Environmental Management Company
6001 Bollinger Canyon Rd, K2256
P.O. Box 6012
San Ramon, CA 94583-2324
Tel 925-842-1589
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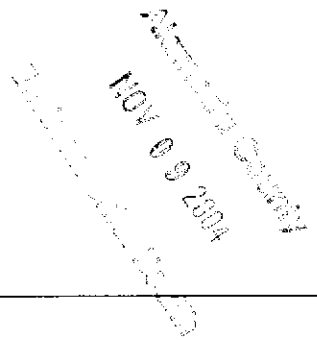
Karen Streich
Project Manager

RO256

ChevronTexaco

November 5, 2004
(date)

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



Re: Chevron Service Station # 9-1740

Address: 6550 Moraga Ave., Oakland, CA

I have reviewed the attached report titled *Investigation Workplan Addendum* and dated November 4, 2004.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Cambria Environmental Technology, Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct.

Sincerely,

Karen Streich

Karen Streich
Project Manager

Enclosure: Report

CAMBRIA

November 4, 2004

Mr. Barney Chan
Alameda County Health Care Services
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Re: **Investigation Workplan Addendum**
Chevron Service Station 9-1740
6550 Moraga Avenue
Oakland, California

Dear Mr. Chan:

On behalf of Chevron Environmental Management Company (ChevronTexaco), Cambria Environmental Technology, Inc. (Cambria), is submitting this Investigation Workplan Addendum for the site referenced above per your letter dated September 12, 2004. Cambria originally proposed advancing three temporary wells to further define the extent of MTBE in groundwater beneath the site. As directed in your letter, Cambria now proposes advancing a total of four borings, and completing one boring as a permanent monitoring point. The site background and Cambria's detailed proposed scope of work are presented below.

SITE BACKGROUND

The site is an active service station located at the northwest corner of the intersection of Moraga Avenue and Mountain Boulevard, in a mixed commercial and residential area of Oakland, California (Figure 1). Under a ground lease agreement, Chevron began station operations in 1936. According to ChevronTexaco records, site improvements were made prior to 1936, indicating station operations existed prior to Chevron's involvement. Site facility configuration information prior to 1960 is not available.

Site facilities include a station building with two service bays, three 10,000-gallon double-walled fiberglass underground storage tanks (USTs), three dispenser islands, and associated product piping. Groundwater flows south-southwest. Depth to groundwater during the third quarter 2004 monitoring and sampling event was between 4.88 and 5.41 feet below grade (fbg).

2004 Receptor Survey: In February 2004, Cambria completed a Department of Water Resources (DWR) well survey. One domestic well and one irrigation well were found within a one-half mile radius. Both identified wells are west of the site, down- to cross-gradient. However, both wells are screened in deeper sediments, approximately 300 to 400 fbg thus, site hydrocarbons do not pose a threat to these nearby wells. A reservoir is located approximately 1,600 feet northwest

Cambria Environmental Technology, Inc.

4111 Citrus Avenue
Suite 9
Rocklin, CA 95677
Tel (916) 630-1855
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of the site and Sausal Creek is flows approximately 2,000 feet east of the site. Attachment B includes the well survey table and map.

PROPOSED SCOPE OF WORK

To further define the extent of MTBE in groundwater, Cambria proposes four soil borings, C-5 and C-6, and SB-7 through SB-9, for two permanent monitoring wells, C-5 and C-6, and three temporary wells, SB-7 through SB-9. C-5 is proposed in the parking lane on the west side of Moraga Avenue, down-gradient of the USTs and dispenser islands to define the extent of methyl tert-butyl ether (MTBE) in groundwater. Temporary well SB-7 is proposed south of the current USTs at the corner of Moraga Avenue and Mountain Boulevard to create a transect with C-2 and C-4, semi-perpendicular to groundwater flow. Proposed temporary well SB-9 has not been moved, and is located north of the dispenser islands to define the source area. Permanent well C-6 has been moved to the sidewalk east of the current USTs creating a semi-perpendicular transect with C-4, and C-5. The locations of the proposed monitoring points are presented in Figure 2.

An additional temporary monitoring well, SB-8, will be located west of former C-1 to assess total oil and grease (TOG) concentrations in the vicinity of the former used-oil tank. SB-8 also adds to the temporary transect with C-2 and C-4 and SB-7. If significant concentrations of TOG are detected, TOG will be added to the monitoring and sampling schedule of all wells. Our detailed scope of work is presented below.

Underground Utility Location: Cambria will contact Underground Service Alert to clear the well locations with utility companies. All locations will be cleared to 8 fbg using an airknife vacuum truck prior to drilling.

Site Health and Safety Plan: Cambria will prepare a site safety plan to be reviewed and signed by all site workers and to be kept on-site at all times.

Permits: Cambria will obtain well permits from the Alameda County Public Works Agency Water Resources Section and necessary encroachment permits from the City of Oakland prior to beginning field operations/sampling.

Soil Borings: Cambria proposes drilling soil borings C-5, C-6 and SB-7 through SB-9. After clearing to 8 fbg, each boring will be advanced to approximately 25 fbg. C-5 and C-6 will be completed as permanent monitoring wells, and SB-7 through SB-9 will be completed as temporary monitoring wells. The borings will be advanced using a hollow-stem auger drilling rig. Soil will be logged and sampled at 5 foot intervals beginning at 10 fbg, and a grab-sample will be collected at 5 fbg.

Well Installation: All proposed monitoring points will be screened from approximately 10 to 25 fbg using 0.020 slotted, schedule 40 PVC pipe. Screen intervals may be modified based on field observations. The wells will be constructed using 2-inch diameter schedule 40 PVC pipe with Monterey #2/12 sand pack. A steel trench plate will be placed atop the temporary monitoring points until analytical results are received. The permanent monitoring wells will be grouted and finished to match existing grade. Standard field procedures are presented in Attachment A.

Soil Sample Selection: Soil samples will be selected for chemical analyses based on field screening for hydrocarbon vapors using a photo-ionization detector (PID), visual observation of soil characteristics such as discoloration, sample depth relative to the capillary fringe, and soil-texture considerations.

Chemical Analysis: Selected soil samples and all groundwater samples will be analyzed for:

- Total petroleum hydrocarbons as gasoline (TPHg) and total petroleum hydrocarbons as diesel (TPHd) by EPA Method 8015M.
- Benzene, toluene, ethylbenzene, and xylene (BTEX), fuel oxygenates MTBE, ethanol, di-isopropyl ether (DIPE), tert-butyl alcohol (TBA), tert-amyl methyl ether (TAME), ethyl tert-butyl ether (ETBE), and lead scavengers 1,2-dichloroethane (1,2-DCA) and ethylene dibromide (EDB) by EPA method 8260B.

A groundwater sample from C-6 will also be analyzed for:

- Total oil and grease (TOG) by EPA method 8260B.

No samples will be analyzed for halogenated volatile organic compounds (HVOCs) because soil samples from the used-oil tank pit were below laboratory detection limits.

Well Development and Sampling: Each well will be developed using surge block agitation and bailer evacuation. Gettler-Ryan Inc., of Dublin, California, will sample the wells no sooner than 72 hours after development.

Well Elevation Survey: The well location and top of casing of each point will be surveyed to mean sea level by a California licensed land surveyor.

Soil and Water Disposal/Recycling: Soil and water produced during field activities will be temporarily stored on-site. Soil cuttings will be stockpiled on plastic and covered with plastic on-site. Rinsate and development water will be stored in drums. Following review of laboratory analytical results, the soil and water will be transported to a ChevronTexaco approved facility for disposal/recycling.

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Geotracker Upload: Once all of the necessary data is received, the data and a current sitemap will be uploaded to the State Water Resources Control Board GeoTracker database as required in sections 2729 and 2729.1 of the California Code of Regulations for UST sites.

Reporting: After the analytical results are received, a subsurface investigation report will be prepared containing:

- A summary of the site background and history,
- Descriptions of the drilling and soil sampling methods,
- Boring logs,
- Tabulated soil and groundwater analytical results,
- A figure illustrating well locations,
- Analytical reports and chain-of-custody forms,
- A discussion of lateral and vertical extent of hydrocarbons in soil and MTBE groundwater,
- A conduit study of the site and vicinity,
- Lithologic cross-sections, and
- Conclusions and recommendations regarding the findings of the assessment.

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SCHEDULE AND CLOSING

Cambria will carry out this scope of work upon receiving written approval from the Alameda County Health Care Services. We will submit our investigation report approximately six weeks after receiving analytical results.

Please contact Sara Giorgi (ext. 103) or Bruce Eppler (ext. 102) at (916) 630-1855 with any questions or comments regarding the site or this workplan.

Sincerely,

Cambria Environmental Technology, Inc.

Sara Giorgi
Senior Staff Geologist

Roger Nommensen, R.G. #5966
Project Geologist

Figures: 1 - Site Vicinity Map
2 - Proposed Monitoring Well Locations

Attachments: A – Standard Field Procedures for Boring and Monitoring Wells
B – Receptor Survey Results

cc: Ms. Karen Streich, Chevron Environmental Management Company, P.O. Box 6012, K2256, San Ramon, CA 94583-0804

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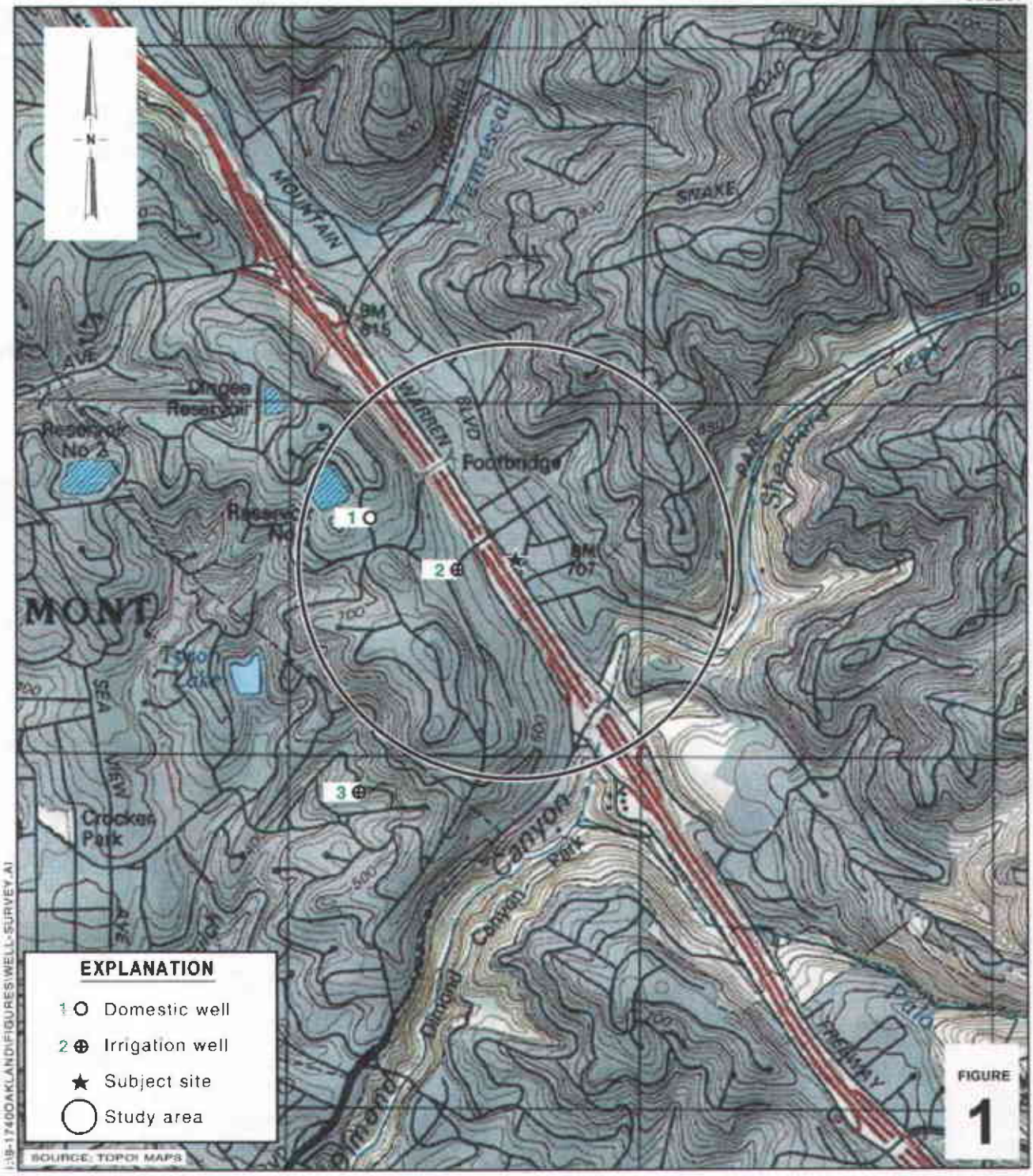

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Chevron Service Station #9-1740

6550 Moraga Avenue

Oakland, California

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Area Well Survey

2,000 Ft. Radius

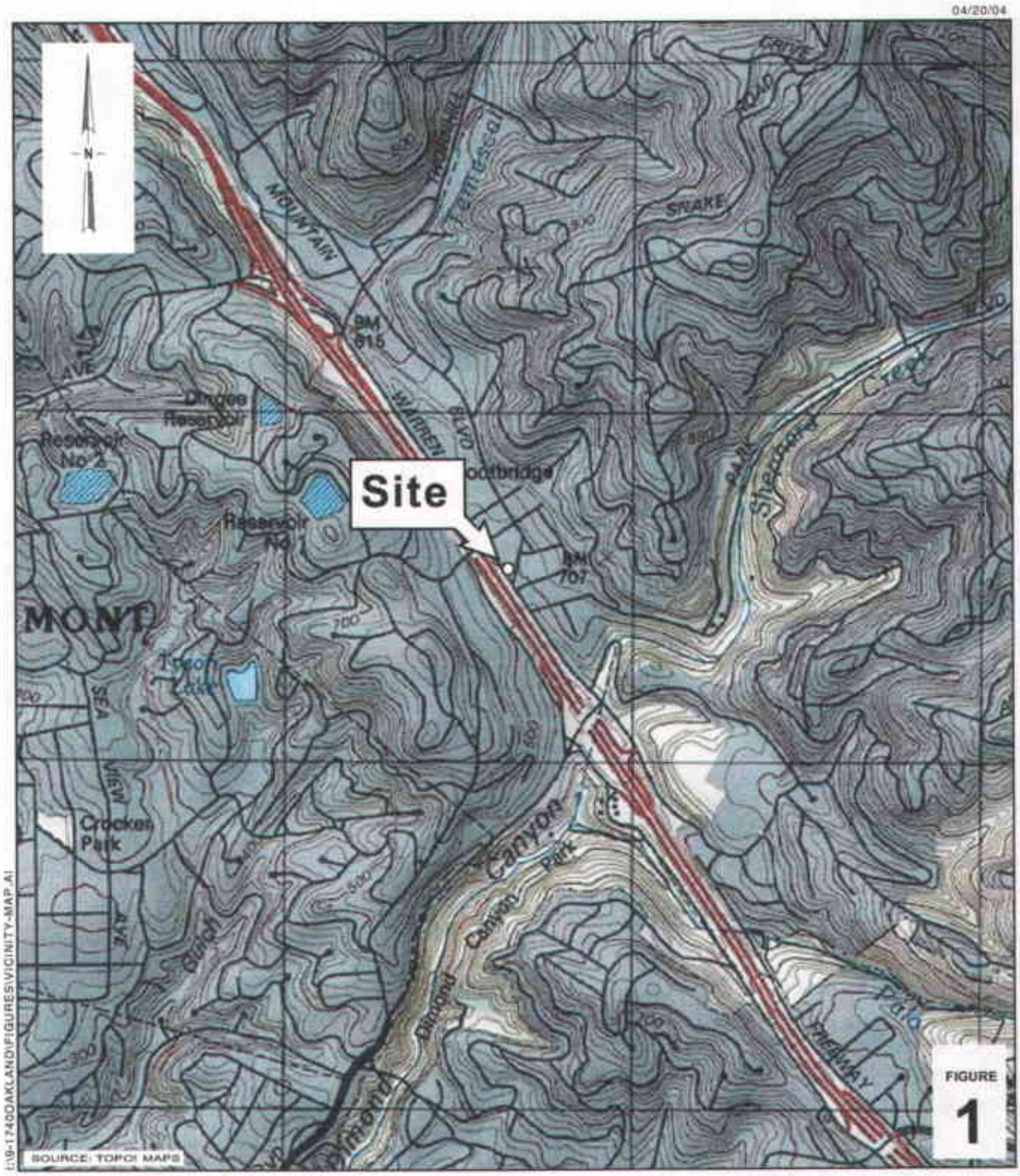

FIGURE 1

0 1/8 1/4 1/2 1

SCALE: 1" = 1/4 MILE

Chevron Service Station 9-1740

6550 Moraga Avenue

Oakland, California

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Vicinity Map

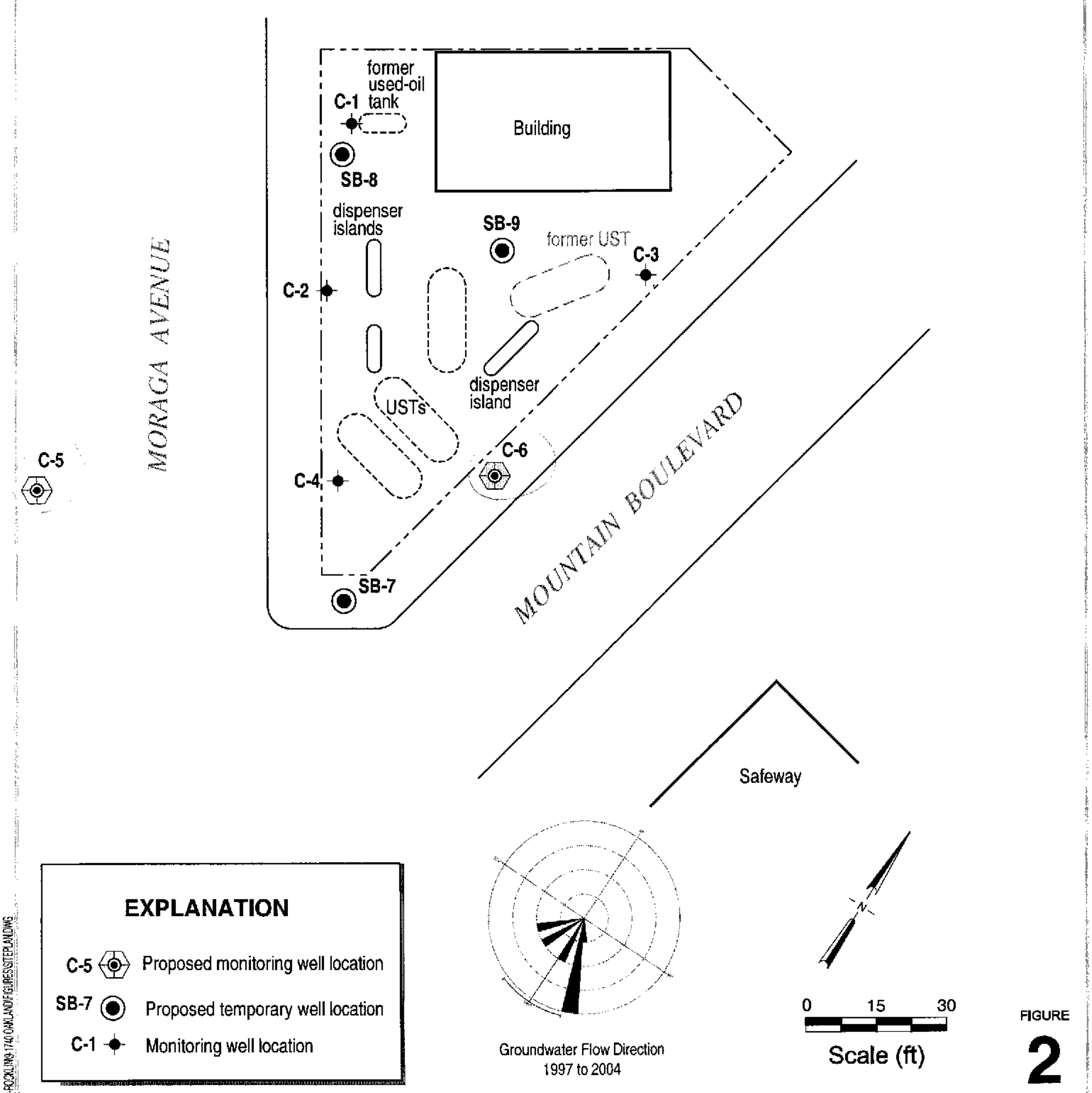

FIGURE
2

Chevron Service Station 9-1740

6550 Moraga Avenue

Oakland, California

CAMBRIA

Site Plan

ATTACHMENT A

Standard Field Procedures
for
Borings and Monitoring Wells

CAMBRIA

STANDARD FIELD PROCEDURES FOR SOIL BORING AND 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 Geoprobe7. 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 Hydropunch7 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 ft below and 5 ft 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 ft 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 ft above the well screen. A two ft 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.

ATTACHMENT B

Receptor Survey Results

Table 1
DWR Well Results
Former Chevron Station 9-1740, 9550 Moraga Ave, Oakland, California

ID #	Address/Location of Well	Well Owner	Use	Screened Interval (ft)	Total Well Depth (ft)	Date Installed	Distance From Site
1	6363 Estates Drive	Mr. & Mrs. Gary Torre	Domestic	Unk.	409	3/12/1991	1,350 feet
2	6017 La Salle Ave.	Robert Green	Irrigation	Unk.	335	7/14/1977	540 feet
3	145 Lexford Rd.	Robert Scherman	Irrigation	Unk.	200	9/13/1977	2,400 feet

Surface water

	Distance From Site
Reservoir #1	1,600 feet W
Sausal Creek	2,000 feet E