	0.025	mg/Kg	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/20/2002
TPH as Gasoline	**300**	5.0	mg/Kg	EPA 8260B	3/21/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	101		% Recovery	EPA 8260B	3/20/2002

Sample : **MW-5-10.0** Matrix : Soil Lab Number : 25286-12
Sample Date :3/8/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**0.0096**	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**0.016**	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	95.4		% Recovery	EPA 8260B	3/19/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **MW-5-15.0** Matrix : Soil Lab Number : 25286-13
Sample Date :3/8/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/20/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/20/2002
Ethylbenzene	**0.15**	0.005	mg/Kg	EPA 8260B	3/20/2002
Total Xylenes	**0.39**	0.005	mg/Kg	EPA 8260B	3/20/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/20/2002
TPH as Gasoline	**9.6**	1.0	mg/Kg	EPA 8260B	3/20/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	3/20/2002
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	3/20/2002

Sample : **MW-5-20.0** Matrix : Soil Lab Number : 25286-14
Sample Date :3/8/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	95.7		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	3/19/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland, Ca**
Project Number : **244-0472**

Sample : **MW-5-23.5** Matrix : Soil Lab Number : 25286-15
Sample Date :3/8/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	**< 0.005**	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	**< 0.5**	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	98.4		% Recovery	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	93.1		% Recovery	EPA 8260B	3/19/2002

Approved By: Joel Kiff

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

Report Number : 25286

Date : 3/23/2002

QC Report : Method Blank Data

Project Name : **105 5th Street, Oakland, Ca**

Project Number : **244-0472**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.005	0.005	mg/Kg	EPA 8260B	3/19/2002
Toluene	< 0.005	0.005	mg/Kg	EPA 8260B	3/19/2002
Ethylbenzene	< 0.005	0.005	mg/Kg	EPA 8260B	3/19/2002
Total Xylenes	< 0.005	0.005	mg/Kg	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	< 0.5	0.5	mg/Kg	EPA 8260B	3/19/2002
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	97.2		%	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	103		%	EPA 8260B	3/19/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	3/19/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	96.3		%	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	104		%	EPA 8260B	3/19/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	3/19/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	3/19/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	3/19/2002
Toluene - d8 (Surr)	104		%	EPA 8260B	3/19/2002
4-Bromofluorobenzene (Surr)	99.3		%	EPA 8260B	3/19/2002

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 : 25286

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 3/23/2002

Project Name : **105 5th Street, Oakland,**

Project Number : **244-0472**

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	25239-66	<0.0050	0.0396	0.0388	0.0349	0.0294	mg/Kg	EPA 8260B	3/19/02	88.0	75.8	15.0	70-130	25
Toluene	25239-66	<0.0050	0.0396	0.0388	0.0350	0.0295	mg/Kg	EPA 8260B	3/19/02	88.3	76.1	14.9	70-130	25
Tert-Butanol	25239-66	<0.0050	0.198	0.194	0.163	0.162	mg/Kg	EPA 8260B	3/19/02	82.3	83.2	1.11	70-130	25
Methyl-t-Butyl Ether	25239-66	<0.0050	0.0396	0.0388	0.0309	0.0310	mg/Kg	EPA 8260B	3/19/02	78.1	79.8	2.09	70-130	25
Benzene	25172-09	<0.50	133	132	105	105	ug/L	EPA 8260B	3/19/02	78.6	79.2	0.760	70-130	25
Toluene	25172-09	<0.50	133	132	107	108	ug/L	EPA 8260B	3/19/02	80.3	81.7	1.73	70-130	25
Tert-Butanol	25172-09	19	667	662	606	590	ug/L	EPA 8260B	3/19/02	88.1	86.3	2.08	70-130	25
Methyl-t-Butyl Ether	25172-09	1000	133	132	884	869	ug/L	EPA 8260B	3/19/02	0.00	0.00	0.00	70-130	25
Benzene	25379-01	<0.50	40.0	40.0	43.1	41.4	ug/L	EPA 8260B	3/20/02	108	104	3.90	70-130	25
Toluene	25379-01	<0.50	40.0	40.0	44.3	43.2	ug/L	EPA 8260B	3/20/02	111	108	2.65	70-130	25
Tert-Butanol	25379-01	<5.0	200	200	199	209	ug/L	EPA 8260B	3/20/02	99.7	104	4.68	70-130	25
Methyl-t-Butyl Ether	25379-01	<0.50	40.0	40.0	41.1	39.8	ug/L	EPA 8260B	3/20/02	103	99.4	3.22	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

QC Report : Laboratory Control Sample (LCS)

Report Number : 25286
Date : 3/23/2002

Project Name : **105 5th Street, Oakland,**
Project Number : **244-0472**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	0.0399	mg/Kg	EPA 8260B	3/19/02	77.9	70-130
Toluene	0.0399	mg/Kg	EPA 8260B	3/19/02	79.5	70-130
Tert-Butanol	0.200	mg/Kg	EPA 8260B	3/19/02	81.7	70-130
Methyl-t-Butyl Ether	0.0399	mg/Kg	EPA 8260B	3/19/02	76.5	70-130
Benzene	20.0	ug/L	EPA 8260B	3/19/02	74.9	70-130
Toluene	20.0	ug/L	EPA 8260B	3/19/02	76.8	70-130
Tert-Butanol	100	ug/L	EPA 8260B	3/19/02	86.7	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	3/19/02	74.1	70-130
Benzene	40.0	ug/L	EPA 8260B	3/19/02	103	70-130
Toluene	40.0	ug/L	EPA 8260B	3/19/02	109	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/19/02	101	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/19/02	86.1	70-130

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

Approved By: Joel Kiff

KIFF ANALYTICAL

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

EQUIVA Services LLC Chain Of Custody Record

Equiva Project Manager to be invoiced:
☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON
Karen Petryna
25286

INCIDENT NUMBER (S&E ONLY): 98995757
SAP or CRMT NUMBER (TS/CRMT):

DATE: March 8
PAGE: 1 of 3

SAMPLING COMPANY: Cambria Environmental Technology, Inc
LOG CODE: CETO
SITE ADDRESS (Street and City): 105 5th Street, Oakland, Ca
GLOBAL ID NO.: T0600102116
ADDRESS: 1144 65th Street, Suite B
EDF DELIVERABLE TO (Responsible Party): Shell oakland edf@cambria-env.com
PHONE NO.:
E-MAIL:
CONSULTANT PROJECT NO.: 244-047
PROJECT CONTACT (Hardcopy or PDF Report to): Shannon Couch
SAMPLER NAME(S) (Print): Shannon Couch
LAB USE ONLY
TELEPHONE: 510.420.3339
FAX: 510.420.9170
E-MAIL: scouch@cambria-env.com

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 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°
	SB-8-8.0	3/7		SOIL	1	X	X	X																		-01
	SB-9-7.5																									-02
	SB-10-8.0																									-03
	SB-11-7.5																									-04
	SB-12-8.0																									-05
	SB-8-H2O			H2O																						-06
	SB-9-H2O																									-07
	SB-10-H2O																									-08
	SB-11-H2O																									-09
	SB-12-H2O																									-10

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

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	to secure location		
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) John Cutts/Kiff Analytical	Date: 031202	Time: 1053

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

10/16/00 Revision

Q&Q Graphic (714) 899-9702

KIFF ANALYTICAL

720 Olive Drive, Suite D

Davis, CA 95616

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

EQUIVA Services LLC Chain Of Custody Record

Equiva Project Manager to be invoiced:

☑ SCIENCE & ENGINEERING ☐ TECHNICAL SERVICES ☐ CRMT HOUSTON

Karen Petryna

2-52-86

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

SAP or CRMT NUMBER (TS/CRMT):

DATE: March 9

PAGE: 2 of 3

SAMPLING COMPANY: Cambria Environmental Technology, Inc

LOG CODE: CETO

SITE ADDRESS (Street and City): 105 5th Street, Oakland, Ca

GLOBAL ID NO.: T0600102116

ADDRESS: 1144 65th Street, Suite B

EDF DELIVERABLE TO (Responsible Party or Designee): Shelloklandedf@cambria

PHONE NO.:

E-MAIL:

CONSULTANT PROJECT NO.: 244-047

PROJECT CONTACT (Hardcopy or PDF Report to): SHANNAN COUCH

SAMPLER NAME(S) (Print): Shannon Couch

LAB USE ONLY

TELEPHONE: 510.420.3339

FAX: 510.420.9170

E-MAIL: scouch@cambria-env.com

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 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°
	MW-5-5.0	3/8		SOIL	1	X	X	X																		-4
	MW-5-10.0	↓		↓	↓	↓	↓	↓																		-12
	MW-5-15.0																									-13
	MW-5-20.0																									-14
	MW-5-23.5	↓		↓	↓	↓	↓	↓																		-15

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

Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
	to secure location		
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature) John Cuadra / Kiff Analytical	Date: 031202	Time: 1053

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

10/16/00 Revision

Q&Q Graphic (714) 898-9702

ATTACHMENT B

Blaine Tech Services Second Quarter 2002
Groundwater Monitoring Report

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 24, 2002

Karen Petryna
Equiva Services LLC
P.O. Box 7869
Burbank, CA 91510-7869

Second Quarter 2002 Groundwater Monitoring at
Shell-branded Service Station
105 5th Street
Oakland, CA

Monitoring performed on March 29 and April 12, 2002

Groundwater Monitoring Report **020412-SO-1**

This report covers the routine monitoring of groundwater wells at this Shell-branded 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, Suite C
Oakland, CA 94608-2411

WELL CONCENTRATIONS
Shell-branded Service Station
105 5th Street
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (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	07/20/1999	NA	NA	NA	NA	NA	NA	NA	NA	12.22	17.56	-5.34	NA
MW-1	07/23/1999	<50.0	NA	<0.500	<0.500	<0.500	<0.500	<2.50	<2.00	12.22	6.45	5.77	NA
MW-1	11/01/1999	100	NA	15.6	3.12	4.04	12.6	6.69	NA	12.22	6.59	5.63	0.5/0.7
MW-1	01/05/2000	<50.0	<20.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	6.38	5.84	1.2/1.4
MW-1	04/07/2000	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	5.83	6.39	1.6/2.4
MW-1	07/26/2000	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	6.10	6.12	1.1/1.4
MW-1	10/28/2000	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	14.08	-1.86	2.2/2.7
MW-1	01/30/2001	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	10.71	1.51	1.2/1.6
MW-1	04/17/2001	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	12.22	6.61	5.61	2.4/4.4
MW-1	07/09/2001	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	12.22	6.31	5.91	1.4/3.4
MW-1	10/23/2001	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	12.22	6.24	5.98	2.6/4.1
MW-1	01/07/2002	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	12.22	5.25	6.97	NA
MW-1	**04/12/2002**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**14.92**	**5.54**	**9.38**	**NA**
MW-2	07/20/1999	NA	NA	NA	NA	NA	NA	NA	NA	10.87	18.24	-7.37	NA
MW-2	07/23/1999	13,800	NA	1,790	<100	<100	682	29,900	29,400	10.87	5.98	4.89	NA
MW-2	11/01/1999	2,420	NA	316	10.8	119	44.2	17,000	NA	10.87	6.03	4.84	0.5/0.3
MW-2	01/05/2000	2,120a	687	301a	<5.00a	116a	84.4a	14,700	NA	10.87	5.90	4.97	2.1/2.6
MW-2	04/07/2000	4,940b	1,300	659b	<25.0b	214b	314b	41,800b	NA	10.87	5.37	5.50	0.4/0.2
MW-2	07/26/2000	5,010	1,520	409	<50.0	302	307	54,300	NA	10.87	5.81	5.06	2.1/2.2
MW-2	10/28/2000	1,720	412	82.2	<10.0	46.0	102	9,800	NA	10.87	14.59	-3.72	0.7/0.7
MW-2	01/30/2001	1,640	574	14.7	<5.00	40.1	58.1	3,670	NA	10.87	10.31	0.56	1.8/2.0
MW-2	04/17/2001	598	179	21.8	<2.00	16.9	10.8	5,630	NA	10.87	6.08	4.79	1.5/2.6
MW-2	07/09/2001	<1,000	<500	19	<10	33	15	NA	6,200	10.87	5.70	5.17	1.1/2.0
MW-2	10/23/2001	<5,000	<500	50	<25	92	<25	NA	13,000	10.87	5.72	5.15	2.0/3.2
MW-2	01/07/2002	<1,000	<200	<10	<10	<10	<10	NA	4,500	10.87	4.87	6.00	NA

WELL CONCENTRATIONS
Shell-branded Service Station
105 5th Street
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (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	**04/12/2002**	**<1,000**	**<100**	**14**	**<10**	**27**	**13**	**NA**	**6,200**	**13.57**	**5.14**	**8.43**	**NA**
MW-3	07/20/1999	NA	NA	NA	NA	NA	NA	NA	NA	11.27	19.07	-7.80	NA
MW-3	07/23/1999	128	NA	<0.500	<0.500	<0.500	<0.500	404,000	324,000	11.27	6.43	4.84	NA
MW-3	11/01/1999	<1,000	NA	<10.0	<10.0	<10.0	<10.0	169,000	224,000	11.27	6.48	4.79	0.5/0.3
MW-3	01/05/2000	137	322	<1.00	<1.00	<1.00	<1.00	165,000	219,000	11.27	6.35	4.92	2.4/2.2
MW-3	04/07/2000	<1,000	264	853	<10.0	<10.0	<10.0	283,000	196,000a	11.27	5.91	5.36	04/0.2
MW-3	07/26/2000	<20,000	585	<200	<200	<200	<200	437,000	320,000	11.27	5.83	5.44	1.9/1.7
MW-3	10/28/2000	<12,500	441	<125	<125	<125	<125	266,000	308,000	11.27	17.51	-6.24	1.1/1.4
MW-3	01/30/2001	<5,000	555	<50.0	<50.0	<50.0	<50.0	248,000	167,000a	11.27	11.43	-0.16	2.0/2.2
MW-3	04/17/2001	<5,000	347	<50.0	<50.0	<50.0	<50.0	134,000	133,000	11.27	6.57	4.70	1.3/1.2
MW-3	07/09/2001	<20,000	250	<200	<200	<200	<200	NA	170,000	11.27	6.12	5.15	1.2/1.9
MW-3	10/23/2001	<50,000	260	<250	<250	<250	<250	NA	180,000	11.27	6.25	5.02	2.2/1.6
MW-3	01/07/2002	<10,000	160	<100	<100	<100	<100	NA	96,000	11.27	5.29	5.98	NA
MW-3	**04/12/2002**	**<10,000**	**87**	**<100**	**<100**	**<100**	**<100**	**NA**	**78,000**	**13.96**	**5.43**	**8.53**	**NA**
MW-4	03/23/2001	NA	NA	NA	NA	NA	NA	NA	NA	9.50	8.21	1.29	NA
MW-4	04/17/2001	<50.0	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	9.50	5.08	4.42	2.4/2.6
MW-4	07/09/2001	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.50	4.64	4.86	2.0/1.5
MW-4	10/23/2001	<50	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.50	7.90	1.60	2.8/1.8
MW-4	01/07/2002	<50	64	<0.50	<0.50	<0.50	<0.50	NA	<5.0	9.50	5.00	4.50	NA
MW-4	**04/12/2002**	**<50**	**<50**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**NA**	**<5.0**	**12.17**	**7.49**	**4.68**	**NA**
MW-5	**03/29/2002**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**14.78**	**5.86**	**8.92**	**NA**
MW-5	**04/12/2002**	**1,600**	**<50**	**25**	**3.5**	**44**	**110**	**NA**	**570**	**14.78**	**5.96**	**8.82**	**NA**
T-1	01/07/2002	<20,000	2,600	310	<200	<200	<200	NA	92,000	NA	4.86	NA	NA

WELL CONCENTRATIONS
Shell-branded Service Station
105 5th Street
Oakland, CA

Well ID	Date	TPPH (ug/L)	TEPH (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)
T-1	04/12/2002	<5,000	1,000	230	<50	<50	<50	NA	57,000	NA	5.05	NA	NA

Abbreviations:
TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to July 9, 2001 analyzed by EPA Method 8015.
TEPH = Total petroleum hydrocarbons as diesel by modified EPA Method 8015.
BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to July 9, 2001 analyzed by EPA Method 8020.
MTBE = Methyl-tertiary-butyl ether
TOC = Top of Casing Elevation
GW = Groundwater
DO = Dissolved Oxygen
ug/L = Parts per billion
ppm = Parts per million
msl = Mean sea level
ft = Feet
<n = Below detection limit
NA = Not applicable
n/n = Pre-purge/Post-purge

Notes:
a = Sample was analyzed outside of the EPA recommended holding time.
b = Result was generated out of hold time.
Top of casing for well MW-4 provided by Cambria Environmental Technology, Inc.
Wells MW-1 through MW-5 surveyed April 12, 2002, by Virgil Chavez Land Surveying of Vallejo, California.

KIFF ANALYTICAL LLC

Report Number : 25935
Date : 4/19/2002

Leon Gearhart
Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112-1105

Subject : 6 Water Samples
Project Name : 105 5th Street, Oakland
Project Number : 020412-SO-1
P.O. Number : 98995757

Dear Mr. Gearhart,

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

KIFF ANALYTICAL LLC

Report Number : 25935
Date : 4/19/2002

Subject : 6 Water Samples
Project Name : 105 5th Street, Oakland
Project Number : 020412-SO-1
P.O. Number : 98995757

Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for sample MW-2.

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25935
Date : 4/19/2002

Project Name : **105 5th Street, Oakland**
Project Number : **020412-SO-1**

Sample : **MW-1** Matrix : Water Lab Number : 25935-01
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	4/16/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	4/16/2002
Toluene - d8 (Surr)	99.8		% Recovery	EPA 8260B	4/16/2002
4-Bromofluorobenzene (Surr)	96.4		% Recovery	EPA 8260B	4/16/2002
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	4/18/2002

Sample : **MW-2** Matrix : Water Lab Number : 25935-02
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**14**	10	ug/L	EPA 8260B	4/17/2002
Toluene	**< 10**	10	ug/L	EPA 8260B	4/17/2002
Ethylbenzene	**27**	10	ug/L	EPA 8260B	4/17/2002
Total Xylenes	**13**	10	ug/L	EPA 8260B	4/17/2002
Methyl-t-butyl ether (MTBE)	**6200**	100	ug/L	EPA 8260B	4/17/2002
TPH as Gasoline	**< 1000**	1000	ug/L	EPA 8260B	4/17/2002
Toluene - d8 (Surr)	97.4		% Recovery	EPA 8260B	4/17/2002
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	4/17/2002
TPH as Diesel	**< 100**	100	ug/L	M EPA 8015	4/18/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25935
Date : 4/19/2002

Project Name : **105 5th Street, Oakland**
Project Number : **020412-SO-1**

Sample : **MW-3** Matrix : Water Lab Number : 25935-03
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 100**	100	ug/L	EPA 8260B	4/17/2002
Toluene	**< 100**	100	ug/L	EPA 8260B	4/17/2002
Ethylbenzene	**< 100**	100	ug/L	EPA 8260B	4/17/2002
Total Xylenes	**< 100**	100	ug/L	EPA 8260B	4/17/2002
Methyl-t-butyl ether (MTBE)	**78000**	2000	ug/L	EPA 8260B	4/18/2002
TPH as Gasoline	**< 10000**	10000	ug/L	EPA 8260B	4/17/2002
Toluene - d8 (Surr)	89.7		% Recovery	EPA 8260B	4/17/2002
4-Bromofluorobenzene (Surr)	97.5		% Recovery	EPA 8260B	4/17/2002
TPH as Diesel	**87**	50	ug/L	M EPA 8015	4/19/2002

Sample : **MW-4** Matrix : Water Lab Number : 25935-04
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	4/16/2002
Methyl-t-butyl ether (MTBE)	**< 5.0**	5.0	ug/L	EPA 8260B	4/16/2002
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	4/16/2002
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	4/16/2002
4-Bromofluorobenzene (Surr)	97.7		% Recovery	EPA 8260B	4/16/2002
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	4/18/2002

Approved By: Joel Kiff

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

KIFF ANALYTICAL LLC

Report Number : 25935
Date : 4/19/2002

Project Name : **105 5th Street, Oakland**
Project Number : **020412-SO-1**

Sample : **MW-5** Matrix : Water Lab Number : 25935-05
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**25**	1.0	ug/L	EPA 8260B	4/17/2002
Toluene	**3.5**	1.0	ug/L	EPA 8260B	4/17/2002
Ethylbenzene	**44**	1.0	ug/L	EPA 8260B	4/17/2002
Total Xylenes	**110**	1.0	ug/L	EPA 8260B	4/17/2002
Methyl-t-butyl ether (MTBE)	**570**	10	ug/L	EPA 8260B	4/17/2002
TPH as Gasoline	**1600**	100	ug/L	EPA 8260B	4/17/2002
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	4/17/2002
4-Bromofluorobenzene (Surr)	97.2		% Recovery	EPA 8260B	4/17/2002
TPH as Diesel	**< 50**	50	ug/L	M EPA 8015	4/18/2002

Sample : **T-1** Matrix : Water Lab Number : 25935-06
Sample Date :4/12/2002

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**230**	50	ug/L	EPA 8260B	4/17/2002
Toluene	**< 50**	50	ug/L	EPA 8260B	4/17/2002
Ethylbenzene	**< 50**	50	ug/L	EPA 8260B	4/17/2002
Total Xylenes	**< 50**	50	ug/L	EPA 8260B	4/17/2002
Methyl-t-butyl ether (MTBE)	**57000**	2500	ug/L	EPA 8260B	4/17/2002
TPH as Gasoline	**< 5000**	5000	ug/L	EPA 8260B	4/17/2002
Toluene - d8 (Surr)	99.2		% Recovery	EPA 8260B	4/17/2002
4-Bromofluorobenzene (Surr)	95.3		% Recovery	EPA 8260B	4/17/2002
TPH as Diesel	**1000**	50	ug/L	M EPA 8015	4/18/2002

Approved By: Joel Kiff

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

Report Number : 25935

Date : 4/19/2002

QC Report : Method Blank Data

Project Name : **105 5th Street, Oakland**

Project Number : **020412-SO-1**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	4/17/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	4/18/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	4/18/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	4/18/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	4/18/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	4/18/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	4/18/2002
Toluene - d8 (Surr)	99.9		%	EPA 8260B	4/18/2002
4-Bromofluorobenzene (Surr)	99.2		%	EPA 8260B	4/18/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	4/15/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	4/15/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	4/15/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	4/15/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	4/15/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	4/15/2002
Toluene - d8 (Surr)	99.5		%	EPA 8260B	4/15/2002
4-Bromofluorobenzene (Surr)	96.3		%	EPA 8260B	4/15/2002
Benzene	< 0.50	0.50	ug/L	EPA 8260B	4/16/2002
Toluene	< 0.50	0.50	ug/L	EPA 8260B	4/16/2002
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	4/16/2002
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	4/16/2002
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	4/16/2002
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	4/16/2002
Toluene - d8 (Surr)	100		%	EPA 8260B	4/16/2002
4-Bromofluorobenzene (Surr)	95.0		%	EPA 8260B	4/16/2002

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 : 25935

Date : 4/19/2002

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **105 5th Street, Oakland**

Project Number : **020412-SO-1**

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
TPH as Diesel	Blank	<50	1000	1000	1030	1130	ug/L	M EPA 8015	4/17/02	103	113	9.34	70-130	25
Benzene	25958-04	<0.50	39.9	39.4	36.7	36.6	ug/L	EPA 8260B	4/17/02	91.8	92.8	1.06	70-130	25
Toluene	25958-04	<0.50	39.9	39.4	36.4	35.5	ug/L	EPA 8260B	4/17/02	91.1	89.9	1.32	70-130	25
Tert-Butanol	25958-04	<5.0	200	197	179	171	ug/L	EPA 8260B	4/17/02	89.5	86.9	2.91	70-130	25
Methyl-t-Butyl Ether	25958-04	<0.50	39.9	39.4	35.9	34.5	ug/L	EPA 8260B	4/17/02	89.8	87.4	2.76	70-130	25
Benzene	25927-04	<0.50	40.0	40.0	38.4	38.2	ug/L	EPA 8260B	4/16/02	96.0	95.6	0.391	70-130	25
Toluene	25927-04	<0.50	40.0	40.0	39.7	39.5	ug/L	EPA 8260B	4/16/02	99.3	98.8	0.530	70-130	25
Tert-Butanol	25927-04	65	200	200	280	272	ug/L	EPA 8260B	4/16/02	107	103	4.03	70-130	25
Methyl-t-Butyl Ether	25927-04	<0.50	40.0	40.0	36.8	37.1	ug/L	EPA 8260B	4/16/02	92.0	92.7	0.677	70-130	25
Benzene	25941-02	<0.50	40.0	40.0	39.2	38.8	ug/L	EPA 8260B	4/16/02	97.9	97.0	0.898	70-130	25
Toluene	25941-02	<0.50	40.0	40.0	40.2	40.2	ug/L	EPA 8260B	4/16/02	100	100	0.0747	70-130	25
Tert-Butanol	25941-02	<5.0	200	200	200	200	ug/L	EPA 8260B	4/16/02	100	99.9	0.310	70-130	25
Methyl-t-Butyl Ether	25941-02	0.66	40.0	40.0	38.7	39.0	ug/L	EPA 8260B	4/16/02	95.0	95.8	0.786	70-130	25

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

Report Number : 25935

QC Report : Laboratory Control Sample (LCS)

Date : 4/19/2002

Project Name : **105 5th Street, Oakland**

Project Number : **020412-SO-1**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	20.0	ug/L	EPA 8260B	4/17/02	93.4	70-130
Toluene	20.0	ug/L	EPA 8260B	4/17/02	91.0	70-130
Tert-Butanol	100	ug/L	EPA 8260B	4/17/02	86.1	70-130
Methyl-t-Butyl Ether	20.0	ug/L	EPA 8260B	4/17/02	90.5	70-130
Benzene	40.0	ug/L	EPA 8260B	4/15/02	96.4	70-130
Toluene	40.0	ug/L	EPA 8260B	4/15/02	99.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	4/15/02	99.3	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	4/15/02	101	70-130
Benzene	40.0	ug/L	EPA 8260B	4/16/02	96.1	70-130
Toluene	40.0	ug/L	EPA 8260B	4/16/02	99.2	70-130
Tert-Butanol	200	ug/L	EPA 8260B	4/16/02	98.9	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	4/16/02	99.0	70-130

Approved By: Joel Kiff

KIFF ANALYTICAL, LLC

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

BLAINE
TECH SERVICES

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

WELLHEAD INSPECTION CHECKLIST

Client Equiva

Site Address 105 5th st. Oakland

Technician Dave A.

Date 3/29/02

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

☐ Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected
MW-5	delfin lock			

WELLHEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Equiva Inspection Date 4/12/02

Site Address 105 5th St., Oakland Inspected By O'Bryan

1. Lid on box?	6. Casing secure?	12. Water standing in wellbox?	15. Well cap functional?
2. Lid broken?	7. Casing cut level?	12a. Standing above the top of casing?	16. Can cap be pulled loose?
3. Lid bolts missing?	8. Debris in wellbox?	12b. Standing below the top of casing?	17. Can cap seal out water?
4. Lid bolts stripped?	9. Wellbox is too far above grade?	12c. Water even with the top of casing?	18. Padlock present?
5. Lid seal intact?	10. Wellbox is too far below grade?	13. Well cap present?	19. Padlock functional?
	11. Wellbox is crushed/damaged?	14. Well cap found secure?	

☐ Check box if no deficiencies were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken
MW-11	Broken Cap, No Lock	Replaced w 2" Ex Cap, Installed 9357

Note below all deficiencies that could not be corrected and still need to be corrected.

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected

WELL GAUGING DATA

Project # 020412-SO-1 Date 4/12/02 Client Equiva

Site 105 5th St. Oakland

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	4					5.54	23.60	TOC	
MW-2	4					5.14	23.61		
MW-3	4		Stinger in Well			5.43	24.99		
MW-4	2					7.49	20.07		
MW-5	4					5.96	24.17		
T-1	12					5.05	11.50		

EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SD-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: MW-1	Well Diameter: 2 3 4 6 8 ___
Total Well Depth: 23.60	Depth to Water: 5.54
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; Disposable Bailer; Middleburg; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

11.7 (Gals.) X 3 = 35.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
949	66.1	6.8	892	88	12.5	
950	65.5	6.7	717	104	25	
951	65.9	6.7	751	7200	37.5	

Did well dewater? Yes (No) Gallons actually evacuated: 37.5

Sampling Time: 955 Sampling Date: 4/12/02

Sample I.D.: MW-1 Laboratory: X Kiff Sequoia Other_____

Analyzed for: X TPH-G X BTEX X MTBE X TPH-D Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

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EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SD-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 23.61	Depth to Water: 5.14
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; Disposable Bailer; Middleburg; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

12.0 (Gals.) X 3 = 36.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1017	68.1	6.6	4060	64	12.5	
1018	68.3	6.7	332	49	25	
1019	68.6	6.7	364	112	37.5	

Did well dewater? Yes X No — Gallons actually evacuated: 37.5

Sampling Time: 1023 — Sampling Date: 4/12/02

Sample I.D.: MW-2 — Laboratory: X Kiff Sequoia Other_____

Analyzed for: X TPH-G X BTEX X MTBE X TPH-D Other:

EB I.D. (if applicable): @ Time — Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SD-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: MW-3	Well Diameter: 2 ~~3~~ (4) 6 8 ___
Total Well Depth: 24.99	Depth to Water: 5.43
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; Disposable Bailer; Middleburg; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

12.7 (Gals.) X 3 = 38.1 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1032	65.5	6.6	1081	55	15	
1034	65.9	6.7	959	142	30	
1035	66.1	6.7	915	720	40	

Did well dewater? Yes (No) Gallons actually evacuated: 40

Sampling Time: 1039 Sampling Date: 4/12/02

Sample I.D.: MW-3 Laboratory: X Kiff Sequoia Other_____

Analyzed for: X TPH-G X BTEX X MTBE X TPH-D Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

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EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SO-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 20.07	Depth to Water: 7.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: X Bailer; Disposable Bailer; Middleburg; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

2.0 (Gals.) X 3 = 6.0 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
918	63.8	6.2	1910	>200	2	
920	64.0	6.1	1945	>200	4	
922	65.0	6.1	1958	>200	6	

Did well dewater? Yes (No) Gallons actually evacuated: 6

Sampling Time: 926 Sampling Date: 4/12/02

Sample I.D.: MW-4 Laboratory: X Kiff Sequoia Other_____

Analyzed for: X TPH-G X BTEX X MTBE X TPH-D Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

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EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SD-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: MW-5	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: ~~20.07~~ 24.17	Depth to Water: 7.49
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; Disposable Bailer; Middleburg; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: _____

10.8 (Gals.) X 3 = 32.4 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1003	68.1	6.9	489	141	12.5	
1004	68.3	6.8	523	154	22.5	
1005	68.3	6.9	506	>200	32.5	

Did well dewater? Yes (No) Gallons actually evacuated: 32.5

Sampling Time: 1009 Sampling Date: 4/12/02

Sample I.D.: MW-5 Laboratory: X Kiff Sequoia Other_____

Analyzed for: X TPH-G X BTEX X MTBE X TPH-D Other:

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

EQUIVA WELL MONITORING DATA SHEET

BTS #: 020412-SD-1	Site: 98995757
Sampler: O'Bryan	Date: 4/12/02
Well I.D.: T-1	Well Diameter: 2 3 4 6 8 (12)
Total Well Depth: 11.50	Depth to Water: 5.05
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: X PVC Grade	D.O. Meter (if req'd): YSI HACH

Purge Method: Bailer; Disposable Bailer; Middleburg; X Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other

Sampling Method: X Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other:

37.7 (Gals.) X 3 = 113.1 Gals.
1 Case Volume Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1043	67.7	6.6	1130	51	40	
1047	68.4	6.6	1133	28	80	
1051	68.7	6.6	1132	16	120	

Did well dewater? Yes (No)	Gallons actually evacuated: 120
Sampling Time: 1055	Sampling Date: 4/12/02
Sample I.D.: T-1	Laboratory: X Kiff Sequoia Other
Analyzed for: X TPH-G X BTEX X MTBE X TPH-D	Other:
EB I.D. (if applicable): @ Time	Duplicate I.D. (if applicable):
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WELL GAUGING DATA

Project # 020329-DA-4 Date 3/29/02 Client Equiva

Site 105 5th St. Oakland, CA

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-5	4					5.86	23.87	TOC	

WELL DEVELOPMENT DATA SHEET

Project #: 020329-DA-4	Client: Equiva
Developer: David A.	Date Developed: 3/29/02
Well I.D. MW-5	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth:	Depth to Water:
Before 23.87 After 24.24	Before 5.86 After 17.86
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	(4")	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

11.7	X	10		117
1 Case Volume		Specified Volumes	=	gallons

Purging Device: Bailer ☐ Electric Submersible ☒
Middleburg ☒ Suction Pump ☐

Type of Installed Pump _____
Other equipment used _____

TIME	TEMP (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1538	68.0	7.0	1043	>200	12	brown, very turbid, silty
1547	68.7	7.6	527	>200	24	Agitated Bottom; hand bailed, odor
1548	68.5	7.5	762	>200	36	" ; less silty
1549	68.2	7.5	749	>200	48	dewatered.
1550	68.3	7.7	511	>200	60	>1549-1554 surged 5 min
1555	67.8	7.8	437	>200	72	
1600	67.6	7.7	337	>200	84	less silty, less turbid
1605-1610		Surged 5 min			~~96~~	A
1613	67.1	7.5	426	>200	~~108~~ 96	" less silty, less turbid
1614		dewatered @ 100g			~~117~~ 100	dtw = 25.62
		confirmed 100g.	purge w/ office			

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 100

ATTACHMENT C

Soil Boring Logs and Well Completion Details

Cambria Environmental Technology, Inc.
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Oakland, CA 94608
Telephone: (510) 420-0700
Fax: (510) 420-9170

BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	MW-5
JOB/SITE NAME	oak105	**DRILLING STARTED**	08-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	08-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	29-Mar-02
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	15.05 ft above msl
DRILLING METHOD	Hollow-stem auger	**TOP OF CASING ELEVATION**	14.78 ft above msl
BORING DIAMETER	4"	**SCREENED INTERVAL**	4 to 24 ft bgs
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	10.0 ft (08-Mar-02)
REVIEWED BY	D. Lundquist, PE	**DEPTH TO WATER (Static)**	5.96 ft (12-Apr-02)
REMARKS	Hand augered to 5 fbg. Located approximately 50' north of the UST complex.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	0.5	Portland Type I/II Cement
							SAND (SP); black; soft; damp; 5% silt, 95% fine sand; strong odor; no plasticity.		Bentonite Seal
									Monterey Sand #2/12
		MW-5-5.0		5	SP		@ 5 fbg- greenish black; damp; 15% silt, 85% fine sand; strong odor; no plasticity.		
								10.0	
		MW-5-10.0		10			**Silty SAND** (SM); grayish brown; wet; 20% silt, 80% fine sand; odor; low plasticity.		
		MW-5-15.0		15			@ 15 fbg- reddish brown; wet; 5% clay, 20% silt, 75% fine sand; odor; low plasticity.		4"-diam., 0.010" Slotted Schedule 40 PVC
					SM				
		MW-5-20.0		20			@ 20 fbg- reddish dark brown.		
		MW-5-23.5					@ 23.5 fbg- stiff; 20% silt, 80% sand; weathered sandstone fragments.	24.0	Bottom of Boring @ 24 ft

WELL LOG (SHELL) G:\OAKLAN~1\GINTOAK105.GPJ DEFAULT.GDT 5/1/02

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BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-8
JOB/SITE NAME	oak105	**DRILLING STARTED**	07-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	07-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	14.0 ft (07-Mar-02) ▽
REVIEWED BY	S. Bork, RG# 5626	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5'.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	1.0	Portland Type I/II Cement
					ML		**Gravelly SILT** (ML); grayish brown; damp; 70% silt, 10% fine sand, 20% fine subangular gravel; very strong odor; low plasticity.	3.0	
					SM		**Silty SAND** (SM); greenish brown; damp; 30% silt, 70% fine to medium sand; staining; strong odor; low plasticity.	5.0	
				5					
		SB-8-8.0			SP		**SAND** (SP); grayish brown; damp to moist; 10% silt, 90% fine sand; odor; no plasticity.	9.0	
				10	SM		**Silty SAND** (SM); grayish brown; wet; 20% silt, 80% fine sand; odor; low plasticity.		
							@ 13 fbg- gray; stiff. ▽	14.0	Bottom of Boring @ 14 ft

WELL LOG (SHELL) G:\OAKLAN~1\GINT\OAK105.GPJ DEFAULT.GDT 5/1/02

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BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-9
JOB/SITE NAME	oak105	**DRILLING STARTED**	07-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	07-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	16.0 ft (07-Mar-02) ▽
REVIEWED BY	S. Bork, RG# 5626	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5'.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	1.0	
					ML		**Gravelly SILT** (ML); grayish brown; damp; 65% silt, 15% fine sand, 20% fine subangular gravel; strong odor; low plasticity.	3.0	
					SM		**Silty SAND** (SM); light grayish brown; damp; 20% silt, 80% fine to medium sand; odor; low plasticity.	5.0	
				5					
		SB-9-7.5			SP		**SAND** (SP); grayish brown; damp to moist; 5% silt, 95% fine sand; no plasticity. @ 7 fbg- 10% silt, 90% fine sand.		◄ Portland Type I/II Cement
				10				10.0	
					SM		**Silty SAND** (SM); grayish brown; wet; 25% silt, 75% fine sand; low plasticity. @ 12 fbg- brownish gray; 20% silt, 80% fine sand.	14.0	
				15	SP		**SAND** (SP); dark gray; wet; 90% sand, 10% silt; no plasticity. ▽	16.0	Bottom of Boring @ 16 ft

WELL LOG (SHELL) G:\OAKLAN~1\GINT\OAK105.GPJ DEFAULT.GDT 5/1/02

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BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-10
JOB/SITE NAME	oak105	**DRILLING STARTED**	07-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	07-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	18.0 ft (07-Mar-02) ▽
REVIEWED BY	S. Bork, RG# 5626	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5'.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	1.0	
					ML		**Gravelly SILT** (ML); grayish brown; damp; 65% silt, 15% fine sand, 20% fine subangular gravel; low plasticity.	3.0	
					SM		**Silty SAND** (SM); light grayish brown; damp; 20% silt, 80% fine to medium sand; low plasticity.	5.0	
				5			**SAND** (SP); grayish brown; damp; 5% silt, 95% fine sand; no plasticity.		
		SB-10-8.0			SP		@ 8 fbg- 10% silt, 90% fine sand.	10.0	◄ Portland Type I/II Cement
				10	SM		**Silty SAND** (SM); grayish brown; moist to wet; 20% silt, 80% fine sand; low plasticity.		
							@ 12 fbg- gray; 15% silt, 85% fine sand.	14.0	
				15	SP		**SAND** (SP); dark gray; wet; 90% sand, 10% silt; no plasticity.		
							@ 17 fbg- 100% sand. ▽	18.0	Bottom of Boring @ 18 ft

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BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-11
JOB/SITE NAME	oak105	**DRILLING STARTED**	07-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	07-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	20.0 ft (07-Mar-02)
REVIEWED BY	S. Bork, RG# 5626	**DEPTH TO WATER (Static)**	NA
REMARKS	Hand augered to 5'.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	1.0	
					ML		**Gravelly SILT** (ML); grayish brown; damp; 65% silt, 15% fine sand, 20% fine subangular gravel; low plasticity.	3.0	
					SM		**Silty SAND** (SM); grayish brown; damp; 25% silt, 75% fine to medium sand; low plasticity.	5.0	
		SB-11-7.5		5	SP		**SAND** (SP); grayish brown; damp; 5% silt, 95% fine sand; no plasticity. @ 7 fbg- 10% silt, 90% fine sand.	10.0	Portland Type I/II Cement
				10	SM		**Silty SAND** (SM); grayish brown; moist to wet; 20% silt, 80% fine sand; low plasticity. @ 12 fbg- gray; 15% silt, 85% fine sand.	14.0	
				15	SP		**SAND** (SP); dark gray; wet; 95% sand, 5% silt; no plasticity. @ 16.5 fbg- 100% sand.		
				20			▽	20.0	Bottom of Boring @ 20 ft

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BORING/WELL LOG

CLIENT NAME	Equiva Services LLC	**BORING/WELL NAME**	SB-12
JOB/SITE NAME	oak105	**DRILLING STARTED**	07-Mar-02
LOCATION	105 Fifth Street, Oakland, California	**DRILLING COMPLETED**	07-Mar-02
PROJECT NUMBER	244-0472	**WELL DEVELOPMENT DATE (YIELD)**	NA
DRILLER	Gregg Drilling	**GROUND SURFACE ELEVATION**	Not Surveyed
DRILLING METHOD	Hydraulic push	**TOP OF CASING ELEVATION**	NA
BORING DIAMETER	2"	**SCREENED INTERVAL**	NA
LOGGED BY	S. Couch	**DEPTH TO WATER (First Encountered)**	22.0 ft (07-Mar-02) ▽
REVIEWED BY	S. Bork, RG# 5626	**DEPTH TO WATER (Static)**	NA ▼
REMARKS	Hand augered to 5'.		

TPHg (ppm)	BLOW COUNTS	SAMPLE ID	EXTENT	DEPTH (ft bgs)	U.S.C.S.	GRAPHIC LOG	LITHOLOGIC DESCRIPTION	CONTACT DEPTH (ft bgs)	WELL DIAGRAM
							ASPHALT	1.0	
					ML		**Gravelly SILT** (ML); grayish brown; damp; 70% silt, 10% fine sand, 20% fine subangular gravel; low plasticity.	3.0	
					SM		**Silty SAND** (SM); grayish brown; damp; 25% silt, 75% fine to medium sand; low plasticity.	5.0	
				5			**SAND** (SP); grayish brown; damp; 5% silt, 95% fine sand; no plasticity.		
		SB-12-8.0			SP				
				10			**Silty SAND** (SM); grayish brown; moist to wet; 20% silt, 80% fine sand; low plasticity.	10.0	Portland Type I/II Cement
					SM		@ 13 fbg- gray; stiff.	14.0	
				15			**SAND** (SP); dark gray; wet; 95% sand, 5% silt; no plasticity.		
					SP		@ 17 fbg- 100% sand.		
				20			▽	22.0	Bottom of Boring @ 22 ft

WELL LOG (SHELL) G:\OAKLAN~1\GINT\OAK105.GPJ DEFAULT.GDT 5/1/02

ATTACHMENT D

Standard Field Procedures for Monitoring Well Installation

CAMBRIA

STANDARD FIELD PROCEDURES FOR MONITORING WELL INSTALLATION

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

SOIL BORINGS

Objectives

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

Soil Boring and Sampling

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

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

Sample Analysis

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

Field Screening

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

Water Sampling

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

Grouting

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

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

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

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

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

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

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

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

Groundwater Sampling

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

Waste Handling and Disposal

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

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

ATTACHMENT E

Well Permits

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 Elmhurst Street, HAYWARD, CA 94544
PHONE (510) 670-5554
FAX (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 105 5th Street, Oakland

CLIENT
Name EQUIVA SERVICES, LLC
Address P.O. BOX 78109 Phone 559.645.9306
City BURBANK Zip 91510

APPLICANT
Name CAMBRIA ENVIRONMENTAL
Fax 510.420.9170
Address 1144 65th Street, Suite B Phone 510.420.3339
City OAKLAND Zip 94608

TYPE OF PROJECT

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

PROPOSED WATER SUPPLY WELL USE

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

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☐
Cable	☐	Other	X H.S.A.		

DRILLER'S LICENSE NO. C57485165

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 25 ft.
Surface Seal Depth 5 ft. Number MW-4
Gregg Drilling

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

ESTIMATED STARTING DATE MARCH 7, 2002
ESTIMATED COMPLETION DATE MARCH 8, 2002

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

APPLICANT'S SIGNATURE _____ DATE 1/22/02

FOR OFFICE USE

PERMIT NUMBER WO2-0069
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 work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
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 with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

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

F. WELL DESTRUCTION
See attached.

G. SPECIAL CONDITIONS

APPROVED _____ DATE 1-28-02

ALAMEDA COUNTY PUBLIC WORKS AGENCY

WATER RESOURCES SECTION
399 Elmhurst Street, HAYWARD, CA 94544
PHONE (510) 670-5554
FAX (510) 782-1939

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 105 5th Street Oakland

CLIENT
Name EQUIVA SERVICES, LLC
Address P.O. BOX 78607 Phone 559.646.2506
City BURBANK Zip 91510

APPLICANT
Name CAMBRIA ENVIRONMENTAL Fax 510.420.9170
Address 1144 65th Street, Suite B Phone 510.
City OAKLAND Zip

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	☐	General	☐
Water Supply	☐	Contamination	☒
Monitoring	☐	Well Destruction	☐

PROPOSED WATER SUPPLY WELL USE

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

DRILLING METHOD:

Mud Rotary	☐	Air Rotary	☐	Auger	☒
Cable	☐	Other	☐	H.S.A	

DRILLER'S LICENSE NO. C57485165 Gregg Drilling

WELL PROJECTS

Drill Hole Diameter ____ in. Maximum
Casing Diameter ____ in. Depth ____ ft.
Surface Seal Depth ____ ft. Number ____

GEOTECHNICAL PROJECTS

Number of Borings 5 Maximum
Hole Diameter 2.5 in. Depth 15 ft.

ESTIMATED STARTING DATE MARCH 7, 2002
ESTIMATED COMPLETION DATE MARCH 8, 2002

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

APPLICANT'S SIGNATURE _____ DATE JAN 22, 2002

FOR OFFICE USE

PERMIT NUMBER WO2-0070
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 work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
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 with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC

Fill hole above anode zone with concrete placed by tremie.

F. WELL DESTRUCTION

See attached.

G. SPECIAL CONDITIONS

APPROVED _____ DATE 1-28-02

ATTACHMENT F

DWR Well Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

ATTACHMENT G

Well Elevation Survey Results

Virgil Chavez Land Surveying
312 Georgia Street, Suite 225
Vallejo, California 94590-5907
(707) 553-2476 • Fax (707) 553-8698

April 18, 2002
Project No.: 1703-18

James Loetterle
Cambria Environmental
1144-65th Street, Suite C
Oakland, CA 94608

Subject: Monitoring Well Survey
Shell Service Station
105-5th Street
Oakland, CA

Dear James:

This is to confirm that we have proceeded at your request to survey the ground water monitoring wells located at the above referenced location. The survey was completed on April 12, 2002. The benchmark for this survey was a CALTRANS control station AJ-415 located at the southwesterly corner of the intersection of 5th and Oak Streets. The latitude, longitude and coordinates are for top of casings and are based on the California State Coordinate System, Zone III (NAD83).
Benchmark Elevation 13.49 feet (NAVD 88).

Latitude	Longitude	Northing	Easting	Elev.	Desc.
				15.49	RIM MW-1
37.7949840	-122.2674402	2116755.83	6051006.37	14.92	TOC MW-1
				13.92	RIM MW-2
37.7947432	-122.2672580	2116667.19	6051057.36	13.57	TOC MW-2
				14.46	RIM MW-3
37.7945953	-122.2673678	2116613.93	6051024.63	13.96	TOC MW-3
				12.31	RIM MW-4
37.7943801	-122.2670052	2116533.62	6051127.91	12.17	TOC MW-4
				15.05	RIM MW-5
37.7948363	-122.2673190	2116701.39	6051040.36	14.78	TOC MW-5

LICENSED LAND SURVEYOR
VIRGIL D. CHAVEZ
No. 6323
Exp. 12-31-02
STATE OF CALIFORNIA

Sincerely,

Virgil D. Chavez

Virgil D. Chavez, PLS 6323

ATTACHMENT H

Soil Disposal Confirmation

MANLEY & SONS TRUCKING, INC.
ROCK
SAND
DEMO
FILL DIRT
TOP SOIL
CA 009430
(916) 381-6864

Hazardous Waste Hauler (Registration #2843)

8896 Elder Creek Rd. • Sacramento, CA 95828 • FAX (916) 381-1573

Disposal Confirmation

Request for Transportation Received: 03/27/02

Consultant Information

Company:	Cambria
Contact:	Couch, Shannon
Phone:	510-420-3339
Fax:	510-420-9170

Site Information

Station #:	
Street Address:	105 5th St/Oak
City, State, ZIP:	Oakland, CA 94607

Customer:	Shell Oil Company	RESA-0023-LDC
RIPR #:	10067	
SAP # / Location:	135700	
Incident #:	98995757	
Location / WIC #:	2045510-0402	
Environmental Engineer:	Petryna, Karen	
Fax:		

Material Description:	Soil cuttings
Estimated Quantity:	3 Yards
Service Requested Date:	4/3/02

Disposal Facility:	Forward Landfill
Contact:	Joe Griffith
Phone:	800-204-4242
Approval #:	1824
Date of Disposal:	4/11/02
Actual Tonnage	.77 Tons

Transporter:	Manley & Sons Trucking, Inc.
Contact:	Glenell Forbes
Phone:	916 381-6864
Fax:	916 381-1573
Invoice:	50154B
Date of Invoice:	04/12/02

Fax To: Consultant Shell