

RO 469



Shell Oil Products US

November 20, 2003

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

Subject: Shell-branded Service Station
6039 College Avenue
Oakland, California

Alameda County
NOV 25 2003
Environmental Health

Dear Mr. Hwang:

Attached for your review and comment is a copy of the *Subsurface Investigation Work Plan Amendment 2* for the above referenced site. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

As always, please feel free to contact me directly at (559) 645-9306 with any questions or concerns.

Sincerely,

Shell Oil Products US

A handwritten signature in cursive script that reads "Karen Petryna".

Karen Petryna
Sr. Environmental Engineer

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

Re: **Subsurface Investigation Work Plan Amendment 2**
Shell-branded Service Station
6039 College Avenue
Oakland, California
Incident # 98995745
Project # 245-0503



Dear Mr. Hwang:

On behalf of Equilon Enterprises LLC dba Shell Oil Products US, Cambria Environmental Technology, Inc. (Cambria) is submitting this second amendment to our January 6, 2003 *Subsurface Investigation Work Plan* as requested in an August 19, 2003 letter from Alameda County Health Care Services Agency (ACHCSA).

As stated in the January 6, 2003 *Subsurface Investigation Work Plan* and the May 2, 2003 *Subsurface Investigation Work Plan Amendment*, the objective of this investigation is to define the extent of the methyl-tertiary-butyl ether (MTBE) plume southwest of the site and to determine whether off-site utility trenches provide preferential pathways for chemical migration. The original work plan consisted of installing two on-site (SB-1 and SB-2) and three off-site (SB-3, SB-4, SB-5) Geoprobe® soil borings, collecting grab groundwater samples from each boring, and submitting selected soil samples for chemical analysis. To provide additional plume definition, Cambria amended the original work plan by adding one on-site boring (SB-8) and three off-site soil borings (SB-6, SB-7 and S-9) to the investigation scope of work. In the August 19, 2003 letter, ACHCSA requested that Cambria submit cross-sectional drawings, a groundwater gradient diagram and an explanation for the additional sampling locations.

The site plan showing cross-section transects and a groundwater gradient diagram is shown on Figure 1. The groundwater gradient diagram, based on the groundwater flow directions observed from the third quarter of 1996 through the third quarter of 2003, indicates that the groundwater flow direction is very consistently towards the west-southwest. Cross-sectional drawings are provided in Figures 2, 3 and 4.

**Cambria
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Cambria reviewed the maps utilized to locate the utilities previously shown in Cambria's site plans and quarterly groundwater contour maps, and noted that not all conduits were accurately represented. The 8-inch sanitary sewer line previously shown northwest of the site along

Claremont Avenue is not present adjacent to the site; rather, northeast of College Avenue, the 8-inch sanitary sewer joins the sanitary sewer that runs along College Avenue. On Claremont Avenue, the sanitary sewer line begins approximately 70 feet southwest of the site boundary and continues to the southwest. In addition, the 90-inch storm drain culvert previously indicated northwest of the site along Claremont Avenue, begins in the northeast along Claremont but sweeps to the south and continues along College Avenue. Water, gas and electric utilities are located northwest of the site along Claremont Avenue. However, based on the available historical groundwater elevation data, it is unlikely that groundwater intercepts these utility trenches, and it is thus unlikely that the utility trenches along Claremont Avenue serve as preferential pathways for migration of chemicals in groundwater emanating from the site.



As noted in the May 2, 2003 amendment, the borings will be advanced to the current groundwater depth. Selected soil borings (SB-2, SB-3, SB-6, and SB-7) will be advanced to approximately 15 feet below the current water table. During the investigation, Cambria will log all soil borings continuously for lithologic description, collect one or more grab-groundwater samples from each boring, and select soil samples for chemical analysis based on changes in lithology and areas of obvious contamination as well as at the depth of soil/groundwater interface. Additional borings will be advanced adjacent to the deep borings to collect depth-discrete groundwater samples only for investigating the vertical distribution of hydrocarbon and MTBE in groundwater. Cambria will determine the depth and number of discrete groundwater samples based on the observed lithology. Boring locations and rationale for each is summarized in the table below.

Boring ID	Location	Estimated Depth	Rationale
SB-1	On site, between dispenser islands, near center of site	15 fbg	To date, no soil or groundwater samples have been collected in this area.
SB-2	On site, in planter downgradient of western pump island	30 fbg	Soil and groundwater lateral delineation downgradient of pump islands, at edge of site. Additional borings to be advanced adjacent to this boring to collect depth-discrete grab-groundwater samples
SB-3	Off site, in the southwest corner of the parking lot on the adjacent property	30 fbg	Soil and groundwater lateral delineation downgradient of former waste-oil tank and wells MW-3 and MW-4. Additional borings to be advanced adjacent to this boring to collect depth-discrete grab-groundwater samples for vertical definition of plume in groundwater.



Boring ID	Location	Estimated Depth	Rationale
SB-4	Off site, in Claremont Avenue, immediately west of site boundary, as close to curb as feasible	15 fbg	Data will be used to determine the current impact of hydrocarbons or oxygenates immediately downgradient of site. Soil from nearby 1993 boring BH-A was not analyzed for MTBE.
SB-5	Off site, in Claremont Avenue, immediately west of site boundary, approximately 45 feet west-southwest of SB-4	15 fbg	Data will be used to determine whether any potential exists for hydrocarbons or oxygenates from the site to impact the sanitary sewer trench that terminates downgradient of site.
SB-6	Off site, opposite side of Claremont Avenue, approximately 45 feet west of SB-5 and 10 feet southwest of MW-6	30 fbg	Additional borings to be advanced adjacent to this boring to collect depth-discrete grab-groundwater samples for vertical definition of groundwater plume. Soil collected during installation of MW-6 not analyzed for MTBE.
SB-7	Off site, approximately 100 feet west-southwest of on-site well MW-4.	30 fbg	Additional borings to be advanced adjacent to this boring to collect depth-discrete grab-groundwater samples for vertical definition of plume in groundwater.
SB-8	On site, near southwest corner of existing USTs and adjacent to approximate location of former waste oil UST.	15 fbg	Data will be used to determine whether there is any impact to soil or groundwater immediately downgradient of the existing USTs and between monitoring wells MW-3 and MW-4.

Upon approval of this work plan amendment by ACHCSA, Cambria will complete the following tasks:

Utility Location: Cambria will notify Underground Service Alert (USA) of our proposed drilling activities. USA will have the utilities in the vicinity identified. Due to the proximity of the proposed borings to underground utilities, a contracted subsurface utility locator will also be used to clear the boring locations prior to drilling.

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

Permits: Cambria will obtain required permits for well installation from the Alameda County Public Works Agency and an encroachment permit from the City of Oakland.

Soil Borings: A total of nine soil borings will be advanced using a limited-access, direct-push (Geoprobe®) drilling rig. Cambria's standard field procedures for Geoprobe® sampling were included with the January 6, 2003 work plan. Upon completion, the borings will be sealed with cement grout to match the existing grade. Selected soil and groundwater samples will be transported to a State-approved analytical laboratory for chemical analysis.



Depth-Discrete Groundwater Sampling: Using the lithological information obtained from soil borings SB-2, SB-3, SB-7 and SB-8, Cambria will identify depths for collecting discrete groundwater samples using a Hydropunch® sampling tool. Groundwater samples will be transported to a State-approved analytical laboratory for chemical analysis.

Laboratory Analyses: Soil and groundwater samples will be analyzed for total petroleum hydrocarbons as gasoline, benzene, toluene, ethylbenzene, xylenes, and MTBE using EPA Method 8260B. Per ACHCSA's request, grab groundwater samples will be additionally analyzed for tert-amyl methyl ether, ethyl tert-butyl ether, di-isopropyl ether, tert-butyl alcohol, ethanol, ethylene dibromide and ethylene dichloride.

Subsurface Investigation Report: After the analytical results are received, Cambria will prepare a report that, at a minimum, will contain:

- A summary of the site background and history;
- Descriptions of drilling and sampling activities;
- Soil boring logs;
- Tabulated analytical results for groundwater;
- Analytical reports and chain-of-custody forms;
- A discussion of the hydrocarbon and MTBE distribution in the subsurface; and
- Conclusions and recommendations.

SCHEDULE

Upon receiving written approval of this work plan amendment from the ACHCSA, Cambria will apply for the necessary permits and schedule drilling. We will provide you with a 72-hour notice prior to field activities. We anticipate submitting our investigation report within 60 days of completing the fieldwork.

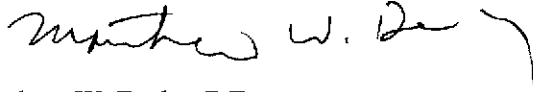
CLOSING

Please call Melody Munz at (510) 420-3324 if you have any questions or comments. Thank you for your assistance.

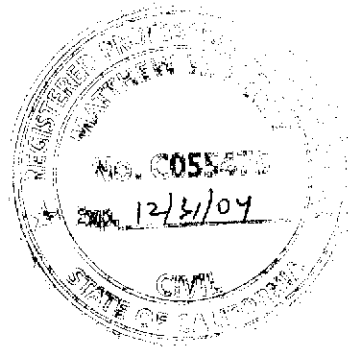
Sincerely,
Cambria Environmental Technology, Inc.



Melody Munz
Project Engineer



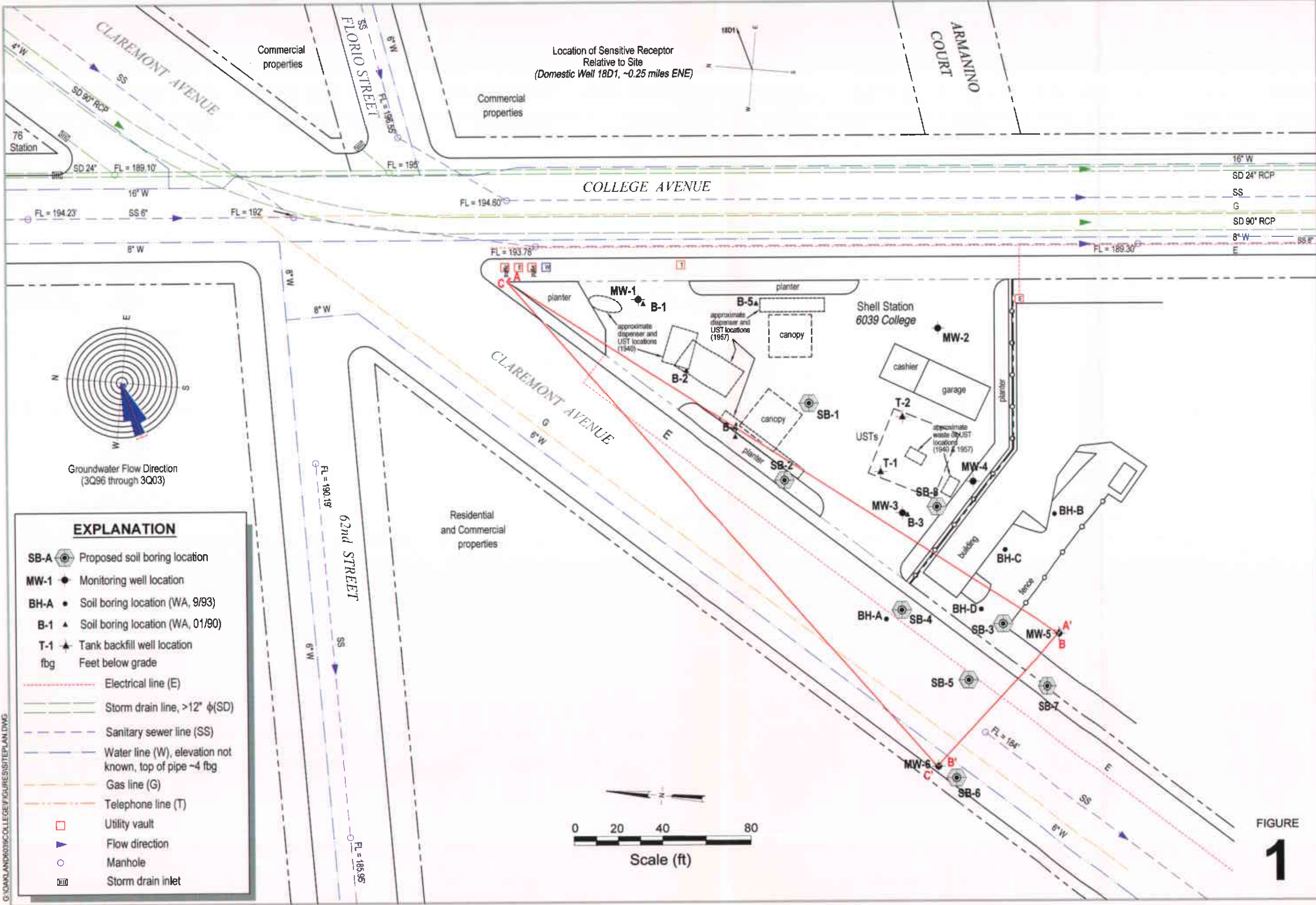
Matthew W. Derby, P.E.
Senior Project Engineer



- Figures:
- 1 - Proposed Soil Boring Location Map and Cross-Section Transects
 - 2 - Cross Section A-A'
 - 3 - Cross Section B-B'
 - 4 - Cross Section C-C'

cc: Karen Petryna, Shell Oil Products US, P.O. Box 7869, Burbank, CA 91510-7869
Russell J. Bruzzone, Inc., 899 Hope Lane, Lafayette, CA 94549
Montrose Investment Co., 242 Rivera Circle, Greenbrae Marina, Larkspur, CA 94939,
Attn: Jim Graham

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Proposed Soil Boring Location Map and Cross-Section Transects

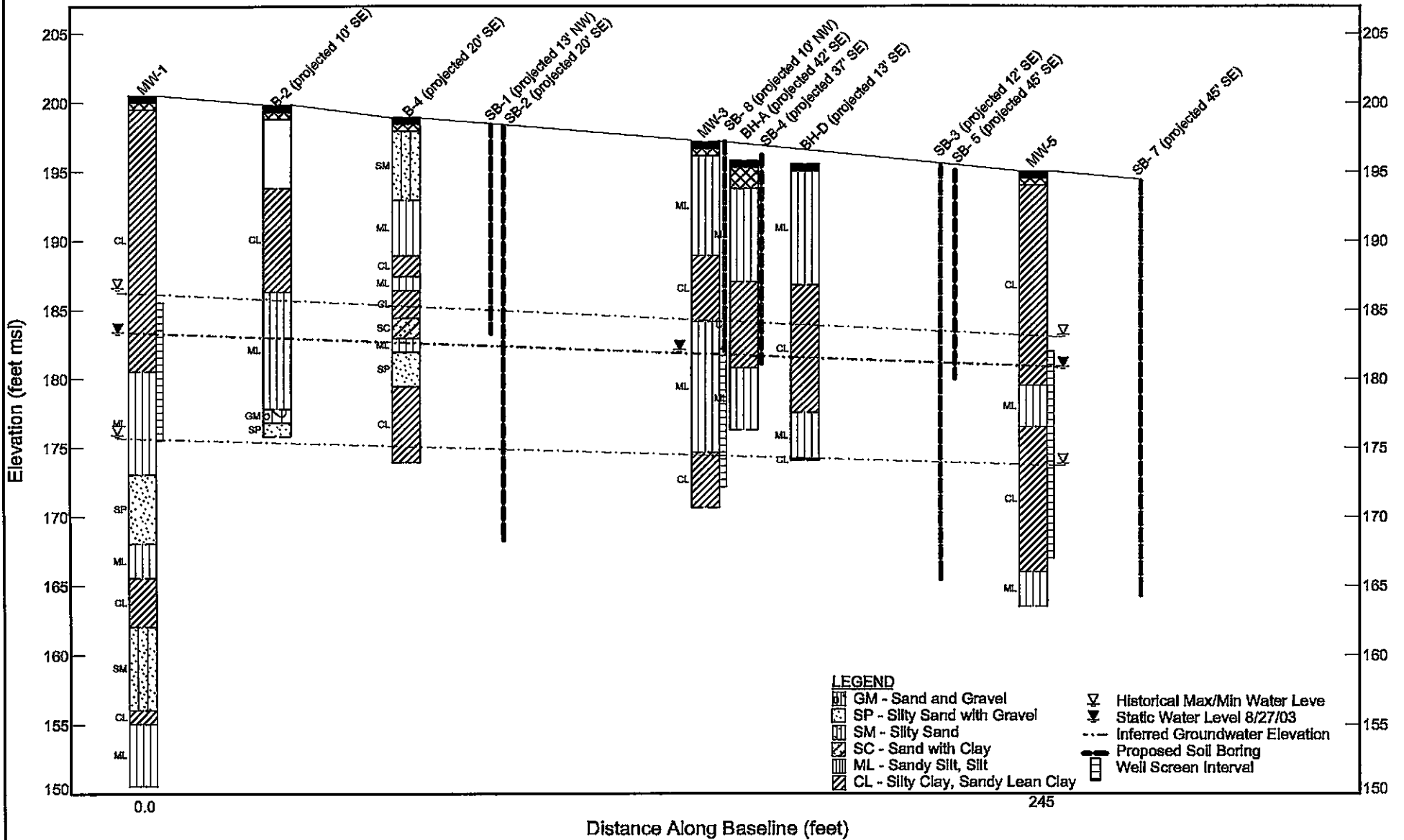


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Shell-branded Service Station

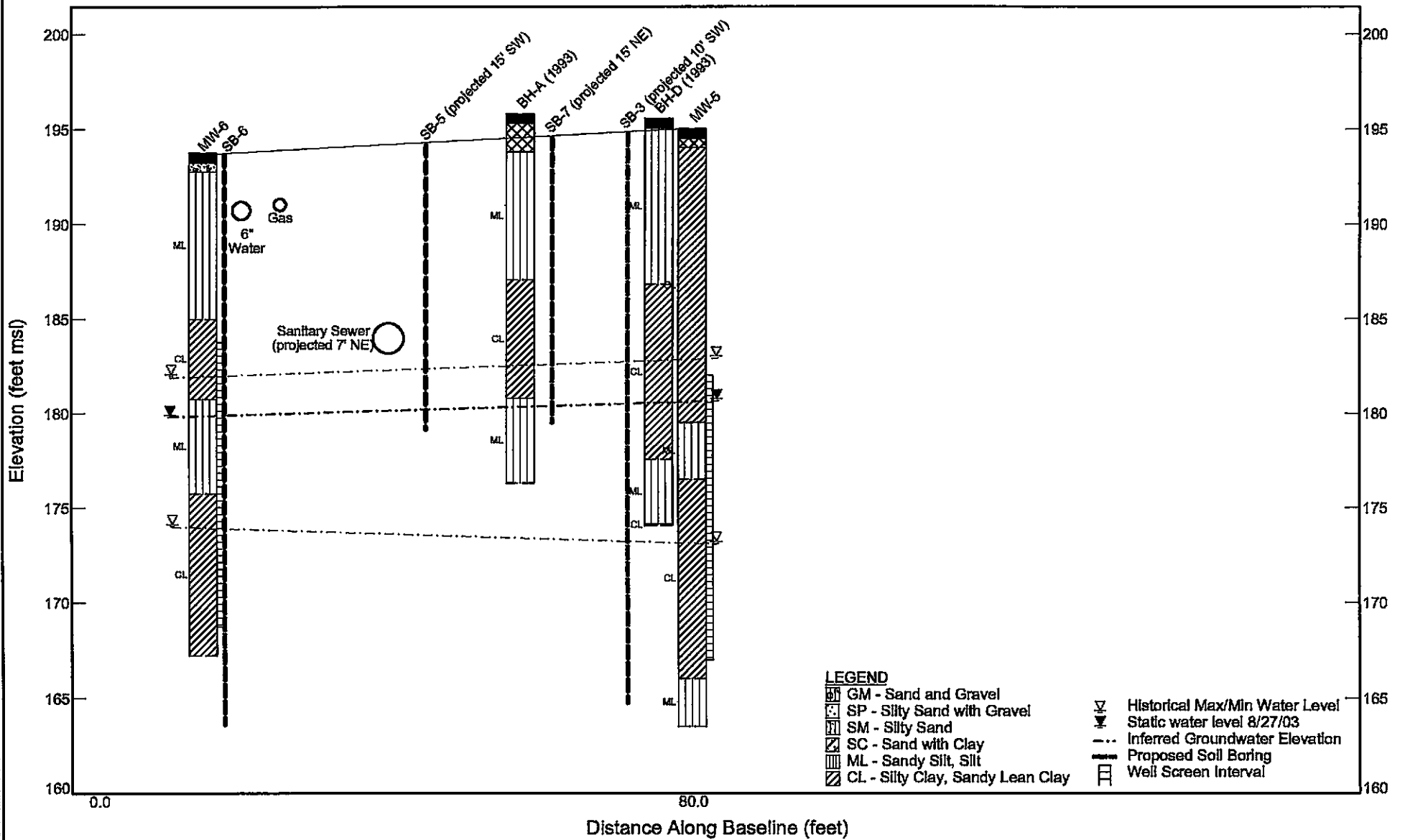
6039 College Avenue
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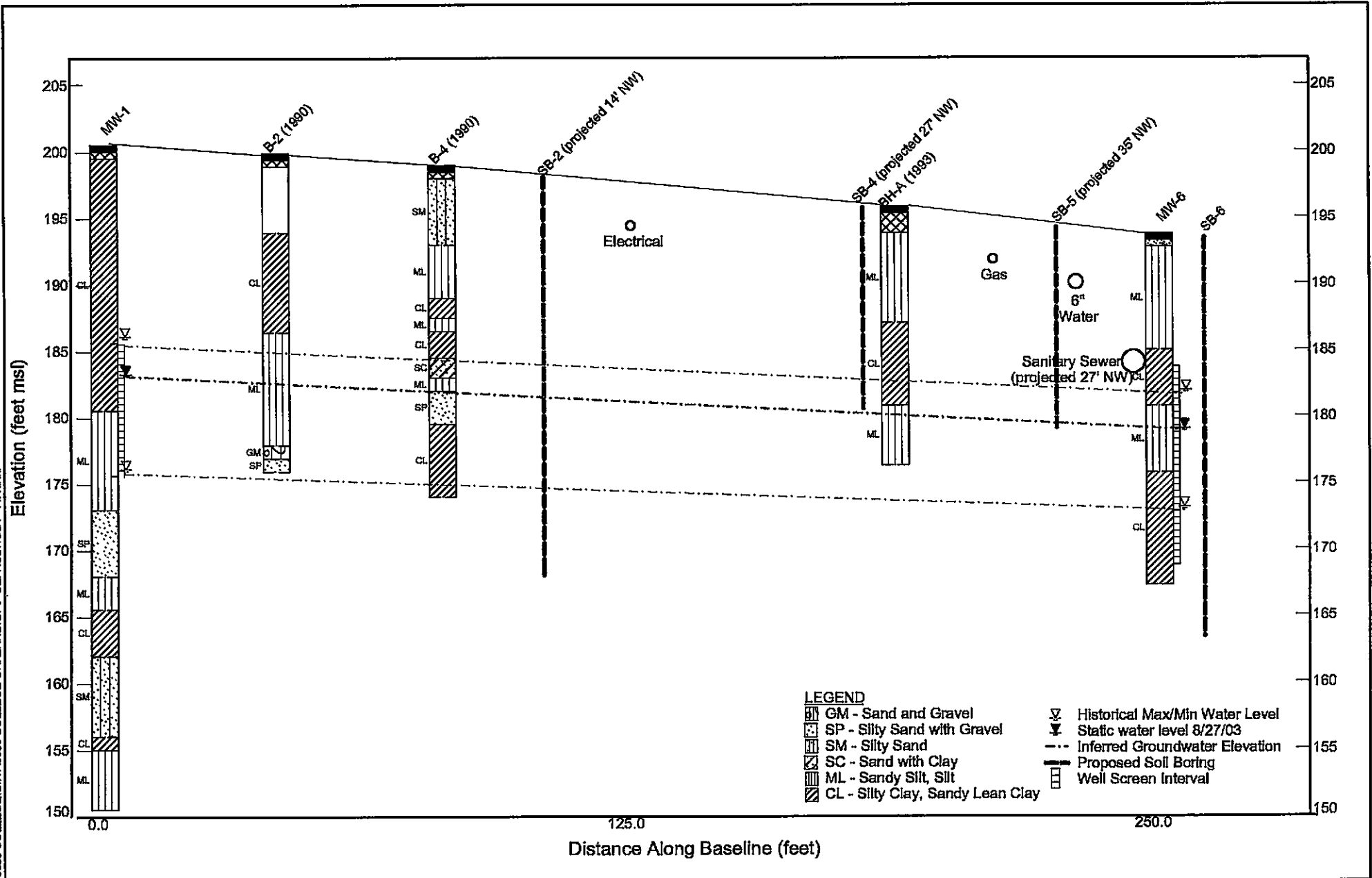
Shell Oil Products US
 6039 College Avenue, Oakland
 CROSS SECTION A-A'
 FIGURE 2



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Shell Oil Products US
 6039 College Avenue, Oakland
 B-B'
 FIGURE 3

X-SECTION G:\OAKLAND 6039 COLLEGE\GINT\0039 COLLEGE OAKLAND.GPJ DEFAULT.GDT 11/18/03



- LEGEND**
- GM - Sand and Gravel
 - SP - Silty Sand with Gravel
 - SM - Silty Sand
 - SC - Sand with Clay
 - ML - Sandy Silt, Silt
 - CL - Silty Clay, Sandy Lean Clay
 - Historical Max/Min Water Level
 - Static water level 8/27/03
 - Inferred Groundwater Elevation
 - Proposed Soil Boring
 - Well Screen Interval



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 6039 College Avenue, Oakland
 C-C'
FIGURE 4

Project Number: 245-0503