ConocoPhillips
76 Broadway
Sacramento, California 95818

September 15, 2008

Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay parkway, Suite250
Alameda, California 94502-577

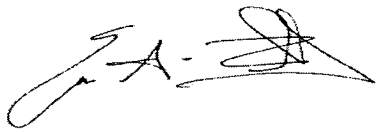
Re: ***Site Conceptual Model***
76 Service Station # 0018
6201 Claremont Street
Oakland, CA

Dear Ms. Jakub:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call me at (916) 558-7666.

Sincerely,



Terry L. Grayson
Site Manager
Risk Management & Remediation

SITE CONCEPTUAL MODEL

76 SERVICE STATION NO. 0018

6201 CLAREMONT STREET

OAKLAND, CALIFORNIA

Prepared for:

ConocoPhillips Company
76 Broadway
Sacramento, CA 95818

Prepared by:

Delta Consultants, Inc.
312 Piercy Road
San Jose, California 95138

September 12, 2008

CERTIFICATION

The following report was prepared under the supervision and direction of the undersigned California Professional Geologist.

DELTA CONSULTANTS, INC.

D. Bryan

Debbie Bryan
California Professional Geologist #7745

1.0 INTRODUCTION

Delta Consultants, Inc. (Delta), on behalf of ConocoPhillips (COP) has prepared this Site Conceptual Model (SCM) for the 76 Service Station No. 0018 site, located at 6201 Claremont Street in Oakland, California (site) (**Figure 1**). The SCM provides a working hypothesis regarding the current and future distribution of petroleum hydrocarbons and methyl tert-butyl ether (MTBE) detected in soil and groundwater beneath the site.

The key elements of the SCM are:

- Site history and description
- Regional hydrogeologic setting
- Nature and extent of the petroleum hydrocarbon source(s)
- Contaminant fate and transport characteristics
- Potential exposure pathways
- Potential receptors

2.0 SITE LOCATION AND DESCRIPTION

The following sections provide a description of the site and surrounding area.

2.1 Site Location

The site (Alameda County Assessor's Parcel # 48A-7070-70-1) is located on a triangular shaped property formed by the intersection of Claremont Avenue and College Avenue in Oakland, California. (**Figures 1 and 2**).

2.2 Site Description

The site is currently an active Union 76 retail service station with two 12,000-gallon underground storage fuel tanks (USTs) (**Figure 2**). Other site features include a station building and two gasoline dispenser islands under a single canopy. The station building consists of a vehicle service area with two hoists and a market and office area.

The site is bounded to the west by College Avenue, to the north by a supermarket parking lot, and to the east by Claremont Avenue (**Figure 2**). The site is located in a mixed commercial and residential area. The immediate vicinity of the site is occupied by commercial properties. The site elevation is approximately 210 feet above mean sea level (MSL). Local topography slopes gently to the southwest toward San Francisco Bay, which is located approximately 3.5 miles west of the site.

2.3 Site Owner

The site property has been the location of a service station since before 1956 when records show the station facility was modernized. The site was purchased by Union Oil Company of California in June 1965. The property was sold in June 1970 and leased back to Union Oil Company who continued to operate a service station. The service station is currently owned and operated by Andrew J. and Nila J. Coffin, 6201 Claremont Avenue, Oakland.

3.0 SITE SETTING

The following sections provide a summary of the regional geologic and hydrogeologic setting.

3.1 Regional Geologic Setting

The site is located near the base of the Berkeley Hills approximately 0.5 mile west of the Hayward fault (**Figure 3**). Gettler-Ryan Inc., in their report dated December 18, 2000, provided the following description of the regional geologic setting;

> The subject is located at the eastern margin of the East Bay Plain, approximately 3.5 miles east of the eastern shore of San Francisco Bay. As mapped by E.J. Helley and others (1979), soil in the site vicinity consists of late Pleistocene alluvium consisting of weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel. Based on the site topography, the regional groundwater flow in the vicinity of the site is inferred to be toward the southwest.

3.2 Regional Hydrogeologic Setting

The site is located at the eastern edge of the East Bay Plain Groundwater Subbasin (DWR Bulletin 118). The East Bay Plain subbasin aquifer system consists of unconsolidated sediments of Quaternary age. Numerous creeks cross the subbasin capturing runoff from foothills east of the Hayward fault. In the site area, streams discharge to San Francisco Bay. The total depth of domestic wells reportedly ranges from 32 to 525 feet with an average of 206 feet. Total depth of municipal and irrigation wells range from 29 to 630 feet with an average of 191 feet (DWR Bulletin 118). Groundwater flow is typically to the west toward San Francisco Bay. Water agencies in the area include East Bay Municipal Utility District (East Bay MUD) and Alameda County Flood Control and Water Conservation District. No municipal wells have been identified within a one-half mile radius of the site.

4.0 NATURE AND EXTENT OF SOURCE

The following sections describe the source(s) of the petroleum hydrocarbons that have been detected in soil and groundwater beneath and adjacent to the site.

4.1 Former USTs

A Union Oil Company of California drawing dated 7-23-56 shows the site USTs to be located in the southern corner of the site (**Appendix A**). Two of the USTs are labeled 4,000-gallon tank and one as a 5,000-gallon tank. The last revision date on the drawings is indicated as 1962. The current fuel USTs are located in the central portion of the site (**Figure 2**).

4.2 Oil/Water Separator Abandonment (1993)

On June 16, 1993, GeoStrategies Inc. (GSI) collected two samples (UOW-1 and UOW-2) from below an oil/water separator located in the station building (see map, **Appendix B**). The two samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), total petroleum hydrocarbons as diesel (TPH-D), total petroleum hydrocarbons as motor oil (TPH-MO), total oil and grease (TOG), benzene, toluene, ethylbenzene, and xylene (BTEX compounds), volatile organic compounds (VOCs), and metals (arsenic, barium, cadmium, chromium, cobalt, copper, mercury, lead, nickel, and zinc). A table of analytical results is contained in **Appendix B**.

Concentrations of TPH-G, TPH-D, TOG, BTEX compounds, VOCs, and mercury were all below the laboratory detection limit. TPH-MO was detected in UOW-1 and UOW-2 at 170 milligrams per kilogram (mg/kg) and 22 mg/kg, respectively. Concentrations of all metals were below the Total Threshold Limit Concentration (TTLC).

4.3 Product Line Test (1996)

An Underground Storage Tank Unauthorized Release Report (URR) dated November 19, 1996 was submitted to the Alameda County Health Care Services Agency (ACHCSA). The leak discovery date was indicated as November 19, 1996 and the source of concern was indicated as a "line test."

4.4 UST Removal (1997)

Two 12,000-gallon unleaded gasoline storage USTs and one 280-gallon waste oil UST were removed from the site in March 1997 (KEI, April 1997). UST removal activities are described in the Kaprealian Engineering, Inc. (KEI) report dated April 17, 1997. The KEI report states;

> *No apparent holes or cracks were observed in the fuel tanks. However, three holes of approximately ¼-inch in diameter were observed on top of the waste oil tank.*

One soil sample was collected from beneath the waste oil tank (WO1). Four soil samples, labeled A1, A2, B1, and B2 were collected from beneath the former fuel USTs. Four soil samples, labeled D1 through D4, were collected from beneath the product dispensers at depths of approximately 2 feet below grade (bg). In addition, a water sample was collected from the fuel tank excavation pit. All samples were analyzed for TPH-G, BTEX compounds, and MTBE. In addition, the sample from beneath the waste oil tank was analyzed for TPH-D, TOG, cadmium, chromium, lead, nickel, and zinc.

A map of sample locations and a table of laboratory results is presented in **Appendix C**. Three (A2, B2, and D1) of the nine soil samples collected contained petroleum hydrocarbons. The highest concentration of TPH-G detected in samples was 2.6 mg/kg in sample A2. MTBE was detected in only one soil sample (D1) at 1.4 mg/kg. TPH-G, TPH-D and TOG were not detected in the soil sample collected from beneath the former waste oil tank.

TPH-G was detected in soil stockpiled from the fuel UST removal excavation at concentrations ranging from 2.0 to 28 mg/kg. TPH-D and TOG were detected in the waste oil tank soil stockpile at 1,400 mg/kg and 1,600 mg/kg, respectively.

The water sample from the UST excavation pit was found to contain 6,100 milligrams per liter (ug/l) TPH-G, 54 ug/l benzene, 38 ug/l toluene, 300 ug/l ethylbenzene, and 2,500 ug/l xylene. MTBE was not detected in the water sample. A URR was submitted to the ACHCSA dated 3/23/98 [97 ?]. The release discovery date was reported as 3/7/97. It appears that the fuel USTs were replaced in the same location in the central portion of the site. The waste oil UST was not replaced.

4.5 Residual Soils as On-Going Source

The most current on-site soil analytical data is from the borings for wells MW-1, MW-2, and MW-3 installed in July 2000. TPH-G, BTEX compounds, and MTBE were below the laboratory detection limit in all but one soil sample. TPH-G, plus unidentified hydrocarbons in the C6-C12 range, were detected in a saturated sample from 25.5-feet bg from the boring for well MW-1 (19 mg/kg). Benzene was detected in the sample at 0.018 mg/kg. MTBE was not detected. The highest photoionization detector reading for soil samples collected in the three borings was 118 parts per million (ppm) in MW-1. The vadose zone thickness beneath the site has typically been about 15 feet thick. The vadose zone consists primarily of silt which retards contaminant migration.

In addition to minimized migration potential, the residual mass of petroleum hydrocarbons and MTBE remaining in soil appears to be small. Only low-level (< 20 mg/kg) concentrations have been detected at the site. Detections were 1) in the boring for Well MW-1, located southwest of site USTs and dispenser islands, 2) in the western portion of the UST pit, and 3) beneath the western-most dispenser island. With the exception of residual TPH-MO beneath the station

building, it appears that a limited area of petroleum hydrocarbon impacted soils exist primarily in the western portion of the site,nearest College Avenue.

4.6 Summary

A release of gasoline from the site USTs (current location) occurred sometime before 1997 when TPH-G was detected in water in the UST excavation pit at 6,100 ug/l. MTBE was not detected in the water sample. It is uncertain if a release occurred from the former USTs, which were located in the southern portion of the site from at least prior to 1962. A release of gasoline from fuel dispensers and/or their associated piping also occurred sometime before 1997 when petroleum hydrocarbons and MTBE were detected beneath the western-most dispenser island.

5.0 FATE AND TRANSPORT CHARACTERISTICS

The following sections describe potential contaminant migration pathways for petroleum hydrocarbons and MTBE. Plume migration and contaminant concentration trends are discussed.

5.1 Underground Utility Conduits

The exact location and depth information of utility trenches both on-site and in the site vicinity has not been determined. Based on the documents in Delta files, a survey of nearby utilities for the purpose of a preferential pathway evaluation has not been performed. However, depth to groundwater (average = 20 feet bg) is below the depth of utility trenches, and no survey is now deemed necessary.

5.2 Soil Migration Pathways

Soils beneath the site area are generally fine-grained and do not provide pathways for rapid spread of contaminants. Soils encountered in the 1997 UST replacement excavation were described as primarily clay and silty clay (KEI, April 1997) to a depth of 16 feet bgs. Borings for wells MW-1, MW-2, and MW-3 encountered primarily silt and silty sand with some silty gravel. Copies of boring logs and well construction diagrams are provided in **Appendix D**.

5.3 Hydrogeologic Pathways

Vertical migration of dissolved contaminants beneath the site is hindered by generally fine-grained soil types. Groundwater was found seeping into the 1997 UST replacement excavation at a depth of approximately 15.5 to 16.5 feet bg (KEI, April 1997). Groundwater was first detected in the borings for the three site wells at depths ranging from 20 to 28.5 feet bgs (GR, December 2000). Wells MW-1 through MW-3 are 30 feet deep and screened from 10 to 30 feet bgs. On August 24, 2000 (first sampling event), static water levels in the wells ranged from 18.50 to 19.69 feet below top of casing. Seasonally, depth to groundwater in wells fluctuates approximately 5 to 7 feet with the highest groundwater levels in January- March and lowest levels in August-September (**see graph Appendix E**). Depth to water in wells over the year typically ranges from approximately 16 to 23 feet below top of casing.

The groundwater flow direction beneath the site has consistently been to the southwest. A site groundwater flow direction rose diagram showing groundwater flow direction from 2000 until 2005 (a total of 15 monitoring events) is provided in **Appendix E**. The groundwater gradient at the site has historically been approximately 0.01 feet/foot (ft/ft). Historic groundwater contour maps, including the most recent (June 20, 2008), are also contained in **Appendix E**.

The groundwater flow rate beneath the site can be approximated based on the hydraulic conductivity of the soil, groundwater flow gradient and effective soil porosity. The linear groundwater flow rate or velocity (V) can be calculated from the formula:

$V = (K \times I)/N$

where K = soil coefficient of hydraulic conductivity

I = groundwater gradient
N = effective soil porosity

The predominant soil types beneath the site are silt and silty sand. The average K for a silt/silty sand is estimated in the range of 1×10^{-3} to 1×10^{-4} centimeters per second and the porosity at 30% (Freeze and Cherry, 1979). The site hydraulic conductivity has typically been approximately 0.01 ft/ft. Using the above estimated parameters, a groundwater velocity of approximately 3.4 to 34 feet per year is calculated. The flow rate for dissolved petroleum hydrocarbons is typically significantly slower than the groundwater due to physical and chemical interactions with the soil matrix and biological processes.

5.3 Contaminant Migration Model

It appears that a release occurred at some undetermined time from the former site USTs removed in 1997. The distance from the bottom of the UST pit to the top of groundwater was approximately 3 feet. Petroleum hydrocarbons moved downward by gravity through silty soil until encountering saturated soils at a depth of approximately 16 to 18 feet bg. Once contaminants entered the groundwater, they were dissolved and began migrating with the shallow groundwater flow toward the southwest. By August 2000, dissolved petroleum hydrocarbons had migrated more than 60 feet downgradient and were detected in the first sample from well MW-1 (**Figure 2**). MTBE was also detected in the first sample from well MW-1 at 54 ug/l. The downgradient extent of MTBE in well MW-1 is not defined.

A Shell service station is located at 6039 College Avenue, approximately 400 feet south of the site (**Figure 4**). The Shell service station is in the general downgradient direction of the 76 station. The 76 station does not appear to have any impact on the Shell station. The Shell upgradient well MW-1 does not contain TPH-G, benzene, or MTBE (Conestoga-Rovers & Associates, May 14, 2008).

5.4 Concentration Trends

TPH-G has only been detected in well MW-1. A TPH-G concentration graph is shown on **Figure 5**. The graph illustrates the declining trend in TPH-G concentrations between 2001 and 2008. The TPH-G concentration in well MW-1 in the June 20, 2008 sample was 100 ug/l.

MTBE has continuously been detected in well MW-1, and sporadically in MW-3. An MTBE concentration graph for well MW-1 is shown on **Figure 6**. MTBE concentrations increased from the initial sample in August 2000 through August 2001 when the historic high concentration of 150 ug/l was reached for the second time. Since August 2001, MTBE concentrations have steadily declined. MTBE was detected in the June 20, 2008 sample from well MW-1 at 13 ug/l.

6.0 SITE REMEDIATION

In March 1997, approximately 500 tons of soil were excavated from the fuel tank pit and piping trenches and 16 tons of soil were excavated from the waste oil pit. Three composite samples were collected from the fuel tank pit soil stockpile. TPH-G was detected at a maximum concentration of 22 mg/kg. Benzene was not detected in any of the samples. TPH-G, TPH-D, and TOG were detected in a composite soil sample from the waste oil stockpile at 28 mg/kg, 1,400 mg/kg, and 1,600 mg/kg, respectively.

Stockpiled soils were transported to Forward Landfill for disposal under Approval #575822 and #575922.

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7.0 POTENTIAL SENSITIVE RECEPTORS

The following sections evaluate the various potential impacts to sensitive receptors from petroleum hydrocarbons and MTBE detected in soil and groundwater.

7.1 Environmental Screening Levels

The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) has published Environmental Screening Levels (ESLs) for chemicals commonly found in soil and groundwater at sites where releases of chemicals have occurred. The RWQCB notes "The ESLs are considered to be conservative." The tables below compare site specific soil and groundwater concentrations for TPH-G, benzene, and MTBE with ESLs for various potential sensitive receptors. The ESL tables for various sensitive receptors as found in the November 2007 publication are referenced.

	ESL Table	TPH-G (mg/kg)	Benzene (mg/kg)	MTBE (mg/kg)
Maximum Concentration Detected in Soil Sample		**19** (MW-1 at 25.5')	**0.018** (MW-1 at 25.5')	**1.4** (D1 at 2')
Groundwater Protection (shallow soils <3 meters)*	A-1	83	0.044	0.023
Groundwater Protection (deep soils >3 meters)*	C-1	83	0.044	0.023
Direct Exposure - Residential	K-1	110	0.12	30
Direct Exposure – Commercial	K-2	450	0.27	65
Direct Exposure – Construction/Trench Workers	K-3	42,000	12	2,800

* Ingestion. Groundwater considered a current or potential source of drinking water.

	ESL Table	TPH-G (ug/L)	Benzene (ug/L)	MTBE (ug/L)
Concentration Groundwater 6/20/08		**100**	**<0.50**	**13**
Potential Vapor Intrusion - Residential	E-1	NA	540	24,000
Potential Vapor Intrusion - Commercial	E-1	NA	1,800	8,000,000
California Maximum Contaminant Level (MCL)	F-3	NA	1.0	13

The maximum soil concentration for MTBE exceeds the ESL for leaching to groundwater considered as a current or potential source of drinking water. The site specific conditions are considered to mitigate these exceedences. The site is underlain by silt and silty sand that impede contaminant leaching. MTBE is detected at the MCL of 13 ug/l with a decreasing concentration trend indicating a lack of significant leaching.

Soil and groundwater TPH-G, benzene, and MTBE concentrations are at or below the ESLs for all other potential sensitive receptors.

7.2 Indoor Air Inhalation - Soil

No ESLs have been established for protection of indoor air from impacted soil. The RWQCB recommends direct measurement of soil gas concentrations in soil. The upward migration of any petroleum hydrocarbons remaining in soil is limited due to the silty nature of site soils and the generally low concentrations and limited area of soil impacts. The threat of soil vapors impacting indoor air quality is considered minimal.

7.3 Impact to Drinking Water Supply Wells

A review of Department of Water Resources (DWR) files was performed in 2006 by TRC to identify any wells within a ½-mile radius of the site. The well search did not identify any water supply wells within ½ mile of the site. A copy of the TRC well survey study is provided as **Appendix F**.

8.0 SUMMARY

Delta has prepared an SCM that describes the occurrence, migration, and fate of petroleum hydrocarbons and MTBE previously identified beneath the. The following are the key observations and conclusions;

- Site soils are generally fine-grained consisting of silt and silty sand. The groundwater flow rate is estimated at approximately 3.4 feet per year. The primary direction of groundwater flow is to the southwest.

- Groundwater typically occurs at a depth of approximately 16 to 23 feet below top of casing. Depth to groundwater in monitoring wells fluctuates 5 to 7 feet annually

- Facility plans from 1956 indicate that the site USTs were once located in the southern portion of the property. The USTs were relocated to their present location sometime after 1962.

- A release of gasoline from the site USTs appears to have occurred prior to March 1997. A water sample form the UST excavation pit contained 6,100 ug/l TPH-G and 54 ug/l benzene. MTBE was not detected in the sample. Petroleum hydrocarbons moved downward from the base of the USTs through 3 to 4 feet of vadose zone. The petroleum hydrocarbons dissolved into the groundwater at a depth of approximately 16 feet bg and migrated to the southwest with the natural groundwater flow gradient.

- Petroleum hydrocarbons and MTBE were detected in the first groundwater samples collected from well MW-1 in August 2,000 at 120 ug/l and 54 ug/l, respectively. Well MW-1 is located approximately 60 feet downgradient of the USTs. Since 2000, TPH-G has only been detected in well MW-1. The downgradient extent of MTBE in not defined.

- TPH-G and MTBE concentrations in groundwater samples from well MW-1 continue to decline. TPH-G and MTBE were detected in the June 20, 2008 sample from well MW-1 at 100 ug/l and 13 ug/l, respectively.

- A comparison of TPH-G, benzene, and MTBE concentrations in site soil and groundwater with RWQCB ESLs indicates that they do not pose a significant risk to public health or the environment.

9.0 RECOMMENDATIONS

There are two data gaps 1) the investigation of the former UST location in the southern portion of the site, and 2) the downgradient extent of dissolved MTBE. Delta recommends the drilling of two soil borings within the foot-print of the former UST location and the collection of soil samples from depths of 5, 10, and 15 feet bgs. The soil samples will be analyzed for TPH-G, TPH-D, and BTEX compounds. MTBE would not have been associated with pre-1962 fuels.

Delta recommends collection of a groundwater sample southwest of the site (Figure 4). Direct-push drill equipment will be used to collect a groundwater sample at a depth of 15 to 20 feet bg. The sample will be analyzed for TPH-G, BTEX compounds, MTBE, and TBA.

10.0 LIMITATIONS

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

11.0 REFERENCES

California Department of Water Resources, *Bulletin 118 Updated 2003, California's Groundwater*, October 2003.

Conestoga-Rovers & Associates, *Groundwater Monitoring Report – First Quarter 2008, Shell-branded Service Station, 6039 College Avenue, SAP Code 135685, Incident No. 98995745, ACHSA No. RO0000469*, May 14, 2008.

GeoStrategies Inc., *Oil/Water Separator Abandonment, UNOCAL Service Station No. 0018, 6201 Claremont Avenue, Oakland, California*, September 21, 1993.

Gettler-Ryan Inc., *Work Plan for a Limited Subsurface Investigation, Tosco 76 Branded Facility No. 0018, 6201 Claremont Avenue, Oakland, California*, June 26, 1998.

Gettler-Ryan Inc., *Well Installation Report, Tosco (76) Service Station No. 0018, 6201 Claremont Avenue, Oakland, California*, December 18, 2000.

Kaprealian Engineering Incorporated, *Soil and Ground Water Sampling Report, Unocal Service Station #0018, 6201 Claremont Avenue, Oakland, California*, April 17, 1997.

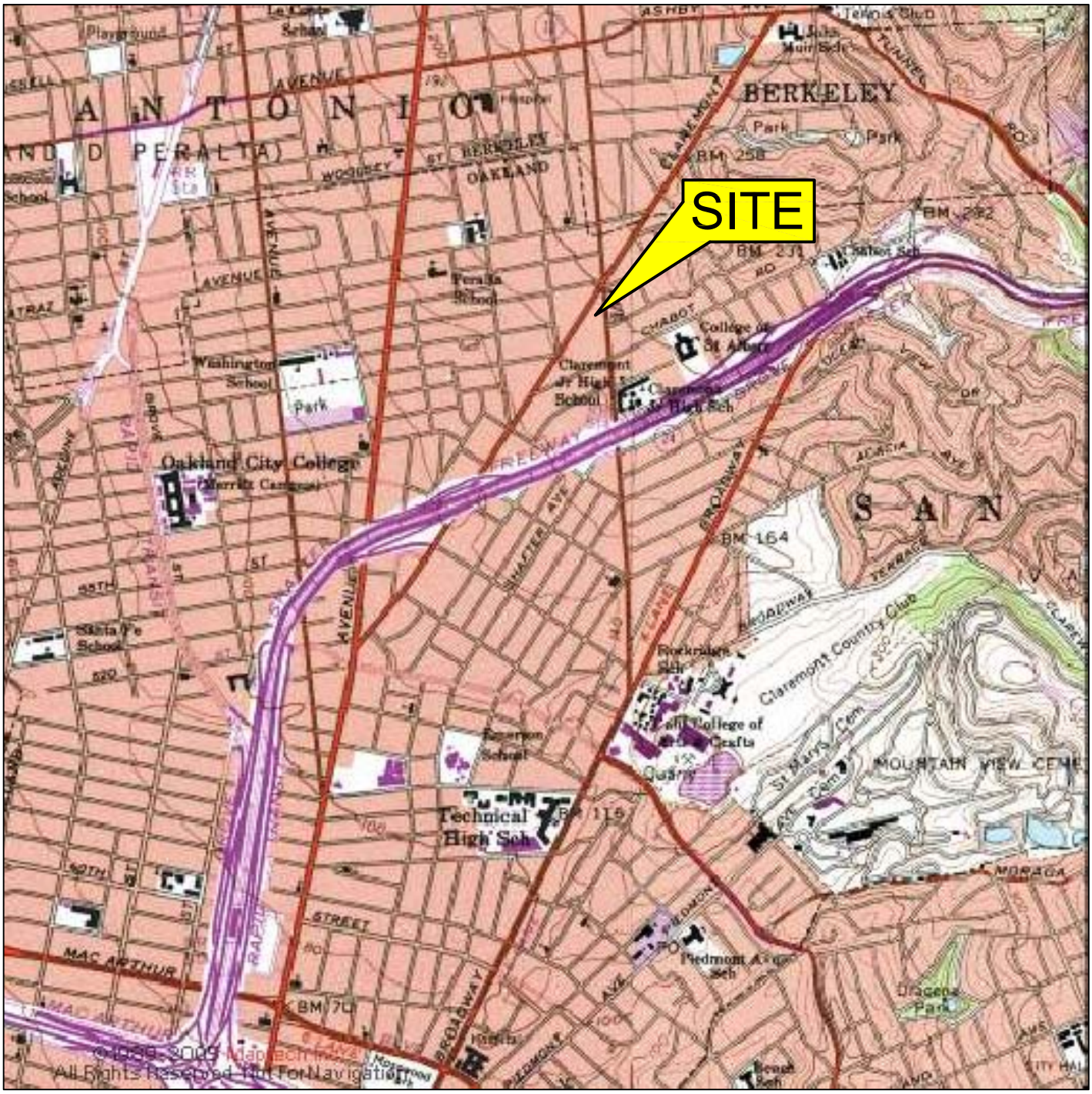
TRC, *No Further Action Required Report – Request for Closure, 76 Service Station #0018, 6201 Claremont Avenue, Oakland, California, Alameda County*, January 6, 2006.

TRC, *Sensitive Receptor Survey, 76 Service Station #0018, 6201 Claremont Avenue, Oakland, California*, April 26, 2006.

TRC, *Quarterly Monitoring Report, April through June 2008, 76 Station 0018, 6201 Claremont Avenue, Oakland, California*, July 14, 2008.

Union Oil Company of California, Internal Real Estate Documents, January 21, 1963.

FIGURES



North

0 900 1800 FT

SCALE

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, BERKELEY QUADRANGLE (1978)

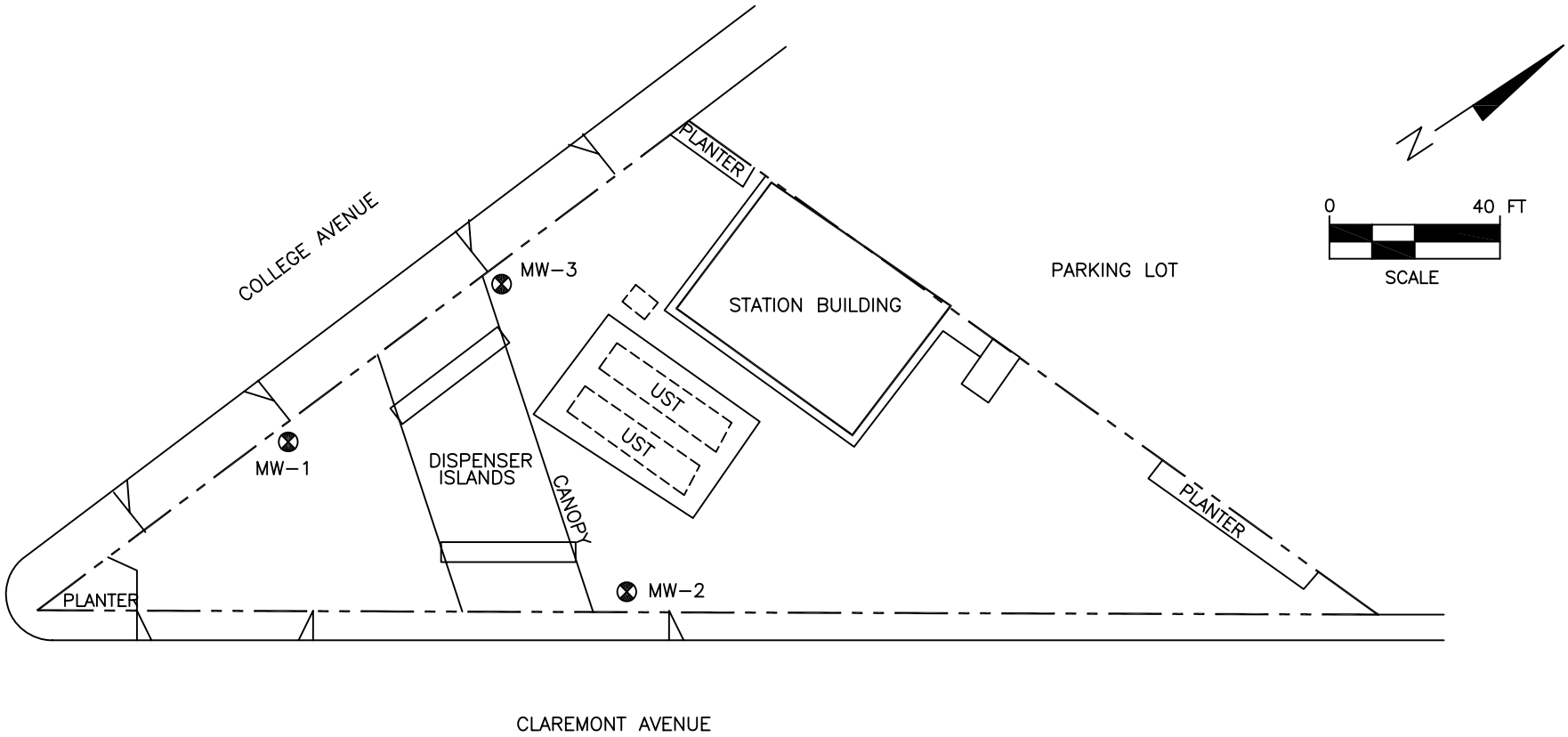
FIGURE 1

SITE LOCATION MAP

76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. C105406	DRAWN BY JH 04/04/08
FILE NO. 5406-SiteLocator	PREPARED BY JW
REVISION NO.	REVIEWED BY JW

DELTA



LEGEND:

PROPERTY BOUNDARY

MONITORING WELL

ADAPTED FROM A MAP ENTITLED "POTENTIOMETRIC MAP" DATED 8/24/00 BY GETTLER-RYAN INC.

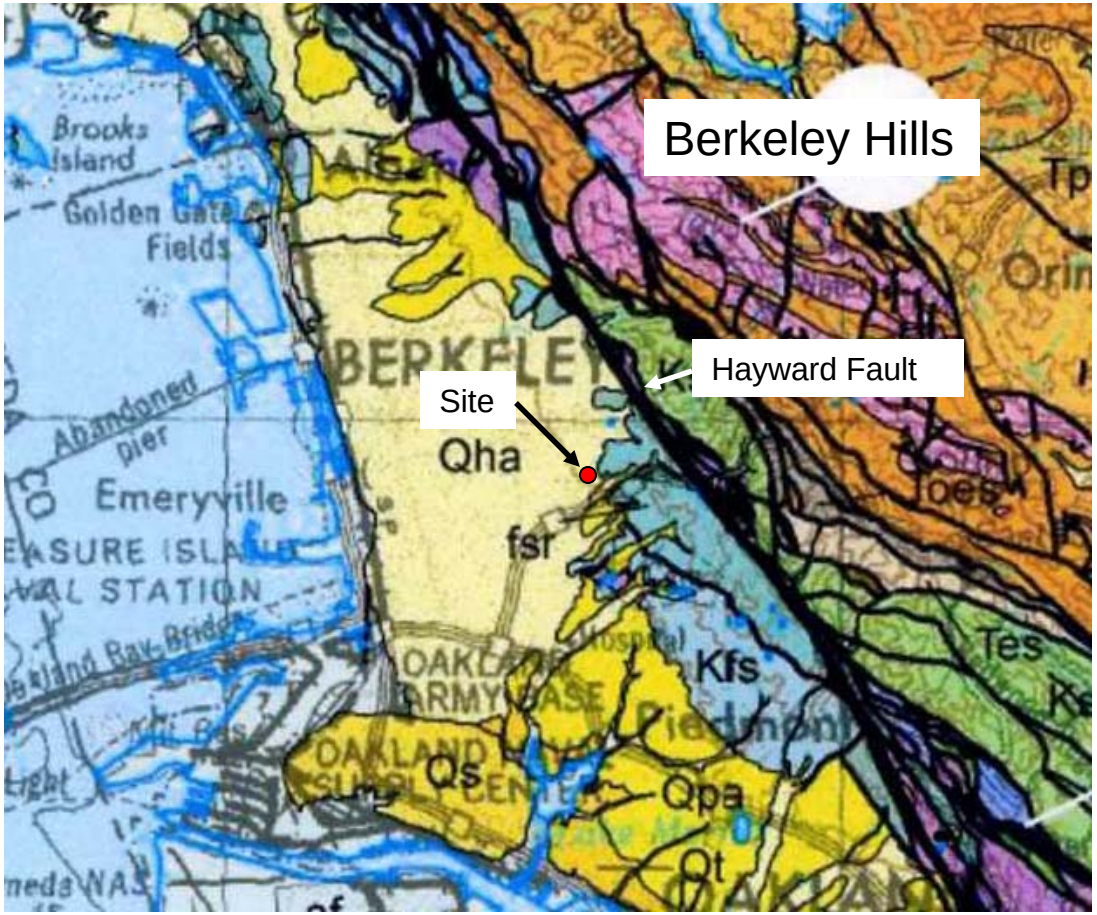
FIGURE 2
SITE PLAN

76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
C100018	DB	JH
DATE	REVIEWED BY	FILE NAME
09/12/08		76-0018

DELTA

Figure 3 – Regional Geologic Map



Qha = Alluvium (Holocene)

Qs = Beach and dune sand

Qpa = Alluvium (Pliestocene)

Kfs/fsr = Franciscan Complex (Cretaceous)

Geologic Map of the San Francisco Bay Area; Geology and Geologic Hazards; U.S.Geological Survey

Figure 4 – Local Groundwater Flow Direction

76 Service Station No. 0018

6210 Claremont Street, Oakland, CA

Figure 5 - TPH-G Concentration Graph
Well MW-1
76 Station 0018
6201 Claremont Avenue
Oakland, California

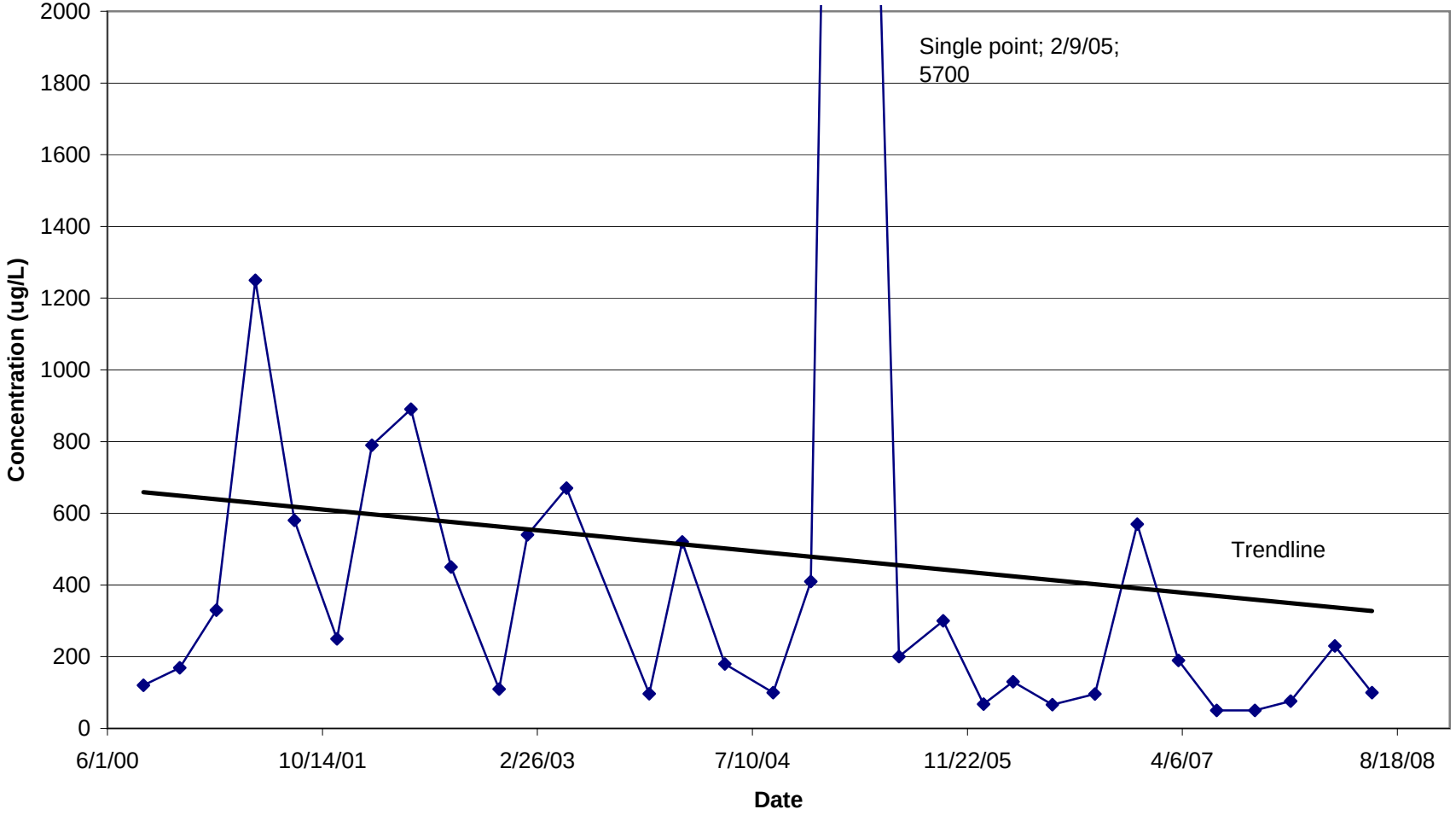
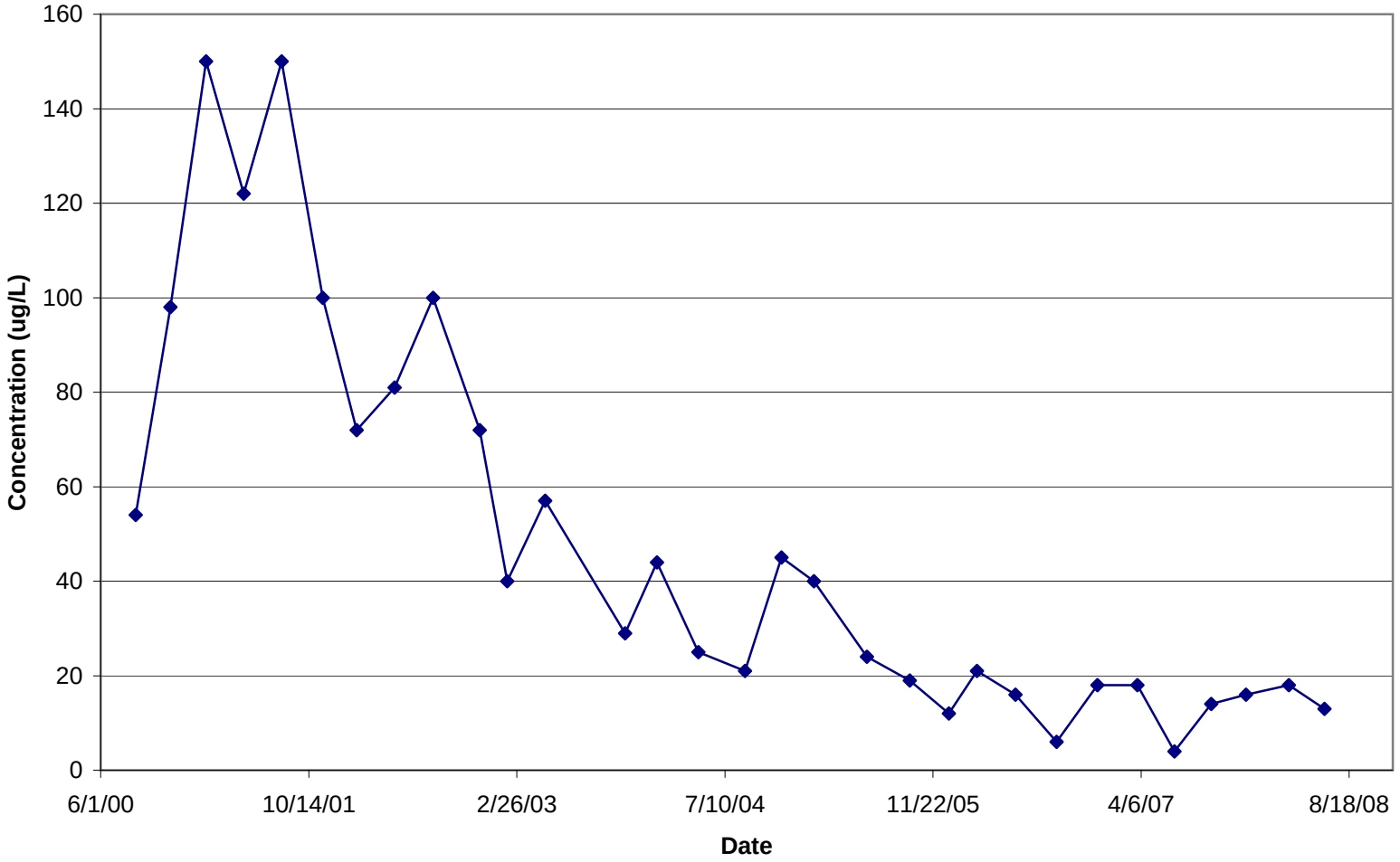
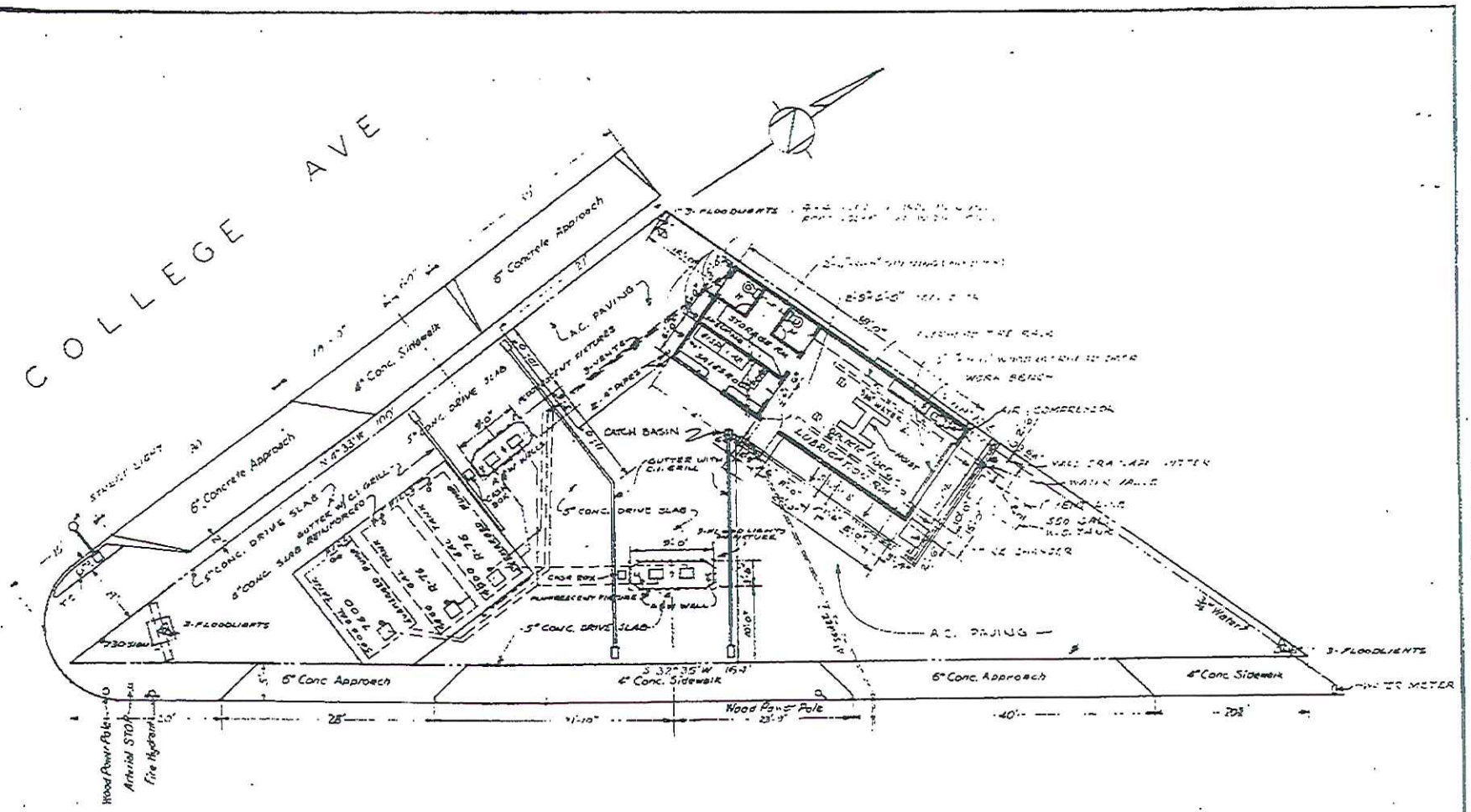


Figure 6 - MTBE Concentration Graph
Well MW-1
76 Station 0018
6201 Claremont Avenue
Oakland, California



APPENDIX A

Historic Facility Plan



PROPERTY OWNED BY UNION OIL COMPANY
BOUNDED THUS

DATE	REVISED	REV	CK	APP
6-25-61	GENERAL REVISIONS	J.G.		
10-26-61	MODERNIZATION	J.G.		
JAN-1962	DRAWING CORRECTED, MODERNIZATION AS SHOWN			
	COMPLETION DATE JANUARY 12, 1962	GB		

PROJECT ENGINEER	JOB NO.
PARKER ENGINEERING & CONSTRUCTION COMPANY	6495

DRAWN BY G.B.
1 IN. = 10 FT
7-23-56

SERVICE STATION NO 18
CLAREMONT & COLLEGE AVENUES
OAKLAND, CALIF.

UNION OIL COMPANY OF CALIFORNIA
LOS ANGELES

F3A106

APPENDIX B

Oil/Water Separator Removal

GeoStrategies Inc.

September 21, 1993

UNOCAL Corporation
911 Wilshire Boulevard, Suite 1137
Los Angeles, California 90017

Attention: Mr. Syed N. Rizvi

Reference: **OIL/WATER SEPARATOR ABANDONMENT**
UNOCAL Service Station No. 0018
6201 Claremont Avenue
Oakland, California

Mr. Rizvi:

This report summarized the field activities performed for UNOCAL Corporation (UNOCAL) by GeoStrategies Inc. (GSI) at the above referenced site (Plate 1). On June 16, 1993, GSI collected soil samples as part of the oil/water separator and drain abandonment activities at the site.

FIELD AND ANALYTICAL METHODS

The site is currently occupied by an operating UNOCAL Service Station. The contents of the 2 by 6 by 3-foot deep separator and drain box were transferred into 55-gallon drums. The separator and drain box were then steam cleaned, the rinseate transferred into 55-gallon drums, and the emptied separator and drain were wiped down with absorbent pads. The concrete bottom to the separator box was then broken out using a jackhammer.

On June 16, 1993, GSI collected soil samples UOW-1 and UOW-2, from below the separator and drain, respectively (Plate 2). A hand auger was used to bore approximately 3 feet below the bottom of the separator and drain box.

2140 WEST WINTON AVENUE • HAYWARD, CALIFORNIA 94545 • (510) 352-4800
601 UNIVERSITY AVENUE • SUITE 150 • SACRAMENTO, CALIFORNIA 95825 • (916) 568-7500

A hand-driven soil sampling device, fitted with a clean stainless steel tube, was used to collect each sample. After filling the sample tube with soil, the tube was removed, both ends covered with teflon sheeting and sealed with plastic end caps. Both samples were then labeled, placed in a cooler with blue ice, entered on to Chain-of-Custody form and transported to Western Environmental Services and Technology (WEST), a California State-certified environmental laboratory located in Santa Rosa, California.

The samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), as Diesel (TPH-Diesel), and as Motor Oil (TPH-Motor Oil) according to EPA Method 8015 (Modified); Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020; Oil and Grease (O&G) according to ASTM Method 5520 E&F; Volatile Organic Compounds (VOCs) according to EPA Method 8240; and for ten Title 22 Metals (As, Ba, Cd, Cr, Co, Cu, Hg, Ni, Pb, and Zn) according to EPA Methods 6010 and 7000.

SOIL ANALYTICAL RESULTS

TPH-Motor Oil was detected in UOW-1 and UOW-2 at concentrations of 170 parts per million (ppm) and 22 ppm, respectively. All metal analytes, except mercury were detected in both samples below their Total Threshold Limit Concentration (TTLC). BTEX, TPH-Gasoline, TPH-Diesel, O&G, VOCs, and mercury were not detected in either sample. Soil analytical results are summarized in Table 1. The certified analytical report and Chain-of-Custody form are presented in Appendix A.

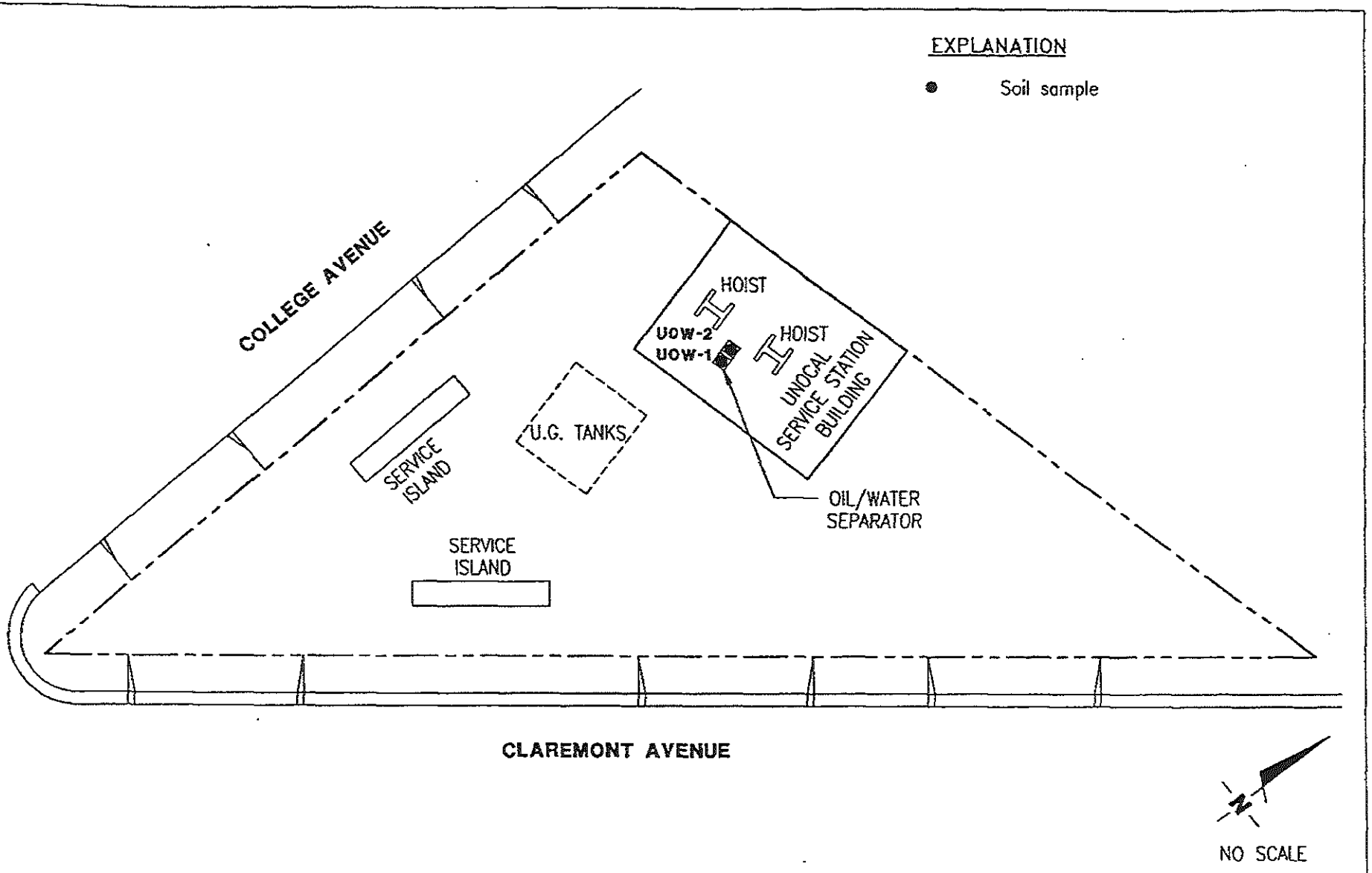
TABLE 1

SOIL CHEMICAL ANALYTICAL RESULTS
(Oil-Water Separator Samples)

SAMPLE I.D.	SAMPLE DATE	SAMPLE DEPTH	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	TPH-D (PPM)	TPH-MOTOR OIL (PPM)	O&G (PPM)	As (PPM)	Ba (PPM)	Cd (PPM)	Cr (PPM)	Co (PPM)	Cu (PPM)	Pb (PPM)	Hg (PPM)	Ni (PPM)	Zn (PPM)
UOW-1	16-Jun-93	3	<.50	<.0050	<.0050	<.0050	<.0050	<10	170	<50	8.6	160	1.2	52	15	21	7.0	<.5	50	48
UOW-2	16-Jun-93	3	<.50	<.0050	<.0050	<.0050	<.0050	<10	22	<50	9.3	140	1.2	52	13	20	6.2	<.5	45	44

PPM = Parts Per Million
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
TPH-D = Total Petroleum Hydrocarbons calculated as Diesel.
TPH-Motor Oil = Total Petroleum Hydrocarbons calculated as Motor Oil.

412102-1



GeoStrategies Inc.

OIL/WATER SEPARATOR SAMPLING PLAN
UNOCAL Service Station #0018
6201 Claremont Avenue
Oakland, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
412102-1		8/93	

APPENDIX C

UST Removals 1997

KAPREALIAN ENGINEERING
INCORPORATED

KEI-J97-0301.R1
April 17, 1997

Tosco Marketing Company
Environmental Compliance Department
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Attention: Ms. Tina Berry

RE: Soil and Ground Water Sampling Report
Unocal Service Station #0018
6201 Claremont Avenue
Oakland, California

FILE # 0018 SS ✓ BP ____
RPT ✓ QM ____ TRANSMITTAL ____
1 ____ 2 ____ 3 ____ 4 ____ 5 ____ 6 ____

Dear Ms. Berry:

This report summarizes the soil and ground water sampling performed by Kaprealian Engineering, Inc. (KEI) at the referenced site. During the recent replacement of the underground storage tanks and product dispensers, all work was performed in compliance with the guidelines established by the Regional Water Quality Control Board (RWQCB) and the Alameda County Health Care Services (ACHCS) Agency.

The scope of the work performed by KEI consisted of the following:

Coordination with regulatory agencies

Collection of soil samples from beneath the underground fuel and waste storage tanks, and from beneath the product dispensers

Collection of one ground water sample from the fuel storage tank pit

Collection of soil samples from the stockpiled soil that had been excavated from the fuel and waste oil storage tank pits and from piping trenches

Delivery of soil and water samples, including proper Chain of Custody documentation, to a certified analytical laboratory

Technical review and preparation of this report

SITE DESCRIPTION AND BACKGROUND

The subject site contains a Unocal service station facility. A Location Map and a Site Plan are attached to this report. No previous environmental work performed at the site is known to KEI.

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel: 510.602.5100 Fax: 510.687.0602

FIELD ACTIVITIES

KEI's initial field work was conducted on March 5, 1997, when two 12,000 gallon underground unleaded gasoline storage tanks and one 280 gallon waste oil storage tank were removed from the site. No apparent holes or cracks were observed in the fuel tanks. However, three holes of approximately 1/4-inch in diameter were observed on top of the waste oil tank. Tank removal soil sampling was performed in the presence of Ms. Madhulla Logan of the ACHCS. Mr. Herman E. Gomez of the City of Oakland Fire Services Agency was present during tank removal operations. Soil sampling in the fuel tank pit was scheduled to be performed on March 7, 1997, after completion of an additional 4 feet vertical excavation needed for new larger fuel tank installation.

One soil sample (labeled WO1) was collected from beneath the waste oil tank at a depth of approximately 8 feet below grade. The undisturbed sample was collected from bulk material excavated by backhoe. The samples was placed in a clean, two-inch diameter brass tube, sealed with Teflon-lined plastic caps, and stored in a cooled ice chest for delivery to a state-certified laboratory. The soil sample point locations are shown on the attached Figure 1.

Because of the short distance of the product line trenches from the fuel tank pit to the product dispensers, Mr. Barney Chan did not request soil sampling from the product line trenches.

KEI returned to the site on March 7, 1997, in order to collect the required soil samples from the fuel tank pit that had been excavated to a depth of about 16 feet below grade. Ground water was encountered in the fuel tank pit at depths ranging from 15.5 feet to 16.5 feet below grade. Four soil samples, labeled A1, A2, B1, and B2, were collected from beneath the former fuel tanks at soil-water interface (approximately 16 feet below grade). Four soil samples, labeled D1 through D4, were collected from beneath the product dispensers at depths of approximately 2 feet below grade. These soil samples were also collected and handled as described above. Soil sample point locations are shown on the attached Figure 1. Because of the short distance of the product line trenches from the fuel tank pit to the product dispensers, Mr. Barney Chan did not request soil sampling from the product line trenches. In addition, one ground water sample, labeled Water 1, was collected from the fuel tank pit excavation by the use of a clean Teflon bailer. The water sample was decanted into three clean glass VOA vials that were then sealed with Teflon-lined screw caps, labeled and stored in a cooler, on ice, until delivery to a state-certified laboratory. Mr. Barney Chan of the ACHCS was present during sampling activities.

STOCKPILE MANAGEMENT

Approximately 500 tons of soil were excavated from the fuel tank pit and piping trenches and 16 tons of soil were excavated from the waste oil tank pit. Arrangements were made to transport and temporarily stockpile all excavated soil at Forward Landfill, Inc. located in Manteca, California (an approved Class II/III disposal facility), where subsequent soil samples were collected. Manley & Sons Trucking, Inc. of Sacramento, California, transported the soil to Forward Landfill.

On March 13, 1997, KEI collected three composite soil samples (designated as Comp A, Comp B, and Comp C) from the stockpiled soil that had been generated from the fuel tank pit and piping trench excavation. In addition, one composite soil sample (designated as Comp WOA) was collected from the stockpiled soil that had been generated from the waste oil tank pit excavation. Each composite soil sample consisted of four individual grab samples taken at various locations and at depths of about 2 feet into the stockpile. The individual soil samples were also collected and handled as previously described. Based on the analytical results of the stockpile samples, Forward Landfill subsequently disposed of the soil under Approval #575822 and #575922.

SUBSURFACE CONDITIONS

Subsurface soil observed in the excavations consisted primarily of clay and silty clay. Ground water was encountered in the fuel tank pit excavation at depths ranging from 15.5 to 16.5 feet below grade.

ANALYTICAL RESULTS

All samples were analyzed by Sequoia Analytical Laboratory in Walnut Creek, California, and were accompanied by properly executed Chain of Custody documentation. The samples from the fuel tank pit and dispenser islands were analyzed for total petroleum hydrocarbons (TPH) as gasoline by EPA method 5030/modified 8015, benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA method 8020, and MTBE. The sample from the waste oil tank pit was analyzed for TPH as gasoline, TPH as diesel by EPA method 3550/modified 8015, BTEX, total oil and grease (TOG) by Standard Method 5520E&F, EPA methods 8270 and 8010 constituents, and the metals cadmium, chromium, lead, nickel, and zinc.

The results of the soil analyses are summarized in Tables 1 and 2, and the results of the water analyses are summarized in Table 3. Copies of the laboratory analyses and the Chain of Custody documentation are attached to this report.

DISTRIBUTION

A copy of this report should be sent to Ms. Madhulla Logan of the ACHCS.

LIMITATIONS

Soil deposits and rock formations may vary in thickness, lithology, saturation, strength and other properties across any site. In addition, environmental changes, either naturally-occurring or artificially-induced, may cause changes in the extent and concentration of any contaminants. Our studies assume that the field and laboratory data are reasonably representative of the site as a whole, and assume that subsurface conditions are reasonably conducive to interpolation and extrapolation.

The results of this study are based on the data obtained from the field and laboratory analyses obtained from a state-certified laboratory. We have analyzed this data using what we believe to be currently applicable engineering techniques and principles in the Northern California region. We make no warranty, either expressed or implied, regarding the above, including laboratory analyses, except that our services have been performed in accordance with generally accepted professional principles and practices existing for such work.

Should you have any questions on this report, please call me at (510) 602-5100.

Sincerely,

Kaprealian Engineering, Inc.

Hagop Kevork, P.E.
Senior Staff Engineer

License No. C55734
Exp. Date: 12/31/00

REGISTERED PROFESSIONAL ENGINEER
HAGOP KEVORK
No. C 55734
Exp. 12/31/00
CIVIL
STATE OF CALIFORNIA

Sarkis A. Soghomonian
Project Engineer

/jad

Attachments: Tables 1, 2 & 3
Figure 1
Laboratory Analyses
Chain of Custody documentation

KEI-J97-0301.R1
April 17, 1997

TABLE 1

SUMMARY OF LABORATORY ANALYSES
SOIL

Date	Sample	Depth (feet)	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TOG
3/05/97	WO1	8	ND	ND	ND	ND	ND	ND	ND

EPA Method 8010 Constituents (µg/kg)	EPA Method 8270 Constituents (µg/kg)	Cadmium	Chromium	Lead	Nickel	Zinc
ND	ND	ND	33	3.7	38	45

Date	Sample	Depth (feet)	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
3/07/97	A1	16	ND	ND	ND	ND	ND	ND
	A2	16	2.6	ND	0.011	0.017	0.044	ND
	B1	16	ND	ND	ND	ND	ND	ND
	B2	16	ND	ND	ND	ND	0.0051	ND
	D1	2	1.4	0.012	0.10	0.030	0.32	1.4
	D2	2	ND	ND	ND	ND	ND	ND
	D3	2	ND	ND	ND	ND	ND	ND
	D4	2	ND	ND	ND	ND	ND	ND

ND = Non-detectable.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

KEI-J97-0301.R1
April 17, 1997

TABLE 2

SUMMARY OF LABORATORY ANALYSES
STOCKPILED SOIL AT FORWARD LANDFILL

Date	Sample	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	Total Lead
3/13/97	Comp A	22	ND	ND	0.012	ND	6.5
	Comp B	5.0	ND	0.0060	0.0060	0.022	17
	Comp C	2.0	ND	ND	ND	0.0090	15
3/17/97	Comp WOA	28	--	--	--	--	47

Date	Sample	TPH as Diesel	TOG	EPA Method 8240 Constituents (µg/kg)	EPA Method 8270 Constituents (µg/kg)	Cadmium	Chromium	Nickel	Zinc
3/17/97	Comp WOA	1,400	1,600	ND	ND	ND	36	31	55

ND = Non-detectable.

-- Indicates analysis was not performed.

Results are in milligrams per kilogram (mg/kg), unless otherwise indicated.

KEI-J97-0301.R1
April 17, 1997

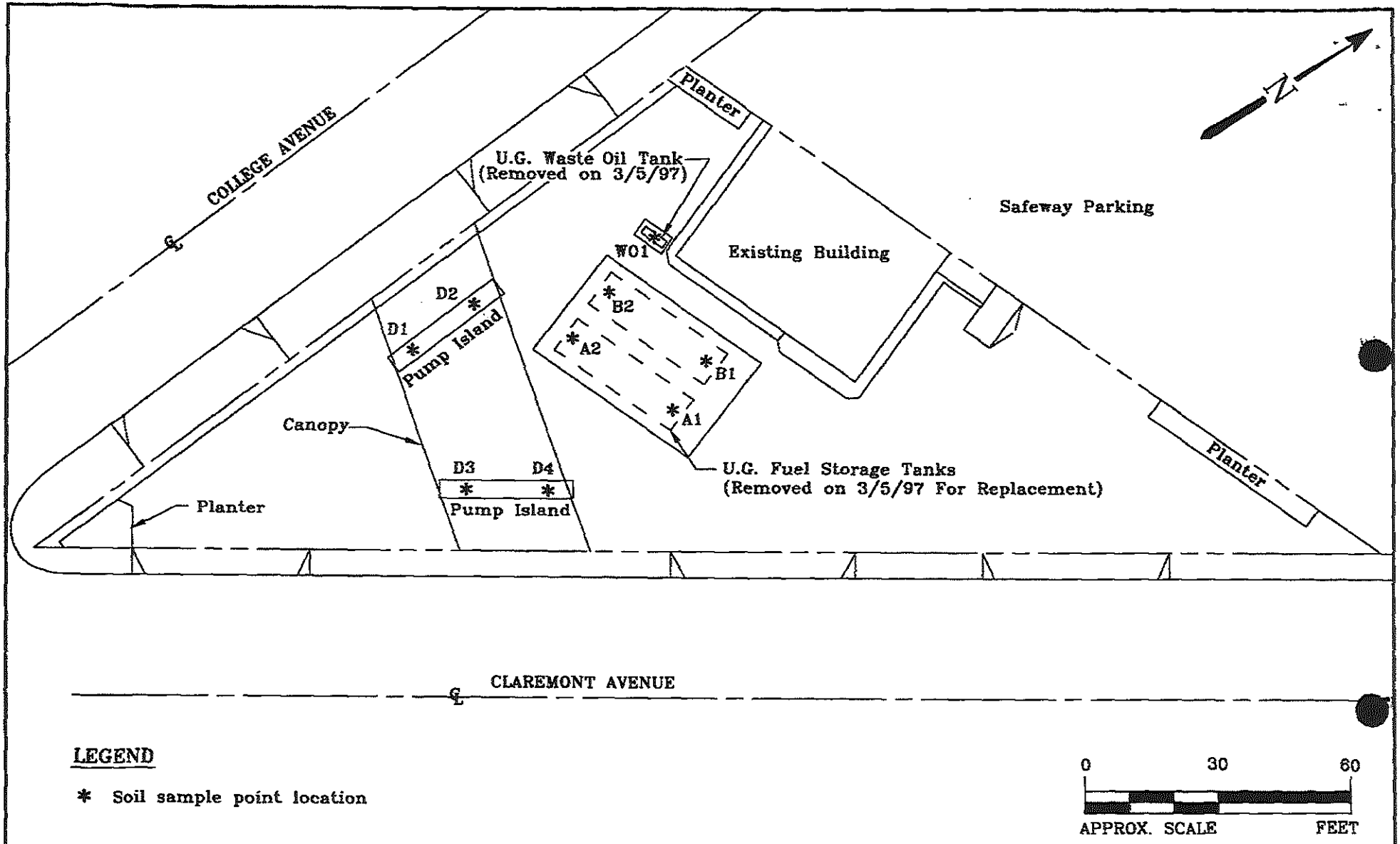
TABLE 3

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Sample	Depth to Water (feet)	MTBE	TPH as Gasoline	TPH as Benzene	Toluene	Ethyl-benzene	Xylenes
3/07/97	Water 1	16	ND	6,100	54	38	300	2,500

ND = Non-detectable.

Results are in micrograms per liter (µg/L), unless otherwise indicated.



SOIL SAMPLE POINT LOCATION MAP

KAPREALIAN ENGINEERING
INCORPORATED

76 PRODUCTS S/S #0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

FIGURE
1

APPENDIX D

Boring Logs

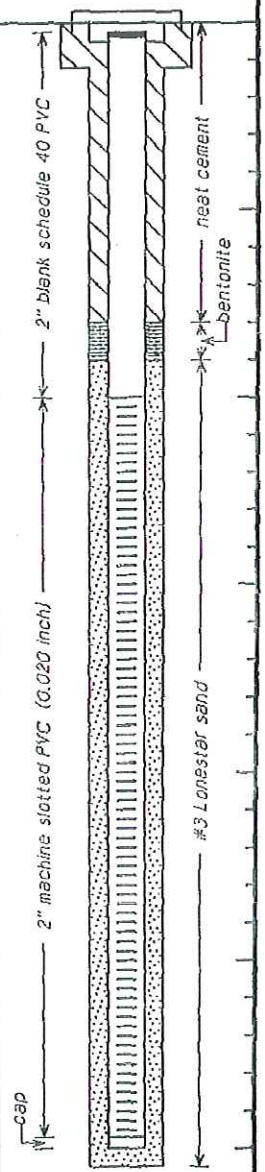
Gettler-Ryan, Inc.

Log of Boring MW-1

PROJECT: *Tosco (76) Service Station No. 0018*	LOCATION: *6201 Claremont Blvd., Oakland, California*
GR PROJECT NO. : *140061.03*	CASING ELEVATION:
DATE STARTED: *07/11/00*	WL (ft. bgs): *20.4* DATE: *07/11/00* TIME: *09:25*
DATE FINISHED: *07/11/00*	WL (ft. bgs): *16.95* DATE: *07/11/00* TIME: *14:20*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *30.5 feet*
DRILLING COMPANY: *Woodward Drilling*	GEOLOGIST: *Skip McIntosh*

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SOIL CLASS	GEOLOGIC DESCRIPTION
				FILL	Asphalt – 3 inches thick.
					Clay, silt and gravel (fill).
				SM	SILTY SAND (SM) – dark yellowish brown (10YR 4/4), moist, medium dense; 60% sand, 30% silt, 10% gravel, roots.
				ML	SILT WITH SAND (ML) – very dark grayish brown (10YR 3/2), moist, very stiff; 65–70% silt, 25% sand, 5–10% gravel, trace of clay.
5	0	24			
10	0	27			At 10 feet color changes to dark yellowish brown (10YR 4/6), becomes 75% silt, 20% sand, 5% clay, trace of gravel to 5/8 inch diameter.
15	1.6	12	MW-1-15		SANDY SILT (ML) – gray green (5GY 4/1), damp to wet, stiff; 60% silt, 40% fine sand, trace of gravel to 1/2 inch diameter.
20	63	16			SILT WITH SAND (ML) – dark yellowish brown (10YR 4/6) mottled with dark olive gray (5Y 3/2), moist, stiff; 75% silt, 15% sand, 10% clay, trace of gravel.
25	118	24	MW-1-25.5		At 25 feet color changes to brownish yellow (10YR 6/8) with black streaks, becomes moist, very stiff.
				SM	SILTY SAND (SM) – dark yellowish brown (10YR 4/4), wet, medium dense; 65% sand, 25% silt, 10% rounded gravel.
30	0	16			Bottom of boring at 30.5 feet bgs.
					(* = converted to equivalent standard penetration blows/foot.)
35					

WELL DIAGRAM



JOB NUMBER: *140061.03*

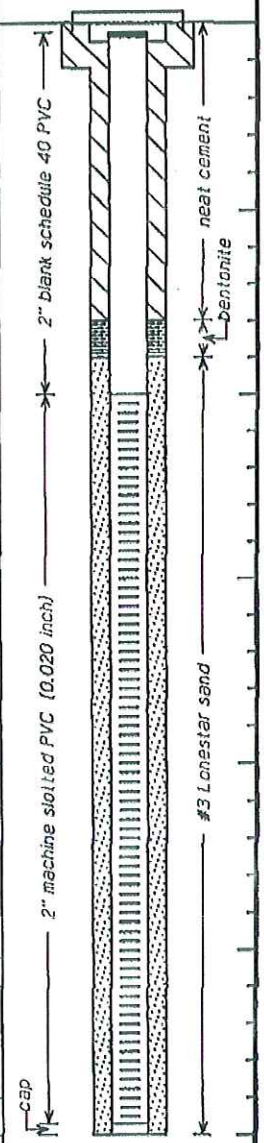
Gettler-Ryan, Inc.

Log of Boring MW-2

PROJECT: *Tosco (76) Service Station No. 0018*	LOCATION: *6201 Claremont Blvd., Oakland, California*
GR PROJECT NO.: *140061.03*	CASING ELEVATION:
DATE STARTED: *07/11/00*	WL (ft. bgs): *28.5* DATE: *07/11/00* TIME: *11:30*
DATE FINISHED: *07/11/00*	WL (ft. bgs): *18.1* DATE: *07/11/00* TIME: *14:28*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *30 feet*
DRILLING COMPANY: *Woodward Drilling*	GEOLOGIST: *Skip McIntosh*

DEPTH (feet)	PID (ppm)	BLOWS/FT.*	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
							Concrete – 6 inches thick.
						ML	SANDY SILT (ML) – dark brown (10YR 2/2), moist, stiff; 45–50% silt, 40% sand, 10–15% gravel to 1/2 inch diamter.
5	0	21				SM	SILTY SAND (SM) – dark yellowish brown (10YR 3/4) mottled with red and light yellow brown, moist, medium dense; 60% sand, 25% silt, 15% gravel, trace of clay.
10	0	30				ML	SANDY SILT (ML) – dark yellowish brown (10YR 4/4), moist, very stiff; 60% silt, 35% sand, 5% clay, trace of gravel.
15	0	10	MW-2-18			SM	SILTY SAND WITH GRAVEL (SM) – dark yellowish brown (10YR 4/4), moist, dense; 55% sand, 35% silt, 10% gravel, trace of clay.
20	0	46	MW-2-20.5			GM	SILTY GRAVEL WITH SAND (GM) – dark yellowish brown (10YR 4/6), moist, dense; 65% gravel to 2 inch diameter, 15% silt, 15% sand, 5% clay.
25	0	54				ML	SILT WITH SAND (ML) – dark yellowish brown (10YR 4/6), moist, hard; 75% silt, 15% sand, 10% clay, trace of gravel.
						GM	WELL GRADED GRAVEL WITH SILT AND SAND (GM) – dark yellowish brown (10YR 3/6), wet, very dense; 45% gravel, 20%
	0	15				ML	SILTY SAND (ML) – dark yellowish brown (10YR 3/6), medium dense; 70–80% sand, 15–20% silt, 10% gravel.
30							gravelly sand lens from 29–29.5 feet.
							Bottom of boring at 30 feet bgs.
35							(* = converted to equivalent standard penetration blows/foot.)

WELL DIAGRAM



JOB NUMBER: *140061.03*

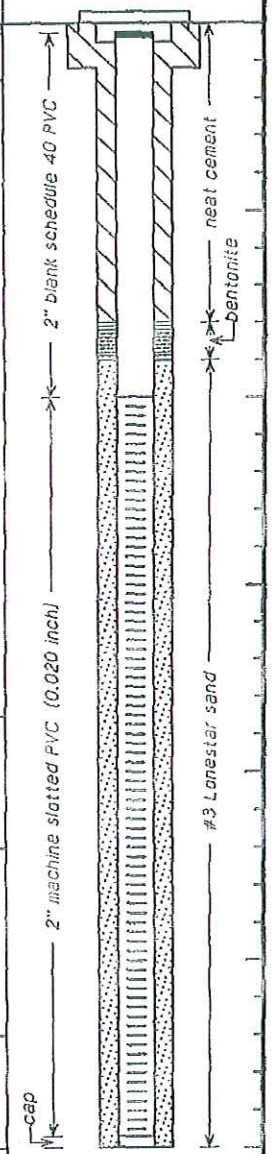
Gettler-Ryan, Inc.

Log of Boring MW-3

PROJECT: *Tosco (76) Service Station No. 0018*	LOCATION: *6201 Claremont Blvd., Oakland, California*
GR PROJECT NO.: *140061.03*	CASING ELEVATION:
DATE STARTED: *07/11/00*	WL (ft. bgs): *20* DATE: *07/11/00* TIME: *12:40*
DATE FINISHED: *07/11/00*	WL (ft. bgs): *17.95* DATE: *07/11/00* TIME: *14:38*
DRILLING METHOD: *8 in. Hollow Stem Auger*	TOTAL DEPTH: *30 feet*
DRILLING COMPANY: *Woodward Drilling*	GEOLOGIST: *Skip McIntosh*

DEPTH (feet)	PID (ppm)	BLOWS/FT. *	SAMPLE NUMBER	SAMPLE INT.	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						FILL	Concrete – 3 inches thick.
							Fill.
						ML	SANDY SILT (ML) – dark brown (10YR 2/2), moist, medium stiff; 60% silt, 35% poorly sorted sand, 5% clay, trace of gravel to 3/4 inch diameter.
5	0	9					4 inch gravel lens at 6 feet; rounded clasts to 2 inches.
10	0	26					Color changes to grayish green (5G 5/2) at 9.5 feet, becomes stiff. Color changes to grayish green (5G 5/2) with 20% brown patches, becomes very stiff.
15	0	14					Color changes to light olive gray (5Y 6/2), becomes very moist, stiff; 70% silt, 30% sand, trace of root holes.
	0	10	MW-3-18				▼
20	0	28				SM	SILTY SAND WITH GRAVEL (SM) – dark yellowish brown (10YR 4/4) with gray green patches, very moist, medium dense; 55% sand, 30% silt, 15% gravel, roots. ▽ Becomes water saturated at 20 feet.
							SILTY SAND (SM) – dark yellowish brown (10YR 4/4) wet, medium dense; 65-70% sand, 30-35% silt.
25	0	40					Color changes to dark yellowish brown (10YR 4/6), dense; 65% sand, 35% silt, trace of clay.
	0	18				ML	SILT WITH SAND (ML) – brown (10YR 4/3) mottled with dark yellowish brown (10YR 4/6), wet, very stiff; 70% silt, 20% sand, 10% clay.
30							Bottom of boring at 30 feet bgs. (* = converted to equivalent standard penetration blows/foot.)
35							

WELL DIAGRAM

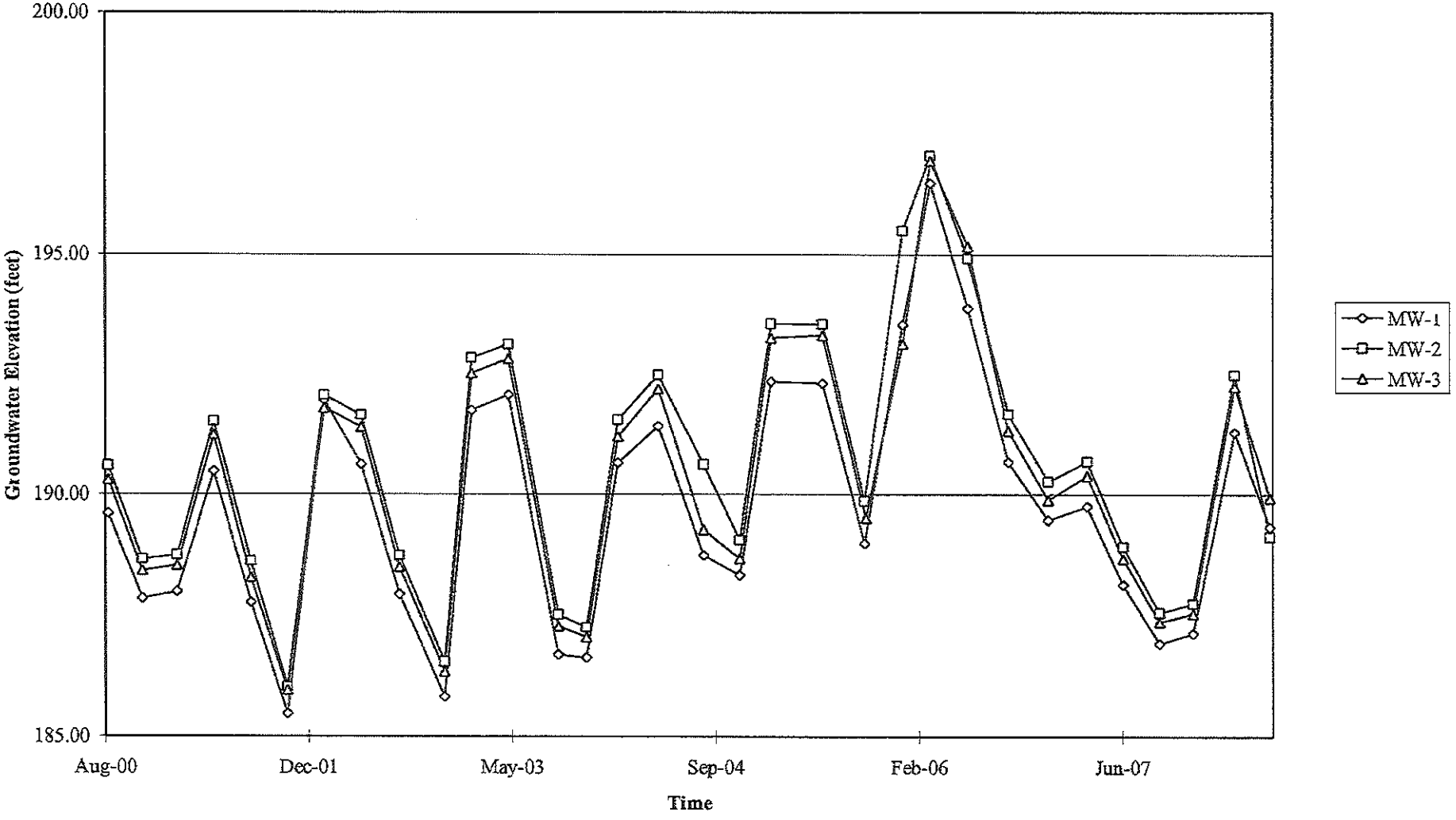


JOB NUMBER: *140061.03*

APPENDIX E

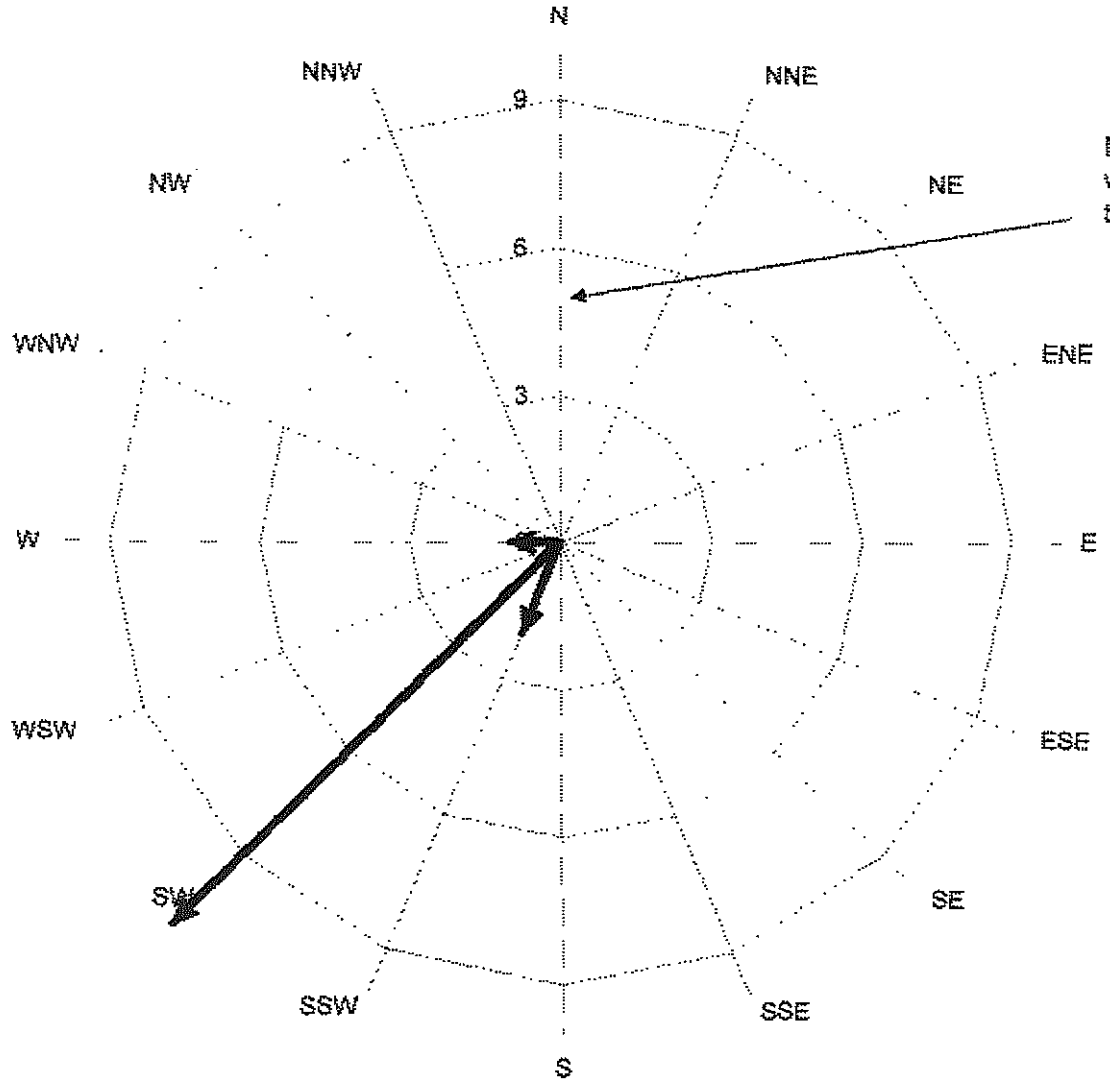
Groundwater Flow Rose Diagram and Historic Maps

Groundwater Elevations vs. Time
76 Station 0018



Elevations may have been corrected for apparent changes due to resurvey

Historical Groundwater Flow Directions
for Tosco (76) Service Station No. 0018
October 2000 through September 2005



TRC

FIGURE 5

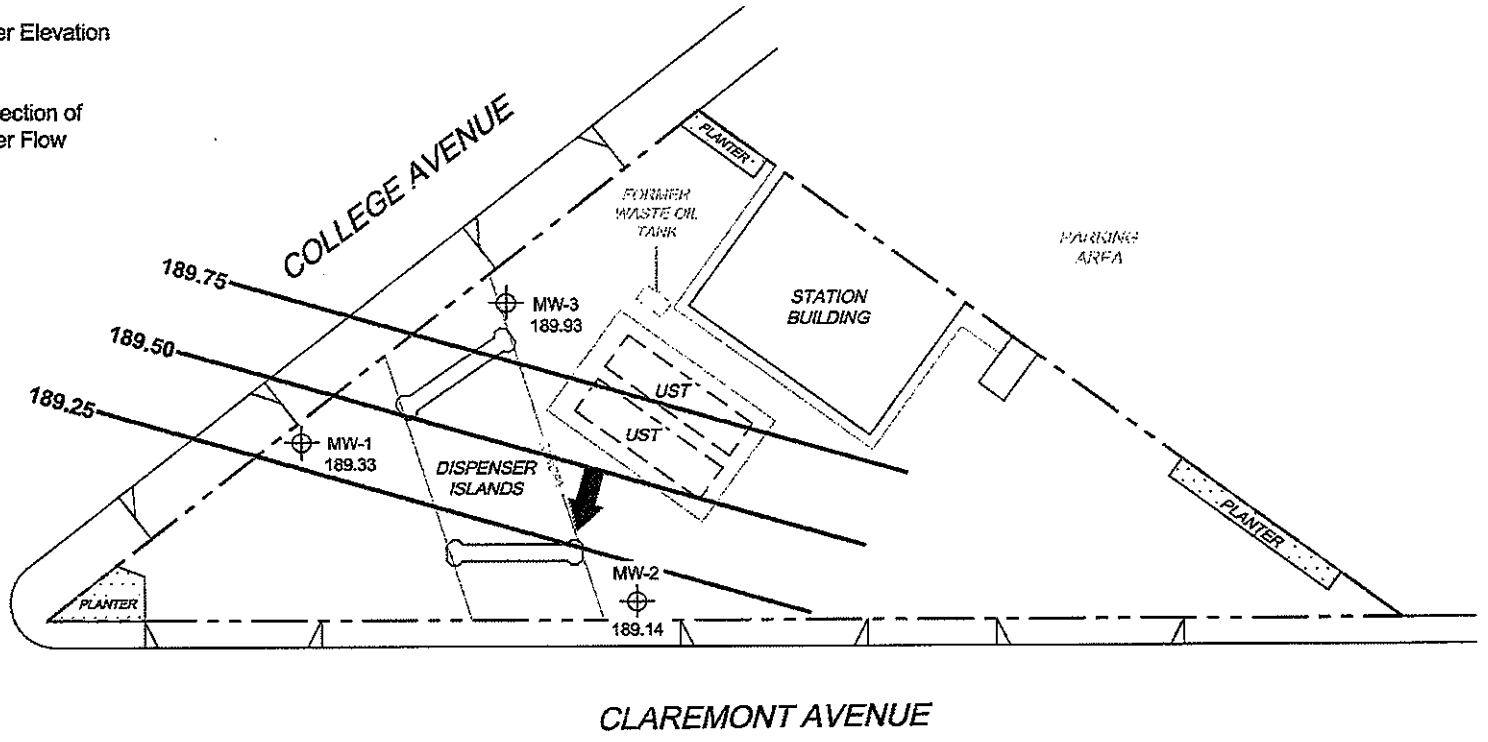
MS=1:40 0018-003 L:\Graphics\QMS NORTH-SOUTH\x-0000\0018+\0018-QMS-(NEW).DWG Jul 07, 2008 - 10:58am bschmidt

LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

189.75 —— Groundwater Elevation Contour

➡ General Direction of Groundwater Flow



SCALE (FEET)

0 40

NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

TRC

PROJECT: 154771

FACILITY:
76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP
June 20, 2008

FIGURE 2

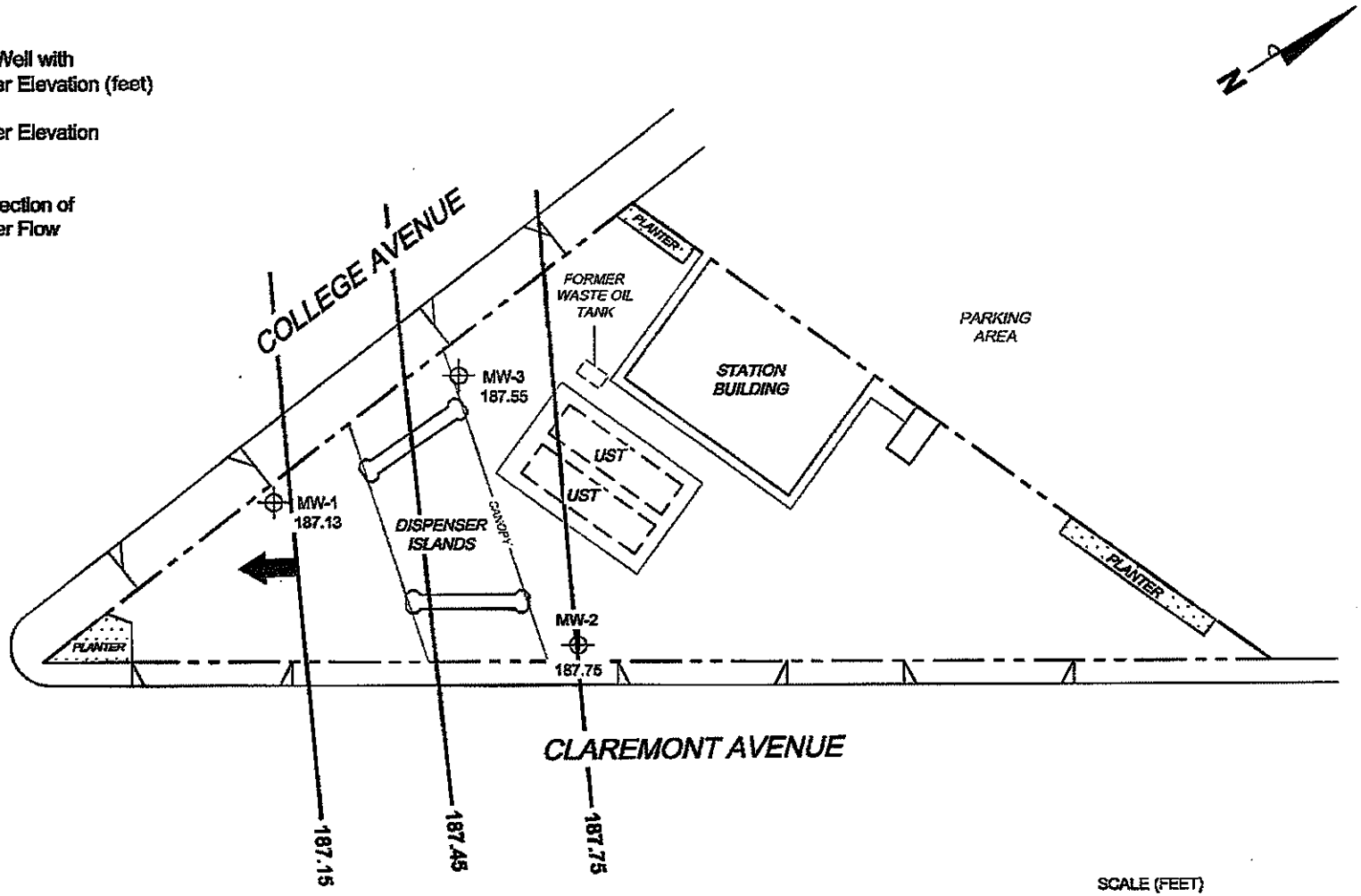
MS=1:40 0018-003 L:\Graphics\QMS NORTH-SOUTH\x-00010018+\0018-QMS-(NEW).DWG Feb 08, 2008 - 8:03am bschmidt

LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

187.75 —— Groundwater Elevation Contour

➡ General Direction of Groundwater Flow



NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

TRC

PROJECT: 154771

FACILITY:
76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP
December 14, 2007

FIGURE 2

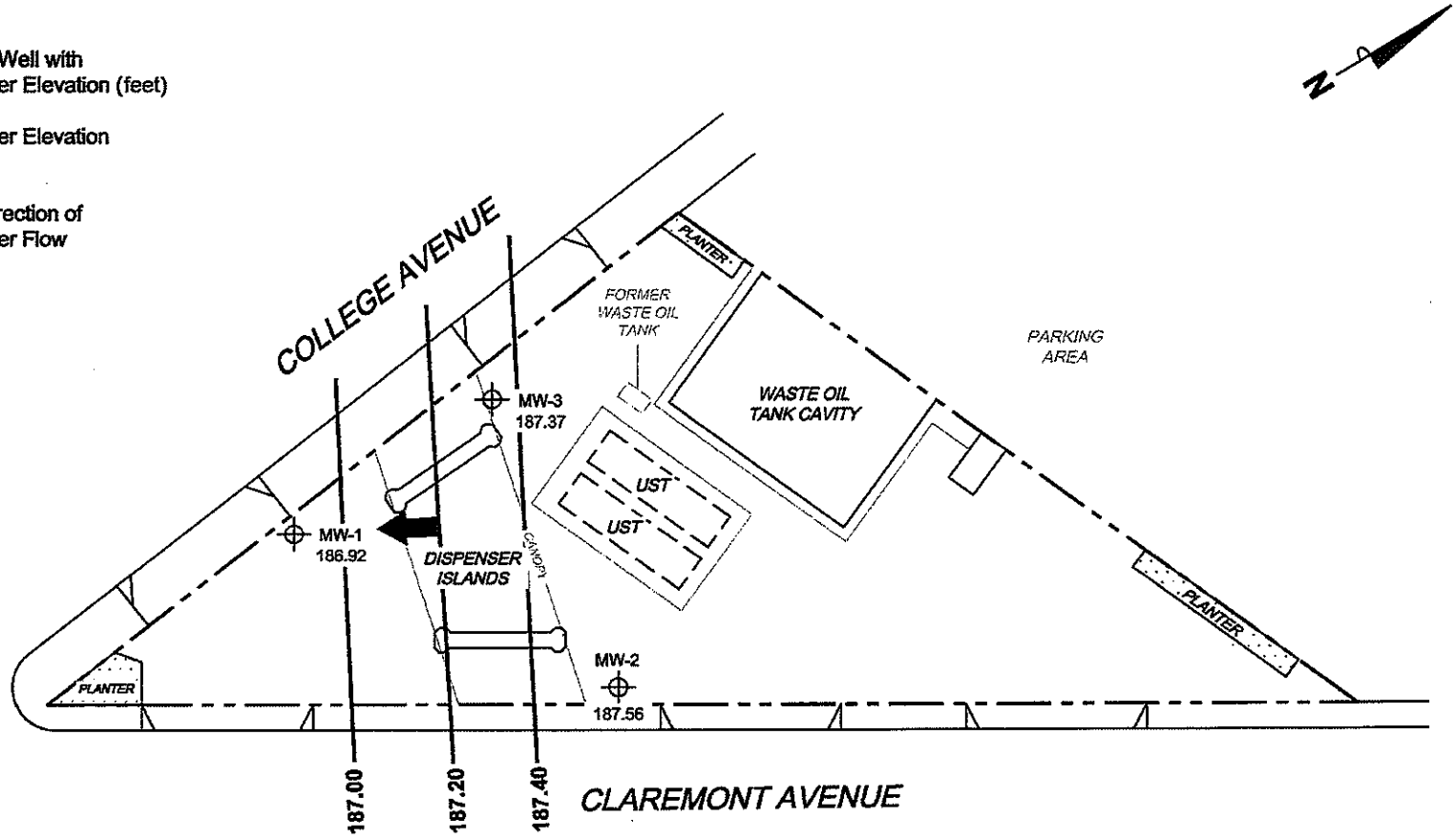
MS=1:40 0018-003 L:\Graphics\QMS NORTH-SOUTH\x-0000\0018+\0018-QMS-(NEW).DWG Oct 17, 2007 - 9:52am bschmidt

LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

187.40 —— Groundwater Elevation Contour

➡ General Direction of Groundwater Flow



SCALE (FEET)

0 40

NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

TRC

PROJECT: 125703

FACILITY:
76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP
September 22, 2007

FIGURE 2

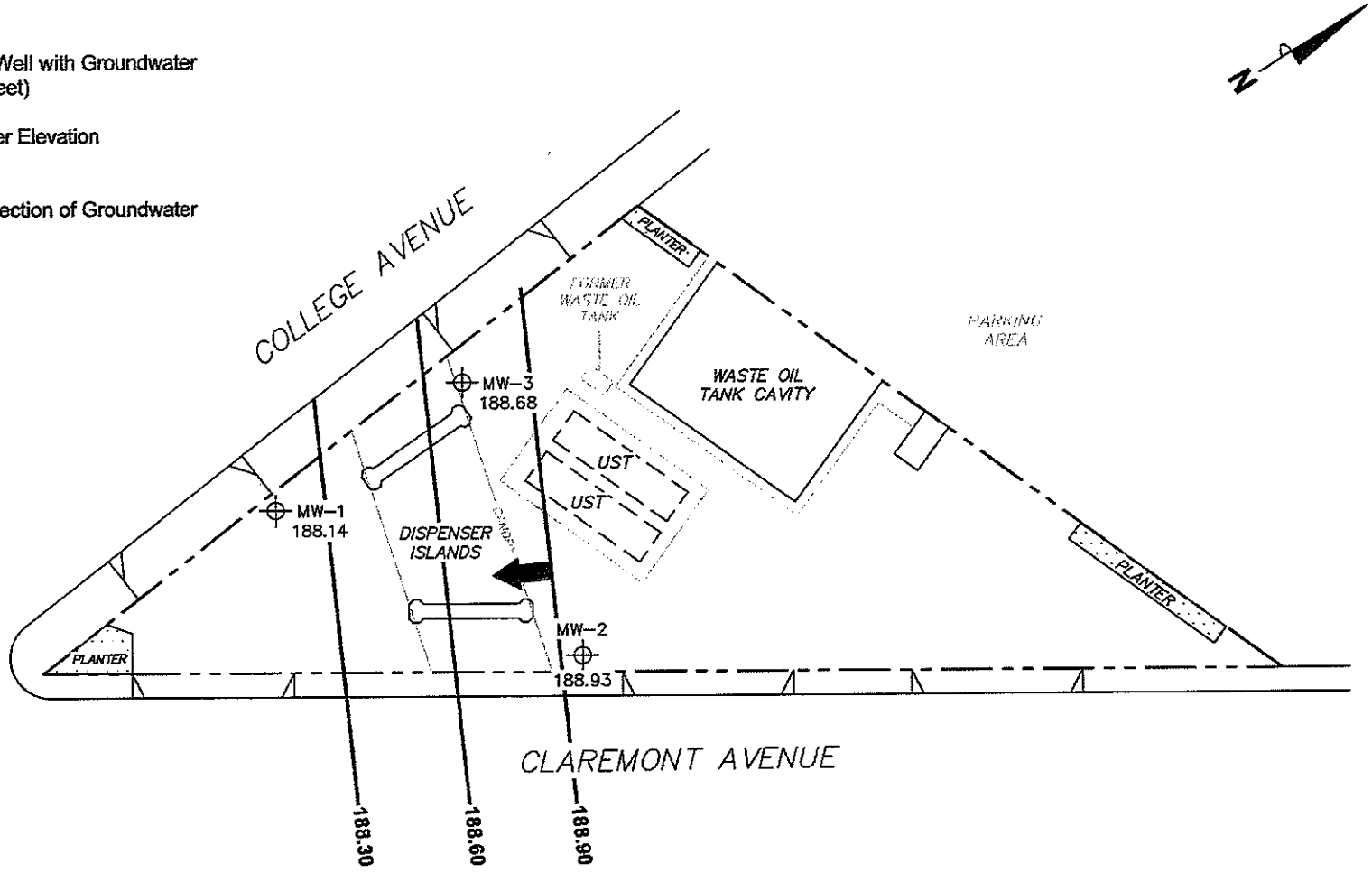
MS=1:40 0018-003 L:\Graphics\QMS NORTH-SOUTH\x-0000\0018+\0018-QMS-(NEW).DWG Jul 09, 2007 - 3:45pm bschmidt

LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

188.90 — Groundwater Elevation Contour

➡ General Direction of Groundwater Flow



SCALE (FEET)

0 40

NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

TRC

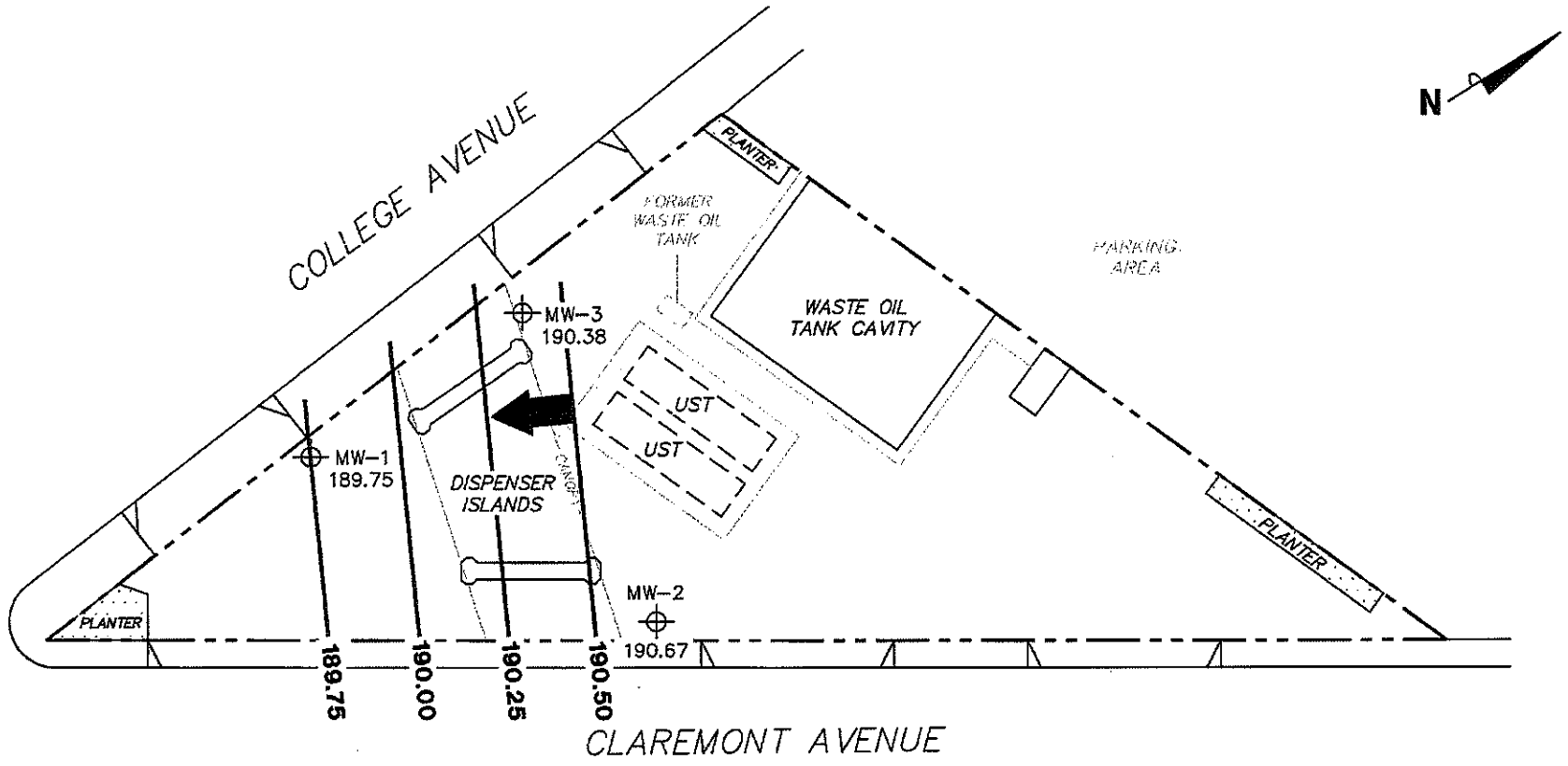
PROJECT: 125703

FACILITY:
76 STATION 0018
6201 CLAREMONT AVENUE
OAKLAND, CALIFORNIA

GROUNDWATER ELEVATION CONTOUR MAP
June 25, 2007

FIGURE 2

PS=1:1 0018-003 L:\Graphics\ProjectsByNumber\20-xxxx\20-0400(UnocalQMS)\x-0000\0018+\0018QMS.DWG Apr 11, 2007 - 1:51pm bschmidt



LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

190.50 —— Groundwater Elevation Contour

General Direction of Groundwater Flow

NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

SCALE (FEET)

0 40

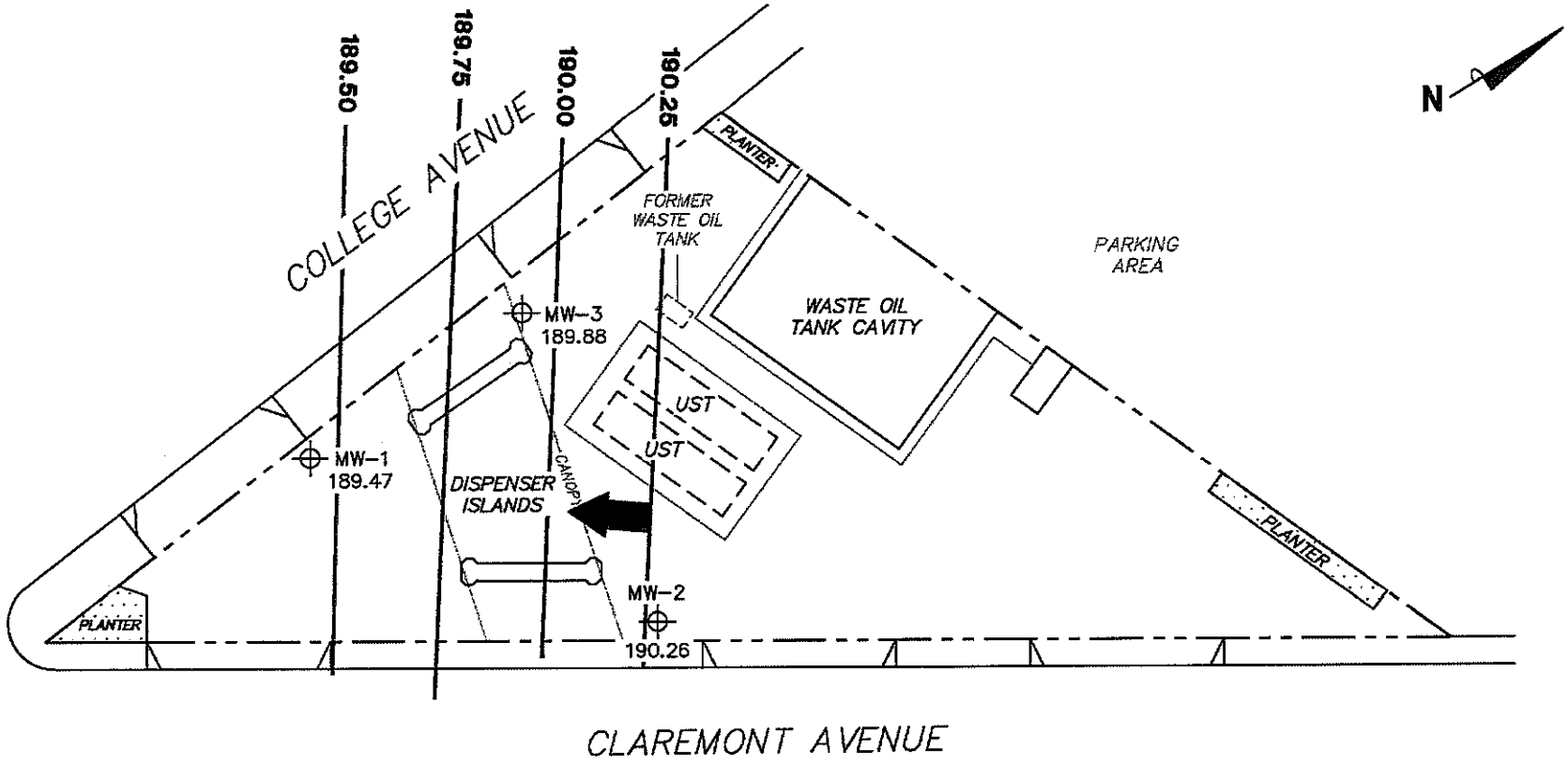
TRC

GROUNDWATER ELEVATION CONTOUR MAP
March 28, 2007

76 Station 0018
6201 Claremont Avenue
Oakland, California

FIGURE 2

PS=1:10018-003 L:\Graphics\ProjectsByNumber\20-xxxx\20-0400(UnocalQMS)\x-0000\0018+\0018QMS.DWG Jan 10, 2007 - 12:45pm ackers



LEGEND

MW-3 ⊕ Monitoring Well with Groundwater Elevation (feet)

190.25 —— Groundwater Elevation Contour

➡ General Direction of Groundwater Flow

NOTES:

Contour lines are interpretive and based on fluid levels measured in monitoring wells. Elevations are in feet above mean sea level. UST = underground storage tank.

SCALE (FEET)

0 40

TRC

GROUNDWATER ELEVATION CONTOUR MAP
December 22, 2006

76 Station 0018
6201 Claremont Avenue
Oakland, California

FIGURE 2

APPENDIX F

TRC Sensitive Receptor Study

ConocoPhillips

76 Broadway
Sacramento, California 95818

April 24, 2006

Mr. Don Hwang
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Report Transmittal**
SENSITIVE RECEPTOR SURVEY
76 Service Station #0018
6201 Claremont Avenue
Oakland, CA

Dear Mr. Hwang:

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please contact

Shelby S. Lathrop (Contractor)
ConocoPhillips
Risk Management & Remediation
76 Broadway
Sacramento, CA 95818
Phone: 916-558-7609
Fax: 916-558-7639

Sincerely,

Thomas K. Kosel

Thomas Kosel
Risk Management & Remediation

Attachment

TRC
Customer-Focused Solutions

April 24, 2006 TRC Project No. 42016504

Mr. Don Hwang
Hazardous Materials Specialist
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, CA. 94502-6577

RE: SENSITIVE RECEPTOR SURVEY
76 SERVICE STATION # 0018
6201 CLAREMONT AVE., OAKLAND, CALIFORNIA

Dear Mr. Hwang:

On behalf of ConocoPhillips, TRC has prepared this sensitive receptor survey report for 76 Service Station # 0018, located at 6201 Claremont Ave. (Site) in Oakland, California (Figure 1).

SCOPE OF WORK

To identify domestic and municipal wells within a one-half mile radius of the subject site, TRC contacted the Department of Water Resources to review copies of well completion reports from nearby wells. The results, excluding destroyed water supply wells and groundwater monitoring and extraction wells, are summarized in Table 1 and Figure 1.

Also included in the survey was an evaluation of nearby surface water bodies as possible sensitive receptors. TRC accomplished this by examining various site and vicinity maps.

SENSITIVE RECEPTOR SURVEY

A request was made to the California Department of Water Resources (DWR) for well completion reports within the vicinity of the site. Of the well completion reports reviewed, no water supply wells were within a one-half mile radius of the Site.

No surface water bodies were located within one-half mile of the Site.

Groundwater at the site is found at an average depth of 15.23 feet below grade and flows to the west at a hydraulic gradient of 0.03 ft/ft (Quarterly Monitoring Report dated January 16, 2006).

CONCLUSIONS

No current or potential sensitive receptors were identified within one-half mile of the subject site.

If you have any questions or concerns regarding this information, please contact either of the undersigned at 925-688-1200.

Sincerely,
TRC

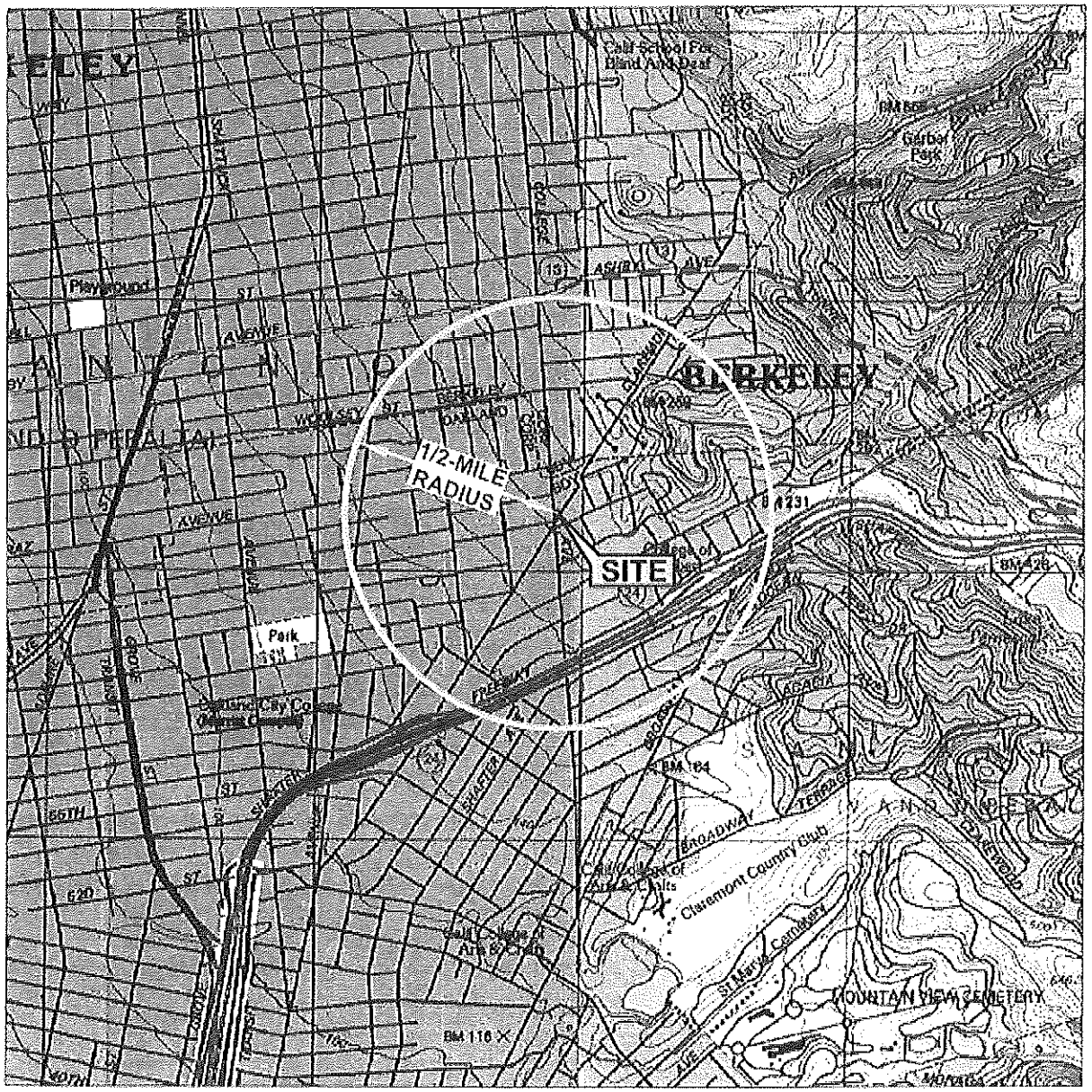
Mike Sellwood
Staff Geologist

Keith Woodburne, P.G.
Senior Project Geologist

REGISTERED GEOLOGIST
KEITH L. WOODBURNE
No. 7607
exp 1/07
STATE OF CALIFORNIA

Attachments:
Figure 1- Vicinity Map with Half-Mile Radius Around Site

cc: Shelby Lathrop, ConocoPhillips (electronic upload only)



1 MILE 3/4 1/2 1/4 0 1 MILE

SCALE 1 : 24,000

N

SOURCE:

United States Geological Survey
7.5 Minute Topographic Maps:
Oakland East and Oakland West
Quadrangles, California

VICINITY MAP WITH HALF-MILE RADIUS AROUND SITE

Tosco (76) Service Station 0018
6201 Claremont Avenue
Oakland, California

TRC

FIGURE 1