



10/19/05
R058

November 26, 2003

Mr. Andrew Stow
ConocoPhillips
P.O. Box 2197
Houston, Texas 77252-2197

SITE: 76 STATION 6129
3420 35th AVENUE
OAKLAND, CALIFORNIA

RE: LIMITED PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

Dear Mr. Stow:

Miller Brooks Environmental, Inc. (Miller Brooks), is pleased to submit this Limited Phase II Environmental Site Assessment Report summarizing subsurface assessment activities conducted at 76 Station 6129, located at 3420 35th Avenue, Oakland, California (Figure 1). Assessment activities were inherently limited in scope and breadth based upon directives given by ConocoPhillips, and were intended to provide a limited "baseline" evaluation of subsurface conditions at the site in association with a transaction of real property. The scope of work described in this report was conducted in general accordance with Miller Brooks' October 27, 2003, *Revised Proposal and Cost Estimate for Limited Phase II Environmental Site Assessment*.

SITE DESCRIPTION

The site is currently an operating 76 Service Station that dispenses gasoline stored in two 12,000-gallon underground storage tanks (USTs) from two dispenser islands. A site visit conducted by Miller Brooks on October 15, 2003 revealed that there is one current waste oil UST, one former waste oil UST, three hydraulic lifts, and three groundwater monitoring wells present at the site. No clarifiers were observed in the three automotive service bays, although a subsequent site visit revealed a scar in the concrete in front of the central hydraulic lift where a former clarifier was present. The station manager also informed Miller Brooks that two floor drains had previously been removed. Pertinent current and former site features are displayed on Figure 2.

BACKGROUND

According to Kaprealian Engineering, Inc. (KEI), in 1989, two 10,000-gallon gasoline USTs and one 550-gallon waste oil UST were removed from the site. Analytical results of soil samples collected beneath the former gasoline USTs, waste oil UST and product piping indicated that low concentrations of petroleum hydrocarbons were detected in each of the sampling areas. Three groundwater monitoring wells (MW-1 through MW-3) were installed in 1989 to a depth of approximately 44 feet below ground surface (bgs). In 1990, four soil borings (EB1 through EB4) were drilled at the site in the vicinity of MW-3 in an attempt to define the hydrocarbon impact to soil. Based on the results of the soil sampling from the four borings, approximately 230 cubic yards of soil were excavated from an area between the dispenser islands and around well MW-3 in 1991. Excavation was performed so as to not destroy well MW-3. Analytical results from confirmation soil samples indicated that predominantly all the impacted soil had been removed from the subsurface.

ENVIRONMENTAL SETTING

GEOLOGIC AND HYDROGEOLOGIC CONDITIONS

The site is located at an elevation of approximately 190 feet above mean sea level. Groundwater was encountered during well installation in 1989 at a depth of approximately 30 feet bgs, and was measured by Miller Brooks at approximately 30 feet bgs in monitoring well MW-2 on October 15, 2003. Historically, the groundwater flow direction has generally been towards the southwest. Soil encountered during previous drilling activities generally consisted of clayey gravel with varying amounts of sand and clay to the maximum depth explored (44 feet bgs).

SUMMARY OF FIELD ACTIVITIES

PRE-DRILLING ACTIVITIES

Before field activities were initiated, Underground Service Alert was notified (No. 412549), and Cruz Brothers, a private utility locating company, verified the location of onsite utilities. Prior to drilling, a soil boring installation permit was obtained from the Alameda County Public Works Agency (ACPWA) (No. W03-0980). On the day field activities were initiated, a site safety plan was provided to all workers onsite during the tailgate safety meeting, which was held to inform workers of potential onsite hazards.

DRILLING AND SAMPLING ACTIVITIES

On November 12 and 13, 2003, four soil borings (SB-1 and SB-3 through SB-5) were drilled to assess subsurface conditions at the site. The soil borings were hand augured to a depth of approximately 5 feet bgs to prevent damage to possible unidentified subsurface utilities. Five separate attempts were made to advance soil boring SB-2, however during hand auguring activities, pea gravel was encountered on three occasions, a subsurface utility was encountered in one location and gravel fill was encountered in one location. Therefore, attempts to install soil boring SB-2 were terminated and the boring was not completed. Soil boring locations are depicted in Figure 2. Each soil boring was advanced using a hollow-stem auger drill rig. During drilling activities, the soil borings were drilled to a total depth of approximately 31.5 (SB-3 through SB-5) and 36.5 (SB-1) feet bgs. Based upon field observations, groundwater was encountered at a depth of approximately 35 feet bgs.

During drilling, soil samples were collected at approximate 5-foot depth intervals for hydrocarbon vapor screening, and soil descriptions were logged in accordance with the Unified Soil Classification System. In accordance with directives from ConocoPhillips, one soil sample from each soil boring, collected from depths representing the capillary fringe or the maximum hydrocarbon vapor concentration recorded during vapor screening, was submitted for laboratory analysis.

GROUNDWATER SAMPLING ACTIVITIES

In order to assess groundwater conditions beneath the site, groundwater samples were collected from the three existing monitoring wells at the site (MW-1 through MW-3). Prior to groundwater sampling activities, the monitoring wells were developed using a combination of surging and bailing techniques. Approximately 15 to 20 gallons of water were removed from each monitoring well. A minimum of five hours after the wells were developed, groundwater samples were collected from each well using a disposable bailer and decanted into appropriate containers supplied by the laboratory.

A description of general field procedures, and copies of boring logs and the soil boring permit are included in Appendix A.

Soil, purged groundwater, and decontamination rinse water generated during drilling and sampling activities were temporarily stored onsite in labeled, Department of Transportation-approved, 55-gallon drums prior to transport to the Filter Recycling Services facility in Rialto, California, for disposal/recycling. A copy of the non-hazardous waste manifest will be forwarded under separate cover upon receipt.

LABORATORY ANALYSIS

Soil and groundwater samples collected during this investigation were submitted to a California-certified laboratory for analysis. All samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (collectively, BTEX), methyl tertiary butyl ether (MtBE), tertiary butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and ethanol using EPA Method 8260. In addition, the soil sample collected from SB-1 and SB-5 (adjacent to the existing and former waste oil USTs) were analyzed for oil and grease (O&G) using EPA Method 1664 and total lead by EPA Method 6010. Laboratory analytical results of soil and groundwater samples collected during site assessment activities are presented in Table 1 and Table 2, respectively. Copies of the official laboratory reports and chain of custody records are included in Appendix B.

FINDINGS

Sediments observed in the subsurface generally consisted of silt and lean clay with varying amounts of sand and gravel to approximately 36.5 feet bgs. The lean clay was observed to the maximum depth explored (approximately 36.5 feet bgs). During drilling activities, groundwater was observed at an approximate depth of 35 feet bgs.

Petroleum hydrocarbon concentrations were reported in the soil samples analyzed from soil borings SB-1, SB-3, and SB-5. The soil sample analyzed from boring SB-4 did not contain concentrations of petroleum hydrocarbons above laboratory reporting limits.

- MtBE and total lead were reported at a concentration of 0.410 and 3.9 milligrams per kilogram (mg/kg), respectively, in the soil sample analyzed from soil boring SB-1. All other constituents were reported below the laboratory reporting limit.
- MtBE was reported at a concentration of 0.370 mg/kg in the soil sample analyzed from soil boring SB-3. All other constituents were reported below the laboratory reporting limit.
- MtBE and total lead were reported at a concentration of 0.055 and 5.8 mg/kg, respectively, in the soil sample analyzed from soil boring SB-5. All other constituents were reported below the laboratory reporting limit.

Groundwater was measured at a depth of 30.27 to 31.36 feet below the top of well casing in monitoring wells MW-1 through MW-3. Petroleum hydrocarbon concentrations were reported in the groundwater samples collected from wells MW-1 through MW-3 as follows:

- Concentrations of 180 and 240 micrograms per liter ($\mu\text{g/L}$) of TPHg and MtBE, respectively, were reported in the groundwater sample collected from well MW-1. However, the reported TPHg

concentration (reported in the gasoline range) did not match the laboratory's gasoline standard. None of the remaining analytes were detected at or above the laboratory reporting limit.

- A concentrations of 2,100 µg/L of MtBE was reported in the groundwater sample collected from well MW-2. None of the remaining analytes were detected at or above the laboratory reporting limit, however the laboratory reporting limit for TPHg was 2,000 µg/L.
- Concentrations of 2,600 and 3,700 µg/L of TPHg and MtBE, respectively, were reported in the groundwater sample collected from well MW-3. However, the reported TPHg concentration (reported in the gasoline range) did not match the laboratory's gasoline standard. None of the remaining analytes were detected at or above the laboratory reporting limit.

CONCLUSIONS

Based upon laboratory analytical results of soil samples collected during this investigation, residual concentrations of MtBE and lead (<0.410 and <5.8 mg/kg, respectively) are present in the vicinity of soil borings SB-1, SB-3, and SB-5. The concentrations of detected lead are consistent with background concentrations in the soil. Analytical results of groundwater samples collected during this investigation indicate that MtBE is present in the groundwater beneath the site at concentrations up to 3,700 µg/L. According to the laboratory results, the TPHg detected in the groundwater samples did not match the laboratory's gasoline standard. Based on the absence of BTEX constituents and the elevated MtBE concentrations in the groundwater samples, the TPHg concentrations are most likely a laboratory false positive result due to MtBE interference. The detected dissolved phase hydrocarbon concentrations of MtBE during this investigation (between 240 and 3,700 ug/L) were above the California Regional Water Quality Control Board's maximum contaminant levels for MtBE (13 ug/L).

STATEMENT OF LIMITATIONS AND PROFESSIONAL CERTIFICATION

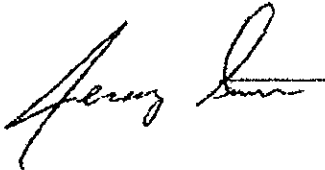
The conclusions presented herein are based solely upon the agreed upon scope of work outlined in this report. Miller Brooks makes no warranties or guarantees as to the accuracy or completeness of information provided or compiled by others. It is possible that information exists beyond the scope of this investigation. Additional information, which was not found or available to Miller Brooks at the time of writing this report, may result in modification of the conclusions presented. This report is not a legal opinion. The services performed by Miller Brooks have been conducted in a manner consistent with the level of care ordinarily exercised by members of our profession currently practicing under similar conditions. No other warranty, expressed or implied, is made.

This investigation was performed under the direct responsible charge of the professional whose signature and license number appear below.

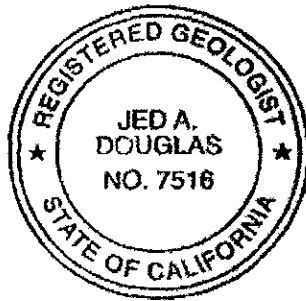
If you have any questions regarding this report, please call us at (707) 765-0466.

Sincerely,

MILLER BROOKS ENVIRONMENTAL, INC.



Jeremy A. Smith
Senior Staff Scientist



Jed A. Douglas, RG No. 7516
Senior Geologist

Attachments: Table 1 – Laboratory Analytical Results of Soil Samples
 Table 2 – Laboratory Analytical Results of Groundwater Samples
 Figure 1 – Vicinity Map
 Figure 2 – Site Plan
 Appendix A - General Field Procedures, Boring Logs, and Drilling Permit
 Appendix B - Laboratory Reports and Chain of Custody Documentation

cc: David DeWitt, ConocoPhillips – 1 hard copy
 Tina Luckman, ConocoPhillips – 1 electronic copy
 Bob Turreitta, ConocoPhillips 3611 Harbor Boulevard, Santa Ana, CA 92704 – 3 hard copies

REFERENCES

- United States Geologic Survey 7.5 minute Topographic Map, 1959, Oakland East Quadrangle, photorevised 1980.
- Kaprelian Engineering Inc., Preliminary Ground Water Investigation at Unocal Service Station #6129, 3420–35th Avenue, Oakland, California, dated February 5, 1990.
- Kaprelian Engineering Inc., Soil Sampling Report at Unocal Service Station #6129, 3420–35th Avenue, Oakland, California, dated April 25, 1991.
- Miller Brooks Environmental, Inc., 2003, Revised Proposal and Cost Estimate for Limited Phase II Environmental Site Assessment, 76 Service Station No. 6129, 3420 – 35th Avenue, Oakland, California, October 27, 2003.

TABLES

Table 1

LABORATORY ANALYTICAL RESULTS OF SOIL SAMPLES
 76 Station 6129
 3420 - 35th Avenue
 Oakland, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg (mg/kg)	O&G (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	TAME (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	Ethanol (mg/kg)	Total Lead (mg/kg)
SB-1-31	31	11/12/03	ND<3.4	ND<50	ND<0.017	ND<0.017	ND<0.017	ND<0.017	0.410	ND<0.034	ND<0.034	ND<0.017	ND<0.017	NA	NA	ND<0.340	3.9
SB-2	--	Not Collected															
SB-3-26	26	11/12/03	ND<3.5	NA	ND<0.017	ND<0.017	ND<0.017	ND<0.017	0.370	ND<0.035	ND<0.035	ND<0.017	ND<0.017	NA	NA	ND<0.350	NA
SB-4-26	26	11/13/03	ND<1	NA	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.010	ND<0.010	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.1	NA
SB-5-31	31	11/13/03	ND<1	ND<50	ND<0.005	ND<0.005	ND<0.005	ND<0.005	0.055	ND<0.005	ND<0.010	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<0.1	5.8

Notes

feet = feet below ground surface

TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8260

O&G = oil and grease using EPA Method 1664

BTEX = benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8260

MTBE = methyl tertiary butyl ether using EPA Method 8260

TBA = tertiary butyl alcohol using EPA Method 8260

DIPE = diisopropyl ether using EPA Method 8260

ETBE = ethyl tertiary butyl ether using EPA Method 8260

TAME = tertiary amyl methyl ether using EPA Method 8260

1,2-DCA = 1,2-Dichloroethane using EPA Method 8260

EDB = 1,2-Dibromoethane using EPA Method 8260

Ethanol - using EPA Method 8260

Total Lead - using EPA Method 6010

mg/kg = milligrams per kilogram

ND = not detected at or above reporting limit indicated

NA = Not Analyzed

Analytical results reported by laboratory as micrograms per kilogram and converted to milligrams per kilogram by Miller Brooks

0.410 = Analytical result reported above laboratory reporting limit

Table 2

LABORATORY ANALYTICAL RESULTS OF GROUNDWATER SAMPLES
76 Station 6129
3420 - 35th Street
Oakland, California

Sample ID	Date Sampled	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Ethanol (µg/L)
MW-1	11/13/03	180 ¹	ND<1.0	ND<1.0	ND<1.0	ND<2.0	240	ND<200	ND<4.0	ND<4.0	ND<4.0	ND<4.0	ND<4.0	ND<1,000
MW-2	11/13/03	ND<2,000	ND<20	ND<20	ND<20	ND<40	2,100	ND<4,000	ND<80	ND<80	ND<80	ND<80	ND<80	ND<20,000
MW-3	11/13/03	2,600 ¹	ND<20	ND<20	ND<20	ND<40	3,700	ND<4,000	ND<80	ND<80	ND<80	ND<80	ND<80	ND<20,000

Notes

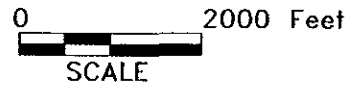
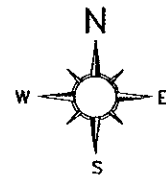
TPHg = total petroleum hydrocarbons as gasoline using EPA Method 8260
 BTEX = benzene, toluene, ethylbenzene, and total xylenes using EPA Method 8260
 MTBE = methyl tertiary butyl ether using EPA Method 8260
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 TAME = tertiary amyl methyl ether using EPA Method 8260
 1,2-DCA = 1,2-Dichloroethane using EPA Method 8260
 EDB = 1,2-Dibromoethane using EPA Method 8260
 Ethanol - using EPA Method 8260
 µg/L = micrograms per liter
 ND = not detected at or above reporting limit indicated
 1,2 = Analytical result reported above laboratory reporting limit
¹ = Hydrocarbon reported in the gasoline range does not match laboratory's gasoline standard

FIGURES



FROM: U.S. GEOLOGICAL SURVEY, 1981
 QUADRANGLE: OAKLAND EAST
 COUNTY: ALAMEDA
 SERIES: 7.5-MINUTE QUAD

NOTE: ALL BOUNDARIES AND LOCATIONS ARE APPROXIMATE



720 SOUTHPOINT BOULEVARD, SUITE 207
 PETALUMA, CA. 94954
 (707) 765-0466

PROJECT NO. 06-459-6129-01

DRAWN BY:
 AIL
 DATE:
 11/19/03
 REVISED BY:
 PEL
 REVISED:
 11/19/03
 APPROVED BY:
 JAD
 DATE:
 11/20/03

SITE LOCATION MAP

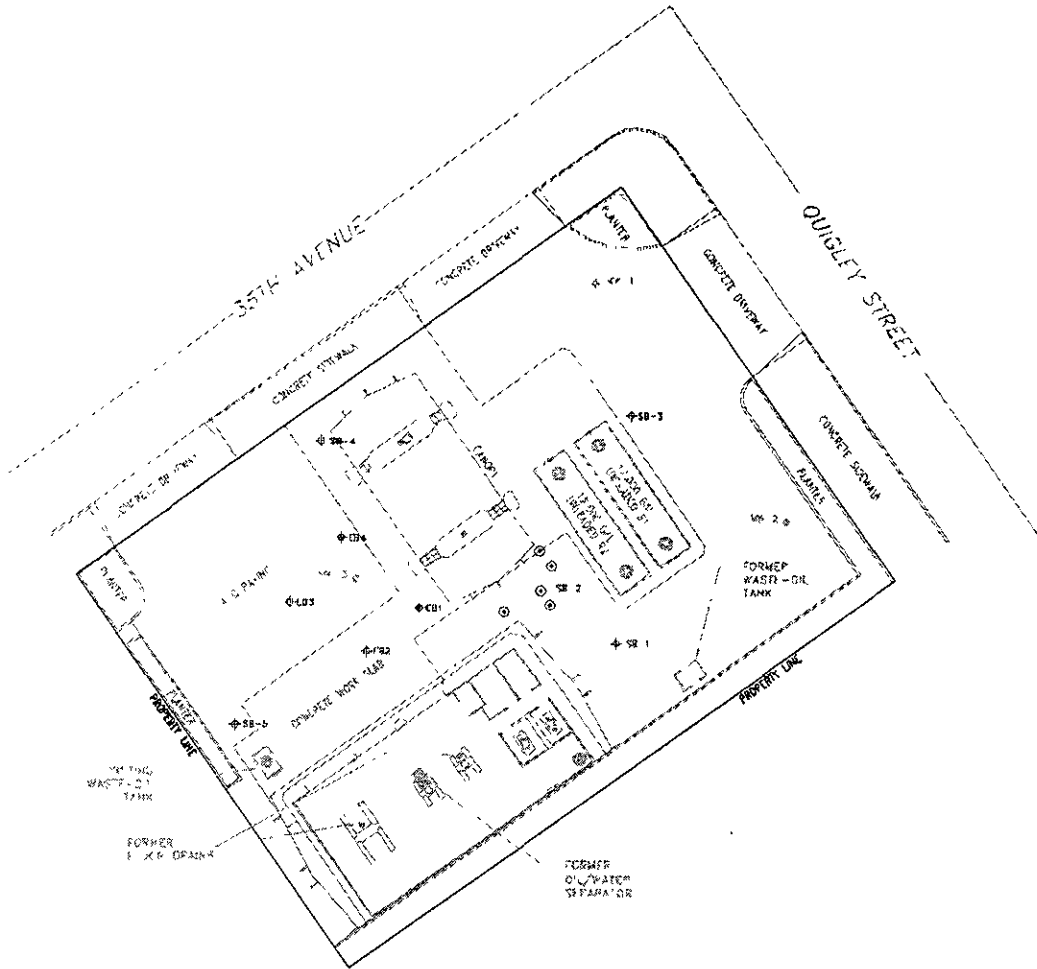
76 STATION 6129
 3420 35TH STREET
 OAKLAND, CA.

FIGURE

1

FILE: K:\DWGS\C-P\NO. 6129 (3420 35TH STREET)\VICINITY MAP
 DATE PLOTTED: 11/20/03

11/20/03 09:21:00



LEGEND

- ⊕ SB-5 → GROUNDWATER MONITORING WELL
- ⊕ SB-5 ⊕ SOIL BORING LOCATIONS
- ⊕ SB-2 ⊕ ATTEMPTED SOIL BORING
- ⊕ GASOLINE UNDERGROUND STORAGE TANK
- ⊕ DISPENSER ISLAND
- ⊕ HOIST



<p>MILLER BROOKE <i>Environmental, Inc.</i></p>	DRAWN BY: AIL	SITE PLAN	FIGURE 2
	DATE: 11/19/03		
720 SOUTHPOINT BLVD., SUITE 207 PETALUMA, CA. 94954 (707) 765-0466	REVISED BY: PEL	76 STATION NO. 6129 3420 35TH STREET OAKLAND, CA.	
PROJECT NO. 01-459-6129-03	APPROVED BY: JAD	FILE X:\DWG\C-C-P\NO. 6129 (3420 35TH ST, OAKLAND)\SITE PLAN	DATE PLOTTED: 11/20/03
	DATE: 11/20/03		