Denis L. Brown

Shell Oil Products US
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May 5, 2006

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

RECEIVED
By lopprojectop at 9:20 am, May 08, 2006

Re: Site Conceptual Model Addendum
Former Shell Service Station
500 40th Street
Oakland, California
SAP Code 129452
Incident No. 97093400

Dear Mr. Wickham:

Attached for your review and comment is a copy of the *Site Conceptual ModelAddendum* 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.

If you have any questions or concerns, please call me at (707) 865-0251.

Sincerely,

Denis L. Brown
Sr. Environmental Engineer

CAMBRIA

May 5, 2006

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

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Re: **Site Conceptual Model Addendum**
Former Shell Service Station
500 40th Street
Oakland, California
SAP Code 129452
Incident No. 97093400
Cambria Project No. 248-1513-006
RO0000264

Dear Mr. Wickham:

In response to the December 9, 2005 letter from the Alameda County Health Care Services Agency (ACHCSA), Cambria Environmental Technology, Inc. (Cambria) prepared this *Site Conceptual Model Addendum* on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell). On November 21, 2005, Shell submitted a *Site Conceptual Model* (SCM) to ACHCSA that described historical and current conditions at the site and recommended that this site be considered for closure. In its December 9, 2005 letter, ACHCSA requested additional information on previous site activities and additional groundwater analysis prior to considering the closure request. Presented below are an updated summary of the site background and an addendum to the SCM table.

SITE BACKGROUND

Previous Investigations (1982-1986)

1982 Site Investigation and Monitoring Well Installations: On July 16, 1982, IT Enviroscience (IT) of Martinez, California advanced eight soil borings (B-1 through B-8) in the vicinity of the now former underground storage tank (UST) complex. These eight borings were converted to groundwater monitoring wells. Separate phase hydrocarbons were observed in and purged from wells B-4, B-7, and B-8 in July 1982. Details of the investigation are included in IT's July 28, 1982 *Progress Reports #1 - Gasoline Leakage.*

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1983 Site Investigation and Monitoring Well Installations: On July 28, 1983, IT advanced two soil borings (B-9 and B-10) near the now former UST complex. These two borings were converted to groundwater monitoring wells.

On August 19, 1983, following a discussion with Shell about a product recovery system for the site, IT advanced three additional borings in the tank backfill material. Two of the borings missed the backfill and were abandoned; the third was completed as well B-11.

On September 28, 1983, IT advanced two borings adjacent to the now former UST complex. Recovery wells R-1 and R-2 were installed in the borings. The wells were purged during October 1983. IT stated that free product would be purged twice each week until a suitable product recovery system could be designed. Details of the investigation are included in IT's October 18, 1983 *Summary of Work Performed Since July 28, 1983.*

1983 UST Removal and Well Destruction: According to a site chronology included in the April 14, 1989 *Work Plan for Site Characterization and Remediation* by Converse Environmental Consultants of San Francisco, California, wells R-1 and R-2 were removed along with the USTs in November 1983. No details on the tank removals or well destructions are available.

1986 UST Removal: On September 23, 1986, the second-generation USTs were removed and Blaine Tech Services of San Jose, California (Blaine) collected five soil samples for headspace analysis at 9.5 to 10 feet below grade (fbg) beneath the west and east ends of the USTs. The soil sample headspace concentrations ranged between 8 and 99 parts per million (ppm) of gasoline. Blaine's September 26, 1986 *Sampling Report* presents details.

1986 Construction: According to a July 28, 1987 Pacific Environmental Group, Inc. memorandum to Gettler-Ryan Inc., a retail commercial shopping center building covering wells B-2, B-6, B-7, B-9 and B-10 was erected on the property between January and April 1986. In addition, parking lot and rear driveway pavement covered wells B-1, B-3, B-4, B-5 and B-8. The wells are not reported to have been destroyed.

SITE CONCEPTUAL MODEL ADDENDUM

Site Address:	500 40th Street	**Incident Number:**	97093400
City:	Oakland	**Regulator:**	Alameda County Health Care Services Agency

Item	Evaluation Criteria	Comments/Discussion
1	**Hydrocarbon Source**	
1.2	Discuss Steps Taken to Stop Release	The original USTs (two 5,000-gallon tanks, one 7,500-gallon tank, and one 8,000-gallon tank) were removed in November 1983. According to handwritten notes in Shell's archived site records, three 10,000-gallon fiberglass USTs were installed at the site sometime in 1984 and removed in late September 1986. Progress reports produced by IT in December and January 1985 note new construction at the site. No documents related to the removal of the initial set of USTs or the installation of the second-generation tanks have been found.
2	**Site Characterization**	
2.10	Preferential Pathways Analysis	IT's July 28, 1982 *Progress Report #1* contains the statement that "combustible vapors were also detected in the storm sewer system in the BART station parking lot located across 40th Street." The report does not detail how or where this observation was made. A hand drawn map included in the Shell archived files notes "vapors" in storm system drains on the western side of the BART parking lot, just west of this location on the eastern side of the BART station building, and in an "electrical vault" west of both these locations. City of Oakland Public Works Agency maps indicate that there are sanitary sewers beneath 40th Street, between the site and the BART parking lot; however, the map shows no storm sewer lines beneath 40th Street. In addition, a review of BART utility maps and a discussion with a BART representative determined that connection to the City of Oakland storm sewer lines was terminated when the parcel that contains the BART parking lot was excavated to its current elevation. A separate storm sewer system was installed that services the parking lot and connects with storm drains along 40th Street and Telegraph Avenue. Because the sanitary sewer lines that run near the site do not extend to BART property and the BART storm sewer system does not have lines that run near the site, there does not appear to be a preferential pathway from the subject site to the BART parking lot. The BART storm sewer system does connect to storm drains along 40th Street. Therefore, any vapors detected in BART's storm sewer system more likely originated from surface runoff into the storm drains or from the parking lot.

Site Address:	500 40th Street	**Incident Number:**	97093400
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2.11	Other Pertinent Issues	Samples collected in November 1993 from off-site monitoring wells OMW-11 and OMW-12 contained the halogenated volatile organic compound (HVOC) tetrachloroethene (PCE) at concentrations of 380 ppb and 400 ppb, respectively. These wells, the most distant of the off-site wells, have since been destroyed. On-site wells also contained detectable concentrations of PCE and other HVOCs, including trichloroethene (TCE), 1,1-dichloroethane, cis-1,2-dichloroethane, and 1,2-dichloroethane. At ACHCSA's request, samples collected during the first quarter 2006 sampling event were analyzed for HVOCs. Table 1 presents the historical HVOC analytical data. This table, as well as the laboratory report for the 2006 HVOC analysis, is also included in Cambria's *First Quarter 2006 Groundwater Monitoring Report*. PCE was detected in the samples from on-site wells MW-2, MW-3, and MW-8 at low concentrations. It was not detected in the samples from off-site wells OMW-6, OMW-9, or OMW-13. Current concentrations are lower than those detected in 1993 but show a similar distribution. The only HVOC concentrations that exceed the RWQCB Environmental Screening Level are the 1993 PCE detections in wells OMW-11 and OMW-12. Because PCE is detected in wells cross gradient of possible source areas at the site and not detected in directly downgradient wells OMW-6 and OMW-13, it is unlikely that they originated from the subject site.

CLOSING

If you have any questions regarding the contents of this document, please call Dave Gibbs at (510) 420-3363.

Sincerely,
Cambria Environmental Technology, Inc.

David M. Gibbs, P.G.
Project Geologist

Aubrey K Cool

Aubrey K. Cool, P.G.
Senior Project Geologist

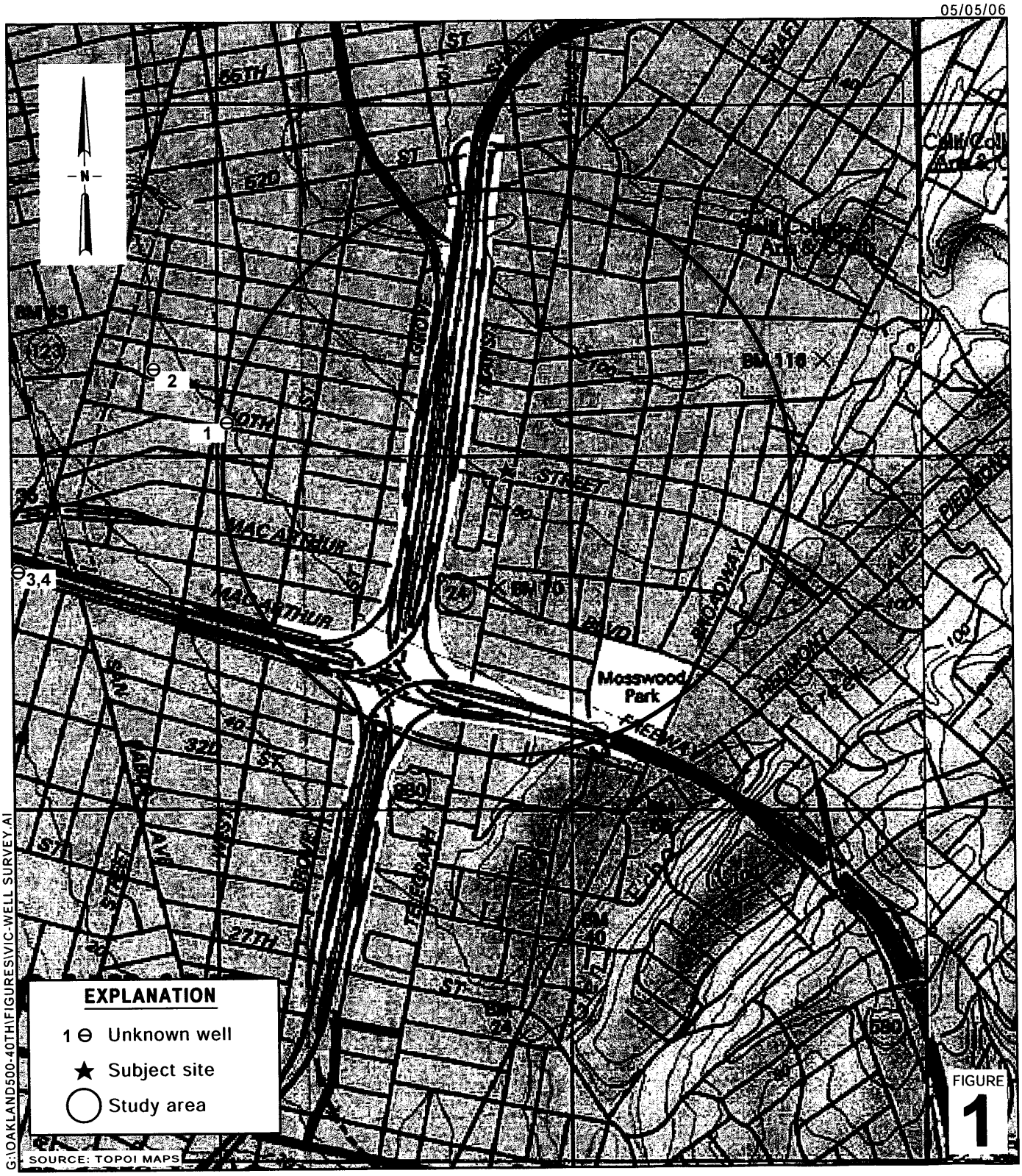
Figures: 1 - Site Vicinity and Area Well Survey Map
2 - Site Plan

Table: 1 - Historical Groundwater Monitoring Data - Halogenated Volatile Organic Compounds

cc: Denis Brown, Shell Oil Products US, 20945 S. Wilmington Ave., Carson, CA 90810
Joseph H Chan & Ivy T Wong, 21213-B Hawthorne Blvd. #5146, Torrance, CA 94609

G:\Oakland 500 40th\2005 Site Conceptual Model\3-06Addemdum.doc

05/05/06



G:\OAKLAND500-40TH\FIGURESVIC-WELL SURVEY.AI

FIGURE 1

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Former Shell Service Station
500 40th Street
Oakland, California
Incident No.97093400

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Site Vicinity and Area Well Survey Map

(1/2-Mile Radius)

05/04/08

Site Plan

EXPLANATION

- MW-2 — Monitoring well location
- MW-4 — Destroyed monitoring well location
- B-1 — Monitoring wells paved over or built upon
- CSB-1 — Soil boring location

Residential 554 40th St.

Residential 542 40th St.

Residential 530 40th St.

Residential 526 40th St.

Residential 522 40th St.

Residential 518 40th St.

stores

Former Shell Station
500 40th St.

former dispenser island (typ.)

sidewalk

MW-8

B-5 B-6

stores

B-4 R-2

former USTs

MW-2

B-3 R-1 B-9

B-10

B-1 B-7

B-2

parking

MW-4

B-8

MW-3

planter

MW-5

EW-1

bus stop

sidewalk

CSB-1

OMW-12

OMW-6

TELEGRAPH AVENUE

40th STREET

median

median planter

HIGHWAY 24 (51ST ST. OFF-RAMP, ELEVATED)

HIGHWAY 24 (ELEVATED)

OMW-11

OMW-13

OMW-9

OMW-10

sidewalk

planter

planter

planter

BART Parking Lot

Bart Station Entrance

Bart Station

Parking Lot Access

Bart Station

Parking Lot Access

Residential (Apts.)
505 40th St.

sidewalk

Residential?
3921 Telegraph Ave.

Residential
3915 Telegraph Ave.

Residential
3911 Telegraph Ave.

N

0 20 40 80

Scale (ft)

Base map taken from City of Oakland General Plan and Zoning Map

G:\OAKLAND 500 40TH\FIGURES\SITE PLAN.DWG

CAMBRIA

Former Shell Service Station
500 40th Street
Oakland, California
Incident No.97093400

FIGURE
2

Table 1. **Historical Groundwater Analytical Data - Halogenated Volatile Organic Compounds** Former Shell Service Station, Incident No.97093400, 500 40th Street, Oakland, California

Sample ID	Sample Date	1,1-Dichloroethane	cis-1,2-Dichloroethene	1,2-Dichloroethane	Trichloroethene	Chloroform	Tetrachloroethene	Bromomethane
		← parts per billion →						
EW-1	11/17/93	0.69	6.8	2.4	5.5	<0.50	<0.50	<0.50
MW-4	11/17/93	<0.5	3.5	<0.5	2.5	1.3	36	<0.50
MW-5	11/17/93	<0.5	1.2	<0.5	2.0	1.0	34	<0.50
MW-8	11/17/93	<1.0	1.1	<1.0	1.8	1.1	50	<1.0
	3/16/06	<0.500	<0.500	<0.500	<0.500	3.23	17.1	<0.500
OMW-10	11/17/93	<0.5	3.9	<0.50	1.7	<0.5	1.9	<0.50
OMW-12	11/17/93	<10	11	<10	13	<10	**400**	<10
OMW-9	11/18/93	<0.5	0.68	<0.50	<0.50	<0.5	<0.5	<0.50
	3/16/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	0.570
OMW-11	11/18/93	<10	42	<10	40	<0.5	**380**	<10
OMW-13	11/18/93	<10	<10	<10	<10	<10	<10	<10
	3/27/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
MW-2	3/16/06	<0.500	<0.500	<0.500	<0.500	<0.500	1.24	<0.500
MW-3	3/16/06	<0.500	1.57	<0.500	1.31	<0.500	7.59	<0.500
OMW-6	3/16/06	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
ESL[1]		**47**	**590**	**200**	**360**	**330**	**120**	**160**

Abbreviations and Notes:

1993 - Halogenated volatile organic compounds analyzed by EPA Method 8010; all detected constituents tabulated.

2006 - Halogenated volatile organic compounds analyzed by EPA Method 8260B; all detected constituents tabulated.

[1]RWQCB Environmental Screening Level for sites at which groundwater is not a drinking water source

<x = Not detected at reporting limit x.