Texaco Refining and Marketing Inc
10 Universal City Plaza
Universal City CA 91608

STID 1039

September 25, 1992

Mr. Scott Seery
Alameda County Environmental
Health Department
80 Swan Way, Room 200
Oakland, CA 94621

Dear Mr. Seery:

Enclosed is a copy of our Quarterly Technical Report dated September 10, 1992, for the currently operating Exxon service station located at 2225 Telegraph Avenue in Oakland, California. This was a former Texaco service station facility. The report covers the second quarter of 1992.

Please call me at (818) 505-2476 if you have any questions or wish to discuss the report further.

Very truly yours,

R Robles

Bob Robles
Texaco Refining and Marketing Inc.

RR:rr

Enclosure

cc: Mr. Rich Hiett
California Regional Water
Quality Control Board
San Francisco Bay Region
2101 Webster Street, Ste. 500
Oakland, Ca 94612

RRZielinski-Richmond

pr

A Report Prepared for

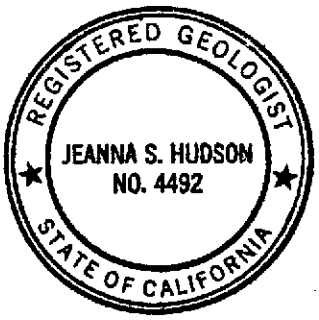
Texaco Refining and Marketing Inc.
10 Universal City Plaza
Universal City, California 91608

QUARTERLY TECHNICAL REPORT
SECOND QUARTER OF 1992
EXXON STATION
2225 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

HLA Job No. 10258.162
September 10, 1992
1992 Report No. 2

by

Jeanna S. Hudson
Registered Geologist



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INTRODUCTION

This quarterly technical report (QTR) presents the results of site investigation and remediation activities conducted by Harding Lawson Associates (HLA) at a service station site currently owned and operated by Exxon Company U.S.A. (Exxon). The station, at 2225 Telegraph Avenue, Oakland, California (Plate 1), was formerly owned by Texaco Refining and Marketing Inc. This QTR summarizes HLA's work at the site, ongoing since May 1988, and presents results of the recent quarter's work.

SITE DESCRIPTION

The site is on the southwest corner of the intersection of Telegraph and West Grand Avenues (Plate 2). The surrounding area is primarily commercial; nearby businesses include a Chevron service station immediately across Telegraph Avenue and an abandoned Beacon service station northeast of the site. Adjacent to the site on the south is the First Baptist Church of Oakland. An apartment building, currently occupied, is immediately west of the site.

Surface elevation at the site is approximately 15 feet above Mean Sea Level. The land surface slopes gently southeast, toward Lake Merritt and the Oakland/Alameda Inner Harbor, an area of former tidal flats that has been filled. This area has been extensively developed, and surface runoff is controlled mainly by the municipal storm sewer system.

As shown on Plate 3, structures at the service station include a building, three fuel pump islands, one underground waste oil tank, and three underground fuel storage tanks. Unleaded gasoline is dispensed from these tanks, and automotive repair services are provided. Leaded gasoline was sold at the site in the past.

HYDROGEOLOGIC SETTING

The East Bay Plain has been divided into seven groundwater subareas, defined by the California Department of Water Resources (DWR) on the basis of hydrologic and geologic conditions. This site lies within the Oakland Upland and Alluvial Plain subarea. Most groundwater used in the East Bay Plain is for agricultural or industrial purposes. The majority of domestic water is supplied by the East Bay Municipal Utility District (EBMUD) from surface sources.

Local groundwater aquifers are primarily within the Alameda and Temescal Formations; these formations have an aggregate thickness of more than 1,100 feet. The Temescal Formation, an alluvial fan deposit, is present at the surface locally. Approximately 1,000 feet west of the site is an outcrop of the Merritt Sand. Direction of regional groundwater flow is south-southwest, toward San Francisco Bay.

Subsurface materials at the site, to the maximum explored depth of 21 feet, generally consist of stiff, silty clay, ranging

in thickness from 8 to 12 feet, underlain by a dense layer of silty sand that ranges from 3 to 8 feet in thickness. According to slug test results, the hydraulic conductivity of the shallow, saturated sand aquifer beneath the site ranges from 1.2 to 5.9 feet per day (Table 1).

Static groundwater levels are encountered at approximately 13 feet below grade; water level measurements and survey data are presented in Table 2. The estimated direction of the groundwater gradient is to the south, as shown on Plate 4.

SUMMARY OF PREVIOUS INVESTIGATIONS

Previous Reports

Since May 1988, HLA has investigated soil and groundwater conditions at this site. Through the first quarter of 1992, results of the investigation and remediation have been presented in the following reports:

- Sensitive Receptor Study — May 24, 1988
- Subsurface Investigation — July 20, 1988
- Environmental Assessment — June 22, 1989
- Groundwater Remediation Plan — November 30, 1989
- Quarterly Technical Reports

Field Investigation

Soil boring, monitoring well, vapor extraction well, and soil gas survey locations are shown on Plate 3. Because of

restricted subsurface access on Telegraph and West Grand Avenues, no off-site exploration was conducted north or east of the site. These restrictions were imposed by the City of Oakland and the Bay Area Rapid Transit District (BART), whose tunnel is in this area (Plate 2).

Between May 1988 and March 1992, the following tasks were completed as part of HLA's investigation of the site:

- Conducted a soil gas survey on site and in city streets near the site. Soil gas survey results are presented in Table 3.
- Drilled and sampled seven shallow soil borings (B-1 through B-7); B-3 was later completed as recovery well RW-1.
- Drilled, constructed, developed, and sampled six on-site monitoring wells (MW-6A through MW-6F) and three off-site wells (MW-6G through MW-6I). Two of these wells, MW-6C and MW-6D, were subsequently completed as groundwater extraction wells.
- Ordered chemical analyses on soil and water samples to determine concentrations of petroleum hydrocarbons; results of soil and water analyses are presented in Tables 4 and 5, respectively.
- Conducted slug tests in MW-6D, MW-6E, and MW-6H to estimate hydraulic conductivity and transmissivity values for the shallow aquifer; slug test results are presented in Table 1.
- Observed tank, line, and dispenser removal and replacement operations conducted by Exxon in the fourth quarter of 1991. Product dispensers, three underground gasoline storage tanks, and one waste oil tank were removed, as well as associated piping. HLA collected and analyzed soil samples from underneath dispensers; results of the analyses are included in Table 4.

Vadose Zone Soil Condition

Petroleum hydrocarbons have been found in shallow vadose zone soils, primarily around the fuel dispenser island adjacent to Grand Avenue. However, the fuel constituents benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH) as gasoline have also been detected in soils from 12 to 13.5 feet below the ground surface; this depth is within the capillary fringe zone. TPH as gasoline concentrations exceeded 100 parts per million (ppm) in some of the soil samples from the capillary fringe (Table 4).

Groundwater Condition

Free floating product (gasoline) was observed on the groundwater in two recovery wells. As shown on Plates 5 and 6, hydrocarbon-bearing groundwater is present in the vicinity of the underground tanks and fuel dispenser islands.

Groundwater analyses indicate that groundwater has contained concentrations of TPH as gasoline in excess of 10,000 parts per billion (ppb). As of June 1992, the lateral limits of the plume are delineated by MW-6F, MW-6G, and MW-6I; samples from these wells show no detectable hydrocarbons (detection limit for TPH = 50 ppb). Plume definition to the north and east is incomplete because of the restricted subsurface access imposed by the City of Oakland and BART.

Free product was discovered in RW-1 during early 1991, and in RW-2 during August 1991. The gasoline in RW-2 had a much fresher appearance than the gasoline product recovered from RW-1.

Free product was bailed from RW-1 and RW-2 on a frequent schedule during 1991; approximately 47 gallons were recovered from RW-1 and 13 gallons were recovered from RW-2 during that period (Table 6).

SUMMARY OF REMEDIAL ACTIVITIES

The following tasks were completed during installation and operation of the remedial system:

- Redrilled two monitoring wells and converted them to recovery wells (RW-2 and RW-3 replaced MW-6D and MW-6C, respectively). Drilled and installed RW-1 in the location of B-3 (Plate 3).
- Installed groundwater extraction and collection system.
- Fabricated and installed skid-mounted groundwater treatment system.
- Obtained a Wastewater Discharge Permit from the EBMUD to discharge treated effluent water directly to the sanitary sewer.
- Extracted, treated, and discharged approximately 307,000 gallons of groundwater between the fourth quarter 1990 and the end of the first quarter 1992.
- Sampled water from influent, effluent, and midstream in accordance with permit requirements.
- Decommissioned recovery well RW-3 prior to Exxon's excavation of fuel tanks.
- Installed two vapor extraction wells in the backfill of the new tank field during Exxon's retrofit operations.

WORK PERFORMED DURING THE SECOND QUARTER OF 1992

- Extracted, treated, and discharged approximately 57,000 gallons of groundwater to the sanitary sewer (364,000 gallons cumulative since start-up).
- Sampled water from influent, effluent, and midstream for carbon breakthrough and performed chemical analyses as specified in EBMUD Wastewater Discharge Permit No. 001-00007 (Table 7).
- Prepared and submitted EBMUD status reports as required by the EBMUD Wastewater Discharge Permit.
- Measured water levels in monitoring wells and recovery wells, and updated the potentiometric map accordingly (Table 2 and Plate 4).
- Conducted quarterly groundwater sampling in six monitoring wells and three recovery wells. Results of chemical analyses are summarized in Table 5 and laboratory reports are attached in Appendix A.
- Measured free product thickness in recovery wells RW-1 and RW-2 (Table 6).
- Decommissioned monitoring well MW-6A, which had been damaged during retrofit operations at the station during the fourth quarter 1991.
- Installed a groundwater recovery well (RW-3A) as a replacement well for RW-3, which was decommissioned in the fourth quarter 1991 prior to retrofit operations at the station.
- Installed VW-3, a vapor extraction well, near the product dispenser island adjacent to West Grand Avenue.
- Conducted a soil vapor extraction pilot test and issued a report to Texaco summarizing the results of the test.

During the second quarter 1992, approximately 57,000 gallons of groundwater were extracted and treated prior to discharge. Water samples were collected from sampling ports in the groundwater treatment system to check for potential breakthrough of hydrocarbons downstream of the first two carbon cannisters.

In addition, influent and effluent samples were collected on a monthly basis and analyzed for BTEX and TPH as gasoline. Analytical results from the samples taken during the second quarter are presented in Table 7. A quarterly status report was submitted to EBMUD, in compliance with the Wastewater Discharge Permit.

On June 4, 1992, a discharge line leading from the treatment system to the sanitary sewer was found to be obstructed. The treatment system was temporarily shut down. Texaco requested that HLA cease operation of the system while they evaluate the effectiveness of groundwater remediation at the site. The system will remain nonoperational for an indefinite period of time, until HLA receives authorization from Texaco to resume system operation.

Quarterly Groundwater Monitoring

Water levels were measured in monitoring wells and recovery wells on June 16, 1992. The water level data are presented on Plate 4, a contour map of the potentiometric surface.

Groundwater samples were collected from six monitoring wells and three recovery wells during the second quarter. Samples were analyzed for BTEX and TPH as gasoline. Results of those analyses are presented in Table 5, and the distribution of hydrocarbons in the groundwater is presented on Plates 5 and 6. Free product thickness was checked in RW-1 and RW-2 three times during April

1992; RW-1 contained no measurable free product, and 0.07 foot was the maximum thickness measured in RW-2 (Table 6).

Well Destruction and Well Installation Activities

Well MW-6A, which was damaged during retrofit operations, was decommissioned during the second quarter of 1992. The Alameda County Flood Control District, Zone 7 issued Permit No. 92186 for the destruction of the well. The well was overdrilled to 21 feet using a 12-inch-diameter hollow-stem auger, and the casing was removed from the well intact. The boring was then backfilled with bentonite-cement grout from total depth to the ground surface using the tremie method.

Well RW-3A was installed, to a depth of 21.5 feet, as a replacement well for RW-3. RW-3 was decommissioned prior to retrofit operations at the station in the fourth quarter of 1991. Vapor extraction well VW-3 is 13.5 feet deep and was installed near the dispenser island adjacent to West Grand Avenue. Both wells were drilled using a 12-inch-diameter hollow-stem auger. Soil samples were collected by driving a 2.5-inch-diameter, Sprague and Henwood (S&H), split-barrel sampler into the bottom of the boring. The sampler was lined with 6-inch-long stainless steel sampling tubes.

Several samples were collected from each boring and logged in accordance with the Unified Soil Classification System (Appendix B). Each sample was screened for volatile organic compounds, using a photoionization detector (PID); those selected

for chemical analysis were sealed, labeled, and stored in an ice chest. The samples were transported under chain-of-custody to NET Pacific, Inc., in Santa Rosa, California, where they were analyzed for BTEX and TPH as gasoline. Laboratory reports are included in Appendix A.

The wells were constructed using 4-inch-diameter, Schedule 40, flush-threaded polyvinylchloride (PVC) casing (Appendix B). Twelve feet of 0.020-inch screen was installed in the bottom of the RW-3A borehole. The annular space between the screened casing and the borehole wall was filled with No. 3 Monterey sand to approximately one foot above the top of the screened interval. A bentonite seal was placed above the sand pack, and the remainder of the annulus was filled with cement/bentonite grout. Well VW-3 was constructed with 9 feet of 0.050-inch screen over the lower part of the borehole. Sand pack material, which extends to approximately one foot above the screen, is coarse aquarium-grade sand. A bentonite seal one foot thick was placed above the sand pack, and the remainder of the boring was filled with grout.

Soil samples collected in RW-3A contained benzene and TPH as gasoline up to 0.66 ppm and 1.5 ppm, respectively. Analytical results indicate that the sample collected at a depth of 21 feet contained nondetectable concentrations of BTEX and TPH as gasoline (Table 4). Soil samples collected in VW-3 contained benzene and TPH as gasoline up to 2 ppm and 170 ppm,

respectively. The highest concentrations of hydrocarbons were in soil samples collected at depths of 11 and 12 feet.

Soil Vapor Extraction Pilot Test

The soil vapor extraction (SVE) pilot test was conducted on May 8, 1992, and HLA submitted a report titled "Pilot Soil Vapor Extraction Test" to Texaco on June 5, 1992.

The test was comprised of six individual short-term tests at three on-site SVE wells (VW-1, VW-2, and VW-3) and at three on-site groundwater extraction wells (RW-1, RW-2, and RW-3). Locations are shown on Plate 3.

Air flow rates and hydrocarbon vapor concentrations were measured at each well to assess the flow of vapors through surrounding unsaturated soil and to measure the concentration of petroleum hydrocarbon vapors extracted from the area of influence.

On the basis of the pilot test results, HLA concluded the following:

- Air samples from all six wells tested contained hydrocarbon vapors, indicating that hydrocarbons are present in soils near the extraction wells.
- Flow rates obtained during tests in Wells VW-3, RW-1, RW-2, and RW-3A indicate that these wells are not suitable as high flow vapor extraction wells. This is most likely due to the low permeability of the soil in the local area of the well.
- Wells VW-1 and VW-2 will be capable of high flow rates, but are not expected to yield significant vapor concentrations after the first couple of days of operation. The preferential flow path to these wells will come from the surface through the UST vaults rather than the surrounding formation.

- Groundwater levels rose in Wells RW-1, RW-2, and RW-3A during the test. The rise of water in the wells correlates with the higher applied vacuums near the end of each test (in an attempt to increase the flow rates and the range of induced vacuum). The maximum vacuums that can be applied to these wells without a significant rise in the water levels range from 80 to 100 inches of water. This effect could be offset somewhat by groundwater extraction to depress the water table, thus allowing the application of higher vacuums without drawing water.

WORK PLANNED FOR THE THIRD QUARTER OF 1992

HLA is not presently contracted to perform any activities at the site during the third quarter of 1992.

LIST OF TABLES

LIST OF ILLUSTRATIONS

LIST OF APPENDICES

Table 1. Slug Test Results
2225 Telegraph Avenue
Oakland, California

Well Number	Most Permeable Stratum Adjacent to Well Screen			Estimated Hydraulic Conductivity (feet/day)
	Lithology	Classification	Thickness (feet)	
MW-6D	sand	confined	2	5.9
MW-6E	sand, fine-grained	confined	2.5	1.2
MW-6H	sand, medium-grained	unconfined	6	4.8

Table 2. Water Level Measurements and Survey Data
2225 Telegraph Avenue
Oakland, California

Well No.	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation[2] (feet)
MW-6A	12/15/88	98.99[1]	13.77	85.22
	10/03/89		13.40	85.59
	05/11/90		12.87	86.12
	10/16/90		13.27	85.72
	12/06/90		13.28	85.71
	01/14/91		--	--
	02/08/91		12.49	86.50
	04/02/91		--	--
	05/07/91		11.94	87.05
	05/31/91		Blocked	--
	06/26/91		12.87	86.12
	08/05/91		13.44	85.55
	08/14/91		13.47	85.52
	09/11/91		13.48	85.51
	10/16/91		13.64	85.35
	12/30/91		Damaged	--
	02/25/92		Damaged	--
	03/25/92		Damaged	--
	05/05/92	Well Decommissioned		
MW-6B	12/15/88	98.81	13.01	85.80
	10/03/89		12.94	85.87
	04/30/90		12.53	86.28
	10/16/90		12.73	86.08
	12/06/90		12.74	86.07
	01/14/91		12.57	86.24
	02/08/91		12.16	86.65
	04/02/91		11.50	87.31
	05/07/91		12.02	86.79
	05/31/91		12.40	86.41
	06/26/91		12.69	86.12
	08/05/91		12.95	85.86
	08/14/91		12.93	85.88
	09/11/91		13.01	85.80
	10/16/91		13.09	85.72
	12/30/91		12.62	86.19
	02/25/92		11.81	87.00
	03/25/92		11.58	87.23
	06/16/92	15.34[4]	12.54	2.80

Table 2. (continued)

Well No.	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation[2] (feet)
MW-6C	12/15/88	99.89[1]	14.41	85.48
	10/03/89		14.10	85.79
	04/30/90		13.81	86.68
(RW-3)	10/16/90	98.97[3]	13.29	85.68
	01/14/91		14.50	84.47
	02/08/91		12.54	86.43
	04/02/91		11.39	87.58
	05/07/91		12.47	86.50
	05/31/91		16.31	82.66
	06/26/91		15.50	83.47
	08/05/91		13.69	85.28
	08/13/91		13.67	85.30
	09/11/91		13.77	85.20
	10/16/91		16.66	82.31
	11/05/91	Well decommissioned	--	--
RW-3A	06/16/92	15.91[4]	13.38	2.53
MW-6D	12/15/88	98.78[1]	13.53	85.25
	10/03/89		13.44	85.34
	04/30/90		13.19	85.59
(RW-2)	10/16/90	98.11[3]	12.77	85.34
	01/14/91		--	--
	02/08/91		13.11	85.00
	04/02/91		11.70	86.41
	05/07/91		14.09	84.02
	05/31/91		16.01	82.10
	06/26/91		14.60	83.51
	08/05/91		14.00	84.11
	08/13/91		21.30	76.81
	09/11/91		19.97	78.14
	10/16/91		15.19	82.92
	12/30/91		13.19	84.92
	02/25/92		16.27	81.84
	03/25/92		--	--
	06/16/92	14.61[4]	12.86	1.75

Table 2. (continued)

Well No.	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation[2] (feet)
MW-6E	12/15/88	98.99[1]	13.84	85.15
	10/03/89		13.70	85.29
	04/30/90		13.43	85.56
	10/16/90		13.77	85.22
	12/06/90		13.95	85.04
	01/14/91		13.95	85.04
	02/08/91		13.20	85.79
	04/02/91		12.28	86.71
	05/07/91		13.48	85.51
	05/31/91		14.09	84.90
	06/26/91		12.54	86.45
	08/05/91		14.39	84.60
	08/14/91		14.18	84.81
	09/11/91		14.73	84.26
	10/16/91		14.40	84.59
	12/30/91		13.39	85.60
	02/25/92		13.16	85.83
	03/25/92		12.15	86.84
	06/16/92	15.23[4]	13.54	1.69
MW-6F	12/15/88	99.91[1]	14.73	85.18
	10/03/89		14.48	85.43
	04/30/90		14.14	85.77
	10/16/90		14.77	85.14
	12/06/90		14.81	85.10
	01/14/91		14.73	85.18
	02/08/91		13.73	86.18
	04/02/91		12.38	87.53
	05/07/91		13.67	86.24
	05/31/91		14.43	85.48
	06/26/91		14.81	85.10
	08/05/91		14.96	84.95
	08/14/91		14.87	85.04
	09/11/91		15.11	84.80
	10/16/91		15.16	84.75
	12/30/91		13.78	86.13
	02/25/92		12.68	87.23
	03/25/92		11.93	87.98
	06/16/92	16.46[4]	14.34	2.12

Table 2. (continued)

Well No.	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation[2] (feet)
MW-6G	12/15/88	99.16[1]	12.39	86.77
	10/03/89		12.22	86.94
	04/30/90		11.73	87.43
	10/16/90		12.28	86.88
	12/06/90		12.27	86.89
	01/14/91		12.14	87.02
	02/08/91		11.44	87.72
	04/02/91		10.03	89.13
	05/07/91		11.00	88.16
	05/31/91		11.75	87.41
	06/26/91		12.91	86.25
	08/05/91		12.43	86.73
	08/14/91		12.43	86.73
	09/11/91		12.48	86.68
	10/16/91		12.64	86.52
	12/30/91		11.80	87.36
	02/25/92		10.32	88.84
	03/25/92		9.93	89.23
	06/16/92	14.71[4]	11.88	2.83
MW-6H	12/15/88	97.93[1]	12.39	85.54
	10/03/89		12.36	85.57
	04/30/90		12.10	85.83
	10/16/90		12.18	85.75
	12/06/90		12.29	85.64
	01/14/91		12.22	85.71
	02/08/91		11.93	86.00
	04/02/91		11.59	86.34
	05/07/91		12.24	85.69
	05/31/91		12.22	85.71
	06/26/91		14.34	83.59
	08/05/91		12.62	85.31
	08/14/91		12.43	85.50
	09/11/91		12.83	85.10
	10/16/91		12.71	85.22
	12/30/91		12.16	85.77
	02/25/92		12.17	85.76
	03/25/92		11.65	86.28
	06/16/92	14.47[4]	12.12	2.35

Table 2. (continued)

Well No.	Date	Top of Casing Elevation (feet)	Depth to Groundwater (feet)	Groundwater Surface Elevation[2] (feet)
MW-6I	12/15/88	97.60[1]	12.82	84.78
	10/03/89		12.83	84.77
	04/30/90		12.66	84.94
	10/16/90		12.71	84.89
	12/06/90		12.75	84.85
	01/14/91		12.55	85.05
	02/08/91		12.32	85.28
	04/02/91		12.22	85.38
	05/07/91		12.61	84.99
	05/31/91		12.82	84.78
	06/26/91		12.93	84.67
	08/05/91		13.01	84.59
	08/14/91		12.98	84.62
	09/11/91		13.11	84.49
	10/16/91		13.04	84.56
	12/30/91		12.72	84.88
	02/25/92		12.45	85.15
	03/25/92		12.12	85.48
	06/16/92	14.14[4]	12.75	1.39
RW-1	10/16/90	97.89[1]	12.24	85.65
	01/14/91		12.80	85.09
	02/08/91		12.53	85.36
	04/02/91		--	--
	05/07/91		--	--
	05/31/91		12.86	85.03
	08/05/91		13.19	84.70
	08/13/91		14.05	83.84
	09/11/91		15.96	81.93
	10/16/91		16.00	81.89
	12/30/91		12.65	85.24
	02/25/92		14.40	83.49
	03/25/92		--	--
	06/16/92	14.42[4]	12.37	2.05

Notes:

1 Elevation relative to HLA temporary benchmark located at the western end of the dispenser island nearest West Grand Avenue, with an arbitrary elevation of 100.0 feet.

2 Groundwater surface elevation = top of casing elevation - depth to water

3 Top of casing elevation changed when monitoring wells were converted into recovery wells.

4 Top of casing resurveyed relative to Mean Sea Level.

-- Water levels not measured/values not applicable.

Table 3. Results of Soil Gas Survey
2225 Telegraph Avenue
Oakland, California

Conducted on September 19, 1988
(Concentrations in micrograms per liter)

Sample	Depth (feet)	Benzene	Ethyl-benzene	Toluene	Xylenes	Total Petroleum Hydrocarbons
Air	N/A	<0.7	<0.8	<0.8	<0.8	<0.7
SG-01	--	--	--	--	--	--
SG-02	5.0	<0.7	<0.8	<0.8	<0.8	<0.7
SG-03	12.0	10	4	<0.8	2,800	6,100
SG-04	13.0	<0.7	<0.8	<0.8	140	780
WS-05*	12.0	<75	<76	<77	<77	<75
SG-06	13.0	<0.7	<0.8	<0.8	<0.8	<0.7
SG-07	--	--	--	--	--	--
Air	N/A	<0.7	<0.8	<0.8	<0.8	<0.7

-- - Not able to obtain sample
N/A - Not applicable
Air - Ambient air sample
* - WS-05 was a sample of groundwater

Table 4. Results of Soil Chemical Analyses
2225 Telegraph Avenue
Oakland, California

(Concentrations in milligrams per kilogram)

Sample Number	Depth (feet)	1 Benzene	Ethyl- 2 benzene	3 Toluene	3 Xylenes	TPH as 4 Gasoline
B-1	8.0	0.05	ND	ND	ND	ND
B-1	13.0	ND (5)	10	16	41	2,000
B-2	7.0	ND	ND	ND	ND	ND
B-2	13.5	ND	ND	ND	ND	ND
B-3	7.0	0.06	ND	ND	ND	ND
B-3	13.5	40	84	390	370	11,000
B-4	13.5	ND	ND	ND	ND	ND
B-5	5.5	ND	ND	ND	ND	ND
B-5	9.5	ND	ND	ND	ND	ND
B-5	12.5	ND	ND	ND	ND	ND
B-6	6.0	ND	ND	ND	ND	ND
B-6	9.5	ND	ND	ND	ND	ND
B-6	12.0	40	40	110	450	3,000
B-7	6.0	0.64	0.4	0.9	3.4	24
B-7	9.5	0.5	ND	0.7	1.0	ND
B-7	12.0	20	20	72	190	1,400
MW-6E	13.0	ND	ND	ND	ND	ND
MW-6F	13.0	ND	ND	ND	ND	ND
MW-6G	13.5	ND	ND	ND	ND	5.2
MW-6H	13.5	11	8.8	3.2	19	1,000
MW-6I	13.5	ND	ND	ND	ND	ND
RW-3A	5.6	0.054	ND(.0025)	ND(.0025)	ND(.0025)	ND(1)
RW-3A	10.5	0.066	0.045	0.0068	0.033	1.5
RW-3A	15.5	0.0071	ND(.0025)	ND(.0025)	ND(.0025)	ND(1)
RW-3A	21.0	ND(.0025)	ND(.0025)	ND(.0025)	ND(.0025)	ND(1)
VW-3	0.5	ND(.0025)	ND(.0025)	ND(.0025)	0.0027	ND(1)
VW-3	5.5	0.220	0.610	0.930	0.051	80
VW-3	9.5	0.460	0.120	0.450	0.480	9.9
VW-3	11.0	2.0	2.5	4.4	10.0	110
VW-3	12.0	0.920	2.4	2.8	9.5	170

Table 4. (continued)

Concentrations in milligrams per kilogram (mg/kg)

Sample Number	Depth (feet)	1 Benzene	Ethyl- 2 benzene	3 Toluene	3 Xylenes	TPH as 4 Gasoline
AB-1	8	1.9	1.0	3.4	4.2	65
AB-2	surface	ND(.0025)	14	43	140	7,200
AB-2	2	0.83	0.76	2.1	4.0	78
AB-3	2	ND(.0025)	ND(.0025)	ND(.0025)	18	540
AB-4	6	ND(.0025)	ND(.0025)	ND(.0025)	ND(.0025)	ND(1)
AB-5	6	ND(.0025)	.021	ND(.0025)	.016	5.0
AB-6	5	ND(.0025)	ND(.0025)	ND(.0025)	ND(.0025)	ND(1)

ND = Not detected.

1 Detection limit 0.05 mg/kg except as noted in parentheses.
2 Detection limit 0.2 mg/kg except as noted in parentheses.
3 Detection limit 0.1 mg/kg except as noted in parentheses.
4 Detection limit 10 mg/kg except as noted in parentheses.
AB Soil samples collected with a hand auger near fuel dispensers.

ND = Not detected

Harding Lawson Associates

Table 5. Results of Groundwater Chemical Analyses
2225 Telegraph Avenue
Oakland, California
(Concentrations in micrograms per liter)

EPA TEST METHOD 602

Well Number	Date Sampled	Benzene	Ethyl benzene	Toluene	Xylenes	TPH (as gasoline)	Total Oil and Grease
MW-6A	06/24/88	ND	ND	ND	ND	NA	NA
	10/20/88	1	ND	ND	ND	NA	NA
	09/07/89	2	ND	ND	ND	ND	NA
	05/11/90	150	ND (0.25)	6.2	13	ND (500)	NA
	05/07/91	700	67	64	74	2,700	NA
	08/14/91	3.6	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	12/31/91	Well damaged, no sample					
	03/25/92	Well damaged, no sample					
	05/05/92	Well decommissioned					
MW-6B	06/24/88	ND	ND	ND	5	NA	NA
	10/20/88	4	ND	3	ND	NA	NA
	09/07/89	70	60	8	160	2,700	NA
	04/30/90	45	20	6	22	168	NA
	05/07/91	240	310	42	660	3,300	NA
	08/14/91	9.1	85	ND (5)	150	980	NA
	12/31/91	46	84	8.6	220	1,200	ND
	03/25/92	31	7.2	1.7	8.6	190	NA
	06/16/92	44	110	6.8	230	1,700	NA
MW-6C	06/24/88	7,400	170	7	2,300	NA	NA
	10/20/88	9,500	170	65	850	NA	NA
	09/07/89	7,900	350	430	1,100	18,000	NA
	04/30/90	6,100	1,000	1,500	2,700	30,000	NA
(RW-3)	05/07/91	4,200	220	640	670	5,800	NA
	08/14/91	2,300	49	330	360	3,800	NA
	11/05/91	Well decommissioned					
(RW-3A)	06/16/92	1,700	21	92	250	4,300	NA
MW-6D	07/11/88	220	ND (20)	27	ND (10)	NA	NA
	10/20/88	710	22	74	110	NA	NA
	09/07/89	600	58	26	31	2,200	NA
	04/30/90	800	310	150	280	3,600	NA
(RW-2)	05/07/91	3,200	150	480	780	11,000	NA
	08/14/91	NA	NA	NA	NA	NA	NA
	12/31/91	NA	NA	NA	NA	NA	NA
	03/25/92	NA	NA	NA	NA	NA	NA
	06/16/92	2,900	120	1,000	2,700	28,000	NA

Table 5. (continued)

Well Number	Date Sampled	Benzene	Ethyl benzene	Toluene	Xylenes	TPH (as gasoline)	Total Oil and Grease
MW-6E	10/20/88	1	ND	ND	3	NA	NA
	09/07/89	3	ND	ND	ND	220	NA
	04/30/90	57	ND (5)	ND (5)	53	250	NA
	05/07/91	32	2.2	1.0	1.4	160	NA
	08/14/91	0.9	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	12/31/91	3.1	ND (0.5)	ND (0.5)	ND (0.5)	90	ND
	03/25/92	41	3.8	1.0	16	830	NA
	06/16/92	300	68	23	510	3,400	NA
MW-6F	10/25/88	ND	ND	ND	2		
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	08/14/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	12/31/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND
	03/25/92	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	06/16/92	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
MW-6G	12/07/88	ND	ND	ND	ND	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	08/14/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	12/31/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND
	03/25/92	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	06/16/92	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
MW-6H	12/07/88	1,200	110	320	220	NA	NA
	09/07/89	480	16	ND (10)	ND (15)	660	NA
	04/30/90	700	31	39	50	630	NA
	05/07/91	95	15	14	21	570	NA
	08/14/91	52	11	9.9	18	540	NA
	12/31/91	52	22	28	42	790	ND
	03/25/92	170	25	52	54	920	NA
	06/16/92	31	6.8	11	16	460	NA
MW-6I	12/07/88	ND	ND	ND	ND	NA	NA
	09/07/89	ND	ND	ND	ND	ND	NA
	04/30/90	ND	ND	ND	ND	ND	NA
	05/07/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	08/14/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	12/31/91	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	ND
	03/25/92	ND	ND (0.5)	ND (0.5)	ND (0.5)	ND	NA
	06/16/92	ND	ND (0.5)	ND (0.5)	ND	ND	NA

D.L. = Detection limits
ND = Concentrations below detection limits; detection limits in parentheses if other than those listed above.
NA = Not Analyzed

Table 5. (continued)

Well Number	Date Sampled	Benzene	Ethyl benzene	Toluene	Xylenes	TPH (as gasoline)	Total Oil and Grease
RW-1	06/16/92	620	240	1,400	1,400	6,200	NA
	D.L.	0.5	2	1	1	50	5,000

D.L. = Detection limits
ND = Concentrations below detection limits; detection limits in parentheses if other than those listed above.
NA = Not Analyzed

Table 6. Free Product Thickness in Groundwater Extraction Wells and Recovered Volumes

Date	Free Product Thickness in RW-1 (feet)*	Approximate Volume Recovered from RW-1 (gallons)**	Free Product Thickness in RW-2 (feet)*	Approximate Volume Recovered from RW-2 (gallons)**
1st QTR 1991 Cumulative	0.30 - 2.5	4.80	0	0
2nd QTR 1991 Cumulative	0.02 - 1.46	8.04	0	0
3rd QTR 1991 Cumulative	0.27-2.73	22.09	0.23-4.5	10.49
4th QTR 1991 Cumulative	0.31-2.75	12.04	0-1.33	2.35
1st QTR 1992 Cumulative	0	0	0-0.50	0.26
2nd QTR 1992				
04/02/92	0	0	0	0
04/09/92	0	0	0.07	0
04/16/92	0	0	0	0
Total volume of free product recovered to date		46.97		13.10

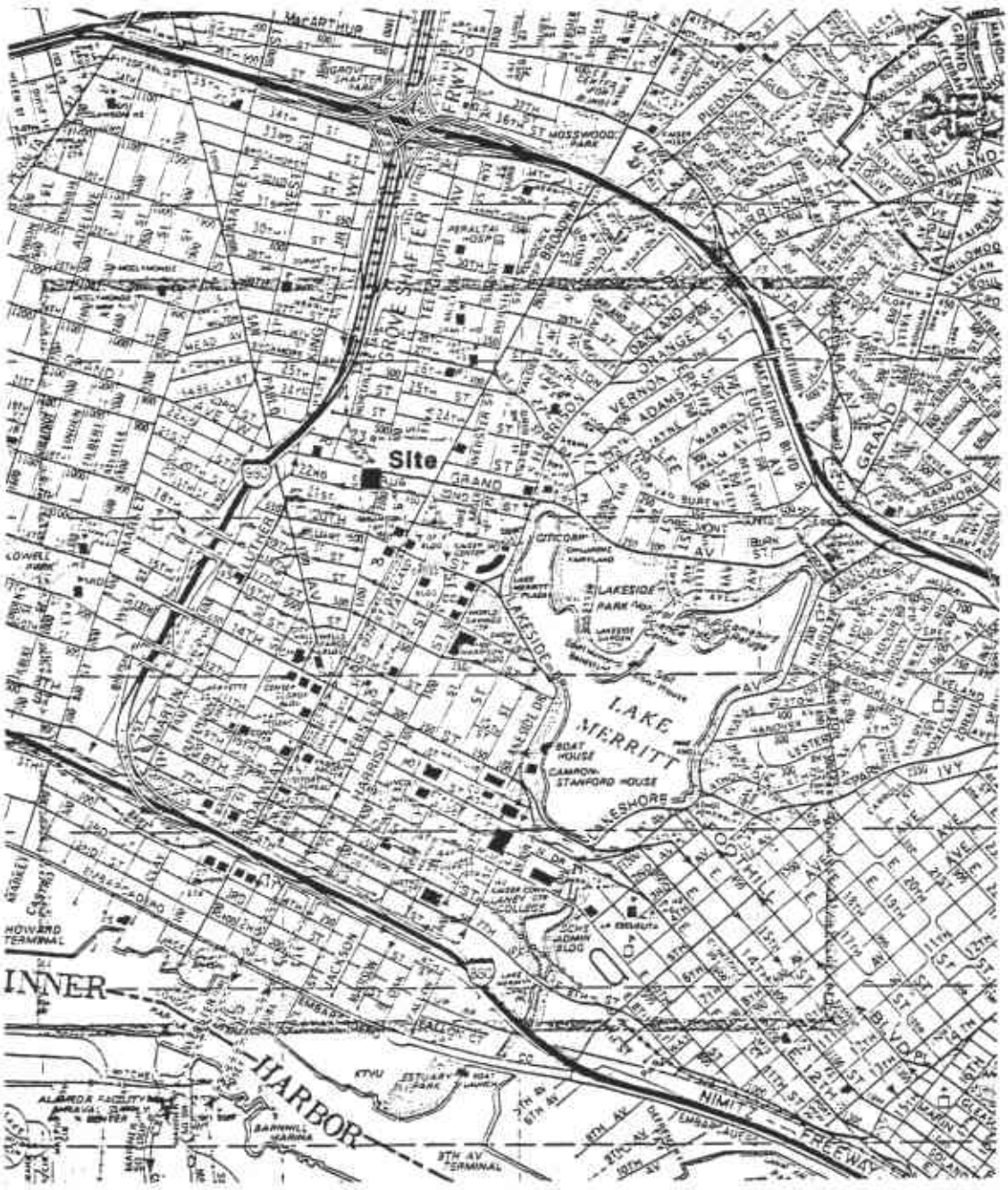
* Range of free product thickness measured during the quarter
** Free product recovered using a graduated lucite bailer

Table 7. Results of Chemical Analyses, Groundwater Treatment System
Second Quarter, 1992
2225 Telegraph Avenue, Oakland, California

Sampling Date	Sample	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	Flow Meter (gallons)
EBMUD Requirements		NS	3	31	5	42	
04/02/92	INF-26	7,200	2,000	810	110	1,200	307,090
04/02/92	EFF-26	ND	ND	ND	ND	ND	307,090
04/02/92	BT-2-40	ND	ND	ND	ND	ND	307,090
04/09/92	BT-2-41	ND	ND	ND	ND	ND	314,255
04/16/92	BT-2-42	ND	ND	ND	ND	ND	321,680
04/28/92	BT-2-43	ND	ND	ND	ND	ND	332,970
05/06/92	INF-27	9,500	2,800	1,100	77	1,000	340,770
05/06/92	EFF-27	ND	ND	ND	ND	ND	340,770
05/06/92	BT-2-44	ND	ND	ND	ND	ND	340,770
05/20/92	BT-2-45	ND	ND	ND	ND	ND	355,150
05/29/92	BT-2-46	ND	ND	ND	ND	ND	360,652
06/04/92*	INF-28	2,800	350	140	22	360	363,810
06/04/92*	EFF-28	ND	ND	ND	ND	ND	363,810
06/04/92*	BT-2-47	ND	ND	ND	ND	ND	363,810
Detection Limit		50	0.5	0.5	0.5	0.5	

ND = Concentration is below the laboratory detection limit
NS = Not specified
ppb = Parts per billion (µg/l)
TPH = Total petroleum hydrocarbons as gasoline (EPA 8015 modified)
INF = Influent
EFF = Effluent
BT-2 = Breakthrough through No. 2 carbon canister
* = Treatment system nonoperational; sewer discharge line obstructed

105649



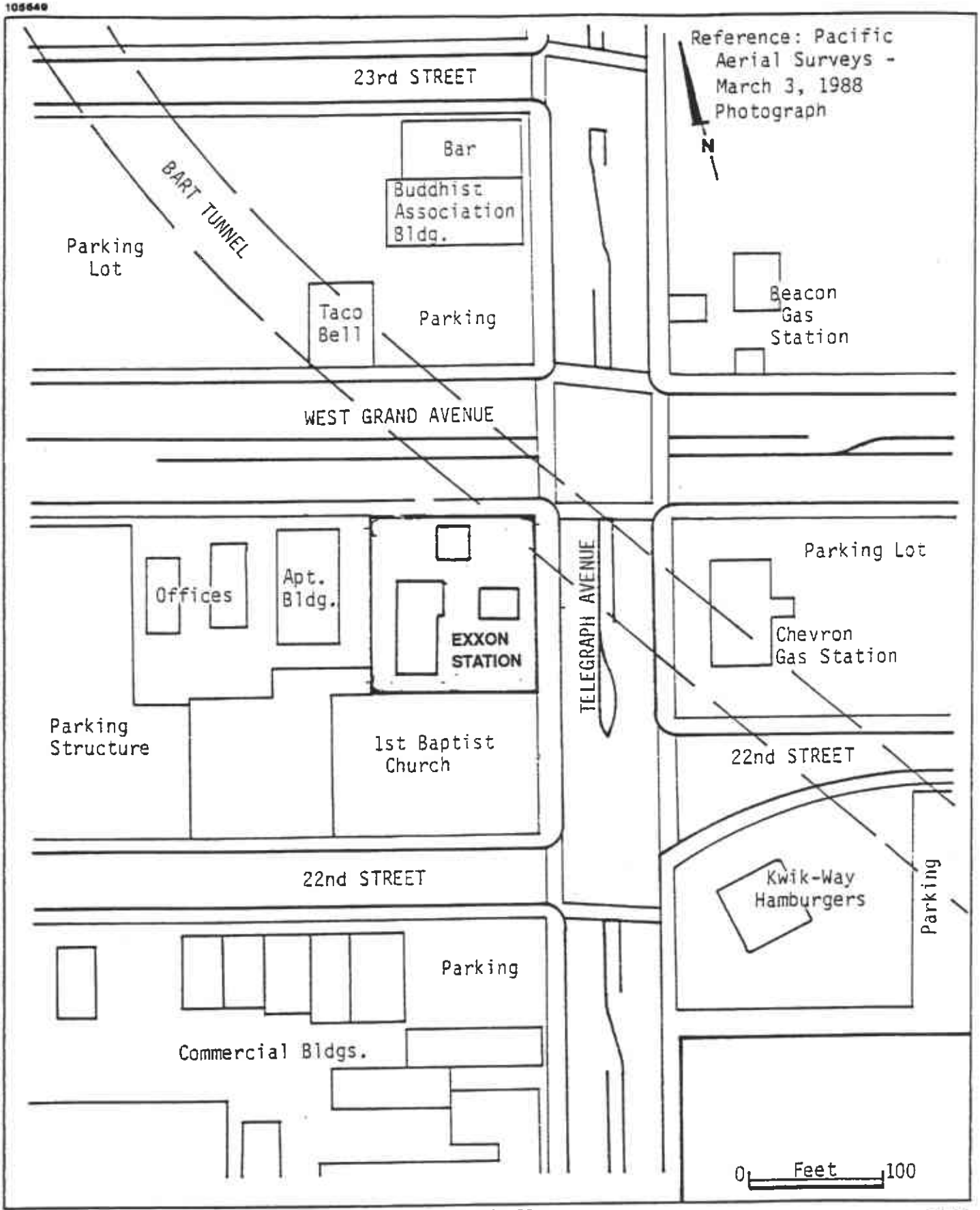
Harding Lawson Associates
Engineers and Geoscientists

Site Location Map
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE
1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	2251,162.03	JSH	05/08/92		

105649

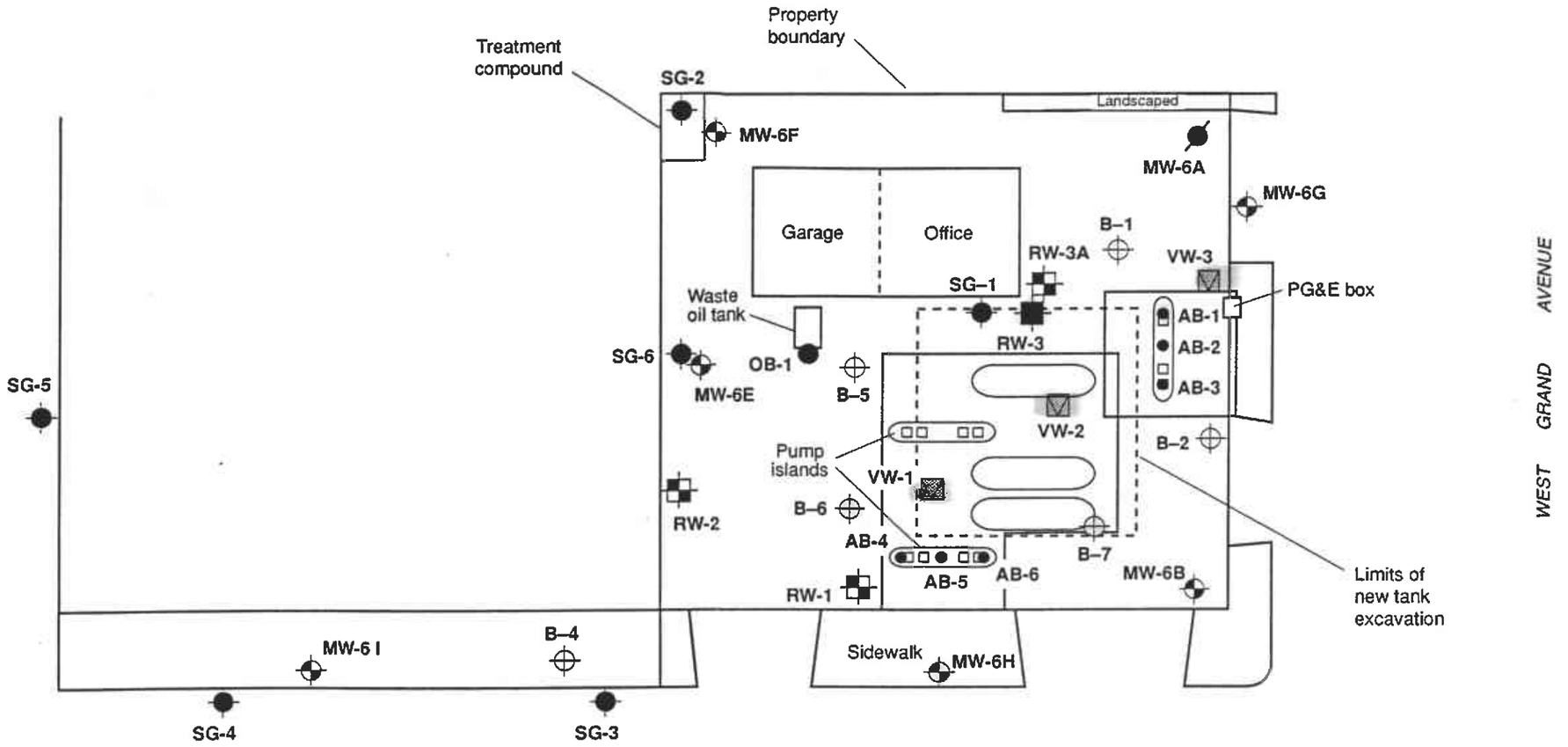


Harding Lawson Associates
Engineers and Geoscientists

Vicinity Map
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	2251.162.03	JSH	05/08/92		



= "hot" soil

EXPLANATION

- Groundwater monitoring well
- Decommissioned monitoring well
- Groundwater recovery / vapor extraction well
- Decommissioned recovery well (11/5/91)
- Soil boring location
- Soil-gas probe location
- Soil sample location, hand auger
- Decommissioned observation well
- Vapor extraction well

NOTE :
RW-1 previously B-3
RW-2 previously MW-6D
RW-3 previously MW-6C

N

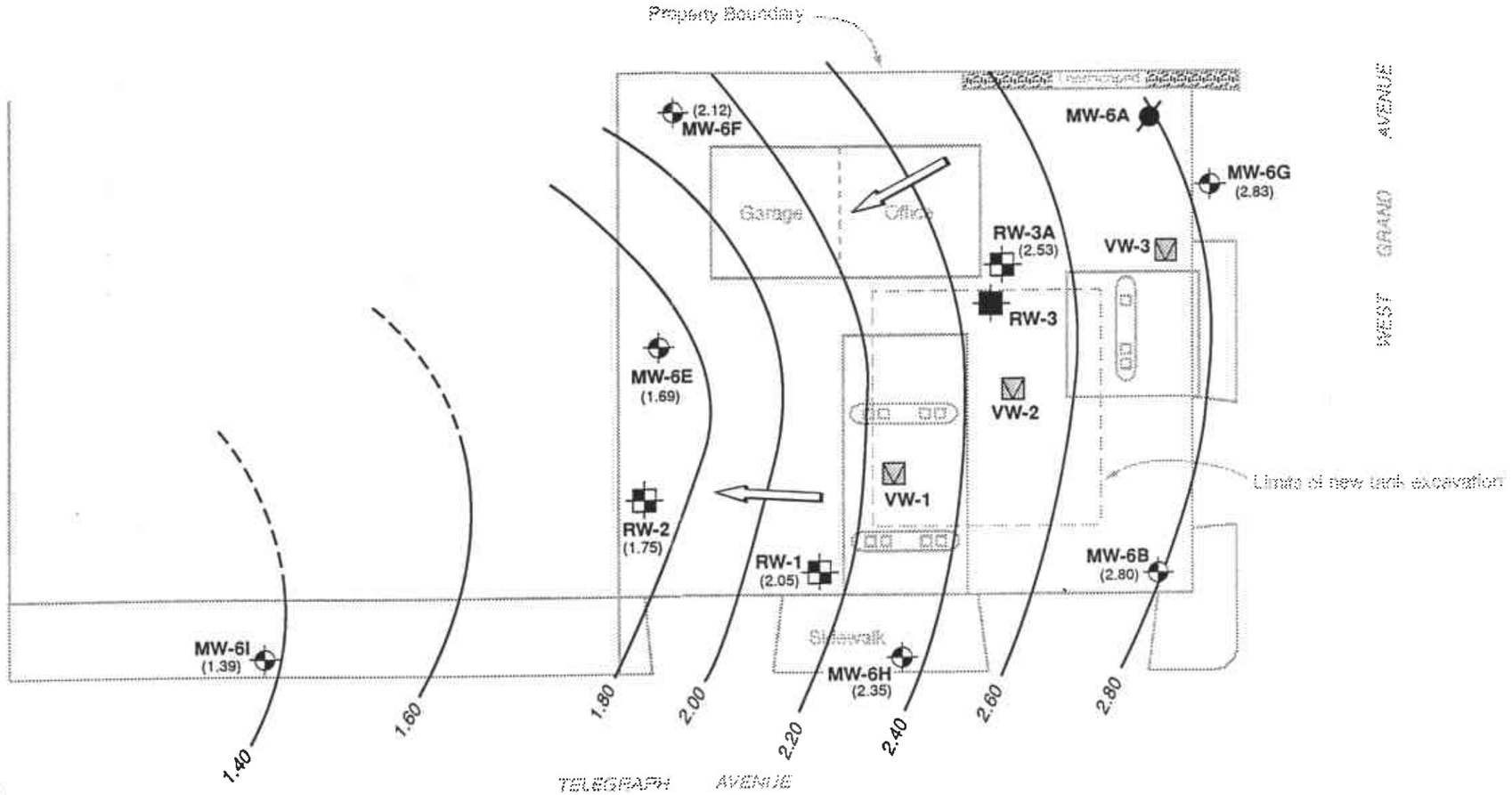
0 30 60
SCALE IN FEET

Harding Lawson Associates
Engineering and Environmental Services

Site Plan
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE 3

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	10258.162	JSH	09/14/92	



EXPLANATION

- Groundwater monitoring well
- Decommissioned monitoring well
- Groundwater recovery well / vapor extraction well
- Decommissioned recovery well
- Vapor extraction well
- (1.69) Groundwater elevation relative to Mean Sea Level
- —1.40— Contour of water elevations: contour interval 0.20 feet
- Direction of groundwater flow

N

0 30 60

SCALE IN FEET

NOTE :
RW-1 previously B-3
RW-2 previously MW-6D
RW-3 previously MW-6C

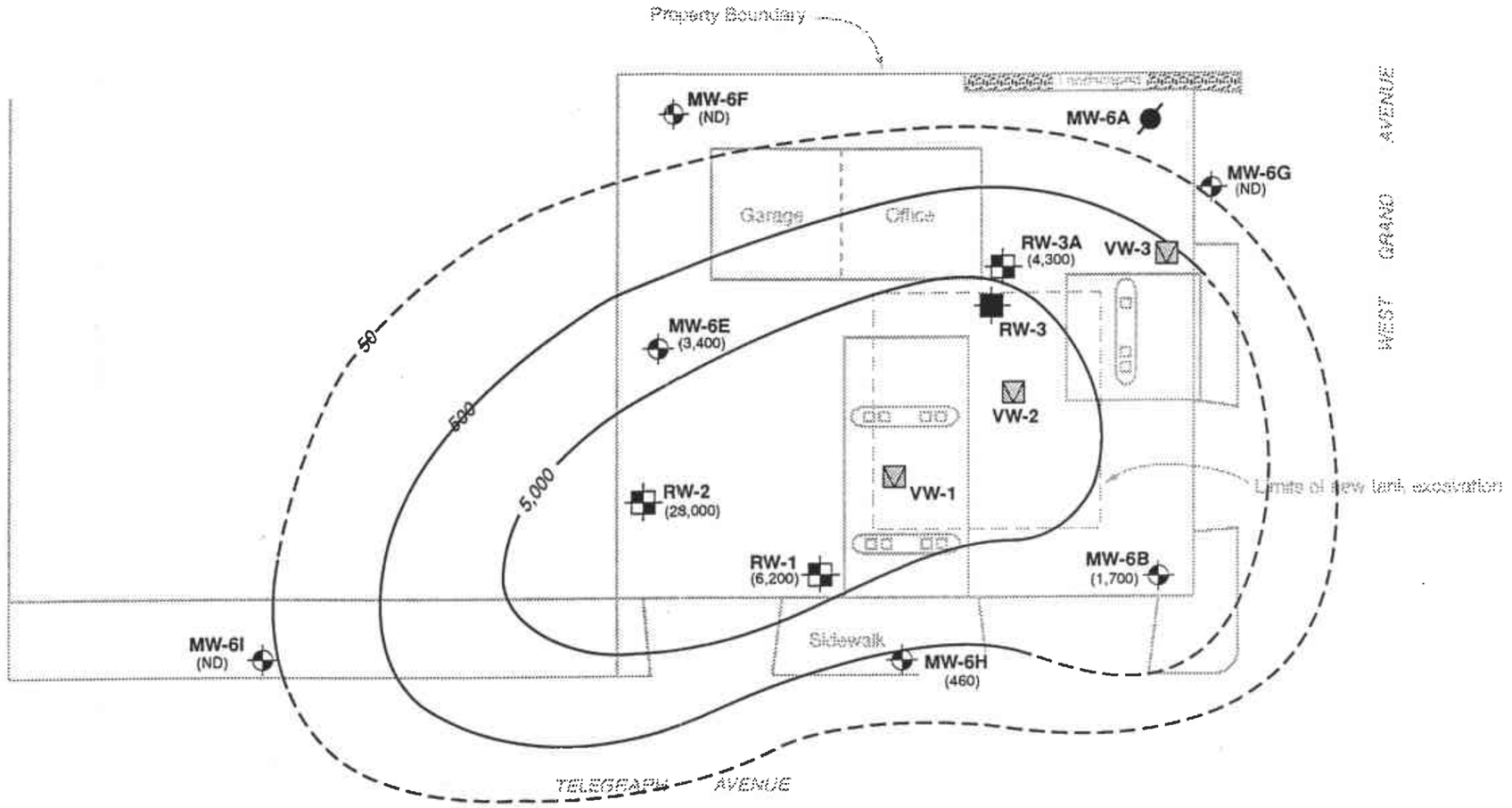
HLA

Harding Lawson Associates
Engineering and Environmental Services

Potentiometric Surface 6/16/92
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **4**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	09/14/92	



EXPLANATION

- Groundwater monitoring well
- Decommissioned monitoring well
- Groundwater recovery well / vapor extraction well
- Decommissioned recovery well
- Vapor extraction well
- (460) TPH concentrations in groundwater (ppb)
- (ND) Concentrations below detection limit of 50 ppb
- 50 Contour of TPH concentrations; contour interval 50, 500, 5000 ppb; dashed where uncertain

N

0 30 60

SCALE IN FEET

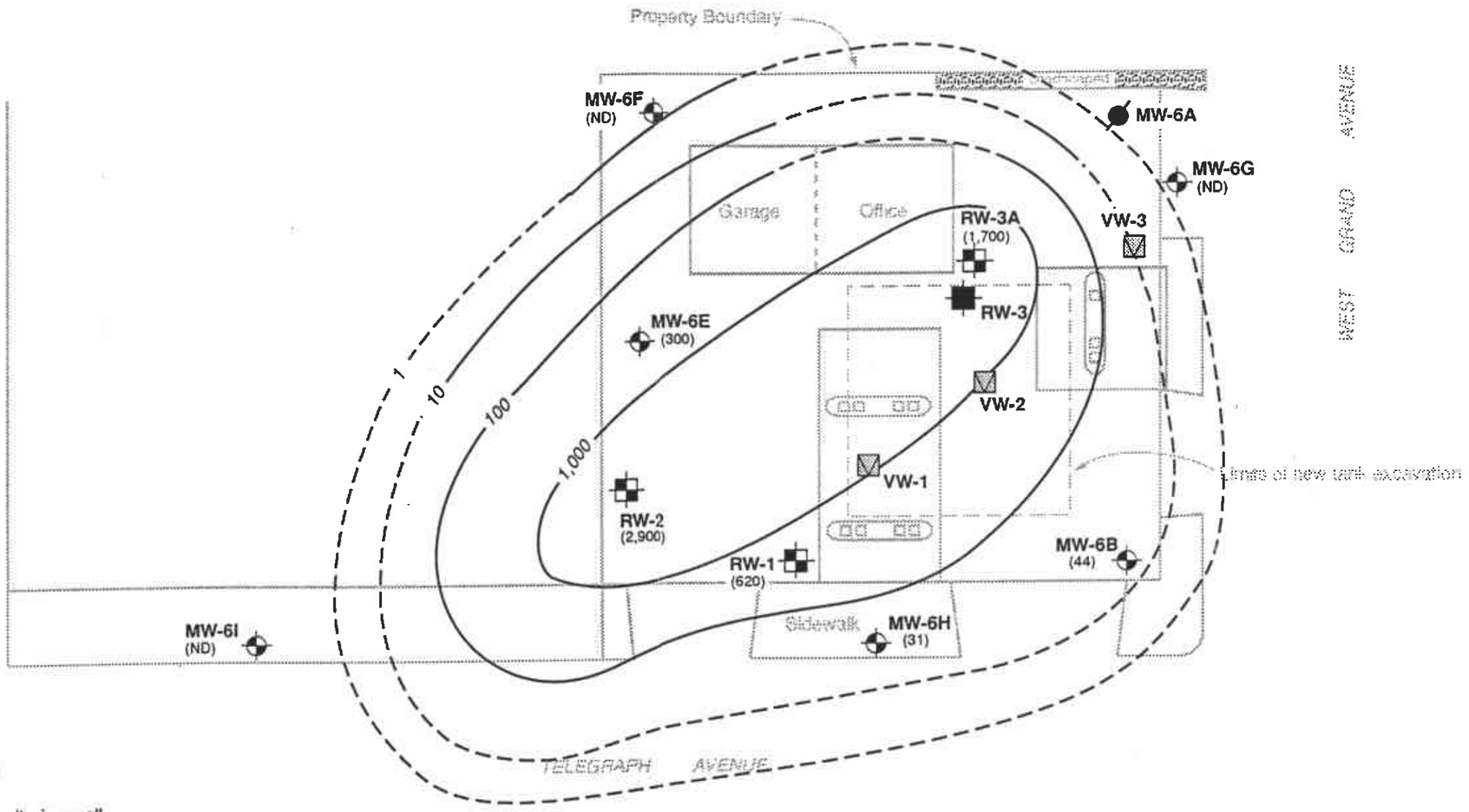
NOTE :
RW-1 previously B-3
RW-2 previously MW-6D
RW-3 previously MW-6C

Harding Lawson Associates
Engineering and Environmental Services

TPH as Gasoline in Groundwater (6/16/92)
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **5**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	09/14/92	



EXPLANATION

- Groundwater monitoring well
- Decommissioned monitoring well
- Groundwater recovery well / vapor extraction well
- Decommissioned recovery well
- Vapor extraction well
- (31) Benzene concentrations in groundwater (ppb)
- (ND) Concentrations below detection limit of 0.5 ppb
- 10 Contour of Benzene concentrations; logarithmic contour interval; dashed where uncertain

N

NOTE :
RW-1 previously B-3
RW-2 previously MW-6D
RW-3 previously MW-6C

0 30 60
SCALE IN FEET

Harding Lawson Associates
Engineering and Environmental Services

Benzene In Groundwater (6/16/92)
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE 6

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	09/14/92	

APPENDIX A

RESULTS OF LABORATORY ANALYSES ON SOIL SAMPLES AND QUARTERLY GROUNDWATER SAMPLES

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

HARDING ASSOC
JUN 2 1992

Jeanna Hudson
Harding Lawson Associates
1355 Willow Way, Ste. 109
Concord, CA 94520

Date: 05/29/1992
NET Client Acct No: 1001
NET Pacific Job No: 92.2621
Received: 05/09/1992

Client Reference Information

Texaco 2225 Telegraph, Oakland, Job No. 2251,161.03

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

NET Pacific, Inc

Client No: 1001 Date: 05/29/1992
Client Name: Harding Lawson Associates
NET Job No: 92.2621 Page: 2

Ref: Texaco 2225 Telegraph, Oakland, Job No. 2251,161.03

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	VW-3 11.0 05/06/1992 122580	VW-3 12.0 05/06/1992 122581	Units
TPH (Gas/BTXE,Solid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			05-18-92	05-18-92	
DILUTION FACTOR*			10	10	
as Gasoline	5030	1	110	170	mg/Kg(ppm)
METHOD 8020 (GC,Solid)			--	--	
DATE ANALYZED			05-19-92	05-19-92	
DILUTION FACTOR*			100	100	
Benzene	8020	2.5	2,000	920	ug/Kg(ppb)
Ethylbenzene	8020	2.5	2,500	2,400	ug/Kg(ppb)
Toluene	8020	2.5	4,400	2,800	ug/Kg(ppb)
Xylenes (Total)	8020	2.5	10,000	9,500	ug/Kg(ppb)
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		107	100	% Rec.

NET Pacific, Inc

Client No: 1001 Date: 05/29/1992
Client Name: Harding Lawson Associates
NET Job No: 92.2621 Page: 3

Ref: Texaco 2225 Telegraph, Oakland, Job No. 2251,161.03

Descriptor, Lab No. and Results

Parameter	Method	Reporting Limit	Composite-3 05/06/1992 122582	VW-3 5.5 05/06/1992 122583	Units
TPH (Gas/BTXE,Solid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			05-18-92	05-19-92	
DILUTION FACTOR*			1	50	
as Gasoline	5030	1	3.3	80	mg/Kg(ppm)
METHOD 8020 (GC,Solid)			--	--	
DATE ANALYZED			05-18-92	05-19-92	
DILUTION FACTOR*			1	50	
Benzene	8020	2.5	100	220	ug/Kg(ppb)
Ethylbenzene	8020	2.5	71	610	ug/Kg(ppb)
Toluene	8020	2.5	160	930	ug/Kg(ppb)
Xylenes (Total)	8020	2.5	300	51	ug/Kg(ppb)
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		86	97	% Rec.

NET Pacific, Inc

Client No: 1001 Date: 05/29/1992
Client Name: Harding Lawson Associates
NET Job No: 92.2621 Page: 4

Ref: Texaco 2225 Telegraph, Oakland, Job No. 2251,161.03

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results VW-3 9.5 05/06/1992 122584	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-20-92	
DILUTION FACTOR*			5	
as Gasoline	5030	1	9.9	mg/Kg(ppm)
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-20-92	
DILUTION FACTOR*			5	
Benzene	8020	2.5	460	ug/Kg(ppb)
Ethylbenzene	8020	2.5	120	ug/Kg(ppb)
Toluene	8020	2.5	450	ug/Kg(ppb)
Xylenes (Total)	8020	2.5	480	ug/Kg(ppb)
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		99	% Rec.

NET Pacific, Inc

Client No: 1001 Date: 05/29/1992
Client Name: Harding Lawson Associates
NET Job No: 92.2621 Page: 5

Ref: Texaco 2225 Telegraph, Oakland, Job No. 2251,161.03

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	1	mg/Kg	102	ND	92	92	< 1
Benzene	2.5	ug/Kg	90	ND	82	82	< 1
Toluene	2.5	ug/Kg	94	ND	93	93	< 1
COMMENT: Blank Results were ND on other analytes tested.							
Gasoline	1	mg/Kg	96	ND	84	75	11
Benzene	2.5	ug/Kg	97	ND	81	81	< 1
Toluene	2.5	ug/Kg	100	ND	91	90	1.7
COMMENT: Blank Results were ND on other analytes tested.							
Toluene	2.5	ug/Kg	95	ND	97	95	2.2
COMMENT: Blank Results were ND on other analytes tested.							

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Harding Lawson Associates
1356 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: Net-Pacific

Samplers: Sushmita K. Smith

Job Number: 2251,161.03

Name/Location: Texaco Telegraph

Project Manager: Jeanna Hudson

Recorder: Sushmita K. Smith (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	TPHg	BTEX
49			1					VW-	3	11.0	92	05	06		Standard turnaround						X	X
49			1					VW-	3	12.0	92	05	06								X	X
49			1					Composite-	3		92	05	06		possible additional analyses on composite sample						X	X
49			1					VW-	3	5.5	92	05	06								X	X
49			1					VW-	3	9.5	92	05	06								X	X

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						CUSTODY SEALED 5-8 seals intact. AC

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
Sushmita K. Smith		5-8 9:20
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		5-9-92 0900
METHOD OF SHIPMENT		

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

6533

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

HARDING LSCOC.

MAY 27 1992

Jeanna Hudson
Harding Lawson Associates
1355 Willow Way, Ste. 109
Concord, CA 94520

Date: 05/26/1992
NET Client Acct. No: 1001
NET Pacific Job No: 92.2569
Received: 05/07/1992

Client Reference Information

Texaco Telegraph, Job No. 2251,161.03

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: RW3A-21.0
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122157)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	ND	ug/Kg
Ethylbenzene	8020	2.5	ND	ug/Kg
Toluene	8020	2.5	ND	ug/Kg
Xylenes (Total)	8020	2.5	ND	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		84	% Rec.

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: RW3A-10.5
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122158)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	1.5	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	66	ug/Kg
Ethylbenzene	8020	2.5	45	ug/Kg
Toluene	8020	2.5	6.8	ug/Kg
Xylenes (Total)	8020	2.5	33	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		91	% Rec.

NET Pacific, Inc

Client Acct: 1001
Client Name: Harding Lawson Associates
NET Job No: 92.2569

Date: 05/26/1992
Page: 4

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: RW3A-15.5
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122159)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	7.1	ug/Kg
Ethylbenzene	8020	2.5	ND	ug/Kg
Toluene	8020	2.5	ND	ug/Kg
Xylenes (Total)	8020	2.5	ND	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		90	% Rec.

NET Pacific, Inc

Client Acct: 1001
Client Name: Harding Lawson Associates
NET Job No: 92.2569

Date: 05/26/1992
Page: 5

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: RW3A-5.66
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122160)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	54	ug/Kg
Ethylbenzene	8020	2.5	ND	ug/Kg
Toluene	8020	2.5	ND	ug/Kg
Xylenes (Total)	8020	2.5	ND	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		93	% Rec.

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: Composite-2
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122161)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	3.8	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	48	ug/Kg
Ethylbenzene	8020	2.5	58	ug/Kg
Toluene	8020	2.5	68	ug/Kg
Xylenes (Total)	8020	2.5	300	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		114	% Rec.

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: Composite-1
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122162)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	ND	ug/Kg
Ethylbenzene	8020	2.5	ND	ug/Kg
Toluene	8020	2.5	ND	ug/Kg
Xylenes (Total)	8020	2.5	ND	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		86	% Rec.

NET Pacific, Inc

Client Acct: 1001
Client Name: Harding Lawson Associates
NET Job No: 92.2569

Date: 05/26/1992
Page: 8

Ref: Texaco Telegraph, Job No. 2251,161.03

SAMPLE DESCRIPTION: VW-3 0.5
Date Taken: 05/05/1992
Time Taken:
LAB Job No: (-122163)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			05-16-92	
DILUTION FACTOR*			1	
Benzene	8020	2.5	ND	ug/Kg
Ethylbenzene	8020	2.5	ND	ug/Kg
Toluene	8020	2.5	ND	ug/Kg
Xylenes (Total)	8020	2.5	2.7	ug/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		84	% Rec.

Ref: Texaco Telegraph, Job No. 2251,161.03

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	1.0	mg/Kg	100	ND	97	95	2.5
Benzene	2.5	ug/Kg	99	ND	95	91	3.5
Toluene	2.5	ug/Kg	97	ND	99	97	1.6

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Harding Lawson Associates
1355 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

CHAIN OF CUSTODY FORM

Lab: NET Pacific 6204 ~~6206~~

Job Number: 2251,161.03
Name/Location: Texaco Telegraph
Project Manager: Jeanna Hudson

Samplers: Sushmita K. Smith
Recorder: Sushmita K. Smith (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER (Yr Wk Seq)	DATE Yr	Mo	Dy	Time	STATION DESCRIPTION/NOTES
49			X					RW3A-21.0	92	05	05		Standard
49			X					RW3A-10.5	92	05	05		turnaround
49			X					RW3A-15.5	92	05	05		
49			X					RW3A-5.66	92	05	05		
~~49~~								~~RW3A~~					
49			X					Composite-2	92	05	05		
49			X					Composite-1	92	05	05		CUSTODY SEALED 5-6
49			X					VW-3 0.5	92	05	05		@ 1900 JB

ANALYSIS REQUESTED: EPA 601/8010; EPA 602/8020; EPA 624/8240; EPA 625/8270; ICP METALS; EPA 8015M/TPH; TPH gas for all samples; BTEX per JH to NP 5/7

- seal intact!
- carry poss future tests after analysis per JH to NP 5/7

LAB NUMBER (Yr Wk Seq)	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
Sushmita K. Smith	JB	5-6 [illegible]
Jason Bean 5-6 1900		

DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		[signature]	5/7/92 0800

METHOD OF SHIPMENT (NCS)

[redacted] Laborat[redacted]py White [redacted] Offi[redacted]py Yellow [redacted] Offi[redacted]py Pink [redacted] 63[redacted]

NATIONAL
ENVIRONMENTAL
TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

HARDING ASSOC.
JUN 26 1992

Jeanna Hudson
Harding Lawson Associates
1355 Willow Way, Ste. 109
Concord, CA 94520

Date: 06/25/1992
NET Client Acct No: 1001
NET Pacific Job No: 92.3393
Received: 06/17/1992

Client Reference Information

TEXACO, Telegraph, Job: 10258.162

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

JS:rct
Enclosure(s)

NET Pacific, Inc

Client No: 1001 Date: 06/25/1992
Client Name: Harding Lawson Associates
NET Job No: 92.3393 Page: 4

Ref: TEXACO, Telegraph, Job: 10258.162

			Descriptor, Lab No. and Results		
			6H	6I	
			06/16/1992	06/16/1992	
Parameter	Method	Reporting Limit	126409	126410	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			06-19-92	06-19-92	
DILUTION FACTOR*			1	1	
as Gasoline	5030	0.05	0.46	ND	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			06-19-92	06-19-92	
DILUTION FACTOR*			1	1	
Benzene	8020	0.5	31	ND	ug/L
Ethylbenzene	8020	0.5	6.8	ND	ug/L
Toluene	8020	0.5	11	ND	ug/L
Xylenes (Total)	8020	0.5	16	ND	ug/L
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		83	76	% Rec.

NET Pacific, Inc

Client No: 1001 Date: 06/25/1992
Client Name: Harding Lawson Associates
NET Job No: 92.3393 Page: 2

Ref: TEXACO, Telegraph, Job: 10258.162

			Descriptor, Lab No. and Results		
			6B	6E	
			06/16/1992	06/16/1992	
Parameter	Method	Reporting Limit	126405	126406	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			06-20-92	06-20-92	
DILUTION FACTOR*			1	1	
as Gasoline	5030	0.05	1.7	3.4	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			06-20-92	06-20-92	
DILUTION FACTOR*			1	10	
Benzene	8020	0.5	44	300	
Ethylbenzene	8020	0.5	110	68	
Toluene	8020	0.5	6.8	23	ug/L
Xylenes (Total)	8020	0.5	230	510	
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		83	85	

NET Pacific, Inc

Client No: 1001 Date: 06/25/1992
Client Name: Harding Lawson Associates
NET Job No: 92.3393 Page: 5

Ref: TEXACO, Telegraph, Job: 10258.162

			Descriptor, Lab No. and Results		
			RW-1	RW-2	
			06/16/1992	06/16/1992	
Parameter	Method	Reporting Limit	126411	126412	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			06-20-92	06-19-92	
DILUTION FACTOR*			10	100	
as Gasoline	5030	0.05	6.2	28	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			06-19-92	06-19-92	
DILUTION FACTOR*			100	100	
Benzene	8020	0.5	620	2,900	ug/L
Ethylbenzene	8020	0.5	240	120	ug/L
Toluene	8020	0.5	1,400	1,000	ug/L
Xylenes (Total)	8020	0.5	1,400	2,700	ug/L
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		85	87	% Rec.

NET Pacific, Inc

Client No: 1001 Date: 06/25/1992
Client Name: Harding Lawson Associates
NET Job No: 92.3393 Page: 6

Ref: TEXACO, Telegraph, Job: 10258.162

Parameter	Method	Reporting Limit	Descriptor, Lab No. and Results RW-3 06/16/1992 126413	Units
TPH (Gas/BTXE,Liquid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			06-20-92	
DILUTION FACTOR*			10	
as Gasoline	5030	0.05	4.3	mg/L
METHOD 8020 (GC,Liquid)			--	
DATE ANALYZED			06-20-92	
DILUTION FACTOR*			10	
Benzene	8020	0.5	1,700	ug/L
Ethylbenzene	8020	0.5	21	ug/L
Toluene	8020	0.5	92	ug/L
Xylenes (Total)	8020	0.5	250	ug/L
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		81	% Rec.

NET Pacific, Inc

Client No: 1001
Client Name: Harding Lawson Associates
NET Job No: 92.3393

Date: 06/25/1992
Page: 3

Ref: TEXACO, Telegraph, Job: 10258.162

			Descriptor, Lab No. and Results		
			6F	6G	
			06/16/1992	06/16/1992	
Parameter	Method	Reporting Limit	126407	126408	Units
TPH (Gas/BTXE,Liquid)					
METHOD 5030 (GC,FID)			--	--	
DATE ANALYZED			06-19-92	06-19-92	
DILUTION FACTOR*			1	1	
as Gasoline	5030	0.05	ND	ND	mg/L
METHOD 8020 (GC,Liquid)			--	--	
DATE ANALYZED			06-19-92	06-19-92	
DILUTION FACTOR*			1	1	
Benzene	8020	0.5	ND	ND	ug/L
Ethylbenzene	8020	0.5	ND	ND	ug/L
Toluene	8020	0.5	ND	ND	ug/L
Xylenes (Total)	8020	0.5	ND	ND	ug/L
SURROGATE RESULTS			--	--	
Bromofluorobenzene	5030		75	76	% Rec.

NET Pacific, Inc

Client No: 1001
Client Name: Harding Lawson Associates
NET Job No: 92.3393

Date: 06/25/1992
Page: 7

Ref: TEXACO, Telegraph, Job: 10258.162

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Gasoline	0.05	mg/L	101	ND	101	100	<1
Benzene	0.5	ug/L	88	ND	100	101	<1
Toluene	0.5	ug/L	94	ND	100	100	<1
Gasoline	0.05	mg/L	95	ND	97	103	6.0
Benzene	0.5	ug/L	96	ND	102	107	5.0
Toluene	0.5	ug/L	94	ND	101	106	6.0

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

[redacted] Hudson Associates
1355 Willow Way, Suite 109
Concord, California 94520
415/687-9660
Telecopy: 415/687-9673

2025 Telegraph Ave
Oakland

CHAIN OF CUSTODY FORM

704

Lab: NET PACIFIC

Samplers: JAMES E. McCOY

Job Number: 10258.162

Name/Location: TEXACO TELEGRAPH

Project Manager: J.S. Hudson

Recorder: [signature] (Signature Required)

SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH: TPHg	BTEX
23	X				3			6	B		9	2	06	16	11 UNPRESERVED. PLEASE GIVE THIS CHAIN OF CUSTODY TO NORA. WATCH HOLDING TIME.						X	
23	X				3			6	E		9	2	06	16							X	
23	X				3			6	F		9	2	06	16							X	
23	X				3			6	G		9	2	06	16							X	
23	X				3			6	H		9	2	06	16							X	
23	X				3			6	I		9	2	06	16							X	
23	X				3			RW-	1		9	2	06	16							X	
23	X				3			RW-	2		9	2	06	16							X	
23	X				3			RW-	3		9	2	06	16							X	

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) [signature]	RECEIVED BY: (Signature) [signature]	DATE/TIME 6-17 11:-
RELINQUISHED BY: (Signature) [signature] 6-17 7:-	RECEIVED BY: (Signature) [signature]	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature) DATE/TIME	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 6/17/93 19:00
METHOD OF SHIPMENT		

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink

6533

APPENDIX B

BORING LOGS AND WELL COMPLETION DIAGRAMS

UNIFIED SOIL CLASSIFICATION - ASTM D2487-85

MAJOR DIVISIONS				TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN No. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC	CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS WITH OR WITHOUT GRAVEL
			SC	CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN No. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL	ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

KEY TO TEST DATA

Perm	-	Permeability
Consol	-	Consolidation
LL	-	Liquid Limit (%)
PI	-	Plasticity Index (%)
G_s	-	Specific Gravity
MA	-	Particle Size Analysis
OC	-	Organic Content
■	-	"Undisturbed" Sample
⊠	-	Bulk or Classification Sample
PP	-	Pocket Penetrometer Readings

Shear Strength (psf)
Confining Pressure

TxUU 3200 (2600)	-	Unconsolidated Undrained Triaxial Shear
(FM) or (S)	-	(field moisture or saturated)
TxCU 3200 (2600)	-	Consolidated Undrained Triaxial Shear
(P)	-	(with or without pore pressure measurement)
TxCD 3200 (2600)	-	Consolidated Drained Triaxial Shear
SSCU 3200 (2600)	-	Simple Shear Consolidated Undrained
(P)	-	(with or without pore pressure measurement)
SSCD 3200 (2600)	-	Simple Shear Consolidated Drained
DSCD 2700 (2000)	-	Consolidated Drained Direct Shear
UC 470	-	Unconfined Compression
LVS 700	-	Laboratory Vane Shear

Harding Lawson Associates
Engineering and Environmental Services

Soil Classification Chart and Key to Test Data
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **B-1**

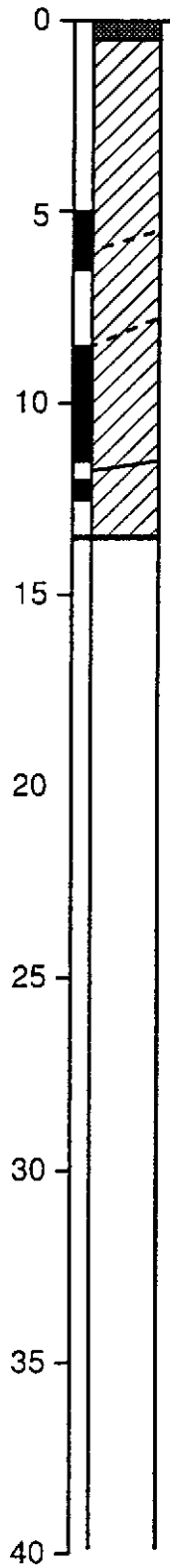
DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	8/24/92	

Blows/foot *	Photo-Ionization Detector (ppm) HNu	Petroleum Hydrocarbon Odor
48	800	Strong
20	150	None
29	500	Slight

Depth (ft.) | Sample

Equipment 12-inch Hollow Stem Auger

Elevation --- Date 5/6/92



Asphalt

BROWN LEAN CLAY WITH GRAVEL (CL), moist, stiff

YELLOW BROWN MOTTLED SANDY CLAY(CL), moist, hard

GRAY SANDY CLAY (CL), moist, hard

BROWN LEAN CLAY (CL), moist, very stiff

GRAY SANDY LEAN CLAY (CL), moist, stiff

Bottom of boring at 13.5 feet
No free water encountered

* *Field blow counts per foot converted to Standard Penetration Test N-Values.*

Harding Lawson Associates
Engineering and Environmental Services

Log of Boring VW-3
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **B-2**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	08/24/92	

Equipment 12-inch Hollow Stem Auger

Elevation --- Date 5/5/92

Blows/foot *	Photo-Ionization Detector (ppm) HNu	Petroleum Hydrocarbon Odor	Depth (ft.)	Sample	
			0		Pea gravel
					MOTTLED BROWN SANDY LEAN CLAY (CL), moist, very stiff
25	90	None	5		
					MOTTLED BROWN LEAN CLAY (CL), moist, very stiff
25	50	None	10		
					Water level at time of drilling
					GRAY CLAYEY SAND (SC), moist, dense
34	10	Slight	15		
					BROWN SANDY LEAN CLAY (CL), moist, stiff
15	20	None	20		
					Bottom of boring at 21.5 feet
			25		
			30		
			35		
			40		

* *Field blow counts per foot converted to Standard Penetration Test N-Values.*

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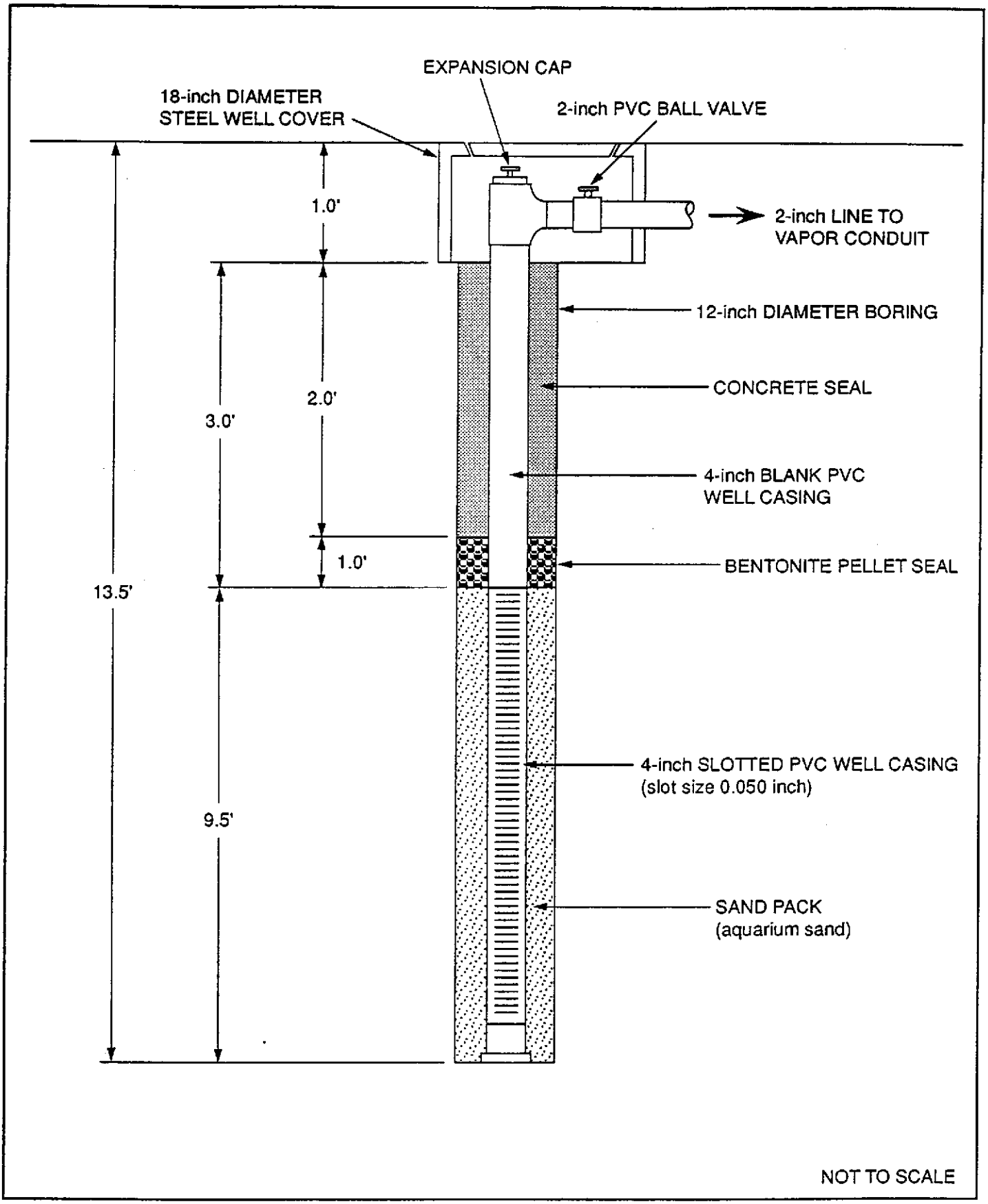
Log of Boring RW-3A
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **B-3**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
RHC	10258.162	JSH	08/24/92	



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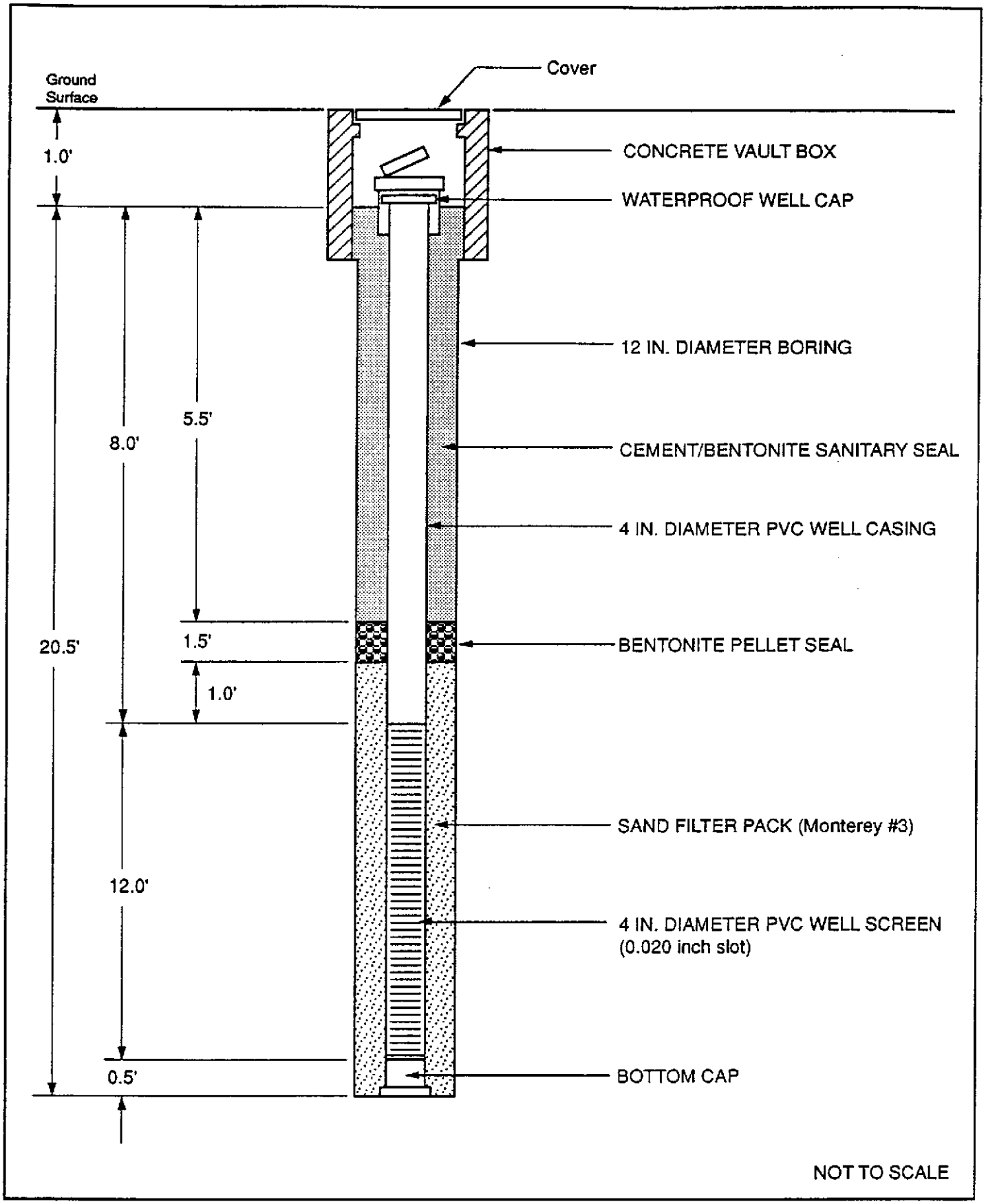
Vapor Extraction Well Diagram VW-3
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE
B-4

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	10258.162	JSH	08/24/92	



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Well Completion Diagram RW-3A
Exxon Service Station
2225 Telegraph Avenue
Oakland, California

PLATE **B-5**

DRAWN	PROJECT NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	10258.162	JSH	08/24/92	

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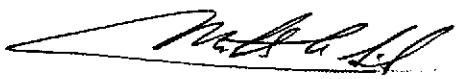
JSH/ERC/mlw 032856M/R60

QUALITY CONTROL REVIEWER



Michael A. Sides
Environmental Engineer