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October 30, 2008

Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Subject: Former Mobil Station 04FGN, 14994 East 14th Street, San Leandro, California

Dear Ms. Jakub:

Attached for your review and comment is a copy of the *Risk Assessment Work Plan and Preferential Pathway Survey* for the above-referenced site. The document, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, is submitted in response to a request from the Alameda County Health Care Services Agency in a letter dated August 20, 2008.

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 comments, please contact me at 510.547.8196.

Sincerely,

Jennifer C. Sedlachek
Project Manager

Attachment: ETIC Risk Assessment Work Plan and Preferential Pathway Survey

c: w/ attachment:
Ms. Jana Gluckman – property owner

c: w/o attachment:
Mr. Bryan Campbell – ETIC Engineering, Inc.

Risk Assessment Work Plan
and Preferential Pathway Survey

Former Mobil Station 04FGN
14994 East 14th Street
San Leandro, California

Prepared for

ExxonMobil Oil Corporation

Prepared by

ETIC Engineering, Inc.
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Yuko Mamiya
Project Geologist

10/30/08
Date

PROFESSIONAL GEOLOGIST
BRYAN CAMPBELL
No. 7724
Exp. 2/28/10
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Bryan Campbell, P.G. #7724
Senior Geologist

10/30/08
Date

October 2008

SITE CONTACTS

Site Name:	Former Mobil Station 04FGN
Site Address:	14994 East 14th Street San Leandro, California
ExxonMobil Project Manager:	Jennifer C. Sedlachek ExxonMobil Environmental Services Company 4096 Piedmont Avenue #194 Oakland, California 94611 (510) 547-8196
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ETIC Project Manager:	Bryan Campbell
Regulatory Oversight:	Barbara Jakub Alameda County Health Care Services Agency 1131 Harbor Bay Parkway, 2nd Floor Alameda, California 94502 (510) 567-6700

INTRODUCTION

ETIC Engineering, Inc. (ETIC) has prepared this Risk Assessment Work Plan and Preferential Pathway Survey for ExxonMobil Environmental Services Company on behalf of ExxonMobil Oil Corporation (ExxonMobil) for former Mobil Station 04FGN, located at 14994 East 14th Street, San Leandro, California (Figures 1 and 2). This work plan is being submitted in response to a request from the Alameda County Health Care Services Agency Environmental Health Services (ACHCSA) which was made in a letter from the ACHCSA to ExxonMobil dated in 20 August 2008 (Appendix A).

The letter from the ACHCSA was submitted in response to the Formal Case Closure Request by Alton Geoscience dated 23 November 1998 (Alton 1998) and the Data Submittal and Request for Case Closure by ETIC dated 28 December 2006 (ETIC 2006).

In their letter, the ACHCSA requested an evaluation of the soil vapor pathway for the site due to residual concentrations hydrocarbons in soil and the completion of a preferential pathway survey. This work plan outlines a scope of work for a risk assessment for the evaluation of potential vapor intrusion risks resulting from potential exposure to hydrocarbons beneath the site. This work plan also includes a conduit study and a discussion of nearby sensitive receptors besides wells including nearby creeks, water bodies, and wetlands.

Responses to specific items mentioned in the letter from the ACHCSA are listed below:

- The ACHCSA recommended the collection of soil vapor from areas without a building and from a subslab vapor point inside the building. The work proposed in this work plan includes the installation and sampling of five vapor wells onsite and near the current building, however, a subslab vapor point is not proposed. The results of this sampling are expected to provide sufficient data for the evaluation of vapor intrusion concerns for the building.

- The ACHCSA recommended the use of helium as a tracer gas instead of isopropanol which can cause issues during sampling. The tracer gas proposed during the sampling of the proposed vapor wells is 1,1-difluoroethane.

- The ACHCSA requested additional information on sampling the former waste-oil UST. The analytical results were obtained from the City of San Leandro and submitted to the ACHCSA on 26 September 2008.

- The ACHCSA requested that the onsite wells be developed and sampled for hydrocarbons and oxygenates and that samples from well MW1A and from well MW7 be analyzed for perchloroethene, trichloroethene, and trans 1,2-dichloroethene. Well MW7 is associated with the (former) Unocal site located to the southeast and groundwater monitoring and sampling has recently been conducted at that site on behalf of ConocoPhillips. The development and sampling of the onsite wells is scheduled for the fourth quarter of 2008 and split samples from MW7 were requested from ConocoPhillips during the fourth quarter of 2008. The results of this sampling will be submitted under separate cover.

SITE BACKGROUND

Former Mobil Station 04FGN is currently in use as a retail shopping center. The site is located at the northwest corner of the intersection of East 14th Street and 150th Avenue in San Leandro, California (Figure 2). Three gasoline USTs, one used-oil UST, and the associated fuel dispensers and piping were removed in 1987. The sizes of the former USTs are unknown.

Land use in the immediate vicinity of the site is predominantly commercial, with gasoline and auto service stations, restaurants, and offices.

SITE GEOLOGY AND HYDROGEOLOGY

The subsurface lithology of the site was evaluated using soil boring logs from previous investigations. The subsurface is characterized by Quaternary alluvial sediments consisting of clayey/gravelly silt, silty/sandy/gravelly clay, and clayey/silty sand. Generally, the stratigraphy of the site consists of clayey and gravelly silt to approximately 10 feet below ground surface (bgs) and clayey silt and silty/gravelly clay to 26.5 feet bgs with interbedded silty and clayey sand layers between 20 and 30 feet bgs.

The groundwater flow direction has generally been to the south to southwest. Historically, groundwater has been encountered at the site at depths between approximately 5.5 and 12 feet bgs.

SUMMARY OF PREVIOUS INVESTIGATIONS

Summary of Soil Excavation Activities and Residual Hydrocarbon Concentrations

According to the closure request (Alton 1998), in 1984 Mobil discontinued fuel dispensing operations at the site. In 1987, three unleaded gasoline tanks of unknown size, one used-oil tank of unknown size, and the associated fuel dispensers and piping were removed from the site. During removal activities an unknown quantity of soil was excavated from the tank cavity. These activities were conducted by the property owner.

In September 1987, the Alameda County Environmental Health Department (ACEHD) collected and analyzed soil samples from a Pacific Gas and Electric Company (PG&E) excavation in the sidewalk to the southeast of the site. The County reported that the soil cuttings from the PG&E excavation contained oil and grease at a concentration of 45,000 mg/kg (Subsurface 1987). On 29 September 1987, Subsurface Consultants, Inc. (Subsurface) advanced soil borings SCB-1 through SCB-6 near the PG&E excavation. The soil borings ranged in total depth from 9.5 to 13.5 feet bgs. Total Petroleum Hydrocarbons as gasoline (TPH-g) were detected at concentrations of 72 mg/kg (SCB-1, 4.0 feet bgs) and 320 mg/kg (SCB-3, 8.5 feet bgs). Total Petroleum Hydrocarbons as diesel were detected at a concentration of 200 mg/kg (SCB-1, 4.0 feet bgs). Benzene was detected at a concentration of 6.6 mg/kg (SCB-6, 5.0 feet bgs) (Subsurface 1987).

In March 1988, Subsurface overexcavated soil around the former PG&E excavation. Soil analytical results are summarized in the attached closure request (Alton 1998).

Summary of Additional Site Assessment and Residual Hydrocarbon Concentrations

In March 1988, Subsurface installed groundwater monitoring well MW1A. No soil analytical results from boring MW1A were reported (Alton 1998).

Soil borings B-1 through B-4 were advanced in February 1994 to depths ranging from 11.5 to 25 feet bgs. Borings B-2 and B-3 were converted into groundwater monitoring wells MW2A and MW3A (Alisto 1994).

In June 1995, soil borings B-5 through B-9 and MW4A through MW6A were advanced to depths ranging from 15.5 to 26.5 feet bgs. Borings MW4A through MW6A were completed as groundwater monitoring wells. Soil boring MW7A was advanced in July 1995 and completed as a groundwater monitoring well (Alisto 1995).

In March 2000, MW4A through MW7A were decommissioned by pressure grouting method (TRC 2000).

Case closure requests for the site were submitted in November 1998 (Alton) and December 2006 (ETIC 2006).

Groundwater monitoring was conducted at the site between March 1988 and July 2004. Well construction details are presented in Table 1. Soil analytical results are summarized by Alton in their closure report (Alton 1998) and included in Appendix B. Historical gauging data and laboratory analytical results for the monitoring wells are summarized in Tables 2 and 3. Figure 3 shows the results from the July 2004 groundwater monitoring event (ETIC 2004).

SENSITIVE RECEPTORS

As requested by the ACHCSA in a letter dated 20 August 2008 (Appendix A), sensitive receptors were evaluated.

Based on the previous well search, no wells within 2,000-foot radius of the site are likely impacted by the groundwater conditions at the site (ETIC 2006). The ACHCSA agreed with the results in the letter dated 20 August 2008.

The nearest surface water body to the site is Estudillo Canal, located approximately 2,800 feet south of the site. The engineered channel is drainage for stormwater and flood control. San Lorenzo Creek is located approximately 1.4 miles south of the site. Stormwater also drains into this creek. The Lake Chabot reservoir is located approximately 1.5 miles northeast of the site. The flow from the lake into San Leandro Creek, located approximately 1.7 mile north of the site, is controlled by a dam. All of the creeks flow into San Francisco Bay. The groundwater at the site generally flows towards southwest and Estudillo Canal and San Lorenzo Creek is located downgradient of the site. However, based on the remaining concentrations at the site and distance to these creeks from the site they are not likely to be impacted by the concentrations of hydrocarbons at the former Mobil site.

A database search by Environmental Data Recourses, Inc. was conducted. The nearest wetland identified is located at approximately 0.8 miles north of the site. Based on the distance from the

site and the groundwater flow direction it is not likely that the groundwater is impacted by the concentrations of hydrocarbons at the former Mobil site.

PREFERENTIAL PATHWAY SURVEY

As requested by the ACHCSA in a letter dated 20 August 2008 (Appendix A), a preferential pathway survey was conducted. Since information on wells was previously submitted (ETIC 2006), this survey was conducted for the underground utilities at and near the site. Information regarding the utilities was obtained from multiple sources including the City of San Leandro Engineering and Transportation Department, Oro Loma Sanitary District, Alameda County Public Works Department, East Bay Municipal District (EBMUD), MCI, and PG&E. The underground utility lines are shown on Figure 4.

This conduit study focused on the major utilities in the area. The following is a summary of the information obtained for the utilities in the vicinity of the site.

- Storm water lines: Information about the locations of these lines was provided by the City of San Leandro Engineering and Transportation Department and the Alameda County Public Works Department. Maps indicate that the nearest storm water pipeline is located adjacent to the site along East 14th Street and it runs to the southeast. The depth of the pipeline ranges from 2 feet bgs near the site to 3 feet bgs to the southeast and is up to 36 inches in diameter. The depth of the storm water pipeline across East 14th Street to the southwest is unknown.

- Sanitary sewer lines: Information about the locations of these lines was provided by Oro Loma Sanitary District. Maps indicate that the sanitary sewer lines in the vicinity are 8 and 12 inches in diameter and are buried at approximately 5 to 6 feet bgs.

- Telecommunication lines: According to MCI, there are no underground telecommunication lines in the area of the site.

- Water pipelines: Information about the locations of water pipelines was provided by EBMUD. Maps indicate that the water pipelines are located along East 14th Street and along 150th Avenue. The pipelines were installed at depths of 3 to 4 feet bgs and the diameters of the pipelines are unknown.

- Gas lines: Information about the locations of gas pipelines was provided by PG&E. Maps show that there are gas lines beneath East 14th Street and 150th Avenue. The depths of the lines are 24 to 26 inches bgs.

Depths to water in the monitoring wells have ranged from approximately 5.5 to 12 feet bgs. Information from previous investigations indicates that saturated soils are encountered between approximately 10.5 to 15.5 feet bgs (Alisto 1994 and Alisto 1995). According to this information, it appears that groundwater elevations do not generally intersect the utility lines near the site although the depths of the sanitary sewer lines may occasionally intersect the depth of static groundwater at the site.

PROPOSED SCOPE OF WORK

The following work will be conducted and data collected to evaluate human health risks resulting from potential exposure to hydrocarbons beneath the site via the vapor migration pathway. The risk assessment will include a comparison of concentrations of chemicals of potential concern (COPCs) to relevant environmental screening levels adopted by the RWQCB-SF (RWQCB-SF 2008).

An advisory published by the Department of Toxic Substances Control (DTSC) and the Los Angeles Regional Water Quality Control Board (DTSC/LARWQCB 2003) and vapor intrusion evaluation guidelines published by the DTSC (DTSC 2004) will be used as a reference for the collection of the shallow soil vapor samples proposed below.

ETIC proposes to conduct the following activities:

- Five soil borings will be advanced at the proposed locations shown in Figure 5. The borings will be advanced to a depth of 6 feet bgs using a hand auger. The proposed boring locations were selected based on the historical concentrations of COPCs (TPH-g, benzene, toluene, ethylbenzene, total xylenes [BTEX], and methyl tertiary butyl ether [MTBE]) in the subsurface, groundwater flow direction, and the location of onsite structures. Drilling methods are described in Appendix C.

- Two soil samples will be collected from each boring location at approximately 5 to 5.5 feet bgs. The soil samples will be screened in the field with an organic vapor analyzer and logged. These samples will be submitted to a state-certified laboratory for physical parameter analysis.

- The borings will be completed as vapor wells for the collection of soil vapor samples from 5 to 6 feet bgs. A proposed well construction diagram is shown in Figure 6.

- Shallow soil vapor samples will be collected in 1-liter Summa canisters from the above-mentioned soil vapor well locations. Sample collection methods are described in Appendix C. These samples will be analyzed by a state-certified analytical laboratory.

- Guidelines by the Department of Toxic Substances Control (DTSC) state that every attempt should be made to collect representative vapor samples but that it may not be possible to collect soil gas samples from the subsurface in some instances including for sites with a "saturated vadose zone due to a shallow water table or sites with clay-rich soil" (DTSC 2004). If water is encountered in the vapor wells during the proposed sampling, attempts will not be made to remove the water as this may preclude performing the proper purging of soil vapor before sampling. It may not be possible to collect soil gas samples due to "low-flow" or "no-flow" conditions, often caused by the presence of clayey soils (DTSC/LARWQCB 2003). If vapor samples cannot be collected from the wells, then an evaluation of vapor intrusion without vapor samples will be considered.

- All soil and soil vapor samples will be preserved, stored in an ice-filled cooler, and delivered under chain of custody to a laboratory certified by the California Department of Health Services.

- The results of COPCs in the above-mentioned soil gas samples will be used for evaluation of potential health risks.

The soil samples collected at approximately 5 to 5.5 feet bgs from the borings will be analyzed for:

- Moisture content by D2216.
- Porosity by ASTM D854 including bulk density.

The soil gas samples will be analyzed for:

- TPH-g by EPA Method TO-3M.
- BTEX by EPA Method TO-15.
- MTBE, tertiary butyl alcohol, diisopropyl ether, ethyl tertiary butyl ether, tertiary amyl methyl ether, 1,2-dibromoethane, and 1,2-dichloroethane by EPA Method TO-15.
- Oxygen by ASTM D1946.
- 1,1-Difluoroethane (as a tracer) by EPA Method TO-15.

SCHEDULE AND REPORTING

Completion of the field work is contingent upon approval of this work plan by the ACHCSA and acquiring any necessary permits or access agreements. A report of the investigation and the results of the risk evaluation will be submitted following completion of the field work. ETIC will keep the ACHCSA informed on the progress of the field investigation activities.

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Alton (Alton Geoscience). 1998. Formal Case Closure Request, Former Mobil Station No. 04-FGN, 14994 East 14th Street, San Leandro, California. Alton, Livermore, California. November.

DTSC/LARWQCB (Department of Toxic Substances Control and California Regional Water Quality Control Board – Los Angeles Region). 2003. Advisory – Active Soil Gas Investigations. DTSC and LARWQCB, Glendale and Los Angeles, California. 28 January.

DTSC (Department of Toxic Substances Control). 2004. Guidance for the Evaluation and Mitigation of Substance Vapor Intrusion to Indoor Air – Interim Final. 15 December.

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RWQCB-SF (California Regional Water Quality Control Board, San Francisco Bay Region). 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. RWQCB-SF, Oakland, California. November 2007 with May 2008 updates.

Subsurface (Subsurface Consultants, Inc.). 1987. Preliminary Geotechnical Services re: Soil Contamination, 150th Avenue and East 14th Street, San Leandro, California. Subsurface, Oakland, California. October.

TRC (TRC/Alton Geoscience). 2000. Well Abandonment Report, Former Mobil Station 04-FGN, 14994 East 14th Street, San Leandro, California. TRC, Concord, California. April.

Figures

N

0 2,000

Scale (feet)

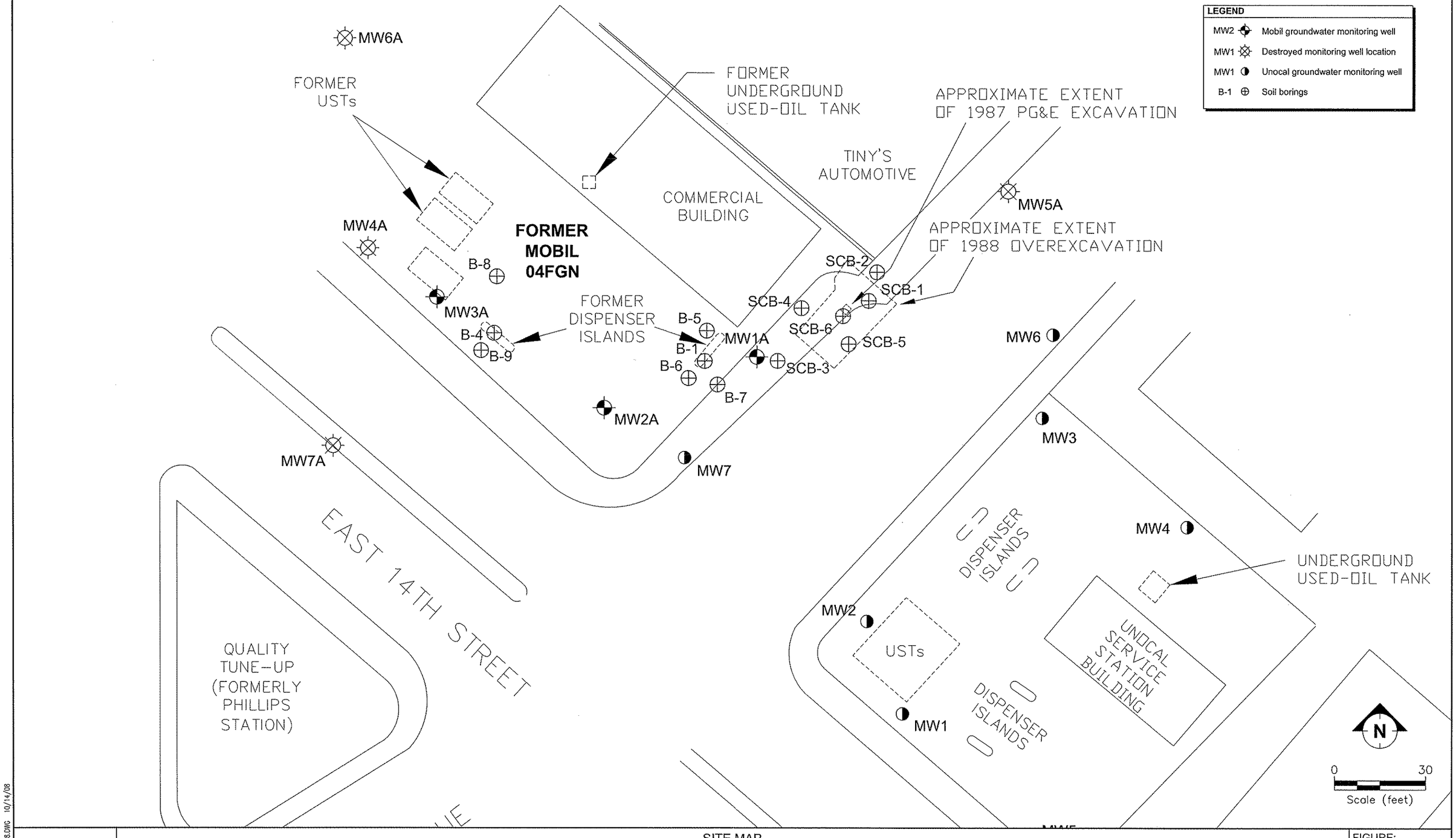
(Map Source: USGS Topography Map)

ETIC ENGINEERING

SITE LOCATION AND TOPOGRAPHIC MAP
FORMER MOBIL STATION 04FGN
14994 EAST 14th STREET
SAN LEANDRO, CALIFORNIA

FIGURE: 1

FILENAME: TOP01207.DWG 12/26/07



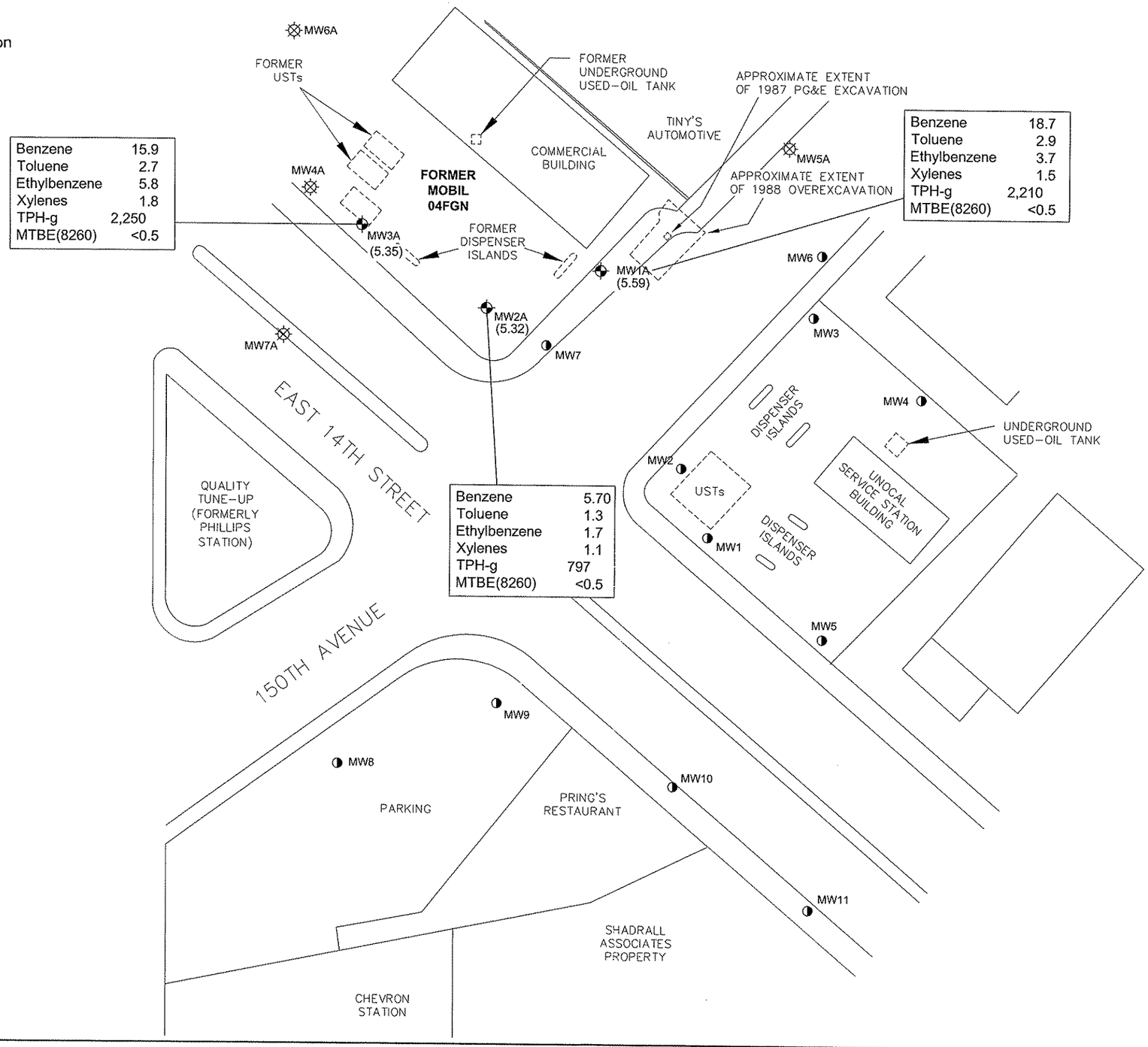
FILENAME: prop1008.DWG 10/14/08

ETIC ENGINEERING

SITE MAP
FORMER MOBIL STATION 04FGN
14994 EAST 14th STREET
SAN LEANDRO, CALIFORNIA

FIGURE: **2**

GW Approximate Groundwater Flow Direction
Gradient = 0.007



Benzene	15.9
Toluene	2.7
Ethylbenzene	5.8
Xylenes	1.8
TPH-g	2,250
MTBE(8260)	<0.5

Benzene	18.7
Toluene	2.9
Ethylbenzene	3.7
Xylenes	1.5
TPH-g	2,210
MTBE(8260)	<0.5

Benzene	5.70
Toluene	1.3
Ethylbenzene	1.7
Xylenes	1.1
TPH-g	797
MTBE(8260)	<0.5

LEGEND:

- MW2 Mobil groundwater monitoring well
- MW1 Destroyed monitoring well location
- MW1 Unocal groundwater monitoring well
- (5.59) Groundwater elevation (feet)
- TPH-g Total Petroleum Hydrocarbons as gasoline
- MTBE Methyl t-butyl ether

NOTE:
Concentrations in micrograms per liter (ug/L).

N

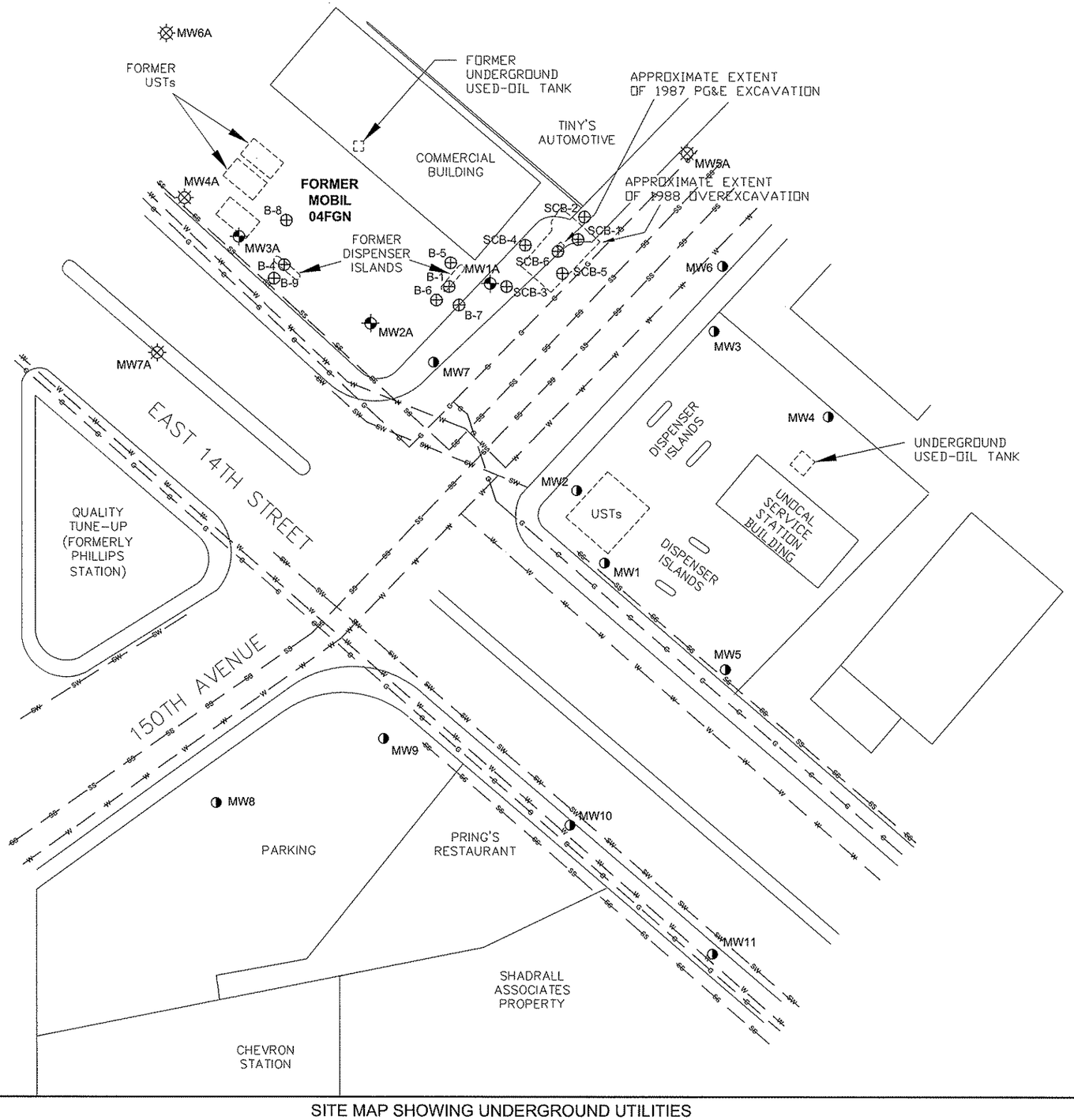
0 50
Scale (feet)

FILENAME: 3q2004.DWG 07/20/04

ETIC ENGINEERING

SITE PLAN SHOWING GROUNDWATER ELEVATIONS AND ANALYTICAL RESULTS
FORMER MOBIL STATION 04-FGN
14994 EAST 14th STREET, SAN LEANDRO, CALIFORNIA
7 JULY 2004

FIGURE: **3**



LEGEND

MW2	Mobil groundwater monitoring well
MW1	Destroyed monitoring well location
MW1	Unocal groundwater monitoring well
B-1	Soil borings
—G—	Gas line
—SS—	Sanitary sewer line
—SW—	Storm water line
—W—	Water pipeline

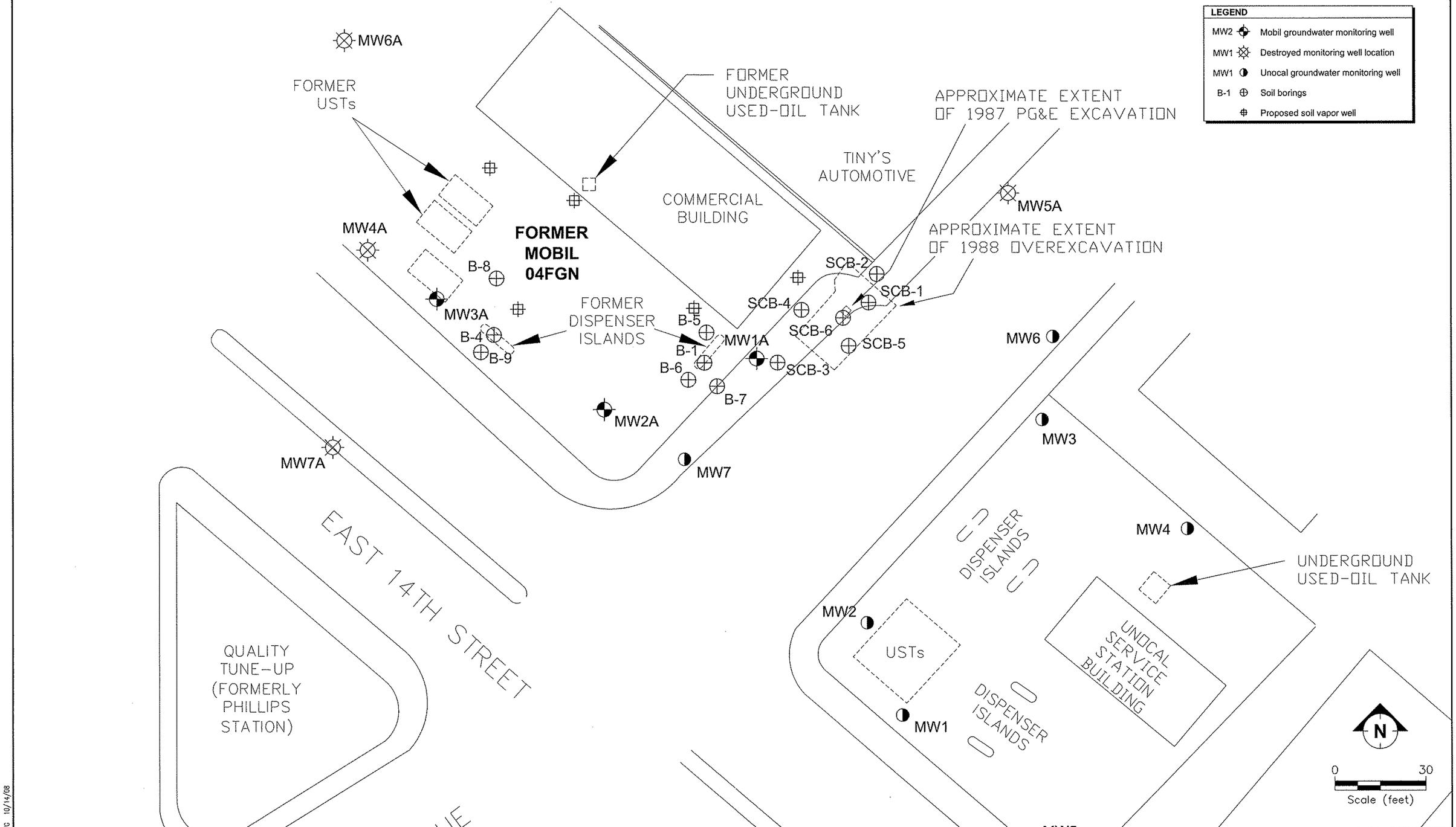
Note: Locations of underground utilities are approximate.

ETIC ENGINEERING

SITE MAP SHOWING UNDERGROUND UTILITIES
FORMER MOBIL STATION 04FGN
14994 EAST 14th STREET
SAN LEANDRO, CALIFORNIA

FIGURE: **4**

FILENAME: prop100B.DWG 10/14/08

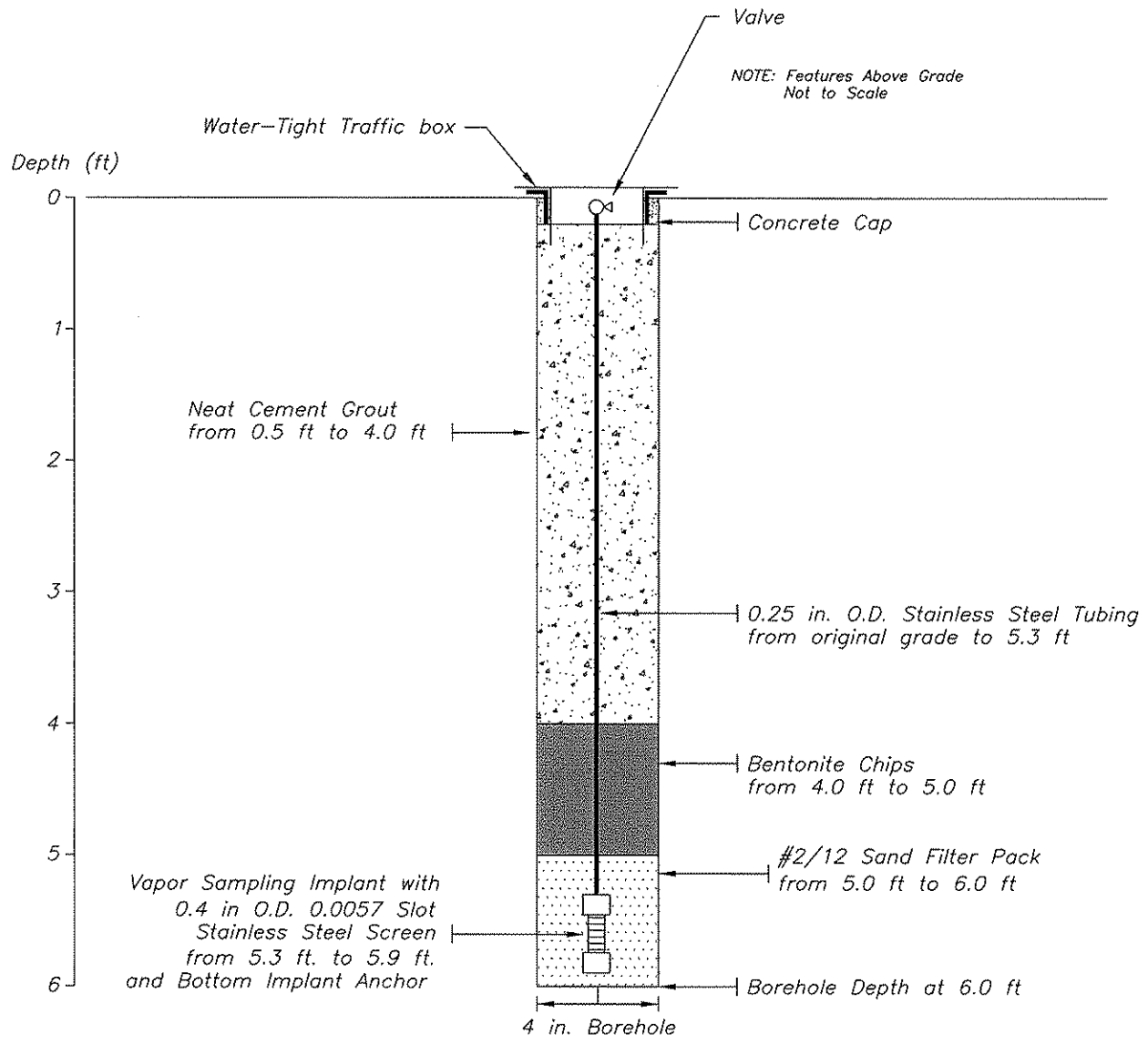


FILENAME: prop1008.DWG 10/14/08

ETIC ENGINEERING

SITE MAP SHOWING PROPOSED SOIL VAPOR WELLS
FORMER MOBIL STATION 04FGN
14994 EAST 14th STREET
SAN LEANDRO, CALIFORNIA

FIGURE: **5**



ETIC ENGINEERING	WELL COMPLETION DIAGRAM FOR PROPOSED SOIL VAPOR MONITORING WELLS FORMER MOBIL STATION 04FGN 14994 EAST 14th STREET, SAN LEANDRO, CALIFORNIA	FIGURE: **6**

Tables

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER MOBIL STATION 04-FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well Number		Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1A	a	03/31/88	16.34	PVC	24	19	8	2	9 - 19	0.020	8 - 19 19 - 24[c]	#3 Sand
MW2A	a	02/10/94	16.12	PVC	24	24	8	2	8.5 24	0.010	7 - 24	#2/12 Lonestar Sand
MW3A	a	02/10/94	16.42	PVC	23	23	8	2	8 - 23	0.010	6.5 23	#2/12 Lonestar Sand
MW4A	b	06/01/95	--	PVC	26.5	24	11	4	9 - 24	0.010	7 - 26.5	#2/12 Lonestar Sand
MW5A	b	06/01/95	--	PVC	26.5	24	11	4	9 - 24	0.010	7 - 26.5	#2/12 Lonestar Sand
MW6A	b	06/02/95	--	PVC	26.5	24	11	4	9 - 24	0.010	7 - 26.5	#2/12 Lonestar Sand
MW7A	b	07/28/95	--	PVC	26.5	24	11	4	9 - 24	0.010	7 - 26.5	#2/12 Lonestar Sand

a Well resurveyed on 27 November 2001.
b Well destroyed.
c Depth of bentonite seal at the base of the boring.

PVC Polyvinyl chloride.
TOC Top of casing.

-- Information not available.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW1A	03/31/88	36.35	—	—	29,000	ND	ND	ND	550	640	—	—
MW1A	01/31/89	36.35	—	—	11,200	—	260	ND	500	500	—	—
MW1A	02/24/94	36.35	9.42	26.93	11,000	2,500	70	ND	260	180	—	—
MW1A	08/03/94	36.35	12.00	24.35	13,000	7,100	61	50	280	230	—	—
MW1A	11/23/94	36.35	11.18	25.17	12,000	2,500	49	ND	300	190	—	—
MW1A	02/28/95	36.35	9.08	27.27	10,000	3,200	25	ND	110	67	—	—
MW1A	05/10/95	36.35	8.33	28.02	10,000	3,600	31	ND	140	81	—	—
MW1A	08/02/95	36.63	9.49	27.14	10,000	3,800	24	18	130	80	—	—
MW1A	11/02/95	36.63	11.05	25.58	12,000	3,400[i]	ND	ND	190	150	—	—
MW1A	02/08/96	36.63	7.55	29.08	8,000	3,600[i]	100	21	87	58	—	—
MW1A	05/08/96	36.63	7.52	29.11	9,200	—	11	ND	120	64	—	—
MW1A	08/09/96	36.63	9.63	27.00	—	—	—	—	—	—	—	—
MW1A	08/20/96	36.63	—	—	6,800	—	64	22	100	55	130	ND
MW1A	11/07/96	36.63	11.01	25.62	7,900	—	100	12	70	34	95	ND
MW1A	02/10/97	36.63	7.58	29.05	5,800	—	36	15	67	29	58	ND
MW1A	05/07/97	36.63	9.15	27.48	1,400	—	13	ND	11	ND	ND	—
MW1A	09/10/97	36.63	10.88	25.75	7,800	—	64	ND	70	26	120	ND
MW1A	02/12/98	36.63	5.52	31.11	ND	—	ND	ND	ND	ND	ND	—
MW1A	08/12/98	36.63	8.80	27.83	500	—	41	12	1.8	20	ND	—
MW1A	12/10/99	36.63	10.86	25.77	1,700	—	ND	1.4	6.2	3.3	ND	—
MW1A	01/14/00	36.63	11.33	25.30	4,600	—	ND	30	28	ND	ND	—
MW1A	10/27/00	36.63	10.30	26.33	3,500	—	<10	2.6	13	6.4	18	<5
MW1A	01/18/01	36.63	10.45	26.18	4,500	—	<10	3.9	12	4.7	<20	—
MW1A	07/10/01	36.63	10.72	25.91	2,000	—	<20	18	9.6	18	<20	<2
MW1A	11/27/01	16.34	Well resurveyed to new reference point									
MW1A	01/16/02	16.34	9.02	7.32	2,690	—	11.7	1.60	6.80	6.00	23.9	—
MW1A	07/08/02	16.34	10.43	5.91	1,570	—	12.0	11.0	<5.0	<5.0	24.0	<0.50
MW1A	01/23/03	16.34	8.84	7.50	2,040	—	16.5	3.5	8.70	5.90	—	<0.50
MW1A	07/09/03	16.34	9.97	6.37	1,440	—	8.60	1.0	7.3	5.2	13.6	<0.5
MW1A	01/15/04	16.34	9.39	6.95	1,640	—	0.70	5.2	4.0	2.8	—	<0.5
MW1A	07/07/04	16.34	10.75	5.59	2,210	—	18.7	2.9	3.7	1.5	—	<0.5
MW2A	02/24/94	36.61	9.52	27.09	6,400	4,500	31	ND	58	42	—	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW2A	08/23/94	36.61	12.05	24.56	7,500	7,100	42	21	71	53	—	—
MW2A	11/23/94	36.61	11.25	25.36	7,000	1,800	33	11	39	ND	—	—
MW2A	02/28/95	36.61	9.10	27.51	9,000	1,600	29	36	96	45	—	—
MW2A	05/10/95	36.61	8.42	28.19	5,100	1,600	20	27	32	35	—	—
MW2A	08/02/95	36.62	9.54	27.08	4,300	1,800	36	ND	11	16	—	—
MW2A	11/02/95	36.62	11.08	25.54	4,300	3,000[i]	22	ND	10	11	—	—
MW2A	02/08/96	36.62	7.68	28.94	2,900	940[i]	32	13	13	ND	—	—
MW2A	05/08/96	36.62	8.64	27.98	2,500	—	13	12	19	26	—	—
MW2A	08/09/96	36.62	9.71	26.91	—	—	—	—	—	—	—	—
MW2A	08/20/96	36.62	—	—	2,500	—	19	11	6.8	8.1	36	—
MW2A	11/07/96	36.62	11.04	25.58	4,700	—	58	7.3	5.3	ND	55	—
MW2A	02/10/97	36.62	7.75	28.87	2,600	—	12	10	35	15	ND	—
MW2A	05/07/97	36.62	9.23	27.39	3,300	—	25	18	16	11	ND	—
MW2A	09/10/97	36.62	10.91	25.71	2,800	—	24	ND	ND	ND	43	—
MW2A	02/12/98	36.62	5.59	31.03	3,800	—	10	11	30	14	ND	—
MW2A	08/12/98	36.62	8.85	27.77	1,300	—	0.8	8.7	2.4	4.7	ND	—
MW2A	12/10/99	36.62	10.90	25.72	1,300	—	ND	2.2	ND	ND	ND	—
MW2A	01/14/00	36.62	11.39	25.23	2,700	—	1.3	18	2.4	ND	ND	—
MW2A	10/27/00	36.62	10.48	26.14	2,600	—	9.6	2.4	<5.0	<5.0	7.9	—
MW2A	01/18/01	36.62	10.61	26.01	3,800	—	<5.0	2.1	3.0	2.0	<10	—
MW2A	07/10/01	36.62	10.78	25.84	2,100	—	<10	2.6	2.8	3.4	<10	—
MW2A	11/27/01	16.12	Well resurveyed to new reference point									
MW2A	01/16/02	16.12	9.11	7.01	2,500	—	9.80	5.10	6.50	9.80	16.0	—
MW2A	07/08/02	16.12	10.48	5.64	682	—	6.3	0.7	0.9	3.3	8.5	—
MW2A	01/23/03	16.12	8.94	7.18	1,180	—	8.8	3.1	4.8	5.8	—	<0.50
MW2A	07/09/03	16.12	10.03	6.09	1,430	—	7.80	1.5	3.1	3.4	10.5	<0.5
MW2A	01/15/04	16.12	9.48	6.64	1,530	—	0.50	4.8	2.2	2.9	—	<0.5
MW2A	07/07/04	16.12	10.80	5.32	797	—	5.70	1.3	1.7	1.1	—	<0.5
MW3A	02/24/94	36.92	9.85	27.07	19,000	10,000	52	30	690	290	—	—
MW3A	08/23/94	36.92	12.33	24.59	14,000	11,000	44	24	1,000	100	—	—
MW3A	11/23/94	36.92	11.56	25.36	13,000	2,600	30	18	690	52	—	—
MW3A	02/28/95	36.92	9.35	27.57	8,500	—	11	ND	340	24	—	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L) TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW3A	05/10/95	36.92	8.55	28.37	7,600	3,800	ND	ND	400	45	—	—
MW3A	08/02/95	36.93	9.75	27.18	9,200	3,800	17	13	340	34	—	—
MW3A	11/02/95	36.93	11.29	25.64	9,200	4,400[j]	31	ND	360	72	—	—
MW3A	02/08/96	36.93	7.97	28.96	6,900	3,800[j]	38	ND	230	43	—	—
MW3A	05/08/96	36.93	8.82	28.11	7,700	—	ND	ND	270	38	—	—
MW3A	08/09/96	36.93	9.95	26.98	—	—	—	—	—	—	—	—
MW3A	08/20/96	36.93	—	—	5,600	—	8.0	29	180	23	12	—
MW3A	11/07/96	36.93	11.28	25.65	8,600	—	47	ND	150	29	ND	—
MW3A	02/10/97	36.93	7.95	28.98	8,300	—	28	ND	130	23	ND	—
MW3A	05/07/97	36.93	9.45	27.48	37,000	—	230	110	630	ND	ND	—
MW3A	09/10/97	36.93	11.13	25.80	5,500	—	16	ND	75	11	ND	—
MW3A	02/12/98	36.93	5.72	31.21	10,000	—	37	ND	84	25	ND	—
MW3A	08/12/98	36.93	9.05	27.88	5,600	—	4	18	39	19	ND	—
MW3A	12/10/99	36.93	11.21	25.72	5,900	—	ND	3.0	22	5.0	ND	—
MW3A	01/14/00	36.93	11.64	25.29	6,500	—	7.5	27	37	ND	ND	—
MW3A	10/27/00	36.93	10.78	26.15	6,300	—	<10	3.8	17	5.6	<20	—
MW3A	01/18/01	36.93	10.87	26.06	7,300	—	<20	3.1	14	3.3	<10	—
MW3A	07/10/01	36.93	11.03	25.90	5,200	—	7.3	8.0	11	9.6	<10	—
MW3A	11/27/01	16.42	Well resurveyed to new reference point									
MW3A	01/16/02	16.42	9.38	7.04	4,900	—	19.0	<5.00	16.0	14.0	28.0	<5
MW3A	07/08/02	16.42	10.75	5.67	2,470	—	9.1	1.8	8.8	4.1	17.5	—
MW3A	01/23/03	16.42	9.20	7.22	2,240	—	12.5	4.5	7.9	28.0	—	<0.50
MW3A	07/09/03	16.42	10.28	6.14	2,850	—	10.8	2.8	8.3	5.5	15.7	<0.5
MW3A	01/15/04	16.42	9.77	6.65	2,810	—	1.20	8.2	5.9	9.1	—	<0.5
MW3A	07/07/04	16.42	11.07	5.35	2,250	—	15.9	2.7	5.8	1.8	—	<0.5
MW4A	08/02/95	37.18	9.63	27.55	ND	ND	ND	ND	ND	ND	—	—
MW4A	11/02/95	37.18	11.48	25.70	ND	ND	ND	ND	ND	ND	—	—
MW4A	02/08/96	37.18	8.18	29.00	ND	ND	ND	1.1	ND	0.92	—	—
MW4A	05/08/96	37.18	8.49	28.69	ND	—	ND	ND	ND	ND	—	—
MW4A	08/09/96	37.18	10.05	27.13	—	—	—	—	—	—	—	—
MW4A	08/20/96	37.18	—	—	ND	—	ND	ND	ND	ND	ND	—
MW4A	11/07/96	37.18	11.48	25.70	ND	—	ND	ND	ND	0.88	ND	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L)							
					TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW4A	02/10/97	37.18	8.11	29.07	ND	—	ND	2.4	ND	ND	ND	—
MW4A	05/07/97	37.18	9.64	27.54	ND	—	ND	ND	ND	ND	ND	—
MW4A	09/10/97	37.18	11.32	25.86	—	—	—	—	—	—	—	—
MW4A	02/12/98	37.18	5.90	31.28	ND	—	ND	ND	ND	ND	ND	—
MW4A	08/12/98	37.18	9.21	27.97	—	—	—	—	—	—	—	—
MW4A	12/10/99	37.18	11.46	25.72	ND	—	ND	0.39	ND	0.95	ND	—
MW4A	03/09/00	Well destroyed										
MW5A	08/02/95	35.91	8.74	27.17	1,300	220	16	0.68	1.3	4.3	—	—
MW5A	11/02/95	35.91	10.34	25.57	180	ND	1.9	1.2	ND	ND	—	—
MW5A	02/08/96	35.91	6.67	29.24	160	150	1.9	2.2	ND	0.89	—	—
MW5A	05/08/96	35.91	7.35	28.56	260	—	2.4	6.7	2.0	9.6	—	—
MW5A	08/09/96	35.91	8.81	27.10	—	—	—	—	—	—	—	—
MW5A	08/20/96	35.91	—	—	ND	—	ND	1.8	ND	ND	9.4	—
MW5A	11/07/96	35.91	10.25	25.66	—	—	—	—	—	—	—	—
MW5A	02/10/97	35.91	6.93	28.98	ND	—	ND	1.2	ND	ND	ND	—
MW5A	05/07/97	35.91	8.42	27.49	—	—	—	—	—	—	—	—
MW5A	09/10/97	35.91	10.15	25.76	—	—	—	—	—	—	—	—
MW5A	02/12/98	35.91	5.32	30.59	ND	—	ND	ND	ND	ND	ND	—
MW5A	08/12/98	35.91	8.19	27.72	—	—	—	—	—	—	—	—
MW5A	12/10/99	35.91	10.10	25.81	ND	—	ND	ND	ND	ND	ND	—
MW5A	03/09/00	Well destroyed										
MW6A	08/02/95	37.10	9.68	27.42	ND	ND	ND	ND	ND	ND	—	—
MW6A	11/02/95	37.10	11.26	25.84	ND	ND	ND	ND	ND	ND	—	—
MW6A	02/08/96	37.10	7.79	29.31	ND	ND	ND	1.3	ND	1.3	—	—
MW6A	05/08/96	37.10	8.38	28.72	ND	—	ND	1.6	ND	1.2	—	—
MW6A	08/09/96	37.10	9.82	27.28	—	—	—	—	—	—	—	—
MW6A	08/20/96	37.10	—	—	ND	—	ND	ND	ND	ND	ND	—
MW6A	11/07/96	37.10	11.02	26.08	—	—	—	—	—	—	—	—
MW6A	02/10/97	37.10	7.70	29.40	ND	—	ND	3.4	ND	ND	ND	—
MW6A	05/07/97	37.10	9.31	27.79	—	—	—	—	—	—	—	—
MW6A	09/10/97	37.10	11.08	26.02	—	—	—	—	—	—	—	—
MW6A	02/12/98	37.10	5.52	31.58	ND	—	ND	ND	ND	ND	ND	—

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentrations (µg/L)							
					TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE (8020 or 8021)	MTBE (8240 or 8260)
MW6A	08/12/98	37.10	8.91	28.19	—	—	—	—	—	—	—	—
MW6A	12/10/99	37.10	11.24	25.86	ND	—	ND	0.32	ND	ND	ND	—
MW6A	03/09/00	Well destroyed										
MW7A	11/02/95	37.39	11.77	25.62	ND	ND	ND	ND	ND	ND	—	—
MW7A	02/08/96	37.39	8.68	28.71	ND	75	ND	1.4	ND	1.5	—	—
MW7A	05/08/96	37.39	9.00	28.39	ND	—	2.2	6.3	1.4	7.9	—	—
MW7A	08/09/96	37.39	10.31	27.08	—	—	—	—	—	—	—	—
MW7A	08/20/96	37.39	—	—	ND	—	ND	ND	ND	ND	ND	—
MW7A	11/07/96	37.39	11.81	25.58	ND	—	ND	0.96	ND	1.6	ND	—
MW7A	02/10/97	37.39	8.57	28.82	ND	—	ND	2.4	ND	ND	ND	—
MW7A	05/07/97	37.39	10.05	27.34	ND	—	ND	ND	ND	ND	ND	—
MW7A	09/10/97	37.39	11.66	25.73	ND	—	ND	ND	ND	ND	ND	—
MW7A	02/12/98	37.39	6.55	30.84	ND	—	ND	ND	ND	ND	ND	—
MW7A	08/12/98	37.39	9.65	27.74	ND	—	0.5	ND	ND	ND	ND	—
MW7A	12/10/99	37.39	11.80	25.59	ND	—	ND	ND	ND	ND	ND	—
MW7A	03/09/00	Well destroyed										

i Unidentified hydrocarbons <C10

TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-g Total Petroleum Hydrocarbons as gasoline.
MTBE Methyl tertiary butyl ether.
ND Not detected at or above laboratory reporting limit.
TOC Top of casing.

µg/L Micrograms per liter.
— Not analyzed or not provided.

TABLE 3 GROUNDWATER ANALYTICAL RESULTS FOR OXYGENATES AND ADDITIVES,
FORMER MOBIL STATION 04FGN, 14994 EAST 14TH STREET, SAN LEANDRO, CALIFORNIA

Well ID	Date	Concentrations (µg/L) t-Butyl alcohol	Methyl t-butyl ether	Diisopropyl ether	Ethyl t-butyl ether	t-Amyl methyl ether	1,2-Dichloro-ethane	1,2-Dibromo-ethane
MW1A	08/20/96	--	ND	--	--	--	--	--
MW1A	11/07/96	--	ND	--	--	--	--	--
MW1A	02/10/97	--	ND	--	--	--	--	--
MW1A	09/10/97	--	ND	--	--	--	--	--
MW1A	10/27/00	--	<5	--	--	--	--	--
MW1A	07/10/01	--	<2	--	--	--	--	--
MW1A	07/08/02	--	<0.50	--	--	--	--	--
MW1A	01/23/03	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW1A	01/15/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW1A	07/07/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW2A	01/23/03	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2A	01/15/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW2A	07/07/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW3A	01/16/02	--	<5	--	--	--	--	--
MW3A	01/23/03	<10	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
MW3A	01/15/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW3A	07/07/04	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

ND Not detected at or above laboratory reporting limit.

-- Not analyzed or not provided.
µg/L Micrograms per liter.

Appendix A

Regulatory Correspondence

04-FGN

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 20, 2008

Ms. Jennifer Sedlachek
ExxonMobil
4096 Peidmont Ave.
Oakland, CA 94611

Jana Gluckman
2110 Stonehaven Drive
Los Altos, CA 94024

Subject: Fuel Leak Case No. RO0000422 and Geotracker Global ID T0600100912, Mobil #04-FGN, 14994 E 14th St, San Leandro, CA 94578

Dear Ms. Sedlachek and Ms. Gluckman:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above-referenced site including the document entitled, *Data Submittal and Request for Case Closure*, dated December 28, 2006 prepared by ETIC Engineering and *Formal Case Closure Request* dated November 23, 1998, prepared by Alton Geoscience. These reports indicate that petroleum hydrocarbon contamination remains on-site at concentrations of 2,250 micrograms per liter (µg/L) total petroleum hydrocarbons as gasoline and 18.7 µg/L benzene in groundwater, and at a concentration of 1.2 milligrams per kilogram (mg/Kg) benzene in soil. Well MW-3A, immediately downgradient of your source area, shows increasing benzene levels and the soil vapor pathway has not been evaluated at your site. Also, the release at the waste-oil UST has not been evaluated or investigated. Perchloroethene (PCE), tricholorethene (TCE) and trans 1,2 dichloroethene (Trans 1,2- DCE) were detected in a trench in the sidewalk downgradient of the waste-oil UST but the nearby wells have not been sampled for these constituents. Based upon our review, ACEH cannot consider case closure for the subject site at this time. This decision to deny closure is subject to appeal to the State Water Resources Control Board (SWRCB), pursuant to Section 25299.39.2(b) of the Health and Safety Code (Thompson-Richter Underground Storage Tank Reform Act - Senate Bill 562). Please contact the SWRCB Underground Storage Tank Program at (916) 341-5851 for information regarding the appeals process.

We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Dissolved Contaminant Plume Definition.** Dissolved contaminant concentrations remaining on-site are reported at maximum concentrations of 2,250 micrograms per liter (µg/L) total petroleum hydrocarbons as gasoline and 18.7 µg/L benzene. However, well MW-7, which is located in the sidewalk downgradient of the dispensers and waste-oil UST, immediately adjacent to your site and monitored by ConocoPhillips, has reported

concentrations of 7,100 micrograms per liter TPHg in the groundwater samples collected in March 2008. Benzene is currently below the detection limits. MW-7 is approximately downgradient of the area where PCE, TCE and Trans 1,2- DCE were detected during a utility line excavation. Well MW-7 has not been analyzed for PCE. ACEH requests an additional groundwater sampling event in order to evaluate this site for case closure. We request that you redevelop and sample the three on-site wells to determine the current concentrations. Please analyze groundwater samples for: total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015M, benzene, toluene, ethylbenzene, toluene, xylenes, MTBE, ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary amyl methyl ether (TAME), TBA, ethylene dibromide (EDB), and 1,2-dichloroethane (1,2-DCA) by EPA Method 8260. Please also analyze water samples from MW-1A and ConocoPhillips well MW-7 for PCE, TCE and Trans 1, 2 DCE.

2. **Residual Soil Contamination and Soil Vapor Migration.** Maximum concentrations of 4,100 milligrams per kilogram (mg/Kg) TPHg and 1.2 mg/Kg benzene were left in place in soil at the subject site. An evaluation of the soil vapor pathway has not been performed. ACEH requests that you submit a work plan to evaluate this data gap adjacent to the areas with residual contamination and also in the current building by the date specified below.

   We recommend collecting soil vapor from a permanently installed vapor well in the areas without a building and a subslab point in the building following the Department of Toxic Substances Control and Los Angeles Regional Water Quality Control Board's January 28, 2003 *Advisory - Active Soil Gas Investigations* guidance for your soil vapor sampling. This document recommends that a tracer gas be used to ensure that samples are not comprised by leakage through the seals. An enclosure can be placed over the sample port, tubing and Summa canister so that a tracer gas be introduced and monitored during sampling. Please include the tracer gas in your sample analysis for each soil vapor sample. ACEH recommends that you use helium because of issues with isopropanol that have risen since the document was published. For information on using a sampling enclosure and helium, please refer to the New York State Department of Health's October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York.

3. **Waste-Oil Tank Sampling.** A waste-oil tank was present at the site however our case files do not contain the reports indicating analysis for waste-oil constituents, as per the Tri-Regional Guidelines for recommended minimum verification analysis for leaking underground tanks such as metals, total oil and grease, chlorinated hydrocarbons, etc. Please submit all reports documenting these analyses by **September 20, 2008**. If sample results are not available, ACEH requests that you prepare a work plan to investigate the waste oil tank area and the lateral and vertical extent of contamination. Please note that chlorinated volatile organic compounds were detected in an excavation conducted in the sidewalk along 150th Avenue adjacent to the site and downgradient of the former waste-oil tank.

4. **Preferential Pathway Study.** The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways and conduits that could spread contamination. We request that you perform a preferential pathway study that details all of the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the vicinity of the site.

The purpose of the preferential pathway study is to locate potential migration pathways and conduits and determine the probability of the NAPL and/or plume encountering preferential pathways and conduits that could spread contamination. We request that you perform a preferential pathway study that details all of the potential migration pathways and potential conduits (wells, utilities, pipelines, etc.) for vertical and lateral migration that may be present in the vicinity of the site.

Discuss your analysis and interpretation of the results of the preferential pathway study (including the utility survey and sensitive receptor survey requested below) and report your results in the report requested below. The results of your study shall contain all information required by California Code of Regulations, Title 23, Division 3, Chapter 16, §2654(b).

a. Utility Survey

An evaluation of all utility lines and trenches (including sewers, storm drains, pipelines, trench backfill, etc.) within and near the site and plume area(s) is required as part of your study. Please include maps and cross-sections illustrating the location and depth of all utility lines and trenches within and near the site and plume areas(s) as part of your study.

b. Well Survey/Sensitive Receptor Survey

A well survey was performed which concluded that no wells would likely be impacted by this site. We concur with the results of your well survey. However, the well survey did not include an evaluation of whether there were other sensitive receptors in the area such as creeks, water bodies or wetlands. Please include a discussion of the nearby sensitive receptors in the report requested below.

TECHNICAL REPORT REQUEST

Please submit technical reports to Alameda County Environmental Health (Attention: Barbara Jakub), according to the following schedule so that we can complete our closure review for this site:

- **September 30, 2008** – Additional Information Request (Documentation of Waste-Oil UST Characterization)

- **October 30, 2008** – Work Plan and preferential pathway survey

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/electronic_submittal/report_rqmts.shtml.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 639-1287 or send me an electronic mail message at barbara.jakub@acgov.org.

Sincerely,

Barbara Jakub

Barbara Jakub, P.G.
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Ms. Tracy Iob, ETIC Engineering, Inc., 2285 Morello Avenue, Pleasant Hill, CA 94523
Donna Drogos, ACEH
Barbara Jakub, ACEH
File

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	ISSUE DATE: July 2005
	REVISION DATE: December 16, 2005
	PREVIOUS REVISIONS: October 31, 2005
SECTION: Miscellaneous Administrative Topics & Procedures	SUBJECT: Electronic Report Upload (ftp) Instructions

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:
  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

Submission Instructions

1) Obtain User Name and Password:
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to dehloptoxic@acgov.org
      or
      ii) Send a fax on company letterhead to (510) 337-9335, to the attention of Alicia Lam-Finneke.
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for.**

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape and Firefox browsers will not open the FTP site.
   b) Click on File, then on Login As.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to dehloptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name at acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload)

Appendix B

Summary of Soil Sample Analysis (Alton 1998)

Table 1

Summary of Soil Sample Analysis*

Former Mobil Station 04-FGN

Boring ID	Date	Sample Depth (feet)	TPH-G (ppm)	TPH-D (ppm)	TOG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	PCE (ppm)	TCE (ppm)	Trans-1, 2-DCE (ppm)
SCB-1	09/29/87	4.0	72	200	—	—	—	—	200	—	—	—
SCB-1	09/29/87	8.6	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-2	09/29/87	2.6	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-2	09/29/87	7.1	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-3	09/29/87	5.0	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-3	09/29/87	8.5	320	ND<50	—	—	—	—	ND<50	—	—	—
SCB-4	09/29/87	4.5	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-4	09/29/87	10.5	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-5	09/29/87	4.0	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-5	09/29/87	8.0	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
SCB-6	09/29/87	5.0	ND<10	ND<50	—	6.6	15.0	8.0	ND<50	6.6	15.0	8.0
SCB-6	09/29/87	9.1	ND<10	ND<50	—	—	—	—	ND<50	—	—	—
B-1	02/10/94	6.5	1,500	160	160	ND<0.005	2.9	18	85	—	—	—
B-1	02/10/94	11.5	580	120	ND<30	1.2	1.1	5.5	18	—	—	—
B-2	02/10/94	7.5	1.4	1.6	ND<30	ND<0.005	0.0065	ND<0.005	ND<0.005	—	—	—
B-2	02/10/94	11.5	49	12	ND<30	0.094	ND<0.005	0.18	0.33	—	—	—
B-3	02/10/94	6.5	10	2.4	100	ND<0.005	0.028	0.027	0.049	—	—	—
B-3	02/10/94	11.5	190	31	ND<30	0.70	0.11	2.5	0.52	—	—	—
B-4	02/10/94	6.5	4,100	650	130	ND<0.005	15	57	390	—	—	—
B-4	02/10/94	11.5	460	62	ND<30	ND<0.005	1.0	4.7	23	—	—	—
B-5	06/01/95	6.5	2.5	ND<1.0	—	ND<0.0050	ND<0.0050	0.0076	0.17	—	—	—
B-5	06/01/95	11.5	8.6	2.1	—	0.025	0.025	0.020	0.11	—	—	—
B-6	06/01/95	6.5	3.3	4.3	—	ND<0.0050	ND<0.0050	0.068	0.16	—	—	—
B-6	06/01/95	11.5	44	2.7	—	0.053	0.078	1.4	5.3	—	—	—

Summary of Soil Sample Analysis*

Former Mobil Station 04-FGN

Boring ID	Date	Sample Depth (feet)	TPH-G (ppm)	TPH-D (ppm)	TOG (ppm)	Benzene (ppm)	Toluene (ppm)	Ethyl-benzene (ppm)	Total Xylenes (ppm)	PCE (ppm)	TCE (ppm)	Trans-1, 2-DCE (ppm)
B-7	06/01/95	6.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
B-7	06/01/95	11.5	130	8.1	—	0.28	0.31	0.92	1.2	—	—	—
B-8	06/01/95	6.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
B-8	06/01/95	11.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
B-9	06/01/95	6.5	ND<1.0	1.4	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
B-9	06/01/95	11.5	2.5	1.7	—	ND<0.0050	0.0053	0.0059	0.0052	—	—	—
MW-4A	06/01/95	6.5	ND<1.0	2.2	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-4A	06/01/95	11.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-5A	06/01/95	6.5	ND<1.0	1.6	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-5A	06/01/95	11.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-6A	06/02/95	6.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-6A	06/02/95	11.5	ND<1.0	ND<1.0	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-7A	07/21/95	6.5	ND<1.0	—	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—
MW-7A	07/21/95	11.5	ND<1.0	—	—	ND<0.0050	ND<0.0050	ND<0.0050	ND<0.0050	—	—	—

NOTES:

* = Source: Alisto Engineering Group; SCB borings drilled by Subsurface Consultants, Inc.

TPH-G = total petroleum hydrocarbons as gasoline

TPH-D = total petroleum hydrocarbons as diesel

TOG = total oil and grease

PCE = tetrachloroethylene

TCE = trichloroethylene

Trans-1,2-DCE = trans-1,2-dichloroethylene

ppm = parts per million

ND = not detected at or above method detection limit

— = not analyzed / not applicable

Appendix C

Field Protocols

PROTOCOLS FOR INSTALLATION AND SAMPLING OF SOIL VAPOR WELLS

SUBSURFACE CLEARANCE SURVEY PROCEDURES

Prior to drilling, the proposed locations of borings will be marked with white paint. Underground Service Alert (USA) will be contacted prior to subsurface activities and a "ticket" will be issued for this investigation. USA members will mark underground utilities in the delineated areas using standard color code identifiers.

Once USA has marked the site, all proposed borehole locations will be investigated by subsurface clearance surveys to identify possible buried hazards (pipelines, drums, tanks). Subsurface clearance surveys use several geophysical methods to locate shallow buried man-made objects. The geophysical methods include electromagnetic induction (EMI) profiling, ground penetrating radar (GPR), and/or magnetic surveying. The choice of methods depends on the target object and potential interference from surrounding features.

Prior to drilling, all boreholes will be cleared of underground utilities to a depth of at least 4 feet below ground surface (bgs) in "non-critical zones" and to 8 feet bgs in "critical zones". Critical zones are defined as locations that are within 10 feet from the furthest edge of any underground storage tank (UST), within 10 feet of the product dispenser islands, the entire area between the UST field and the product dispenser islands, and within 10 feet of any suspected underground line. An 8- to 12-inch-diameter circle will be cut in the surface cover at each boring location. A hole will then be cleared at each boring location using a hand auger.

SOIL SAMPLING

Shallow soil samples are collected using a 6-inch sample barrel connected to a slide hammer and containing a 6-inch stainless steel sample sleeve. After driving the hammer 6 inches, the rods and sample barrel are withdrawn from the borehole and the sample sleeve is removed.

Soil from the hand auger is removed and placed in a sealed plastic bag. The soil is scanned with an organic vapor analyzer (OVA) equipped with a flame ionization detector (FID) or photoionization detector (PID), and the readings are noted on the soil boring logs. The remaining soil from the hand auger is examined and classified according to the Unified Soil Classification System (USCS).

Soil samples are delivered, under chain of custody, to a laboratory certified by the California Department of Health Services (DHS) for analyses.

SOIL VAPOR WELL INSTALLATION PROCEDURES

The vapor wells are constructed with 0.25-inch-diameter stainless steel tubing connected to 0.4-inch-diameter vapor sampling implant with a 0.0057-inch slot stainless steel screen and bottom implant anchor. All connections are sealed with Swagelok® type fittings. A filter pack of #2/12 sand is placed at the screened interval and above and below the slotted PVC casing for each well. The wells are then sealed with hydrated bentonite chips or granules, followed by neat cement grout to just

below ground surface. The tubing is sealed at the surface with a stainless steel Swagelok® valve and stainless steel cap.

The wells are finished at the surface with a slightly raised, watertight steel traffic-rated box set in concrete. The lid on the traffic-rated box is bolted to the rim of the well box.

SOIL VAPOR SAMPLING PROCEDURES

To allow for subsurface conditions to equilibrate, the wells are not disturbed for a period of at least 48 hours.

A vacuum tightness test is performed on each well. The test consists of the application of vacuum and monitoring of vacuum tightness using vacuum gauges and/or flow meter for 5 to 10 minutes.

A purge test will be conducted for one well. The selected well should be the one with the highest expected concentrations. The test consists of the collection of vapor samples using Tedlar bags after purging the well of one (1), three (3), and seven (7) purge volumes by drawing vapor using a syringe connected to a valve on the tubing or a vacuum pump. The purge volume is estimated based on the internal volume of the tubing used and the annular space around the slotted screen. The samples are collected through a particulate filter and flow controller which regulates the flow of soil gas to no more than 200 milliliters per minute. The results of the purge test are used to dictate the purge volume to be used during the sampling of subsequent wells.

The vapor samples are collected in 1-liter stainless steel Summa canisters. The samples are collected through a particulate filter and flow controller which regulates the flow of soil gas to no more than 200 milliliters per minute. To ensure air-tight connections between the tubing, sampling port, valves, and other connections, a tracer compound is applied to joints as a tracer. A leak will be evident if the tracer is detected in the analysis of the soil vapor samples.

The 1-liter Summa canisters are labeled and packaged for delivery to a state-certified laboratory for chemical analysis. The initial pressure and the final pressure readings taken from the gauges on the Summa canisters are recorded. A small vacuum of about 5 inches of mercury is left inside the sample canister and is recorded on the chain-of-custody. Upon receipt, the laboratory will check the pressure in the sample canister and compare it to the pressure recorded on the chain-of-custody for quality control purposes.