EMCON

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97 NOV -7 PM 3:51

November 5, 1997
Project 20805-120.007

Mr. Barney Chan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502

Re: Chronology of Events for ARCO Service Station No. 276, 10600 MacArthur Boulevard, Oakland, California

Dear Mr. Chan:

As we discussed on the telephone on October 22 and 28, 1997, the risk assessment report for the above-referenced site (Site) has been reviewed by your department and found satisfactory, and the Alameda County Health Care Services Agency (ACHSA) is now ready to begin the closure process for the Site. As requested, EMCON has prepared the following chronology of environmental investigations and remediation conducted at the Site. Summaries of soil and groundwater analytical data and remediation system operation data are included in the Attachments A through C. The chronology refers to work performed by different consultants retained by ARCO Products Company (ARCO) during different time periods over the past few years. Please note that all work performed at the Site was performed at ARCO's request and on ARCO's behalf. Also, please note that negotiations which took place over the years between ARCO and owners of the adjacent property regarding responsibility for remediation of chlorinated hydrocarbons are not discussed herein.

→ 280 gal waste oil tank removed. Addl exc. excavated on 11/4/88 + 12/6/88

September 29 to December 6, 1988 - Waste Oil Tank Removal. Pacific Environmental Group, Inc. (PEG), removed a waste oil underground storage tank (UST) from the Site and excavated soil from the tank pit. Hydrocarbons in the vicinity of the excavation pit were delineated, and the affected soil was removed for disposal (PEG, February 6, 1989). Chlorinated hydrocarbons were not detected in the waste oil UST removal soil samples. Soil sample analytical results from this and other phases of investigation are summarized in Attachment A.

* map
* disposal of soil + UST

March 1989 - On-site Well Installation. Applied Geosystems (AGS) installed five groundwater monitoring wells at the Site (MW-1 through MW-5). Soil samples were collected during drilling (Attachment A), and quarterly groundwater monitoring was initiated. Two water-bearing zones were identified: a perched shallower zone (MW-2 is

the only well screened in the perched zone) and a deeper water-bearing zone. Groundwater elevations and analytical data for monitoring of these wells and other wells installed subsequently at the Site are presented in Attachment B. Free product was observed in October 1989 in well MW-2. A summary of product removal is presented in Attachment C.

June to August 1989 - Off-site Investigation. In June 1989, PEG conducted a soil-vapor survey at the Site and the adjacent Foothill Square Shopping Center property. Data from the soil-gas survey was used to site locations for off-site borings. In August 1989, AGS completed nine soil borings (B1 through B9, Attachment A) at the Foothill Square Shopping Center property.

January to May 1990 - UST Replacement and Investigations. AGS completed three soil borings (TPB-1 through TPB-3, Attachment A) in the location of the proposed USTs (now the location of existing USTs). On February 8, 1990, the four gasoline USTs at the Site were removed. Soil samples were collected from the sidewalls and base of the UST pit. Soil from the UST excavation was aerated and removed from the Site. In April 1990, excavation for installation of new USTs was conducted. Soil was screened in the field using a photoionization detector (PID). Soil exhibiting PID concentrations greater than 100 parts per million was removed from the site. Soil samples were collected from the four corners at the base of the excavation (Attachment A). In May 1990, the product lines associated with the removed USTs and the surrounding fill material were removed. Soil samples were collected at 20-foot intervals (Attachment A).

September 1990 to March 1991 - Off-site Vapor Extraction System. PEG installed off-site vapor extraction probes and installed a vapor extraction treatment system (VES) using an internal combustion (IC) engine. The system began operation in September 1990. In March 1991, PEG replaced the IC engine with a 500-cubic-feet-per-minute Anguil catalytic oxidizer (catox).

October 1991 - Recovery Well Installation. RESNA installed on-site recovery well RW-1 and conducted an aquifer pumping and recovery test to evaluate potential yield.

June to August 1992 - Well Installation and On-site VES. In June and July 1992, RESNA installed two off-site groundwater monitoring wells (MW-6 and MW-7), one on-site groundwater monitoring well (MW-8), and seven on-site vapor extraction wells (VW-1 through VW-7). The vapor extraction wells and shallow groundwater monitoring wells MW-2 and MW-8 were connected to the existing catox, and the off-site vapor extraction probes, previously installed by PEG, were disconnected. This allowed for more efficient operation of the remediation system and quicker cleanup.

VES Operation. The system operated using the on-site wells configuration through December 1993 when it was shut down due to low influent concentrations. The system was "pulsed" (operated intermittently) during the first quarter of 1994. EMCON restarted the system in December 1994, and it operated through August 1995, after which the system was again shut down due to low influent concentrations. From August 1995 through March 1996, the system was restarted periodically to evaluate if concentrations of hydrocarbons in extracted vapor would be high enough to warrant operating the system. However, since concentrations remained low during each of the attempts to restart, the system never ran continuously after August 1995. A summary of VES operational data is included in Attachment C.

March 1997 to Present. EMCON submitted a Tier 1 Risk-Based Corrective Action evaluation for the Site. Telephone conversations between Ms. Madulla Logan of the ACHSA and EMCON (as well as conversations referenced in the opening paragraph of this letter) confirmed that the ACHSA does not have any objection to proceeding with administrative closure of the Site.

If you have any questions regarding the information provided herein, please contact me directly at (510) 299-3668. We look forward to receiving upcoming information from you regarding the administrative closure of the Site.

Sincerely,

EMCON

Glen VanderVeen
Project Manager

Attachments: Attachments A through C

cc: Mr. Kyle Christie, ARCO Products Company
Ms. Beth Dorris, Esq., ARCO Products Company
Mr. Kevin Graves, Regional Water Quality Control Board

ATTACHMENT A

Table 1
ARCO Station 276 - Oakland, California
Summary of Soil Analyses
Hydrocarbon Results (mg/kg)

Sample ID	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHD	Oil	Stoddard Solvent	Oil & Grease
Former Gasoline UST Zone										
TP1SW	7	<2	0.13	<0.05	<0.05	0.15	NA(1)	NA	NA	NA
TP1NE	8	<2	0.088	<0.05	<0.05	<0.05	NA	NA	NA	NA
TP2N	13	45	0.32	0.46	0.083	0.68	NA	NA	NA	NA
TP2W	13	3.9	0.24	0.15	0.094	0 67	NA	NA	NA	NA
TP2E	13	23	0 43	0.95	0.36	3.7	NA	NA	NA	NA
TP2S	10	2.5	0.13	0.10	<0.05	0.29	NA	NA	NA	NA
TP2S	12	210	1.8	14	3.4	29	NA	NA	NA	NA
TP2BM	12	42	0.33	1.2	0.77	6.1	NA	NA	NA	NA
TP2BN	13	360	0.86	5.5	6.7	43	NA	NA	NA	NA
Former Waste Oil UST Zone										
Beneath Tank Ends										
SP-1	7	40 (2)	ND(3)	ND[0.76] (4)	0.2[ND]	1 7[ND]	<300	7300	160	5600
WO-A	10	<5	ND	ND	ND	ND	<10	30	NA	30
SP-2	7	50 (2)	ND	ND	0.2[ND]	1.8[0 1]	<300	4800	110	3300
WO-B	10	<5	ND	ND	ND	ND	10	110	NA	220
Side Walls										
WO-C	7	NA	NA	NA	NA	NA	60	500	NA	380
WO-D	7	NA	NA	NA	NA	NA	140	1100	NA	880
WO-E	7	NA	NA	NA	NA	NA	<10	<10	NA	10
WO-F	7	NA	NA	NA	NA	NA	2500	21000	NA	15000
WO-D2	7	NA	NA	NA	NA	NA	<10	<10	NA	<20
WO-F2	7	NA	NA	NA	NA	NA	<10	<10	NA	<20
Product Lines										
SP1	---- (5)	<2	<0.05	<0.05	<0.05	<0.05	NA	NA	NA	NA
SP2	----	<2	<0.05	<0.05	<0.05	0.076	NA	NA	NA	NA
SP3	----	<2	<0.05	<0.05	<0.05	<0.05	NA	NA	NA	NA
SP4	----	<2	<0.05	<0.05	<0.05	<0.05	NA	NA	NA	NA
SP5	----	14	0.41	0.14	0.17	1.1	NA	NA	NA	NA
SP6	----	6.8	0.19	0.17	0.07	0.24	NA	NA	NA	NA
SP7	----	<1	<0.005	<0.005	<0.005	<0 005	NA	NA	NA	NA
SP8	----	<2	<0.05	<0.05	<0.05	0.062	NA	NA	NA	NA
Existing Gasoline UST Zone										
Tank Pit NE	----	<1.0	0.005	0.010	<0.005	<0.005	NA	NA	NA	NA
Tank Pit SE	----	<1.0	<0.005	0 022	<0.005	<0.005	NA	NA	NA	NA
Tank Pit NW	----	<1.0	0.029	0.014	<0 005	<0.005	NA	NA	NA	NA
Tank Pit SW	----	<1.0	0.035	0.013	<0.005	0.005	NA	NA	NA	NA
TPB1	9.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
TPB1	15	290	0.19	0.47	3.3	6.6	NA	NA	NA	NA
TPB1	18.5	58	<0.050	0.069	0 14	0.22	NA	NA	NA	NA
TPB1	21	<2 0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA

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Sample ID	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHD	Oil	Stoddard Solvent	Oil & Grease
Existing Gasoline UST Zone (continued)										
TPB2	11	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
TPB2	16	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
TPB2	18.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
TPB3	5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
TPB3	10	<2.0	0.075	<0.050	<0 050	<0.050	NA	NA	NA	NA
TPB3	15	<2.0	<0.050	<0.050	<0 050	<0.050	NA	NA	NA	NA
TPB3	20	2.1	0.46	<0.050	0.086	<0.050	NA	NA	NA	NA
Onsite Borings										
B1 / MW-1	26	<2	<0.05	<0.05	<0.05	<0 05	NA	NA	NA	NA
B1 / MW-1	31	<2	<0.05	<0.05	<0.05	0.078	NA	NA	NA	NA
B2 / MW-2	5.5	<2	<0.05	<0.05	<0.05	<0.05	NA	NA	NA	NA
B2 / MW-2	11	<2	<0 05	0 066	<0.05	0.079	NA	NA	NA	NA
B2 / MW-2	16	38	0.30	0.91	0.38	2.4	NA	NA	NA	NA
B2 / MW-2	20	690	7.4	36	10	62	NA	NA	NA	NA
B2 / MW-2	24.5	4.2	<0 05	0.10	<0.05	0.18	NA	NA	NA	NA
B2 / MW-2	28	<2	<0.05	<0.05	<0 05	<0.05	NA	NA	NA	NA
B3 / MW-3	30.5	<2	<0.05	<0.05	<0.05	<0.05	NA	NA	NA	NA
B4 / MW-4	21	<2	<0.05	<0 05	<0.05	<0.05	NA	NA	NA	ND
B4 / MW-4	31	<2	<0.05	<0 05	<0.05	<0.05	NA	NA	NA	NA
B5 / MW-5	11	<5 0	0.13	<0 05	<0.05	<0.05	NA	NA	NA	NA
B5 / MW-5	16	220	0.83	3.4	2.2	14	NA	NA	NA	NA
B5 / MW-5	18	<5.0	0.23	0.11	<0.05	0.21	NA	NA	NA	NA
B5 / MW-5	24	<5 0	0.086	<0.05	<0 05	<0.05	NA	NA	NA	NA
B5 / MW-5	31	<5.0	<0 050	<0.05	<0 05	<0.05	NA	NA	NA	NA
B6 / RW-1	15 5	<1.0	<0.005	<0.005	<0 005	<0.005	NA	NA	NA	NA
B6 / RW-1	25 5	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA
B6 / RW-1	35.5	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA
B6 / RW-1	51	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA
B12 / MW-8	9.5	<1.0	0.22	<0.0050	0.031	0.034	NA	NA	NA	NA
B12 / MW-8	15.5	6.6	0.90	0.78	0 17	0.78	NA	NA	NA	NA
B12 / MW-8	19	2.8	1.2	0.79	0.043	0.23	NA	NA	NA	NA
B12 / MW-8	24.5	<1.0	<0.0050	<0.0050	<0.0050	<0 0050	NA	NA	NA	NA
B12 / MW-8	29	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B12 / MW-8	50	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B13 / VW-1	5	<1.0	<0 0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B13 / VW-1	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B13 / VW-1	15	<1 0	<0.0050	<0.0050	<0 0050	<0.0050	NA	NA	NA	NA
B13 / VW-1	18	<1.0	0.084	0.013	0.034	0.14	NA	NA	NA	NA

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Sample ID	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHD	Oil	Stoddard Solvent	Oil & Grease
Onsite Borings (continued										
B14 / VW-2	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B14 / VW-2	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B14 / VW-2	15	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B14 / VW-2	17.5	83	0.14	0 40	1.0	5.0	NA	NA	NA	NA
B15 / VW-3	5	<1.0	0.21	<0.0050	0.014	0.027	NA	NA	NA	NA
B15 / VW-3	10	<1.0	0.16	<0.0050	0.065	0.11	NA	NA	NA	NA
B15 / VW-3	15	6.5	0 83	0.47	0.22	0.81	NA	NA	NA	NA
B15 / VW-3	18	<1.0	0.21	0.47	0.021	0.11	NA	NA	NA	NA
B16 / VW-4	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B16 / VW-4	10	<1.0	<0 0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B16 / VW-4	15	94	0.16	0.18	2.1	11	NA	NA	NA	NA
B16 / VW-4	19	<1.0	0.28	0 018	0.048	0.082	NA	NA	NA	NA
B17 / VW-5	5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B17 / VW-5	10	<1.0	0.0059	<0.0050	<0.0050	0.0090	NA	NA	NA	NA
B17 / VW-5	15	690	2.1	3.1	11	42	NA	NA	NA	NA
B17 / VW-5	18	3700	48	160	94	420	NA	NA	NA	NA
B18 / VW-6	5.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B18 / VW-6	10 5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B18 / VW-6	15.5	470	0.50	9.6	8 7	81	NA	NA	NA	NA
B18 / VW-6	17.5	690	3 0	15	15	92	NA	NA	NA	NA
B19 / VW-7	5	<1.0	<0.0050	<0 0050	<0.0050	<0.0050	NA	NA	NA	NA
B19 / VW-7	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B19 / VW-7	15	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B19 / VW-7	17.5	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
Offsite Borings										
B1	16.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B1	21.5	<2.0	<0.050	<0 050	<0.050	<0.050	NA	NA	NA	NA
B1	24	<1	<0.005	<0.005	<0.005	<0.005	<10	NA	NA	NA
B1	29	2.3	0.27	0.087	0 054	0 15	NA	NA	NA	NA
B2	6.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B2	16.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B2	24	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B2	24/26	NA	NA	NA	NA	NA	<10	NA	NA	NA
B2	29	<1	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA
B3	11.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B3	16.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B3	21.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B3	26.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B3	29	<1	<0.005	<0.005	<0.005	<0.005	NA	NA	NA	NA

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Hydrocarbon Results (mg/kg)

Sample ID	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHD	Oil	Stoddard Solvent	Oil & Grease
Offsite Borings (continued)										
B4	6.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B4	16.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B4	21.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B4	26.5	4	0.410	0.07	0.08	0.16	<10	NA	NA	NA
B4	29	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B5	6.5	<2.0	<0.050	<0.050	<0.050	<0 050	NA	NA	NA	NA
B5	16.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B5	21.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B5	26.5	<1	0.032	<0.005	<0.005	<0.005	NA	NA	NA	NA
B5	29	<2 0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B6	6.5	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B6	16.5	<2.0	<0.050	<0 050	<0.050	<0.050	NA	NA	NA	NA
B6	21.5	<2.0	0.22	0.14	0 13	0.56	NA	NA	NA	NA
B6	26.5	1400	<2	19	12	63	320	NA	NA	NA
B6	31.5	<2.0	<0.050	<0 050	<0 050	<0.050	NA	NA	NA	NA
B7	16	<2.0	<0.050	<0.050	<0 050	<0.050	NA	NA	NA	NA
B7	21	530	1.1	5.8	5 8	30	NA	NA	NA	NA
B7	26	<2.0	0 084	<0.050	<0.050	<0.050	NA	NA	NA	NA
B7	31	15	0.61	0.57	0.24	0.92	NA	NA	NA	NA
B7	36	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B8	16	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B8	21	<2.0	0.18	<0.050	0 72	<0.050	NA	NA	NA	NA
B8	23	<2.0	0.11	<0.050	<0.050	0.075	NA	NA	NA	NA
B8	26	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B8	31	<2 0	<0.050	<0 050	<0.050	<0 050	NA	NA	NA	NA
B9	16	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B9	21	<2.0	<0.050	<0.050	<0 050	<0.050	NA	NA	NA	NA
B9	26	<2.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B9	31	<2.0	<0 050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B10	10.5	<1.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B10	20	<1.0	<0.050	<0.050	<0.050	<0 050	NA	NA	NA	NA
B10	30	<1.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B10	39.5	<1.0	<0.050	<0.050	<0.050	<0.050	NA	NA	NA	NA
B10	60.5	<1.0	<0.050	<0.050	<0 050	<0.050	NA	NA	NA	NA
B11	10	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA	NA
B11	20.5	6.3	0.072	0.069	0.21[0.390]	1.7[3.000]	NA	NA	NA	NA
B11	30	32	0.26[0.190]	0.65[0.310]	0.56[0.120]	2.9[0.600]	NA	NA	NA	NA
B11	36.5	23	0 13	0.36	0.33	1.8[0.360]	NA	NA	NA	NA

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Hydrocarbon Results (mg/kg)

Sample ID	Depth (ft)	TPHG	Benzene	Toluene	Ethyl-benzene	Xylenes	TPHD	Oil	Stoddard Solvent	Oil & Grease

(1) NA = not analyzed
(2) The chromatographic pattern of compounds detected and calculated as gasoline does not match that of the gasoline standard.
(3) ND = not detected above the laboratory detection limit
(4) Concentrations in brackets are those concentrations of gasoline hydrocarbon constituents BTEX detected by EPA Method 8240.
(5) "-----" = not available or reported

ATTACHMENT B

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	03-10-95	55.92	26.26	29.66	ND	NNE	0.003	03-10-95	<57*	<0.5	<0.5	<0.5	<0 5	--	--	--	--
MW-1	06-05-95	55.92	25 71	30 21	ND	FG	FG	06-05-95	<84*	<0.5	<0.5	<0.5	<0 5	--	--	--	--
MW-1	08-29-95	55.92	28 44	27.48	ND	FG	FG	08-29-95	<60*	<0.5	<0 5	<0.5	<0 5	--	<1	--	--
MW-1	11-16-95	55.92	30 85	25 07	ND	SW	0.003	11-16-95	<50	<0.5	<0 5	<0.5	<0.5	<3	--	--	--
MW-1	02-28-96	55.92	24 99	30 93	ND	NNE	0 004	02-28-96	<50	<0 5	<0 5	<0 5	<0.5	--	--	--	--
MW-1	05-28-96	55 92	24 92	31 00	ND	FG	FG	05-28-96	<50	<0.5	<0 5	<0 5	<0.5	<3	--	--	--
MW-1	08-19-96	55.92	28 04	27.88	ND	FG	FG	08-19-96	<50	<0 5	<0 5	<0 5	<0 5	<3	--	--	--
MW-1	11-21-96	55.92	30 19	25 73	ND	FG	FG	11-21-96	<50	<0.5	<0 5	<0 5	<0 5	<3	--	--	--
MW-1	03-26-97	55 92	24 90	31 02	ND	FG	FG	03-26-97	<50	<0 5	<0 5	<0 5	<0 5	<3	--	--	--
MW-1	05-20-97	55.92	26 99	28.93	ND	FG	FG	05-20-97	<50	<0.5	<0 5	<0 5	<0 5	<3	--	--	--
MW-2	03-10-95	55 10	13.98	41.12	ND	NNE	0.003	03-11-95	2800	88	12	16	200	--	--	--	--
MW-2	06-05-95	55 10	15.65	39.45	ND	FG	FG	06-05-95	1800	59	10	53	130	--	--	--	--
MW-2	08-29-95	55 10	17.14	37 96	ND	FG	FG	08-29-95	4500	170	20	150	330	--	71	--	--
MW-2	11-16-95	55.10	Not surveyed: well was inaccessible					11-16-95	Not surveyed: well was inaccessible								
MW-2	02-28-96	55.10	12.46	42.64	ND	NNE	0 004	02-28-96	330	18	0 9	13	13	--	--	--	--
MW-2	05-28-96	55 10	15 23	39 87	ND	FG	FG	05-28-96	1200	48	3	28	75	87	--	--	--
MW-2	08-19-96	55 10	16 84	38 26	ND	FG	FG	08-21-96	880	45	1	15	31	80	--	--	--
MW-2	11-21-96	55.10	15 44	39 66	ND	FG	FG	11-21-96	2200	45	3 4	9	140	44	--	--	--
MW-2	03-26-97	55.10	15 73	39 37	ND	FG	FG	03-26-97	<2000^	<20^	<20^	<20^	<20^	1700	--	--	--
MW-2	05-20-97	55.10	16 07	39 03	ND	FG	FG	05-20-97	<1000^	<10^	<10^	<10^	<10^	1400	--	--	--
MW-3	03-10-95	56.55	26 74	29.81	ND	NNE	0.003	03-11-95	<440*	<0 5	<0 5	<0.5	0.7	--	--	--	--
MW-3	06-05-95	56 55	26 34	30.21	ND	FG	FG	06-05-95	<970*	<1^	<1^	1 1	1 8	--	--	--	--
MW-3	08-29-95	56.55	29 15	27.40	ND	FG	FG	08-29-95	<700*	<0.5	<0 5	<0 5	<0 5	--	<20	--	--
MW-3	11-16-95	56 55	31.50	25 05	ND	SW	0 003	11-16-95	<500*	<0.5	<0 5	<0 5	<0 5	<3	--	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	02-28-96	56.55	25 32	31 23	ND	NNE	0 004	02-28-96	<500*	<0.5	<0 5	<0 5	<0 5	--	--	--	--
MW-3	05-28-96	56 55	25 46	31 09	ND	FG	FG	05-28-96	<600*	<0.5	<0 5	<0 5	<0 5	<3	--	--	--
MW-3	08-19-96	56 55	28.71	27 84	ND	FG	FG	08-19-96	<400*	<0.5	<0 5	<0 5	<0 5	<3	--	--	--
MW-3	11-21-96	56 55	30 85	25 70	ND	FG	FG	11-21-96	<300*	<0.5	<0 5	<0.5	<0 5	<3	--	--	--
MW-3	03-26-97	56 55	25.36	31 19	ND	FG	FG	03-26-97	<500*	<0 5	<0.5	<0 5	<0 5	<3	--	--	--
MW-3	05-20-97	56 55	27.61	28.94	ND	FG	FG	05-20-97	<300*	<0 5	<0.5	<0 5	<0 5	<3	--	--	--
MW-4	03-10-95	55.98	26.22	29 76	ND	NNE	0 003	03-11-95	<780*	<1^	<1^	<1^	1	--	--	<500	--
MW-4	06-05-95	55.98	25 79	30 19	ND	FG	FG	06-05-95	<1200*	<1^	<1^	<1^	<1^	--	--	600	--
MW-4	08-29-95	55.98	28 56	27 42	ND	FG	FG	08-29-95	<1100*	<1^	<1^	<1^	<1^	--	<20	--	--
MW-4	11-16-95	55 98	31 00	24 98	ND	SW	0 003	11-16-95	<900*	<0.5	<0 5	<0 5	<0 5	<6^	--	<0 5	--
MW-4	02-28-96	55 98	24 77	31 21	ND	NNE	0 004	02-28-96	<1000*	<1^	<1^	<1^	<1^	--	--	0.7	--
MW-4	05-28-96	55 98	24 91	31 07	ND	FG	FG	05-28-96	<900*	<0.5	<0.5	<0.5	<0 5	<6^	--	<0.5	--
MW-4	08-19-96	55 98	28 17	27 81	ND	FG	FG	08-19-96	<800*	<0.5	<0.5	<0 5	<0.5	<7^	--	0 8	--
MW-4	11-21-96	55 98	30.30	25.68	ND	FG	FG	11-21-96	<400*	<1^	<1^	<1^	<1^	<5^	--	<0.5	--
MW-4	03-26-97	55 98	24.80	31.18	ND	FG	FG	03-26-97	<800*	<1^	<1^	<1^	<1^	<10^	--	<0.5	--
MW-4	05-20-97	55 98	27.03	28 95	ND	FG	FG	05-20-97	<500*	<1^	<1^	<1^	<1^	<6^	--	0.6	--
MW-5	03-10-95	55 43	25 62	29 81	ND	NNE	0.003	03-10-95	<110*	<0 5	<0.5	<0 5	<0 5	--	--	--	--
MW-5	06-05-95	55 43	25 30	30.13	ND	FG	FG	06-05-95	<130*	<0.5	<0 5	<0.5	<0 5	--	--	--	--
MW-5	08-29-95	55 43	28.21	27.22	ND	FG	FG	08-29-95	<120*	<0.5	<0 5	<0.5	<0.5	--	<5	--	--
MW-5	11-16-95	55 43	30.63	24.80	ND	SW	0 003	11-16-95	<500*	<0.5	<0.5	<0 5	0 7	<20^	--	--	--
MW-5	02-28-96	55 43	24.07	31 36	ND	NNE	0 004	02-28-96	<400*	<0 5	<0.5	<0 5	<0 5	--	--	--	--
MW-5	05-28-96	55 43	24.42	31 01	ND	FG	FG	05-28-96	<100*	<0 5	<0.5	<0 5	<0 5	11	--	--	--
MW-5	08-19-96	55 43	27 82	27 61	ND	FG	FG	08-21-96	<50	<0 5	<0 5	<0 5	<0 5	29	--	--	--
MW-5	11-21-96	55.43	29 92	25 51	ND	FG	FG	11-21-96	<600*	<1^	<1^	<1^	<1^	<20^	--	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418 1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	03-26-97	55 43	24 22	31.21	ND	FG	FG	03-26-97	<200*	<0 5	<0.5	<0.5	<0 5	20	--	--	--
MW-5	05-20-97	55 43	26.60	28.83	ND	FG	FG	05-20-97	<200*	<0.5	<0.5	<0 5	<0 5	26	--	--	--
MW-6	03-10-95	61 21	31 54	29 67	ND	NNE	0 003	03-11-95	<390*	<0 5	<0 5	<0.5	<0 5	--	--	--	--
MW-6	06-05-95	61 21	31 15	30 06	ND	FG	FG	06-05-95	<750*	<0 5	<0 5	<0.5	<0 5	--	--	--	--
MW-6	08-29-95	61 21	34 03	27 18	ND	FG	FG	08-29-95	<600*	<0 5	<0 5	<0.5	<0 5	--	<20	--	--
MW-6	11-16-95	61 21	36 40	24 81	ND	SW	0 003	11-16-95	<500*	<0 5	<0 5	<0.5	<0 5	<3	--	--	--
MW-6	02-28-96	61 21	30 18	31 03	ND	NNE	0 004	02-28-96	<500*	<0 5	<0 5	<0.5	<0 5	--	--	--	--
MW-6	05-28-96	61.21	30 29	30 92	ND	FG	FG	05-28-96	<400*	<0 5	<0 5	<0.5	<0 5	<3	--	--	--
MW-6	08-19-96	61 21	33 54	27 67	ND	FG	FG	08-19-96	<300*	<0 5	<0.5	<0 5	<0 5	<3	--	--	--
MW-6	11-21-96	61 21	35 70	25 51	ND	FG	FG	11-21-96	<300*	<0.5	<0.5	<0.5	<0.5	<3	--	--	--
MW-6	03-26-97	61 21	30.15	31 06	ND	FG	FG	03-26-97	<400*	<0 5	<0.5	<0.5	<0.5	<5^	--	--	--
MW-6	05-20-97	61.21	32 40	28 81	ND	FG	FG	05-20-97	<200*	<0 5	<0 5	<0.5	<0 5	<3	--	--	--
MW-7	03-10-95	58 22	17.69	40.53	ND^^	NNE	0.003	03-11-95	Not sampled floating product entered the well during purging								
MW-7	06-05-95	58 22	19 68	38.54	ND	FG	FG	06-05-95	36000	90	51	450	2000	--	--	--	--
MW-7	08-29-95	58 22	21 70	36.52	ND	FG	FG	08-29-95	86000	380	260	1100	5000	--	<10	--	--
MW-7	11-16-95	58 22	23 02	35.20	ND	SW	0 003	11-16-95	1400000	610	590	7800	3300	<4000^	--	--	--
MW-7	02-28-96	58 22	16 54	41 68	ND	NNE	0 004	02-28-96	29000	<20^	<20^	180	1000	--	--	--	--
MW-7	05-28-96	58 22	19 29	38 93	ND	FG	FG	05-28-96	50000	<100^	100	510	2300	<500^	--	--	--
MW-7	08-19-96	58 22	21 84	36 38	ND	FG	FG	08-21-96	45000	340	200	820	3400	<300^	--	--	--
MW-7	11-21-96	58 22	19 58	38 64	ND	FG	FG	11-21-96	41000	190	150	730	2900	<300^	--	--	--
MW-7	03-26-97	58 22	19 67	38 55	ND	FG	FG	03-26-97	6400	60	25	160	300	190	--	--	--
MW-7	05-20-97	58 22	20 18	38 04	ND	FG	FG	05-20-97	13000	110	56	590	1800	720	--	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418 1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	03-10-95	53 65	23 60	30.05	ND	NNE	0 003	03-10-95	<50	<0 5	<0.5	<0 5	<0 5	--	--	--	--
MW-8	06-05-95	53.65	23 48	30 17	ND	FG	FG	06-05-95	<50	<0 5	<0 5	<0 5	<0 5	--	--	--	--
MW-8	08-29-95	53 65	26 44	27 21	ND	FG	FG	08-29-95	<50	<0 5	<0 5	<0.5	<0 5	--	3	--	--
MW-8	11-16-95	53.65	28 90	24 75	ND	SW	0 003	11-16-95	<50	<0 5	<0 5	<0.5	<0.5	6	9	--	--
MW-8	02-28-96	53.65	22.16	31 49	ND	NNE	0 004	02-28-96	<50	<0 5	<0 5	<0.5	<0.5	--	--	--	--
MW-8	05-28-96	53.65	22.62	31 03	ND	FG	FG	05-28-96	<50	<0 5	<0 5	<0.5	<0.5	5	--	--	--
MW-8	08-19-96	53.65	26.70	26 95	ND	FG	FG	08-21-96	<50	<0 5	<0.5	<0 5	<0 5	18	--	--	--
MW-8	11-21-96	53.65	28 16	25 49	ND	FG	FG	11-21-96	<50	<0 5	<0 5	<0 5	<0 5	19	--	--	--
MW-8	03-26-97	53 65	22.42	31 23	ND	FG	FG	03-26-97	<50	<0.5	<0.5	<0 5	<0 5	44	--	--	--
MW-8	05-20-97	53 65	24.84	28 81	ND	FG	FG	05-20-97	<50	<0.5	<0.5	<0 5	<0 5	21	--	--	--
RW-1	03-10-95	56 32	26 48	29 84	Sheen	NNE	0 003	03-10-95	<180*	<0 5	<0 5	<0 5	<0 5	--	--	--	--
RW-1	06-05-95	56 32	26.20	30 12	ND	FG	FG	06-05-95	<50	<0.5	<0.5	<0 5	<0 5	--	--	--	--
RW-1	08-29-95	56.32	28 98	27 34	ND	FG	FG	08-29-95	<200*	<0.5	<0 5	<0.5	<0 5	--	<5	--	--
RW-1	11-16-95	56.32	31.34	24 98	ND	SW	0.003	11-16-95	<50	<0 5	<0.5	<0.5	<0.5	<3	--	--	--
RW-1	02-28-96	56.32	25.12	31 20	ND	NNE	0 004	02-28-96	<50	<0 5	<0 5	<0.5	<0.5	--	--	--	--
RW-1	05-28-96	56.32	25.26	31 06	ND	FG	FG	05-28-96	<50	<0 5	<0 5	<0 5	<0 5	<3	--	--	--
RW-1	08-19-96	56.32	28.51	27 81	ND	FG	FG	08-21-96	<50	<0 5	<0 5	<0 5	<0 5	<3	--	--	--
RW-1	11-21-96	56 32	30 65	25 67	ND	FG	FG	11-21-96	<70*	<0 5	<0 5	<0 5	<0 5	<3	--	--	--
RW-1	03-26-97	56 32	25.15	31.17	ND	FG	FG	03-26-97	<50	<0.5	<0.5	<0 5	<0 5	<3	--	--	--
RW-1	05-20-97	56 32	27 44	28.88	ND	FG	FG	05-20-97	<50	<0.5	<0.5	<0 5	<0.5	<3	--	--	--
WGR-3	03-10-95	NR	15 20	NR	ND	NR	NR	03-11-95	<50	<0 5	<0 5	<0 5	<0 5	--	--	--	--

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418 1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WGR-3	06-05-95	NR	19.25	NR	ND	NR	NR	06-05-95	<50	<0 5	<0.5	<0.5	<0.5	--	--	--	--
WGR-3	08-29-95	NR	21.41	NR	ND	NR	NR	08-29-95	<50	<0 5	<0.5	<0.5	<0 5	--	10	--	--
WGR-3	11-16-95	NR	22 50	NR	ND	SW	0 003	11-16-95	<50	<0 5	<0 5	<0.5	<0 5	3	--	--	--
WGR-3	02-28-96	NR	14 90	NR	ND	NNE	0 004	02-28-96	<50	<0.5	<0 5	1.5	1 6	--	--	--	--
WGR-3	05-28-96	NR	18 33	NR	ND	FG	FG	05-28-96	<50	<0.5	<0 5	<0.5	<0 5	20	--	--	--
WGR-3	08-19-96	NR	21 38	NR	ND	FG	FG	08-19-96	<50	<0.5	<0 5	<0 5	<0 5	17	--	--	--
WGR-3	11-21-96	NR	18 70	NR	ND	FG	FG	11-21-96	<50	<0.5	<0 5	0 6	<0.5	10	--	--	--
WGR-3	03-26-97	NR	18 98	NR	ND	FG	FG	03-26-97	<200^	<2^	<2^	<2^	<2^	240	--	--	--
WGR-3	05-20-97	NR	19 70	NR	ND	FG	FG	05-20-97	<100^	<1^	<1^	<1^	<1^	130	--	--	--

ft-MSL· elevation in feet, relative to mean sea level
MWN ground-water flow direction and gradient apply to the entire monitoring well network
ft/ft foot per foot
TPHG total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L micrograms per liter
EPA United States Environmental Protection Agency
MTBE: Methyl tert-butyl ether
TRPH total recoverable petroleum hydrocarbons
TPHD total petroleum hydrocarbons as diesel, California DHS LUFT Method
ND none detected

Table 2
Historical Groundwater Elevation and Analytical Data
Petroleum Hydrocarbons and Their Constituents
1995-Present**

10600 and 10700 MacArthur Boulevard
Oakland, California

Date 10-29-97

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240	TRPH EPA 418.1	TPHD LUFT Method
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

NR: not reported, data not available or not measurable
SW: southwest
NNE: north-northeast
FG flat gradient, the groundwater gradient over the local area was nearly flat
^^: floating product entered the well during purging
*: raised method reporting limit due to matrix interference; the sample contains a single non-fuel component eluting in the gasoline range and quantitated as gasoline (possibly PCE), and the chromatogram does not match the typical gasoline fingerprint
^: raised method reporting limit due to (1) matrix interference requiring sample dilution or (2) high analyte concentration
- - not analyzed or not applicable
**: For previous historical groundwater elevation and analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Results and Remediation System Performance Evaluation Report, Retail Service Station 10600 and 10700 MacArthur Boulevard, Oakland, California, (EMCON, March 22, 1996)*

Table 3
Historical Groundwater Analytical Data
Volatile Organic Compounds
1995-Present*

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		Tetrachloro-ethene	Trichloro-ethene	trans-1,2-Dichloro-ethene	cis-1,2-Dichloro-ethene	Freon 12	Benzene	Toluene	Ethylbenzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	03-10-95	170	<1	--	<1	--	<1	<1	<1	<5
MW-1	06-05-95	210	<5	--	<5	--	<5	<5	<5	<25
MW-1	08-29-95	130	<1	--	<1	--	<1	<1	<1	<5
MW-1	11-16-95	45	<1	--	<1	<1	<1	<1	<1	<5
MW-1	02-28-96	97	<1	<1	<1	--	<1	<1	<1	<5
MW-1	05-28-96	160	<5	<5	<5	--	<5	<5	<5	<25
MW-1	08-19-96	77	<1	<1	<1	--	<1	<1	<1	<5
MW-1	11-21-96	30	<1	<1	<1	--	<1	<1	<1	<5
MW-1	03-26-97	66	<1	<1	<1	--	<1	<1	<1	<5
MW-1	05-20-97	36	<0 5	<0.5	<0 5	--	<0.5	<0.5	<0 5	<0 5
MW-2	03-11-95	<1	<1	--	<1	--	110	12	15	240
MW-2	06-05-95	<1	<1	--	<1	--	83	14	72	190
MW-2	08-29-95	<5	<5	--	<5	--	220	26	210	450
MW-2	11-16-95	Not surveyed. well was inaccessible								
MW-2	02-28-96	<1	<1	<1	<1	--	18	<1	13	14
MW-2	05-28-96	<1	<1	<1	<1	--	44	<1	22	62
MW-2	08-21-96	<1	<1	<1	<1	--	49	<1	17	40
MW-2	11-21-96	<1	<1	<1	<1	--	49	3	7	180
MW-2	03-26-97	<10^	<10^	<10^	<10^	--	10	<10^	<10^	<50^
MW-2	05-20-97	<1^	<1^	<1^	<1^	--	<1^	<1^	<1^	<1^
MW-3	03-11-95	1700	<10	--	<10	--	<10	<10	<10	<50
MW-3	06-05-95	2500	<20	--	<20	--	<20	<20	<20	<100
MW-3	08-29-95	1600	<20	--	<20	--	<20	<20	<20	<100

Table 3
Historical Groundwater Analytical Data
Volatile Organic Compounds
1995-Present*

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 10-29-97

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		Tetrachloro-ethene	Trichloro-ethene	trans-1,2-Dichloro-ethene	cis-1,2-Dichloro-ethene	Freon 12	Benzene	Toluene	Ethylbenzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	11-16-95	1100	<20	--	<20	<20	<20	<20	<20	<100
MW-3	02-28-96	1100	<10	<10	<10	--	<10	<10	<10	<50
MW-3	05-28-96	1700	<20	<20	<20	--	<20	<20	<20	<100
MW-3	08-19-96	1200	<20	<20	<20	--	<20	<20	<20	<100
MW-3	11-21-96	710	<20^	<20^	<20^	--	<20^	<20^	<20^	<100^
MW-3	03-26-97	710	<40^	<40^	<40^	--	<40^	<40^	<40^	<200^
MW-3	05-20-97	800	<25^	<25^	<25^	--	<25^	<25^	<25^	<25^
MW-4	03-11-95	2600	<20	--	<20	--	<20	<20	<20	<100
MW-4	06-05-95	3100	<20	--	<20	--	<20	<20	<20	<100
MW-4	08-29-95	2900	<20	--	<20	--	<20	<20	<20	<100
MW-4	11-16-95	2100	<20	--	<20	<20	<20	<20	<20	<100
MW-4	02-28-96	2400	<20	<20	<20	--	<20	<20	<20	<100
MW-4	05-28-96	2700	<20	<20	<20	--	<20	<20	<20	<100
MW-4	08-19-96	2600	<20	<20	<20	--	<20	<20	<20	<100
MW-4	11-21-96	1100	<20^	<20^	<20^	--	<20^	<20^	<20^	<100^
MW-4	03-26-97	1900	<40^	<40^	<40^	--	<40^	<40^	<40^	<200^
MW-4	05-20-97	1600	<50^	<50^	<50^	--	<50^	<50^	<50^	<50^
MW-5	03-10-95	270	<5	--	<5	--	<5	<5	<5	<25
MW-5	06-05-95	310	<5	--	<5	--	<5	<5	<5	<25
MW-5	08-29-95	240	<5	--	<5	--	<5	<5	<5	<25
MW-5	11-16-95	940	<5	--	<5	<5	<5	<5	<5	<25
MW-5	02-28-96	1100	<10	<10	<10	--	<10	<10	<10	<50
MW-5	05-28-96	360	<5	<5	<5	--	<5	<5	<5	<25

Table 3
Historical Groundwater Analytical Data
Volatile Organic Compounds
1995-Present*

10600 and 10700 MacArthur Boulevard
Oakland, California

Date. 10-29-97

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		Tetrachloro-ethene µg/L	Trichloro-ethene µg/L	trans-1,2-Dichloro-ethene µg/L	cis-1,2-Dichloro-ethene µg/L	Freon 12 µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L
MW-5	08-21-96	150	<1	<1	2	--	<1	<1	<1	<5
MW-5	11-21-96	1900	<20^	<20^	<20^	--	<20^	<20^	<20^	<100^
MW-5	03-26-97	270	<10^	<10^	<10^	--	<10^	<10^	<10^	<50^
MW-5	05-20-97	290	<5^	<5^	<5^	--	<5^	<5^	<5^	<5^
MW-6	03-11-95	1300	<20	--	<20	--	<20	<20	<20	<100
MW-6	06-05-95	2000	<20	--	<20	--	<20	<20	<20	<100
MW-6	08-29-95	1300	<20	--	<20	--	<20	<20	<20	<100
MW-6	11-16-95	1300	<20	--	<20	<20	<20	<20	<20	<100
MW-6	02-28-96	960	<20	<20	<20	--	<20	<20	<20	<100
MW-6	05-28-96	970	<20	<20	<20	--	<20	<20	<20	<100
MW-6	08-19-96	820	<20	<20	<20	--	<20	<20	<20	<100
MW-6	11-21-96	680	<20^	<20^	<20^	--	<20^	<20^	<20^	<100^
MW-6	03-26-97	830	<40^	<40^	<40^	--	<40^	<40^	<40^	<200^
MW-6	05-20-97	270	<5^	<5^	<5^	--	<5^	<5^	<5^	<5^
MW-7	03-11-95	Not sampled: floating product entered the well during purging								
MW-7	06-05-95	<10	<10	--	<10	--	86	27	420	1400
MW-7	08-29-95	<10	<10	--	<10	--	410	230	1100	5000
MW-7	11-16-95	<20	<20	--	<20	<20	360	220	1700	10000
MW-7	02-28-96	<10	<10	<10	<10	--	<10	<10	87	760
MW-7	05-28-96	<10	<10	<10	<10	--	74	36	340	1600
MW-7	08-21-96	<1	<1	<1	<1	--	260	200	800	3200
MW-7	11-21-96	<10^	<10^	<10^	<10^	--	180	120	640	2900
MW-7	03-26-97	<20^	<20^	<20^	<20^	--	37	<20^	210	410

Table 3
Historical Groundwater Analytical Data
Volatile Organic Compounds
1995-Present*

10600 and 10700 MacArthur Boulevard
Oakland, California

Date 10-29-97

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		Tetrachloro-ethene	Trichloro-ethene	trans-1,2-Dichloro-ethene	cis-1,2-Dichloro-ethene	Freon 12	Benzene	Toluene	Ethylbenzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-7	05-20-97	<10^	<10^	<10^	<10^	--	140	77	700	2200
MW-8	03-10-95	<1	<1	--	<1	--	<1	<1	<1	<5
MW-8	06-05-95	<1	<1	--	<1	--	<1	<1	<1	<5
MW-8	08-29-95	<1	<1	--	<1	--	<1	<1	<1	<5
MW-8	11-16-95	<1	<1	--	<1	<1	<1	<1	<1	<5
MW-8	02-28-96	3	<1	<1	<1	--	<1	<1	<1	<5
MW-8	05-28-96	<1	<1	<1	<1	--	<1	<1	<1	<5
MW-8	08-21-96	<1	<1	<1	<1	--	<1	<1	<1	<5
MW-8	11-21-96	7	<1	<1	<1	--	<1	<1	<1	<5
MW-8	03-26-97	<1	<1	<1	<1	--	<1	<1	<1	<5
MW-8	05-20-97	<0 5	<0 5	<0 5	<0.5	--	<0 5	<0 5	<0 5	<0.5
RW-1	03-10-95	260	<5	--	<5	--	<5	<5	<5	<25
RW-1	06-05-95	59	<1	--	<1	--	<1	<1	<1	<5
RW-1	08-29-95	570	<5	--	<5	--	<5	<5	<5	<25
RW-1	11-16-95	140	<1	--	<1	<1	<1	<1	<1	<5
RW-1	02-28-96	6	<1	<1	<1	--	<1	<1	<1	<5
RW-1	05-28-96	12	<1	<1	<1	--	<1	<1	<1	<5
RW-1	08-21-96	100	<1	<1	<1	--	<1	<1	<1	<5
RW-1	11-21-96	190	1	<1	<1	--	<1	<1	<1	<5
RW-1	03-26-97	6	<1	<1	<1	--	<1	<1	<1	<5
RW-1	05-20-97	5 3	<0.5	<0 5	<0.5	--	<0 5	<0 5	<0 5	<0 5

Table 3
Historical Groundwater Analytical Data
Volatile Organic Compounds
1995-Present*

10600 and 10700 MacArthur Boulevard
Oakland, California

Date. 10-30-97

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		Tetrachloro-ethene	Trichloro-ethene	trans-1,2-Dichloro-ethene	cis-1,2-Dichloro-ethene	Freon 12	Benzene	Toluene	Ethylbenzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WGR-3	03-11-95	<1	<1	--	<1	--	<1	<1	<1	<5
WGR-3	06-05-95	<1	<1	--	<1	--	<1	<1	<1	<5
WGR-3	08-29-95	<1	<1	--	<1	--	<1	<1	<1	<5
WGR-3	11-16-95	<1	<1	--	<1	<1	<1	<1	<1	<5
WGR-3	02-28-96	<1	<1	<1	<1	--	<1	<1	<1	<5
WGR-3	05-28-96	<1	<1	<1	<1	--	<1	<1	<1	<5
WGR-3	08-19-96	<1	<1	<1	<1	--	<1	<1	<1	<5
WGR-3	11-21-96	<1	<1	<1	<1	--	<1	<1	<1	<5
WGR-3	03-26-97	<1	<1	<1	<1	--	<1	<1	<1	<5
WGR-3	05-20-97	<0 5	<0 5	<0 5	<0.5	--	<0 5	<0.5	<0.5	<0 5

µg/L micrograms per liter
-- not analyzed or not reported
^: method reporting limit was raised due to· (1) high analyte concentration requiring sample dilution, or (2) matrix interference
*: For previous historical analytical data please refer to *Fourth Quarter 1995 Groundwater Monitoring Results and Remediation System Performance Evaluation Report, Retail Service Station 10600 and 10700 MacArthur Boulevard, Oakland, California, (EMCON, March 22, 1996)*

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Floating Product Thickness feet	Ground-Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	04-17-89	55.91	33.04	22.87	ND	NR	NR
MW-1	04-24-89	55.91	33.84	22.07	ND	NR	NR
MW-1	10-13-89	55.91	37.19	18.72	ND	NR	NR
MW-1	02-01-90	55.91	36.73	19.18	ND	NR	NR
MW-1	07-31-90	55.91	36.42	19.49	ND	NR	NR
MW-1	08-01-90	55.91	36.41	19.50	ND	NR	NR
MW-1	08-28-90	55.91	36.88	19.03	ND	NR	NR
MW-1	10-30-90	55.91	37.73	18.18	ND	NR	NR
MW-1	11-20-90	55.91	37.92	17.99	ND	NR	NR
MW-1	12-19-90	55.91	37.90	18.01	ND	NR	NR
MW-1	01-30-91	55.91	38.06	17.85	ND	NR	NR
MW-1	02-27-91	55.91	37.66	18.25	ND	NR	NR
MW-1	03-20-91	55.91	36.77	19.14	ND	NR	NR
MW-1	04-30-91	55.91	34.63	21.28	ND	NR	NR
MW-1	05-31-91	55.91	34.83	21.08	ND	NR	NR
MW-1	07-24-91	55.91	35.96	19.95	ND	NR	NR
MW-1	08-06-91	55.91	36.21	19.70	ND	NR	NR
MW-1	09-03-91	55.91	36.74	19.17	ND	NR	NR
MW-1	10-17-91	55.91	37.57	18.34	ND	NR	NR
MW-1	11-05-91	55.91	37.65	18.26	ND	NR	NR
MW-1	12-24-91	55.91	38.14	17.77	ND	NR	NR
MW-1	01-19-92	55.91	37.62	18.29	ND	NR	NR
MW-1	02-20-92	55.91	36.23	19.68	ND	NR	NR
MW-1	03-10-92	55.91	34.58	21.33	ND	NR	NR
MW-1	04-20-92	55.91	32.82	23.09	ND	NR	NR
MW-1	05-15-92	55.91	33.17	22.74	ND	NR	NR
MW-1	06-30-92	55.91	34.55	21.36	ND	NR	NR
MW-1	07-15-92	55.91	34.90	21.01	ND	NR	NR
MW-1	08-25-92	55.92	35.34	20.58	ND	NR	NR
MW-1	09-09-92	55.92	35.71	20.21	ND	NR	NR
MW-1	10-31-92	55.92	36.62	19.30	ND	NR	NR
MW-1	11-20-92	55.92	36.90	19.02	ND	NR	NR
MW-1	12-16-92	55.92	36.18	19.74	ND	NR	NR
MW-1	01-22-93	55.92	32.24	23.68	ND	NR	NR
MW-1	02-12-93	55.92	30.65	25.27	ND	NR	NR
MW-1	03-26-93	55.92	28.36	27.56	ND	NR	NR
MW-1	04-30-93	55.92	28.45	27.47	ND	NR	NR
MW-1	05-12-93	55.92	28.88	27.04	ND	NR	NR
MW-1	06-17-93	55.92	29.67	26.25	ND	NR	NR
MW-1	08-18-93	55.92	31.44	24.48	ND	NR	NR
MW-1	11-10-93	55.92	33.33	22.59	ND	NR	NR
MW-1	02-04-94	55.92	24.48	31.44	ND	NR	NR
MW-1	05-02-94	55.92	31.66	24.26	ND	NR	NR
MW-1	08-03-94	55.92	32.54	23.38	ND	SW	0.002
MW-1	12-06-94	55.92	31.89	24.03	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Desig-nation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Floating Product Thickness	Ground-Water Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot
MW-2	04-17-89	55.35	17.20	38.15	ND	NR	NR
MW-2	04-24-89	55.35	17.83	37.52	ND	NR	NR
MW-2	10-13-89	55.35	^20.15	^35.20	0.03	NR	NR
MW-2	02-01-90	55.35	NR	NR	NR	NR	NR
MW-2	07-31-90	55.35	18.90	36.45	ND	NR	NR
MW-2	08-01-90	55.35	^18.23	^37.03	1.04	NR	NR
MW-2	08-28-90	55.35	^21.25	^34.10	0.83	NR	NR
MW-2	10-30-90	55.35	^24.21	^31.14	1.04	NR	NR
MW-2	11-20-90	55.35	^25.08	^30.27	0.60	NR	NR
MW-2	12-19-90	55.35	^18.23	^37.12	ND	NR	NR
MW-2	01-30-91	55.35	^19.47	^35.88	0.03	NR	NR
MW-2	02-27-91	55.35	^18.84	^36.51	0.02	NR	NR
MW-2	03-20-91	55.35	^16.02	^39.33	0.01	NR	NR
MW-2	04-30-91	55.35	16.55	38.80	Sheen	NR	NR
MW-2	05-31-91	55.35	^18.41	^36.94	0.01	NR	NR
MW-2	07-24-91	55.35	19.81	35.54	Sheen	NR	NR
MW-2	08-06-91	55.35	^20.59	^34.76	0.14	NR	NR
MW-2	09-03-91	55.35	^23.23	^32.12	0.54	NR	NR
MW-2	10-17-91	55.35	^24.81	^30.54	0.20	NR	NR
MW-2	11-05-91	55.35	^18.88	^36.47	0.01	NR	NR
MW-2	12-24-91	55.35	^19.34	^36.01	0.09	NR	NR
MW-2	01-19-92	55.35	18.00	37.35	Sheen	NR	NR
MW-2	02-20-92	55.35	14.81	40.54	Skimmer	NR	NR
MW-2	03-10-92	55.35	14.95	40.40	Skimmer	NR	NR
MW-2	04-20-92	55.35	16.13	39.22	ND	NR	NR
MW-2	05-15-92	55.35	17.66	37.69	ND	NR	NR
MW-2	06-30-92	55.35	19.11	36.24	Sheen	NR	NR
MW-2	07-15-92	55.35	19.50	35.85	ND	NR	NR
MW-2	08-25-92	55.10	^21.35	^33.73	0.05	NR	NR
MW-2	09-09-92	55.10	^22.70	^32.40	0.05	NR	NR
MW-2	10-31-92	55.10	22.34	32.76	ND	NR	NR
MW-2	11-20-92	55.10	^19.85	^32.25	0.02^^	NR	NR
MW-2	12-16-92	55.10	NR	NR	NR	NR	NR
MW-2	01-22-93	55.10	13.10 –	42.00	ND	NR	NR
MW-2	02-12-93	55.10	14.71	40.39	0.05^^	NR	NR
MW-2	03-26-93	55.10	Not surveyed: well was inaccessible				
MW-2	04-30-93	55.10	15.48	39.62	ND	NR	NR
MW-2	05-12-93	55.10	^15.81	^39.29	0.01	NR	NR
MW-2	06-17-93	55.10	18.45	36.65	ND	NR	NR
MW-2	08-18-93	55.10	NR	NR	NR	NR	NR
MW-2	11-10-93	55.10	21.24	33.86	ND^^	NR	NR
MW-2	02-04-94	55.10	16.42	38.68	ND	NR	NR
MW-2	05-02-94	55.10	16.15	38.95	ND	NR	NR
MW-2	08-03-94	55.10	Not surveyed: well was inaccessible due to a parked vehicle				
MW-2	12-06-94	55.10	14.74	40.36	Sheen	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Floating Product Thickness	Ground-Water Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot
MW-3	04-24-89	56.55	34.47	22.08	ND	NR	NR
MW-3	10-13-89	56.55	37.60	18.95	ND	NR	NR
MW-3	02-01-90	56.55	37.20	19.35	ND	NR	NR
MW-3	07-31-90	56.55	36.90	19.65	ND	NR	NR
MW-3	08-01-90	56.55	36.87	19.68	ND	NR	NR
MW-3	08-28-90	56.55	37.33	19.22	ND	NR	NR
MW-3	10-30-90	56.55	38.15	18.40	ND	NR	NR
MW-3	11-20-90	56.55	38.33	18.22	ND	NR	NR
MW-3	12-19-90	56.55	38.30	18.25	ND	NR	NR
MW-3	01-30-91	56.55	DRY	DRY	ND	NR	NR
MW-3	02-27-91	56.55	38.11	18.44	ND	NR	NR
MW-3	03-20-91	56.55	37.26	19.29	ND	NR	NR
MW-3	04-30-91	56.55	35.02	21.53	ND	NR	NR
MW-3	05-31-91	56.55	35.26	21.29	ND	NR	NR
MW-3	07-24-91	56.55	36.40	20.15	ND	NR	NR
MW-3	08-06-91	56.55	36.66	19.89	ND	NR	NR
MW-3	09-03-91	56.55	37.20	19.35	ND	NR	NR
MW-3	10-17-91	56.55	38.04	18.51	ND	NR	NR
MW-3	11-05-91	56.55	38.08	18.47	ND	NR	NR
MW-3	12-24-91	56.55	DRY	DRY	ND	NR	NR
MW-3	01-19-92	56.55	38.07	18.48	ND	NR	NR
MW-3	02-20-92	56.55	36.71	19.84	ND	NR	NR
MW-3	03-10-92	56.55	34.96	21.59	ND	NR	NR
MW-3	04-20-92	56.55	33.20	23.35	ND	NR	NR
MW-3	05-15-92	56.55	33.70	22.85	ND	NR	NR
MW-3	06-30-92	56.55	34.97	21.58	ND	NR	NR
MW-3	07-15-92	56.55	35.35	21.20	ND	NR	NR
MW-3	08-25-92	56.55	35.94	20.61	ND	NR	NR
MW-3	09-09-92	56.55	36.19	20.36	ND	NR	NR
MW-3	10-31-92	56.55	36.13	20.42	ND	NR	NR
MW-3	11-20-92	56.55	37.40	19.15	ND	NR	NR
MW-3	12-16-92	56.55	36.68	19.87	ND	NR	NR
MW-3	01-22-93	56.55	32.58	23.97	ND	NR	NR
MW-3	02-12-93	56.55	30.86	25.69	ND	NR	NR
MW-3	03-26-93	56.55	28.60	27.95	ND	NR	NR
MW-3	04-30-93	56.55	28.79	27.76	ND	NR	NR
MW-3	05-12-93	56.55	29.17	27.38	ND	NR	NR
MW-3	06-17-93	56.55	30.11	26.44	ND	NR	NR
MW-3	08-18-93	56.55	31.91	24.64	ND	NR	NR
MW-3	11-10-93	56.55	33.80	22.75	ND	NR	NR
MW-3	02-04-94	56.55	33.58	22.97	ND	NR	NR
MW-3	05-02-94	56.55	32.16	24.39	ND	NR	NR
MW-3	08-03-94	56.55	33.09	23.46	ND	SW	0.002
MW-3	12-06-94	56.55	32.46	24.09	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Floating Product Thickness	Ground-Water Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot
MW-4	04-17-89	55.94	33.87	22.07	ND	NR	NR
MW-4	04-24-89	55.94	33.76	22.18	ND	NR	NR
MW-4	10-13-89	55.94	37.03	18.91	ND	NR	NR
MW-4	02-01-90	55.94	36.57	19.37	ND	NR	NR
MW-4	07-31-90	55.94	36.39	19.55	ND	NR	NR
MW-4	08-01-90	55.94	36.32	19.62	ND	NR	NR
MW-4	08-28-90	55.94	36.79	19.15	ND	NR	NR
MW-4	10-30-90	55.94	37.62	18.32	ND	NR	NR
MW-4	11-20-90	55.94	37.82	18.12	ND	NR	NR
MW-4	12-19-90	55.94	37.74	18.20	ND	NR	NR
MW-4	01-30-91	55.94	37.97	17.97	ND	NR	NR
MW-4	02-27-91	55.94	37.52	18.42	ND	NR	NR
MW-4	03-20-91	55.94	36.69	19.25	ND	NR	NR
MW-4	04-30-91	55.94	34.48	21.46	ND	NR	NR
MW-4	05-31-91	55.94	34.73	21.21	ND	NR	NR
MW-4	07-24-91	55.94	35.86	20.08	ND	NR	NR
MW-4	08-06-91	55.94	36.15	19.79	ND	NR	NR
MW-4	09-03-91	55.94	36.66	19.28	ND	NR	NR
MW-4	10-17-91	55.94	37.49	18.45	ND	NR	NR
MW-4	11-05-91	55.94	37.54	18.40	ND	NR	NR
MW-4	12-24-91	55.94	38.01	17.93	ND	NR	NR
MW-4	01-19-92	55.94	37.48	18.46	ND	NR	NR
MW-4	02-20-92	55.94	36.11	19.83	ND	NR	NR
MW-4	03-10-92	55.94	34.96	20.98	ND	NR	NR
MW-4	04-20-92	55.94	32.60	23.34	ND	NR	NR
MW-4	05-15-92	55.94	33.12	22.82	ND	NR	NR
MW-4	06-30-92	55.94	34.06	21.88	ND	NR	NR
MW-4	07-15-92	55.94	NR	NR	NR	NR	NR
MW-4	08-25-92	55.98	35.22	20.76	ND	NR	NR
MW-4	09-09-92	55.98	35.63	20.35	ND	NR	NR
MW-4	10-31-92	55.98	33.84	22.14	ND	NR	NR
MW-4	11-20-92	55.98	36.87	19.11	ND	NR	NR
MW-4	12-16-92	55.98	36.09	19.89	ND	NR	NR
MW-4	01-22-93	55.98	31.98	24.00	ND	NR	NR
MW-4	02-12-93	55.98	30.31	25.67	ND	NR	NR
MW-4	03-26-93	55.98	27.97	28.01	ND	NR	NR
MW-4	04-30-93	55.98	28.24	27.74	ND	NR	NR
MW-4	05-12-93	55.98	28.60	27.38	ND	NR	NR
MW-4	06-17-93	55.98	29.54	26.44	ND	NR	NR
MW-4	08-18-93	55.98	31.37	24.61	ND	NR	NR
MW-4	11-10-93	55.98	33.27	22.71	ND	NR	NR
MW-4	02-04-94	55.98	33.07	22.91	ND	NR	NR
MW-4	05-02-94	55.98	31.60	24.38	ND	NR	NR
MW-4	08-03-94	55.98	32.53	23.45	ND	SW	0.002
MW-4	12-06-94	55.98	31.91	24.07	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Floating Product Thickness	Ground-Water Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot
MW-5	04-17-89	55.43	33.17	22.26	ND	NR	NR
MW-5	04-24-89	55.43	33.06	22.37	ND	NR	NR
MW-5	10-13-89	55.43	36.33	19.10	ND	NR	NR
MW-5	02-01-90	55.43	35.96	19.47	ND	NR	NR
MW-5	07-31-90	55.43	35.70	19.73	ND	NR	NR
MW-5	08-01-90	55.43	35.69	19.74	ND	NR	NR
MW-5	08-28-90	55.43	36.14	19.29	ND	NR	NR
MW-5	10-30-90	55.43	36.94	18.49	ND	NR	NR
MW-5	11-20-90	55.43	37.09	18.34	ND	NR	NR
MW-5	12-19-90	55.43	37.05	18.38	ND	NR	NR
MW-5	01-30-91	55.43	37.26	18.17	ND	NR	NR
MW-5	02-27-91	55.43	36.81	18.62	ND	NR	NR
MW-5	03-20-91	55.43	36.04	19.39	ND	NR	NR
MW-5	04-30-91	55.43	33.75	21.68	ND	NR	NR
MW-5	05-31-91	55.43	34.01	21.42	ND	NR	NR
MW-5	07-24-91	55.43	35.20	20.23	ND	NR	NR
MW-5	08-06-91	55.43	35.48	19.95	ND	NR	NR
MW-5	09-03-91	55.43	36.00	19.43	ND	NR	NR
MW-5	10-17-91	55.43	36.84	18.59	ND	NR	NR
MW-5	11-05-91	55.43	36.86	18.57	ND	NR	NR
MW-5	12-24-91	55.43	37.31	18.12	ND	NR	NR
MW-5	01-19-92	55.43	36.95	18.48	ND	NR	NR
MW-5	02-20-92	55.43	35.39	20.04	ND	NR	NR
MW-5	03-10-92	55.43	33.67	21.76	ND	NR	NR
MW-5	04-20-92	55.43	31.80	23.63	ND	NR	NR
MW-5	05-15-92	55.43	32.37	23.06	ND	NR	NR
MW-5	06-30-92	55.43	34.00	21.43	ND	NR	NR
MW-5	07-15-92	55.43	34.32	21.11	ND	NR	NR
MW-5	08-25-92	55.43	35.76	19.67	ND	NR	NR
MW-5	09-09-92	55.43	34.97	20.46	ND	NR	NR
MW-5	10-31-92	55.43	35.97	19.46	ND	NR	NR
MW-5	11-20-92	55.43	36.26	19.17	ND	NR	NR
MW-5	12-16-92	55.43	35.45	19.98	ND	NR	NR
MW-5	01-22-93	55.43	31.05	24.38	ND	NR	NR
MW-5	02-12-93	55.43	29.42	26.01	ND	NR	NR
MW-5	03-26-93	55.43	27.07	28.36	ND	NR	NR
MW-5	04-30-93	55.43	27.40	28.03	ND	NR	NR
MW-5	05-12-93	55.43	27.83	27.60	ND	NR	NR
MW-5	06-17-93	55.43	28.84	26.59	ND	NR	NR
MW-5	08-18-93	55.43	30.75	24.68	ND	NR	NR
MW-5	11-10-93	55.43	32.70	22.73	ND	NR	NR
MW-5	02-04-94	55.43	32.45	22.98	ND	NR	NR
MW-5	05-02-94	55.43	31.06	24.37	ND	NR	NR
MW-5	08-03-94	55.43	32.05	23.38	ND	SW	0.002
MW-5	12-06-94	55.43	31.44	23.99	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Floating Product Thickness	Ground-Water Flow Direction	Hydraulic Gradient
		ft-MSL	feet	ft-MSL	feet	MWN	foot/foot
MW-6	06-30-92	61.21	35.50	25.71	ND	NR	NR
MW-6	07-15-92	61.21	39.89	21.32	ND	NR	NR
MW-6	08-25-92	61.21	34.90	26.31	ND	NR	NR
MW-6	09-09-92	61.21	Not surveyed: well was paved over				
MW-6	10-31-92	61.21	NR	NR	NR	NR	NR
MW-6	11-20-92	61.21	Not surveyed: well was paved over				
MW-6	12-16-92	61.21	NR	NR	NR	NR	NR
MW-6	01-22-93	61.21	36.52	24.69	ND	NR	NR
MW-6	02-12-93	61.21	35.65	25.56	ND	NR	NR
MW-6	03-28-93	61.21	33.33	27.88	ND	NR	NR
MW-6	04-30-93	61.21	33.56	27.65	ND	NR	NR
MW-6	05-12-93	61.21	33.95	27.26	ND	NR	NR
MW-6	06-17-93	61.21	34.90	26.31	ND	NR	NR
MW-6	08-18-93	61.21	36.72	24.49	ND	NR	NR
MW-6	11-10-93	61.21	38.64	22.57	ND	NR	NR
MW-6	02-04-94	61.21	38.48	22.73	ND	NR	NR
MW-6	05-02-94	61.21	37.02	24.19	ND	NR	NR
MW-6	08-03-94	61.21	37.97	23.24	ND	SW	0.002
MW-6	12-06-94	61.21	37.33	23.88	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Floating Product Thickness feet	Ground-Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-7	06-30-92	58.22	23.70	34.52	ND	NR	NR
MW-7	07-15-92	58.22	23.10	35.12	ND	NR	NR
MW-7	08-25-92	58.22	34.23	23.99	ND	NR	NR
MW-7	09-09-92	58.22	^26.30	^31.92	1.31	NR	NR
MW-7	10-31-92	58.22	35.44	22.78	ND	NR	NR
MW-7	11-20-92	58.22	^23.47	^34.75	0.02	NR	NR
MW-7	12-16-92	58.22	^19.07	^39.15	0.04	NR	NR
MW-7	01-22-93	58.22	^16.56	^41.66	0.02	NR	NR
MW-7	02-12-93	58.22	^18.22	^40.00	0.04	NR	NR
MW-7	03-26-93	58.22	18.04	40.18	ND	NR	NR
MW-7	04-30-93	58.22	19.34	38.88	NR	NR	NR
MW-7	05-12-93	58.22	^19.80	^38.42	0.01	NR	NR
MW-7	06-17-93	58.22	^22.63	^35.59	0.01	NR	NR
MW-7	08-18-93	58.22	22.44	35.78	0.01	NR	NR
MW-7	11-10-93	58.22	24.51	33.71	ND^^	NR	NR
MW-7	02-04-94	58.22	20.78	37.44	ND	NR	NR
MW-7	05-02-94	58.22	20.51	37.71	ND	NR	NR
MW-7	08-03-94	58.22	22.66	35.56	ND	SW	0.002
MW-7	12-06-94	58.22	18.37	## 39.86	0.02	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Floating Product Thickness feet	Ground-Water Flow Direction MWN	Hydraulic Gradient foot/foot
MW-8	08-25-92	53.65	NR	NR	NR	NR	NR
MW-8	09-09-92	53.65	33.20	20.45	ND	NR	NR
MW-8	10-31-92	53.65	37.12	16.53	ND	NR	NR
MW-8	11-24-92	53.65	34.45	19.20	ND	NR	NR
MW-8	12-16-92	53.65	NR	NR	NR	NR	NR
MW-8	01-22-93	53.65	28.59	25.06	ND	NR	NR
MW-8	02-12-93	53.65	27.57	26.08	ND	NR	NR
MW-8	03-26-93	53.65	25.16	28.49	ND	NR	NR
MW-8	04-30-93	53.65	25.50	28.15	ND	NR	NR
MW-8	05-12-93	53.65	25.95	27.70	ND	NR	NR
MW-8	06-17-93	53.65	NR	NR	NR	NR	NR
MW-8	08-18-93	53.65	28.97	24.68	ND	NR	NR
MW-8	11-10-93	53.65	30.96	22.69	ND	NR	NR
MW-8	02-04-94	53.65	30.73	22.92	ND	NR	NR
MW-8	05-02-94	53.65	29.26	24.39	ND	NR	NR
MW-8	08-03-94	53.65	30.33	23.32	ND	SW	0.002
MW-8	12-06-94	53.65	29.66	23.99	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Floating Product Thickness feet	Ground-Water Flow Direction MWN	Hydraulic Gradient foot/foot
RW-1	11-05-91	56.32	37.89	18.43	ND	NR	NR
RW-1	12-24-91	56.32	38.35	17.97	ND	NR	NR
RW-1	01-19-92	56.32	37.82	18.50	ND	NR	NR
RW-1	02-20-92	56.32	36.42	19.90	ND	NR	NR
RW-1	03-10-92	56.32	34.74	21.58	ND	NR	NR
RW-1	04-20-92	56.32	32.90	23.42	ND	NR	NR
RW-1	05-15-92	56.32	33.43	22.89	ND	NR	NR
RW-1	06-30-92	56.32	34.74	21.58	ND	NR	NR
RW-1	07-15-92	56.32	35.12	21.20	ND	NR	NR
RW-1	08-25-92	56.32	36.75	19.57	ND	NR	NR
RW-1	09-09-92	56.32	35.99	20.33	ND	NR	NR
RW-1	10-31-92	56.32	34.32	22.00	ND	NR	NR
RW-1	11-20-92	56.32	37.11	19.21	ND	NR	NR
RW-1	12-16-92	56.32	36.40	19.92	ND	NR	NR
RW-1	01-22-93	56.32	32.30	24.02	ND	NR	NR
RW-1	02-12-93	56.32	30.64	25.68	ND	NR	NR
RW-1	03-26-93	56.32	28.32	28.00	ND	NR	NR
RW-1	04-30-93	56.32	28.55	27.77	ND	NR	NR
RW-1	05-12-93	56.32	28.94	27.38	ND	NR	NR
RW-1	06-17-93	56.32	29.89	26.43	ND	NR	NR
RW-1	08-18-93	56.32	31.74	24.58	ND	NR	NR
RW-1	11-10-93	56.32	33.61	22.71	ND	NR	NR
RW-1	02-04-94	56.32	33.43	22.89	ND	NR	NR
RW-1	05-02-94	56.32	31.96	24.36	ND	NR	NR
RW-1	08-03-94	56.32	32.90	23.42	ND	SW	0.002
RW-1	12-06-94	56.32	32.24	24.08	ND	W	0.001

Table 2
Historical Groundwater Elevation Data

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Desig-nation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Floating Product Thickness feet	Ground-Water Flow Direction MWN	Hydraulic Gradient foot/foot
WGR-3	05-02-94	NR	20.06	NR	ND	NR	NR
WGR-3	08-03-94	NR	22.30	NR	ND	NR	NR
WGR-3	12-06-94	NR	17.52	NR	ND	NR	NR

TOC: top of casing (Groundwater elevation = TOC - depth to water)
ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ND: none detected
NR: not reported; data not available or not measurable
SW: southwest
W: west
^: Depth to water (DTW) and groundwater elevation (GWE) were adjusted as follows: The thickness of the floating product (FPT) and the depth to water were recorded. The recorded thickness of floating product was then multiplied by 0.80 to obtain an approximate value for the displacement of water by the floating product. The approximate displacement value was then subtracted from the measured depth to water to obtain a calculated depth to water (potentiometric surface). GWE = TOC - [DTW - (FPT x 0.8)]
^^: floating product entered the well during purging
DRY: dry well, groundwater was not detected
corrected elevation (Z'), such that: $Z' = Z + (h * 0.73)$ where: Z = measured elevation, h = floating product thickness, 0.73 = density ratio of oil to water

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Desig-nation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	04-24-89	<50	<0.5	<0.5	<0.5	<0.5
MW-1	10-13-89	<20	<0.5	<0.5	<0.5	<0.5
MW-1	02-01-90	91#	<0.3	<0.3	<0.3	0.36
MW-1	07-31-90	<20	<0.5	<0.5	<0.5	<0.5
MW-1	10-30-90	<50	<0.5	<0.5	<0.5	<0.5
MW-1	01-30-91	<50	<0.5	<0.5	<0.5	<0.5
MW-1	04-30-91	<30	<0.3	<0.3	<0.3	<0.3
MW-1	08-06-91	<30	<0.3	<0.3	<0.3	<0.3
MW-1	11-05-91	<30	<0.3	<0.3	<0.3	<0.3
MW-1	03-10-92	<50	<0.5	<0.5	<0.5	<0.5
MW-1	06-30-92	<50	<0.5	<0.5	<0.5	<0.5
MW-1	09-09-92	<50	<0.5	<0.5	<0.5	<0.5
MW-1	11-20-92	<50	<0.5	<0.5	<0.5	<0.5
MW-1	02-12-93	<50	<0.5	<0.5	<0.5	<0.5
MW-1	05-12-93	<100*	<0.5	<0.5	<0.5	<0.5
MW-1	08-18-93	<51*	<0.5	<0.5	<0.5	<0.5
MW-1	11-10-93	<50	<0.5	<0.5	<0.5	<0.5
MW-1	02-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-1	05-02-94	<50	<0.5	<0.5	<0.5	<0.5
MW-1	08-03-94	<50	<0.5	<0.5	<0.5	<0.5
MW-1	12-06-94	<50	<0.5	<0.5	<0.5	<0.5

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L
MW-2	04-24-89	165000	13000	21000	2100	12700
MW-2	10-13-89	Not sampled: well contained floating product				
MW-2	02-01-90	Not sampled: well contained floating product				
MW-2	07-31-90	240000	14000	24000	3000	17000
MW-2	10-30-90	Not sampled: well contained floating product				
MW-2	01-30-91	Not sampled: well contained floating product				
MW-2	04-30-91	Not sampled: well contained floating product				
MW-2	08-06-91	Not sampled: well contained floating product				
MW-2	11-05-91	Not sampled: well contained floating product				
MW-2	03-10-92	220000	8200	13000	4500	22000
MW-2	06-30-92	130000	10000	16000	4700	24000
MW-2	09-09-92	Not sampled: well contained floating product				
MW-2	11-20-92	Not sampled: well contained floating product				
MW-2	02-12-93	Not sampled: well contained floating product				
MW-2	05-12-93	Not sampled: well contained floating product				
MW-2	08-18-93	Not sampled:				
MW-2	11-10-93	Not sampled: floating product entered well during purging				
MW-2	02-04-94	2100	110	5.6	26	110
MW-2	05-02-94	3400	130	21	73	180
MW-2	08-03-94	Not sampled: well was inaccessible due to a parked vehicle				
MW-2	12-07-94	26000	570	43	220	1100

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Desig-nation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	04-24-89	560#	0.54	0.75	<0.5	<0.5
MW-3	10-12-89	450#	<0.5	<0.5	<0.5	<0.5
MW-3	02-01-90	360#	<0.3	<0.3	<0.3	0.85
MW-3	08-01-90	440#	<0.5	<0.5	<0.5	<0.5
MW-3	10-30-90	340#	<0.5	<0.5	<0.5	<0.5
MW-3	01-30-91	Not sampled: dry well				
MW-3	04-30-91	Not sampled: well was inaccessible due to construction				
MW-3	08-06-91	430#	<0.3	<0.3	<0.3	<0.3
MW-3	11-05-91	290#	<1.5	<1.5	<1.5	<1.5
MW-3	03-10-92	<360*	<0.5	<0.5	<0.5	<0.5
MW-3	06-30-92	<530*	<0.5	<0.5	<0.5	<0.5
MW-3	09-09-92	<290*	<0.5	<0.5	<0.5	<0.5
MW-3	11-20-92	<270*	<0.5	<0.5	<2.4**	<1.8**
MW-3	02-12-93	<500*	<0.5	<0.5	<0.5	<0.5
MW-3	05-12-93	<670*	<0.5	<0.5	<0.5	<0.5
MW-3	08-18-93	<590*	<0.5	<0.5	<0.5	<0.5
MW-3	11-10-93	<400*	<0.5	<0.5	<0.5	<0.9**
MW-3	02-04-94	<190*	<0.5	<0.5	<0.5	<0.5
MW-3	05-02-94	<480*	<0.5	<0.5	<0.5	<0.9**
MW-3	08-03-94	<250*	<0.5	<0.5	<0.5	<0.5
MW-3	12-06-94	<380*	<0.5	<0.5	<0.5	<0.5

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L
MW-4	04-24-89	2500#	270	1.4	<0.5	85
MW-4	10-13-89	760#	0.86	<0.5	1.2	<0.5
MW-4	02-01-90	680#	<0.3	<0.3	<0.3	1.6
MW-4	07-31-90	470#	<0.5	<0.5	<0.5	<0.5
MW-4	10-30-90	430#	<0.5	<0.5	<0.5	<0.5
MW-4	01-30-91	<50	<0.5	<0.5	1.2	<0.5
MW-4	04-30-91	600#	<0.3	0.3	<0.3	0.43
MW-4	08-06-91	520#	<0.3	<0.3	<0.3	<0.3
MW-4	11-05-91	900#	<3.0***	<3.0***	<3.0***	<3.0***
MW-4	03-10-92	<730*	<0.5	<0.5	<0.5	<0.5
MW-4	06-30-92	<670*	<0.5	<0.5	<2.3**	500
MW-4	09-09-92	<470*	<0.5	<0.5	<0.5	<0.5
MW-4	11-20-92	<680*	<0.5	<0.5	<6.3**	<3.2**
MW-4	02-12-93	<860*	<0.5	<0.5	<0.5	<0.5
MW-4	05-12-93	<670*	<0.5	<0.5	<1.4**	<1.3**
MW-4	08-18-93	<700*	<0.5	<0.5	<0.5	<0.5
MW-4	11-10-93	<460*	<0.5	<0.5	<0.5	<1.3**
MW-4	02-04-94	<480*	<0.5	<0.5	<0.5	1.4
MW-4	05-02-94	<490*	<0.5	<0.5	<0.5	<0.9**
MW-4	08-03-94	<400*	<0.5	<0.5	<0.5	<0.5
MW-4	12-06-94	<970*	<2.5**	<2.5**	<2.5**	<2.5**

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L
MW-5	04-24-89	130#	0.67	<0.5	<0.5	<0.5
MW-5	10-13-89	75#	<0.5	<0.5	<0.5	<0.5
MW-5	02-01-90	81#	0.94	0.88	<0.3	1.8
MW-5	07-31-90	110#	<0.5	<0.5	<0.5	<0.5
MW-5	10-30-90	<50	<0.5	<0.5	<0.5	<0.5
MW-5	01-30-91	<50	<0.5	<0.5	<0.5	<0.5
MW-5	04-30-91	120#	<0.3	<0.3	<0.3	<0.3
MW-5	08-06-91	<30	<0.3	<0.3	<0.3	<0.3
MW-5	11-05-91	77#	1	3.6	0.6	2.6
MW-5	03-10-92	<110*	<0.5	<0.5	<0.5	<0.6**
MW-5	06-30-92	<50	<0.5	<0.5	<0.5	<0.5
MW-5	09-09-92	<50	<0.5	<0.5	<0.5	<0.5
MW-5	11-24-92	<50	<0.5	<0.5	<0.5	<0.5
MW-5	02-12-93	<150*	<0.5	<0.5	<0.5	<0.5
MW-5	05-12-93	<50	<0.5	<0.5	<0.5	<0.5
MW-5	08-18-93	<50	<0.5	<0.5	<0.5	<0.5
MW-5	11-10-93	<50	<0.5	<0.5	<0.5	<1.4**
MW-5	02-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-5	05-02-94	<50	<0.5	<0.5	<0.5	<0.5
MW-5	08-03-94	<50	<0.5	<0.5	<0.5	<0.5
MW-5	12-06-94	<550*	<0.5	0.6	1.1	2
MW-6	06-30-92	<850*	<0.5	<0.5	<0.5	<0.5
MW-6	09-09-92	Not sampled: well was paved over				
MW-6	11-20-92	Not sampled: well was paved over				
MW-6	02-12-93	<1900*	<2.5***	<2.5***	<2.5***	<2.5***
MW-6	05-12-93	<1600*	<2.5***	<2.5***	<2.5***	<2.5***
MW-6	08-18-93	<1500*	<2.5***	<2.5***	<2.5***	<2.5***
MW-6	11-10-93	<1000*	<2.5***	<2.5***	<2.5***	<2.5***
MW-6	02-04-94	<830*	<2.5***	<2.5***	<2.5***	3.1
MW-6	05-02-94	<860*	<1***	<1***	<1***	1.3
MW-6	08-03-94	<660*	<1***	<1***	<1***	<1***
MW-6	12-07-94	<720*	<1**	<1**	<1**	<1**

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TPHG	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L
MW-7	06-30-92	71000	5100	6600	2300	14000
MW-7	09-09-92	Not sampled: well contained floating product				
MW-7	11-20-92	Not sampled: well contained floating product				
MW-7	02-12-93	Not sampled: well contained floating product				
MW-7	05-12-93	Not sampled: well contained floating product				
MW-7	08-18-93	Not sampled: well contained floating product				
MW-7	11-10-93	Not sampled: floating product entered the well during purging				
MW-7	02-04-94	40000	900	980	1100	9700
MW-7	05-02-94	38000	640	600	930	7200
MW-7	08-03-94	47000	1000	1200	1500	10000
MW-7	12-07-94	260000	<200***	380	2200	11000
MW-8	09-09-92	<50	3.4	<0.5	<0.5	0.7
MW-8	11-24-92	<50	<0.5	<0.5	<0.5	<0.5
MW-8	02-12-93	<50	<0.5	<0.5	<0.5	<0.5
MW-8	05-12-93	<50	<0.5	<0.5	<0.5	<0.5
MW-8	08-18-93	<50	<0.5	<0.5	<0.5	<0.5
MW-8	11-10-93	<50	<0.5	<0.5	<0.5	1.1
MW-8	02-04-94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	05-02-94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	08-03-94	<50	<0.5	<0.5	<0.5	<0.5
MW-8	12-07-94	<50	<0.5	<0.5	<0.5	<0.5
RW-1	11-05-91	750#	4.8	3.7	<3.0	<3.0
RW-1	03-10-92	<140*	<0.5	<0.5	<0.5	<0.6**
RW-1	06-30-92	<400*	<0.5	<0.5	<0.5	<0.5
RW-1	09-09-92	<520*	<0.5	<0.5	<0.5	<0.5
RW-1	11-24-92	<650*	<0.5	<0.5	<8.6**	<7.2**
RW-1	02-12-93	<260*	<0.5	<0.5	<0.5	<0.5
RW-1	05-12-93	<240*	<0.5	<0.5	<0.5	<0.5
RW-1	08-18-93	<230*	<0.5	<0.5	<0.5	<0.5
RW-1	11-10-93	<380*	<0.5	<0.5	<0.5	<0.8**
RW-1	02-04-94	<540*	<0.5	<0.5	<0.5	<1.5**
RW-1	05-02-94	<50	<0.5	<0.5	<0.5	<0.5
RW-1	08-03-94	<140*	<0.5	<0.5	<0.5	<0.5
RW-1	12-07-94	<79*	<0.5	<0.5	<0.5	<0.5

Table 3
Historical Groundwater Analytical Data
(TPHG and BTEX)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TPHG µg/L	Benzene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L
WGR-3	05-02-94	<50	<0.5	<0.5	<0.5	<0.5
WGR-3	08-03-94	<50	<0.5	<0.5	<0.5	<0.5
WGR-3	12-07-94	<50	<0.5	<0.5	<0.5	0.6

TPHG: total petroleum hydrocarbons as gasoline
µg/L: micrograms per liter
#: based on new results, the chromatogram peaks previously interpreted to be TPHG and BTEX have been reinterpreted to be a single peak hydrocarbon (possibly PCE)
*: raised method reporting limit due to matrix interference; the sample contains a single non-fuel component eluting in the gasoline range and quantitated as gasoline (possibly PCE), and the chromatogram does not match the typical gasoline fingerprint
** raised method reporting limit due to matrix interference requiring sample dilution
***: raised method reporting limit due to high analyte concentration requiring sample dilution

Table 4
Historical Groundwater Analytical Data
(TRPH, TPHD, and Metals)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	TOG or TRPH µg/L	TPHD µg/L	Cadmium by EPA 6010 µg/L	Chromium by EPA 6010 µg/L	Lead by EPA 7421 µg/L	Nickel by EPA 6010 µg/L	Zinc by EPA 6010 µg/L
MW-4	04-24-89	NA	NA	NA	NA	NA	NA	NA
MW-4	10-13-89	NA	NA	NA	NA	NA	NA	NA
MW-4	02-01-90	NA	NA	NA	NA	NA	NA	NA
MW-4	07-31-90	<500	240	NA	NA	NA	NA	NA
MW-4	10-30-90	<500	<100	NA	NA	NA	NA	NA
MW-4	01-30-91	<500	<100	NA	NA	NA	NA	NA
MW-4	04-30-91	NA	NA	NA	NA	NA	NA	NA
MW-4	08-06-91	NA	NA	<10	65	6.7	140	96
MW-4	11-05-91	NA	NA	NA	NA	NA	NA	NA
MW-4	03-10-92	<2500	NA	NA	NA	NA	NA	NA
MW-4	06-30-92	500	NA	NA	NA	NA	NA	NA
MW-4	09-09-92	3600	NA	NA	NA	NA	NA	NA
MW-4	11-20-92	800	NA	NA	NA	NA	NA	NA
MW-4	02-12-93	25000	NA	NA	NA	NA	NA	NA
MW-4	05-12-93	120000	NA	NA	NA	NA	NA	NA
MW-4	08-18-93	<500	NA	NA	NA	NA	NA	NA
MW-4	11-10-93	<500	NA	NA	NA	NA	NA	NA
MW-4	02-04-94	<500	NA	NA	NA	NA	NA	NA
MW-4	05-02-94	5900	NA	NA	NA	NA	NA	NA
MW-4	08-03-94	<500	NA	NA	NA	NA	NA	NA
MW-4	12-06-94	1800	NA	NA	NA	NA	NA	NA

TOG total oil and grease by standard methods 5520 C&F
TRPH: total recoverable petroleum hydrocarbons by USEPA Method 418.1
TPHD: total petroleum hydrocarbons as diesel by USEPA Method 3510/California DHS LUFT Method
µg/L micrograms per liter
NA: not analyzed

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	09-03-91	4.5	ND	ND	ND		ND	ND	ND	ND
MW-1	11-06-91	<2.0	<2.0	<2.0	<2.0		ND	ND	ND	ND
MW-1	03-10-92	8.2	ND	ND	ND		ND	ND	ND	ND
MW-1	06-30-92	15	ND	ND	ND		ND	ND	ND	ND
MW-1	09-09-92	6	ND	ND	ND		ND	ND	ND	ND
MW-1	11-20-92	2	ND	ND	ND		ND	ND	ND	ND
MW-1	02-12-93	92	ND	ND	ND		ND	ND	ND	ND
MW-1	05-12-93	280	ND	ND	ND		ND	ND	ND	ND
MW-1	08-18-93	120	ND	ND	ND		ND	ND	ND	ND
MW-1	11-10-93	46	ND	ND	ND		ND	ND	ND	ND
MW-1	02-04-94	22	<1	<1	<1		<1	<1	<1	<5
MW-1	05-02-94	35	<1	<1	<1		<1	<1	<1	<5
MW-1	08-03-94	14	<1		<1		<1	<1	<1	<5
MW-1	12-06-94	17	<1		<1		<1	<1	<1	<5

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-2	09-03-91	Not sampled: well contained floating product								
MW-2	11-06-91	Not sampled: well contained floating product								
MW-2	03-10-92	0.9	ND	5.4	ND		ND	ND	ND	ND
MW-2	06-30-92	<2000	<2000	<2000	<2000		9300	18000	4200	27000
MW-2	09-09-92	Not sampled: well contained floating product								
MW-2	11-20-92	Not sampled: well contained floating product								
MW-2	02-12-93	Not sampled: well contained floating product								
MW-2	05-12-93	Not sampled: well contained floating product								
MW-2	08-18-93	Not sampled:								
MW-2	11-10-93	Not sampled: floating product entered the well during purging								
MW-2	02-04-94	<1	<1	<1	<1		170	9	36	160
MW-2	05-02-94	<1	<1	<1	<1		140	21	79	190
MW-2	08-03-94	Not sampled: well was inaccessible due to a parked car								
MW-2	12-06-94	<5	<5		<5		620	28	220	1200

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	09-03-91	1600	ND	ND	ND		ND	ND	ND	ND
MW-3	11-06-91	400	ND	ND	ND		ND	ND	ND	ND
MW-3	03-10-92	980	5.6	ND	1	3.4	ND	ND	ND	ND
MW-3	06-30-92	1500	ND	ND	ND		ND	ND	ND	ND
MW-3	09-09-92	800	ND	ND	ND		ND	ND	ND	ND
MW-3	11-20-92	690	ND	ND	ND		ND	ND	ND	ND
MW-3	02-12-93	1200	ND	ND	ND		ND	ND	ND	ND
MW-3	05-12-93	1600	ND	ND	ND		ND	ND	ND	ND
MW-3	08-18-93	1300	ND	ND	ND		ND	ND	ND	ND
MW-3	11-10-93	1300	ND	ND	ND		ND	ND	ND	ND
MW-3	02-04-94	91	<5	<5	<5		<5	<5	<5	<25
MW-3	05-02-94	1600	<20	<20	<20		<20	<20	<20	<100
MW-3	08-03-94	680	<20		<20		<20	<20	<20	<100
MW-3	12-06-94	1100	<25		<25		<25	<25	<25	<125

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-4	07-31-90	1600	7.5	0.7	ND		ND	ND	ND	ND
MW-4	10-30-90	3600	8.1	0.7	ND		ND	ND	ND	ND
MW-4	01-30-91	4900	12	ND	ND		ND	ND	ND	ND
MW-4	04-30-91	2200	ND	ND	ND		ND	ND	ND	ND
MW-4	08-06-91	1700	ND	ND	ND		ND	ND	ND	ND
MW-4	09-03-91	2000	ND	ND	ND		ND	ND	ND	ND
MW-4	11-06-91	1000	6.3	ND	ND		ND	ND	ND	ND
MW-4	03-10-92	2300	13	ND	4		ND	ND	ND	ND
MW-4	06-30-92	1800	ND	ND	ND		ND	ND	ND	ND
MW-4	09-09-92	1300	ND	ND	ND		ND	ND	ND	ND
MW-4	11-20-92	1700	ND	ND	ND		ND	ND	ND	ND
MW-4	02-12-93	1800	ND	ND	ND		ND	ND	ND	ND
MW-4	05-12-93	1500	ND	ND	ND		ND	ND	ND	ND
MW-4	08-18-93	1800	ND	ND	ND		ND	ND	ND	ND
MW-4	11-10-93	1800	ND	ND	ND		ND	ND	ND	ND
MW-4	02-04-94	1900	<20	<20	<20		<20	<20	<20	<100
MW-4	05-02-94	1700	<20	<20	<20		<20	<20	<20	<100
MW-4	08-03-94	1200	<20		<20		<20	<20	<20	<100
MW-4	12-06-94	2200	<20		<20		<20	<20	<20	<100

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	08-06-91	7.3	ND	ND	ND		ND	ND	ND	ND
MW-5	09-03-91	25	ND	ND	ND		ND	ND	ND	ND
MW-5	11-06-91	12	ND	ND	ND		ND	ND	ND	ND
MW-5	03-10-92	300	1.3	ND	ND		ND	ND	ND	ND
MW-5	06-30-92	30	ND	ND	ND		ND	ND	ND	ND
MW-5	09-09-92	120	ND	ND	ND		ND	ND	ND	ND
MW-5	11-24-92	93	ND	ND	ND		ND	ND	ND	ND
MW-5	02-12-93	210	ND	ND	ND		ND	ND	ND	ND
MW-5	05-12-93	50	ND	ND	ND		ND	ND	ND	ND
MW-5	08-18-93	80	ND	ND	ND		ND	ND	ND	ND
MW-5	11-10-93	42	ND	ND	ND		ND	ND	ND	ND
MW-5	02-04-94	39	<1	<1	<1		<1	<1	<1	<5
MW-5	05-02-94	35	<1	<1	<1		<1	<1	<1	<5
MW-5	08-03-94	25	<1		<1		<1	<1	<1	<5
MW-5	12-06-94	1800	<20		<20		<20	<20	<20	<100

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-6	06-30-92	2400	ND	ND	ND		ND	ND	ND	ND
MW-6	09-09-92	Not sampled: well was paved over								
MW-6	11-20-92	Not sampled: well was paved over								
MW-6	02-12-93	4200	ND	ND	ND		ND	ND	ND	ND
MW-6	05-12-93	3500	ND	ND	ND		ND	ND	ND	ND
MW-6	08-18-93	3000	ND	ND	ND		ND	ND	ND	ND
MW-6	11-10-93	3900	ND	ND	ND		ND	ND	ND	ND
MW-6	02-04-94	2900	<50	<50	<50		<50	<50	<50	<250
MW-6	05-02-94	2000	<50	<50	<50		<50	<50	<50	<250
MW-6	08-03-94	1400	<50		<50		<50	<50	<50	<250
MW-6	12-06-94	2000	<50		<50		<50	<50	<50	<250

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-7	06-30-92	<1000	<1000	<1000	<1000		5100	6800	2300	16000
MW-7	09-09-92	Not sampled: well contained floating product								
MW-7	11-20-92	Not sampled: well contained floating product								
MW-7	02-12-93	Not sampled: well contained floating product								
MW-7	05-12-93	Not sampled: well contained floating product								
MW-7	08-18-93	Not sampled: well contained floating product								
MW-7	11-10-93	Not sampled: floating product entered the well during purging								
MW-7	02-04-94	<50	<50	<50	<50		940	950	1100	9100
MW-7	05-02-94	<50	<50	<50	<50		440	400	660	5200
MW-7	08-03-94	<50	<50		<50		640	770	960	6200
MW-7	12-06-94	<50	<50		<50		230	180	750	4800

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	09-09-92	37	ND	ND	ND		4	ND	ND	ND
MW-8	11-24-92	2	ND	ND	ND		ND	ND	ND	ND
MW-8	02-12-93	<1	<1	<1	<1		ND	ND	ND	ND
MW-8	05-12-93	<1	<1	<1	<1		ND	ND	ND	ND
MW-8	08-18-93	<1	<1	<1	<1		ND	ND	ND	ND
MW-8	11-10-93	<1	<1	<1	<1		ND	ND	ND	ND
MW-8	02-04-94	<1	<1	<1	<1		<1	<1	<1	<5
MW-8	05-02-94	<1	<1	<1	<1		<1	<1	<1	<5
MW-8	08-03-94	<1	<1		<1		<1	<1	<1	<5
MW-8	12-06-94	2	<1		<1		<1	<1	<1	<5

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
RW-1	11-06-91	980	ND	ND	ND		ND	ND	ND	ND
RW-1	03-10-92	400	1.7	ND	ND		ND	ND	ND	ND
RW-1	06-30-92	1100	ND	ND	ND		ND	ND	ND	ND
RW-1	09-09-92	1500	ND	ND	ND		ND	ND	ND	ND
RW-1	11-24-92	1500	ND	ND	ND		ND	ND	ND	ND
RW-1	02-12-93	620	ND	ND	ND		ND	ND	ND	ND
RW-1	05-12-93	500	ND	ND	ND		ND	ND	ND	ND
RW-1	08-18-93	470	ND	ND	ND		ND	ND	ND	ND
RW-1	11-10-93	1500	ND	ND	ND		ND	ND	ND	ND
RW-1	02-04-94	2200	<20	<20	<20		<20	<20	<20	<100
RW-1	05-02-94	45	<1	<1	<1		<1	<1	<1	<5
RW-1	08-03-94	350	4		<1		<1	<1	<1	<5
RW-1	12-06-94	340	<5		<5		<5	<5	<5	<25

Table 5
Historical Groundwater Analytical Data
(Volatile Organic Compounds)

10600 and 10700 MacArthur Boulevard
Oakland, California

Date: 06-30-95
Project Number: 0805-120.04

Well Designation	Water Sample Field Date	Halogenated Volatile Organic Compounds by EPA Method 601/8010 or 624/8240					BTEX by EPA Method 624/8240			
		PCE	TCE	1,2-DCE	cis-1,2-DCE	Freon 12	Benzene	Toluene	Ethyl-benzene	Total Xylenes
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
WGR-3	05-02-94	<1	<1	<1	<1		<1	<1	<1	<5
WGR-3	08-03-94	<1	<1		<1		<1	<1	<1	<5
WGR-3	12-06-94	4	<1		<1		<1	<1	<1	<5

PCE: tetrachloroethene
TCE: trichloroethene
1,2-DCE: 1,2-dichloroethene
cis-1,2-DCE: cis-1,2-dichloroethene
µg/L: micrograms per liter
ND: not detected at or above the method detection limit

Table 3
Historical Groundwater Analytical Data
Metals

10600 and 10700 MacArthur Boulevard
Oakland, California

Date 10-29-97

Well Designation	Water Sample FieldDate	Cadmium EPA 6010 µg/L	Chromium EPA 6010 µg/L	Lead EPA 7421 µg/L	Nickel EPA 6010 µg/L	Zinc EPA 6010 µg/L
MW-1	04-24-89	Sampling for additional parameters was not initiated				
MW-2	04-24-89	Sampling for additional parameters was not initiated				
MW-3	04-24-89	Sampling for additional parameters was not initiated				
MW-4	04-24-89	--	--	--	--	--
MW-4	10-13-89	--	--	--	--	--
MW-4	02-01-90	--	--	--	--	--
MW-4	07-31-90	--	--	--	--	--
MW-4	10-30-90	--	--	--	--	--
MW-4	01-30-91	--	--	--	--	--
MW-4	04-30-91	--	--	--	--	--
MW-4	08-06-91	<10	65	6.7	140	96
MW-4	11-05-91	Sampling for additional parameters was discontinued				
MW-5	04-24-89	Sampling for additional parameters was not initiated				
MW-6	06-30-92	Sampling for additional parameters was not initiated				
MW-7	06-30-92	Sampling for additional parameters was not initiated				
MW-8	09-09-92	Sampling for additional parameters was not initiated				
RW-1	11-05-91	Sampling for additional parameters was not initiated				
WGR-3	05-02-94	Sampling for additional parameters was not initiated				

EPA: United Statest Environmental Protection Agency
µg/L: micrograms per liter
-- : not analyzed

ATTACHMENT C

Table 4
Approximate Cumulative Floating Product Recovered

10600 and 10700 MacArthur Boulevard
Oakland, California

Date. 10-29-97

Well Designation	Date	Floating Product Recovered gallons
MW-2 and MW-7	1991	18 15
MW-2 and MW-7	1992	0 39
MW-2 and MW-7	1993	0.00
MW-2 and MW-7	1994	0 00
MW-2 and MW-7	1995	0.00
MW-2 and MW-7	1996	0 00
MW-2 and MW-7	1997	0.00
	1991 to 1997 Total·	18 54

Table 7
Soil-Vapor Extraction System
Operation and Performance Data

Location: 10600 and 10700 MacArthur Boulevard, Oakland, California
Vapor Treatment Unit: Anguil Energy Systems Remedi-Cat, 500cfm Catalytic Oxidizer

Consultant: EMCON, 1921 Ringwood Avenue, San Jose, California
Start-Up Date: 09-06-90
Reporting Period From: 09-06-90 To: 01-01-96

Date Begin:		09-06-90	12-22-94	01-01-95	02-01-95	03-01-95
Date End:		12-22-94	01-01-95	02-01-95	03-01-95	04-01-95
Mode of Oxidation:		Catalytic (14)	Catalytic	Catalytic	Catalytic	Catalytic
Days of Operation:		0.0	4.9	26.4	28.0	31.0
Days of Downtime:		0.0	26.2	4.6	0.0	0.0
Average Vapor Concentrations (1)						
On-site WF Influent:	ppmv (2) as gasoline	NA (15)	32	<15	<15	1.2
	mg/m3 (3) as gasoline	NA	116	<60	<60	4.4
	ppmv as benzene	NA	<0.1	<0.1	<0.1	<0.05
	mg/m3 as benzene	NA	<0.3	<0.5	<0.5	<0.16
Off-site WF Influent:	ppmv as gasoline	NA	closed	closed	<15	1.4
	mg/m3 as gasoline	NA	closed	closed	<60	4.9
	ppmv as benzene	NA	closed	closed	<0.1	<0.05
	mg/m3 as benzene	NA	closed	closed	<0.5	<0.16
System Influent:	ppmv as gasoline	NA	32	<15	<15	<1.0
	mg/m3 as gasoline	NA	116	<60	<60	<3.6
	ppmv as benzene	NA	<0.1	<0.1	<0.1	<0.05
	mg/m3 as benzene	NA	<0.3	<0.5	<0.5	<0.16
System Effluent:	ppmv as gasoline	NA	<15	<15	<15	1.3
	mg/m3 as gasoline	NA	<54	<60	<60	4.6
	ppmv as benzene	NA	<0.1	<0.1	<0.1	<0.05
	mg/m3 as benzene	NA	<0.3	<0.5	<0.5	<0.16
Average On-site Well Field Flow Rate (4), scfm (5):		NA	81.6	53.7	62.0	71.3
Average Off-site Well Field Flow Rate (4), scfm:		NA	closed	closed	17.6	47.8
Average System Influent Flow Rate (4), scfm:		NA	81.6	53.7	79.6	119.1
Total Process Flow Rate, scfm:		NA	500.0	500.0	500.0	500.0
Average Destruction Efficiency (6), percent (7):		NA	53.4 (16)	NA	NA	NA
Average Emission Rates (8), pounds per day (9)						
Gasoline:		NA	0.40	0.29	0.43	0.05
Benzene:		NA	0.00	0.00	0.00	0.00
Operating Hours This Period:		NA	116.5	633.4	672.0	744.0
Operating Hours To Date.		NA	116.5	749.9	1421.9	2165.9
Pounds/ Hour Removal Rate, as gasoline (10):		NA	0.035	0.012	0.018	0.004
Pounds Removed This Period, as gasoline (11):		NA	4.13	7.64	12.01	3.08
Pounds Removed To Date, as gasoline (12):		7665.5	7669.6	7677.3	7689.3	7692.4
Gallons Removed This Period, as gasoline (13):		NA	0.67	1.23	1.94	0.50
Gallons Removed To Date, as gasoline.		1236.4	1237.1	1238.3	1240.3	1240.8

Table 7
Soil-Vapor Extraction System
Operation and Performance Data

Location: 10600 and 10700 MacArthur Boulevard
Oakland, California

Vapor Treatment Unit: Anguil Energy Systems
Remedi-Cat, 500cfm
Catalytic Oxidizer

Consultant: EMCON
1921 Ringwood Avenue
San Jose, California

Start-Up Date: 09-06-90
Reporting Period From: 09-06-90
To: 01-01-96

Date Begin:		04-01-95	05-01-95	08-01-95	09-01-95	10-01-95
Date End:		05-01-95	08-01-95	09-01-95	10-01-95	01-01-96
Mode of Oxidation:		Catalytic	Catalytic	Catalytic	Catalytic	Catalytic
Days of Operation:		30.0	18.7	17.9	0.0	0.0
Days of Downtime:		0.0	73.3	13.1	30.0	92.0
Average Vapor Concentrations (1)						
On-site WF Influent:	ppmv (2) as gasoline	<15	<15	95	NA	NA
	mg/m3 (3) as gasoline	<60	<60	350	NA	NA
	ppmv as benzene	<0.1	<0.1	1.1	NA	NA
	mg/m3 as benzene	<0.5	<0.5	3.6	NA	NA
Off-site WF Influent:	ppmv as gasoline	<15	<15	<15	NA	NA
	mg/m3 as gasoline	<60	<60	<60	NA	NA
	ppmv as benzene	<0.1	<0.1	<0.1	NA	NA
	mg/m3 as benzene	<0.5	<0.5	<0.5	NA	NA
System Influent:	ppmv as gasoline	<15	<15	93	NA	NA
	mg/m3 as gasoline	<60	<60	340	NA	NA
	ppmv as benzene	<0.1	<0.1	1	NA	NA
	mg/m3 as benzene	<0.5	<0.5	3.3	NA	NA
System Effluent:	ppmv as gasoline	<15	<15	<15	NA	NA
	mg/m3 as gasoline	<60	<60	<60	NA	NA
	ppmv as benzene	<0.1	<0.1	<0.1	NA	NA
	mg/m3 as benzene	<0.5	<0.5	<0.5	NA	NA
Average On-site Well Field Flow Rate (4), scfm (5):		74.5	79.6	83.5	0.0	0.0
Average Off-site Well Field Flow Rate (4), scfm:		37.1	33.6	34.2	0.0	0.0
Average System Influent Flow Rate (4), scfm:		111.6	113.3	117.7	0.0	0.0
Total Process Flow Rate (4), scfm:		500.0	500.0	500.0	0.0	0.0
Average Destruction Efficiency (6), percent (7):		NA	NA	82.4 (16)	NA	NA
Average Emission Rates (8), pounds per day (9)						
Gasoline:		0.60	0.61	0.63	NA	NA
Benzene:		0.01	0.01	0.01	NA	NA
Operating Hours This Period:		720.0	447.9	428.8	0.0	0.0
Operating Hours To Date:		2885.9	3333.8	3762.6	3762.6	3762.6
Pounds/ Hour Removal Rate, as gasoline (10):		0.025	0.025	0.154	0.000	0.000
Pounds Removed This Period, as gasoline (11):		18.04	11.40	66.11	0.00	0.00
Pounds Removed To Date, as gasoline:		7710.4	7721.8	7787.9	7787.9	7787.9
Gallons Removed This Period, as gasoline (12):		2.91	1.84	10.66	0.00	0.00
Gallons Removed To Date, as gasoline:		1243.7	1245.5	1256.2	1256.2	1256.2

Table 7
Soil-Vapor Extraction System
Operation and Performance Data

Location: 10600 and 10700 MacArthur Boulevard Oakland, California	Vapor Treatment Unit: Anguil Energy Systems Remedi-Cat, 500cfm Catalytic Oxidizer
Consultant: EMCON 1921 Ringwood Avenue San Jose, California	Start-Up Date: 09-06-90 Reporting Period From: 09-06-90 To: 01-01-96

CURRENT REPORTING PERIOD:	10-01-95	to	01-01-96
DAYS / HOURS IN PERIOD:	92.0	2208.0	
DAYS / HOURS OF OPERATION:	0.0	0.0	
DAYS / HOURS OF DOWN TIME:	92.0	2208.0	
PERCENT OPERATIONAL:		0.0 %	
PERIOD POUNDS REMOVED:	0.0		
PERIOD GALLONS REMOVED:	0.0		
AVERAGE SYSTEM INFLUENT FLOW RATE (scfm):		0.0	

1. Average concentrations are based on discrete sample results reported during the month, refer to Appendix C for discrete sample results.
2. ppmv, parts per million by volume
3. mg/m3: milligrams per cubic meter
4. Average flow rates (time weighted average) are based on instantaneous flow rates recorded during the month, refer to Appendix C for instantaneous flow data.
5. scfm, flow in standard cubic feet per minute at one atmosphere and 70 degrees Fahrenheit
6. Average destruction efficiencies are calculated using monthly average concentrations; refer to Appendix C for instantaneous destruction efficiency data.
7. destruction efficiency, percent = ([system influent concentration (as gasoline in mg/m3) - system effluent concentration (as gasoline in mg/m3)] / system influent concentration (as gasoline in mg/m3)) x 100 percent
8. Average emission rates are calculated using monthly average concentrations and flow rates; refer to Appendix C for instantaneous emission rate data.
9. emission rates (pounds per day) = system effluent concentration (as gasoline or benzene in mg/m3) x system influent flow rate (scfm) x 0.02832 m3/ft3 x 1440 minutes/day x 1 pound/454,000 mg
10. pounds/ hour removal rate (as gasoline) = well field influent concentration (as gasoline in mg/m3) x well field influent flow rate (scfm) x 0.02832 m3/ft3 x 60 minutes/hour x 1 pound/454,000 mg
11. pounds removed this period (as gasoline) = pounds/ hour removal rate x hours of operation
12. Pounds removed data for the period from September 6, 1990 through December 22, 1994, were reported by EVAX, PEG, and RESNA. Please refer to *Fourth Quarter 1994 Groundwater Monitoring Results and Remediation System Performance Evaluation Report, EMCON March 1995,* for additioanl data for system operation before December 1994.
13. gallons removed this period (as gasoline) = pounds removed this period (as gasoline) x 0.1613 gallons/pound of gasoline
14. The existing catalytic oxidation unit was used as the off-gas abatement device for the site, with the exception of the period from September 6, 1990 to March 21, 1991, when EVAX used an internal combustion engine as the abatement device
15. NA: not analyzed, not available, or not applicable
16. Although the destruction efficiency appeared to be less than 90 percent, laboratory analytical results collected during this period indicate the effluent TVHG and benzene concentrations in off-gas discharged to the atmosphere were below laboratory detection limits, indicating compliance with BAAQMD discharge requirements.