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Review 5/23/02

MAR 29 2002

EQUILON
ENTERPRISES LLC
Shell & Texaco Working Together

March 25, 2002

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

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 2120 Montana 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,

Karen Petryna
Sr. Environmental Engineer

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Karen Petryna
Sr. Environmental Engineer

QUICK FAX OfficeMax

Date: 4/23/02	# of Pages: 12
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Co./Dept. ACHCSA	Co./Dept. Cambria ENV.
Fax: 510.337.9335	Fax: 510.420.9170
Phone: 510.567.6876	Phone: 510.420.3316
Note: Work Plan	E-Mail: jjones@cambria-env.com

CAMBRIA

March 25, 2002

Mr. Amir K. Gholami
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Subsurface Investigation and Pilot Test Work Plan**
Shell-branded Service Station
2120 Montana Street
Oakland, California
Incident #98995740
Cambria Project # 244-0733

Dear Mr. Gholami:

Effective March 1, 2002, Equiva Services LLC and Equilon Enterprises LLC are now doing business as (dba) Shell Oil Products US (Shell). On behalf of Shell, Cambria Environmental Technology, Inc. (Cambria) is submitting this *Subsurface Investigation and Pilot Test Work Plan* as recommended in our February 26, 2002 *Fourth Quarter 2001 Monitoring Report*. The purpose of this work plan is to further define the extent of hydrocarbons and methyl tertiary butyl ether (MTBE), and to attempt to determine the most practical remedial technology for the referenced site. Presented below are the site summary and the proposed scope of work.

SITE SUMMARY

Site Location: This operating Shell-branded service station is located at the intersection of Montana Street and Fruitvale Avenue in Oakland, California (Figure 1). Commercial properties lie to the north and east of the site, and residential properties lie to the west. Montana Street, a freeway on-ramp, and Highway 580 are located south of the site.

1997 Dispenser/Turbine Sump Upgrades: In November 1997, Paradiso Mechanical of San Leandro, California upgraded fuel-related equipment at the service station. Secondary containment was added to the three existing dispensers and to the turbine sumps above the underground storage tanks (Figure 2). Soil samples D-1, D-2, and D-3 were collected from beneath the dispensers at a depth of approximately 5 feet below grade (fbg). Soil samples were not collected from beneath the associated piping since it was not exposed during the upgrade activities. The maximum total petroleum hydrocarbons as gasoline (TPHg), benzene, and methyl tertiary butyl ether (MTBE by EPA Method 8020) concentrations were reported in sample D-3 at 59 parts per million (ppm), 0.76 ppm, and 1.1 ppm, respectively.

Oakland, CA
San Ramon, CA
Sonoma, CA

Cambria Environmental Technology, Inc.

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Suite B
Oakland, CA 94608
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1999 Subsurface Investigation: In October 1999, Cambria advanced soil borings SB-1 through SB-3. SB-1 was advanced to 16 fbg, and SB-2 and SB-3 were advanced to 20 fbg. The maximum detected hydrocarbon concentrations in soil were 54 ppm TPHg in boring SB-1 at 5.0 fbg, 0.019 ppm benzene in boring SB-2 at 15 fbg, and 0.24 ppm MTBE (by EPA Method 8260) in boring SB-2 at 10.0 fbg. The maximum reported hydrocarbon concentrations in groundwater were 2,380 parts per billion (ppb) TPHg in boring SB-3, 10.6 ppb benzene in SB-2, and 3,210 ppb MTBE (by EPA Method 8020) in SB-3.

2001 Monitoring Well Installation: In February 2001, Cambria installed three groundwater monitoring wells, MW-1 through MW-3. The maximum TPHg and MTBE concentrations of 10 ppm and 5.2 ppm, respectively, were detected in soil samples collected from monitoring well MW-2, located across Montana Street from the site. The maximum detected benzene concentration of 0.066 ppm was detected in soil samples collected from monitoring well MW-1.

Groundwater Monitoring: Quarterly groundwater monitoring has been conducted at the site since well installation in 2001. Tank backfill well TBW-N, one of four tank backfill wells at the site and the only tank backfill well which encounters groundwater, was added to the quarterly monitoring program in September 2001. The depth to water at the site has ranged from approximately 10.1 to 14.3 feet. As indicated by the rose diagram shown on Figure 2, groundwater flow direction typically ranges between northwest and southwest. Separate phase hydrocarbons have been detected intermittently in monitoring well MW-1 as well as in tank backfill well TBW-N.

Mobile Groundwater Extraction (GWE): GWE from wells MW-1 and TBW-N using a vacuum truck began at the site in August 2001. GWE was conducted on a weekly basis through November 2001, a bi-weekly basis through December 2001, and has been conducted on a monthly basis since January 2002.

PROPOSED SCOPE OF WORK

Monitoring Well Installation

To better define the hydrocarbon and MTBE plume at the site, Cambria recommends the installation of one onsite and one offsite groundwater monitoring well. As indicated by the rose diagram shown on Figure 2, the groundwater flow direction at the site typically ranges from northwest to southwest. One monitoring well is proposed in the general downgradient direction of the dispensers at the site, and one monitoring well is proposed further west along Montana

Street, in the general downgradient direction from well MW-1. Our scope of work for this investigation will include the following tasks:

Utility Location: Cambria will notify Underground Service Alert (USA) of our drilling activities. USA will identify utilities in the site vicinity.

Site Health and Safety Plan: We will prepare a comprehensive site safety plan to protect site workers. The plan will be reviewed and signed by each site worker, and kept onsite during field activities.

Permits: We will obtain the required monitoring well installation and encroachment permits from the Alameda County Public Works Department and the City of Oakland.

Soil Boring: Assuming the absence of subsurface and overhead obstructions, Cambria will advance two soil borings in the approximate locations shown on Figure 2 using a drill rig equipped with hollow-stem augers. The borings will be advanced to approximately 20 fbg and converted to groundwater monitoring wells. Soil samples will be collected at 5-foot intervals. All collected soil samples will be transported to a State-approved analytical laboratory. Our standard field procedures are included as Attachment A.

Groundwater Monitoring Well Installation: The onsite groundwater monitoring well will be constructed of 4-inch diameter PVC, and the offsite monitoring well will be constructed of 2-inch diameter PVC. Both wells will be screened with 15 feet of 0.010-inch machined slots. Traffic-rated vault-boxes will be installed to protect the wells. Following installation, the groundwater monitoring wells will be developed by surging and purging at least 10 casing volumes of water. Our standard field procedures for monitoring well installation are included as Attachment A.

Chemical Analysis: Selected soil samples will be analyzed by a State-certified analytical laboratory for TPHg, benzene, toluene, ethylbenzene and xylenes (BTEX), and MTBE.

Groundwater Monitoring: Following installation and development, the proposed monitoring wells will be added to the current groundwater monitoring program at the site. Groundwater samples will be collected on a quarterly basis and analyzed for TPHg, BTEX and MTBE.

SVE Pilot Test

SVE is very successful at remediating source area hydrocarbons in moderate and high permeability soils. SVE involves applying a vacuum to extract hydrocarbon-bearing vapors from the vadose zone and capillary fringe area. Extracted hydrocarbons are typically treated by activated carbon, oxidizers, or internal combustion engines. Additionally, SVE can improve

groundwater quality by removing source area hydrocarbons, by encouraging hydrocarbon diffusion from groundwater, and by delivering oxygen to the subsurface. Oxygen usually stimulates naturally-occurring hydrocarbon biodegradation.

To determine the viability of SVE as a remedial alternative at the site, Cambria recommends conducting a 5-day SVE pilot test on the existing tank backfill wells. As stated above, there are four tank backfill wells at the site, three of which do not encounter groundwater and would be ideal for SVE. Tank backfill well TBW-W is completed to a depth of approximately 3 fbg, and tank backfill wells TBW-E and TBW-S are both completed to approximately 10 fbg. Cambria recommends conducting the test on TBW-S, the deepest and most downgradient of the three dry tank backfill wells, and using the remaining tank backfill wells and well MW-1 as monitoring points for the test. Equipment and operating parameters will be based on field conditions.

The following presents a summary of SVE testing procedures:

- Hand measuring initial groundwater levels in wells MW-1 and TBW-N,
- Configuring and installing SVE equipment,
- Performing SVE,
- Monitoring observation wells for vacuum and groundwater levels during the test,
- Monitoring and recording groundwater recovery, and
- Recording test start and end times, water levels, soil vapor flow rates, soil vapor concentrations, and vacuum influence on data sheets.

Reporting

Upon receipt of analytical results, we will prepare a report that, at a minimum, will contain:

- A summary of the site background and history;
- Descriptions of the drilling and sampling methods;
- Boring/well logs;
- Tabulated soil and grab groundwater analytical results;
- Descriptions of SVE pilot testing procedures;
- Analytical reports and chain-of-custody forms; and
- Cambria's conclusions and recommendations.

CLOSING

We appreciate the opportunity to work with you on this project. Please call Jacquelyn Jones at (510)-420-3316 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

for: Jacquelyn L. Jones
Project Geologist

Stephan A. Bork, C.E.G., C.H.G.
Associate Hydrogeologist

REGISTERED GEOLOGIST
STEPHAN A. BORK
No. EG 2058
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Figures: 1 - Vicinity/Area Well Survey Map
2 - Proposed Monitoring Well Location Map

Attachment: A - Standard Field Procedures for Monitoring Well Installation

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

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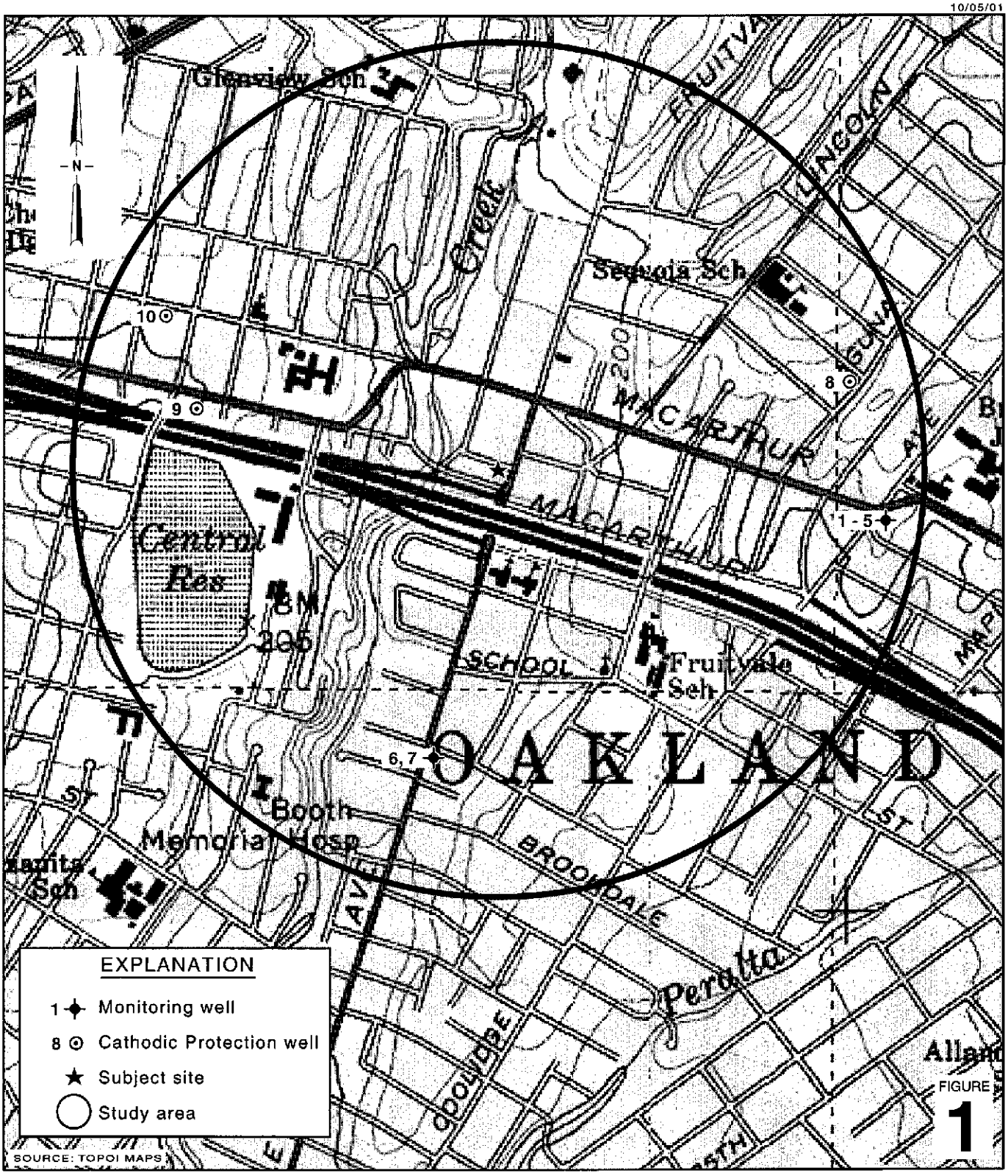
10/05/01



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0 1/6 1/3 1/2 1

SCALE : 1" = 1/6 MILE

FIGURE 1

Shell-branded Service Station
2120 Montana Street
Oakland, California
Incident #98995740

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Vicinity / Area Well Survey Map
(1/2-Mile Radius)

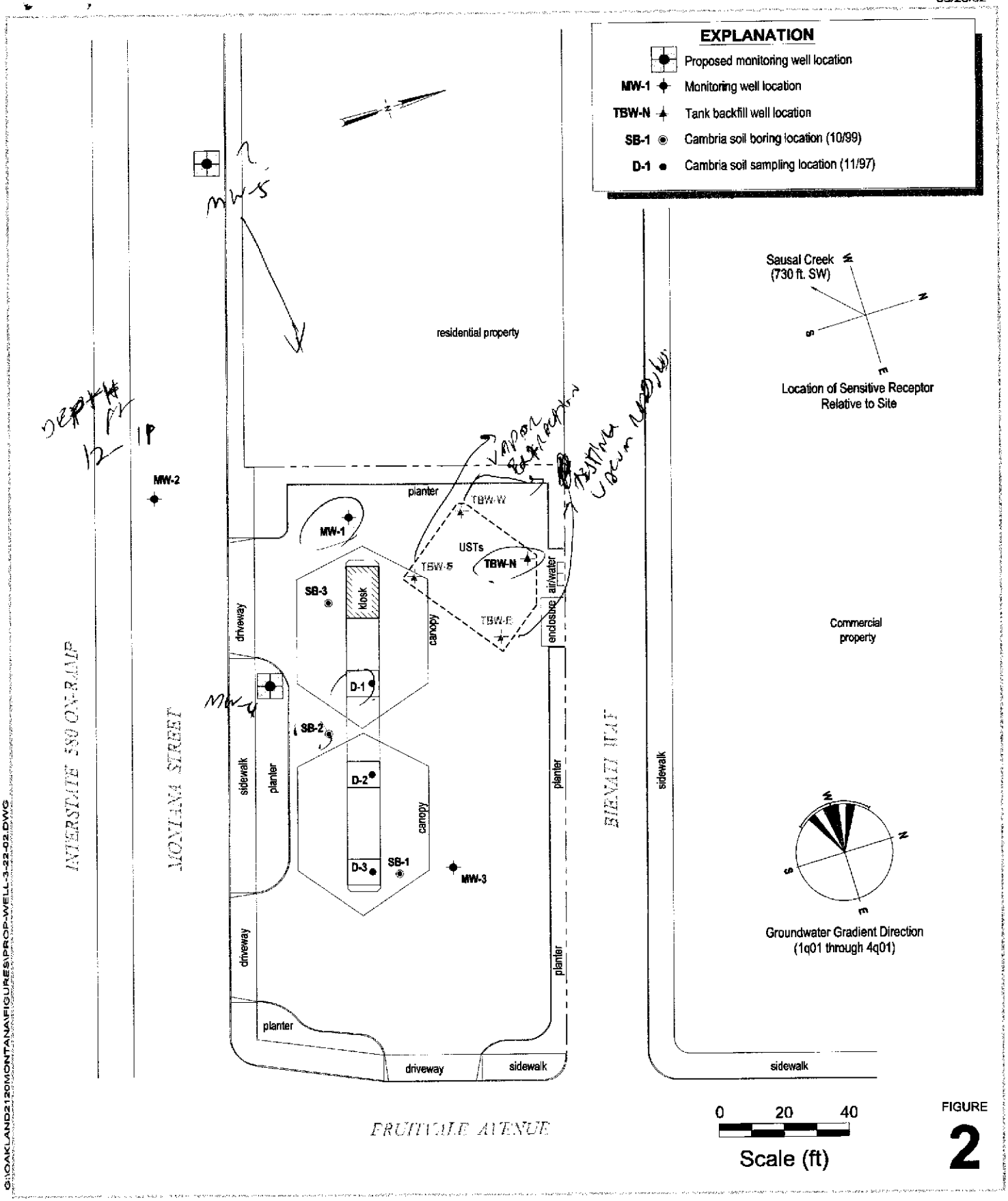

FIGURE
2

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Shell-branded Service Station
2120 Montana Street
Oakland, California
Incident #98995740

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Proposed Monitoring Well Location Map

06/01/05

Revised Proposed Soil Boring Location Map with Utilities

EXPLANATION

- MW-1 — Monitoring well location
- TBW-N — Tank backfill well location
- D-1-4.0 — Soil sampling location (Cambria, 5/04)
- SB-1 — Soil boring location (Cambria, 10/99)
- D-1 — Soil sampling location (Cambria, 11/97)
- SB-4 — Proposed soil boring location
- SV-A — Proposed soil vapor sampling location
- Electrical and overhead electric line (E, OE)
- Remediation piping (R)
- Sanitary sewer (SS)
- Water line (W)
- Telecommunications line (T)
- Discharge line (D)

Groundwater Gradient Direction
(1Q01 through 1Q05)

Sausal Creek
(730 ft. SW)

Location of Sensitive Receptor
Relative to Site

Commercial
property

SLOAN STREET

power pole

sidewalk

10"Ø SS

Relocated Trash Enclosure

SB-8

air/water

storage

planter

Remediation Compound

SV-A

SV-B

TBW-N

TBW-W

TBW-E

USTs

SV-C

SB-7

SV-D

SB-6

TBW-S

MW-1

SV-E

SB-5

SB-4

MW-4

MW-5

MW-2

MW-3

SB-1

D-1

D-2

D-3

D-1-4.0

D-2-4.0

D-3-4.0

SB-3

SB-2

kiosk

dispensers

canopy

Shell Station
2120 Montana St.

2106 Montana

2116 Montana

FRUITVALE AVENUE

driveway

planter

sidewalk

MONTANA STREET

power poles

INTERSTATE 580 ON-RAMP

0 15 30 60
Scale (ft)

FIGURE
3

Shell-branded Service Station
2120 Montana Street
Oakland, California
Incident No.98995740

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G:\OAKLAND 2120 MONTANA\FIGURES\PROPOSED BORINGS DEC04.DWG

ATTACHMENT A

Standard Field Procedures for Monitoring Well Installation

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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.

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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.

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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. 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 and rinseates are stored onsite in sealed 55-gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. 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.

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