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exxon0992

EXXON COMPANY, U.S.A.
QUARTERLY STATUS REPORT
 July - September 1992
 October 6, 1992
 (Page 1 of 2)

RAS #7-3399
 2991 Hopyard Road
 Pleasanton, California
 Job No: 18034

Work Performed During This Quarter

July through September 1992

- o Performed monthly monitoring on July 17 and September 16, 1992.
- o Submitted Modification to Existing Soil Vapor Extraction System Previously Permitted Under Application Number 5125 letter to BAAQMD on August 7, 1992.
- o Performed quarterly monitoring third quarter 1992 on September 16, 1992.
- o Submitted Notification of Startup of Vapor-Phase Activated Carbon System and Application for Permit to Operate letter to BAAQMD on September 25, 1992
- o Submitted final report for second quarter 1992 Quarterly Monitoring on September 30, 1992.

Groundwater Sampling (sampled 09/16/92) Results: (ug/L)

<u>Well</u>	<u>TPHg</u>	<u>B</u>	<u>T</u>	<u>E</u>	<u>X</u>	<u>Historical Trends</u>
MW-1		Well Dry				
MW-2		Well Destroyed				
MW-3		Well Destroyed				
MW-4		Well Dry				
MW-5d		Well Dry				
MW-5s		Well Dry				
MW-6		Well Destroyed				
MW-7		Well Dry				
MW-8	<50	<0.5	0.9	<0.5	<50	Unchanged
MW-9		Well Dry				
MW-10		Well Dry				
MW-11		Well Dry				

Free Phase Product Recovery

Not Applicable

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(Page 2 of 2)

RAS #7-3399
2991 Hopyard Road
Pleasanton, California
Job No: 18034

Work to be Performed Next Quarter

Estimated Completion Date 12/31/92

- o Continue monthly depth-to-water monitoring.
- o Perform Interim Remediation System Start-up and monthly Operation and Maintenance.
- o Submit final report for third quarter 1992 Quarterly Monitoring.
- o Quarterly Monitoring for the fourth quarter 1992 is scheduled for December 16, 1992.

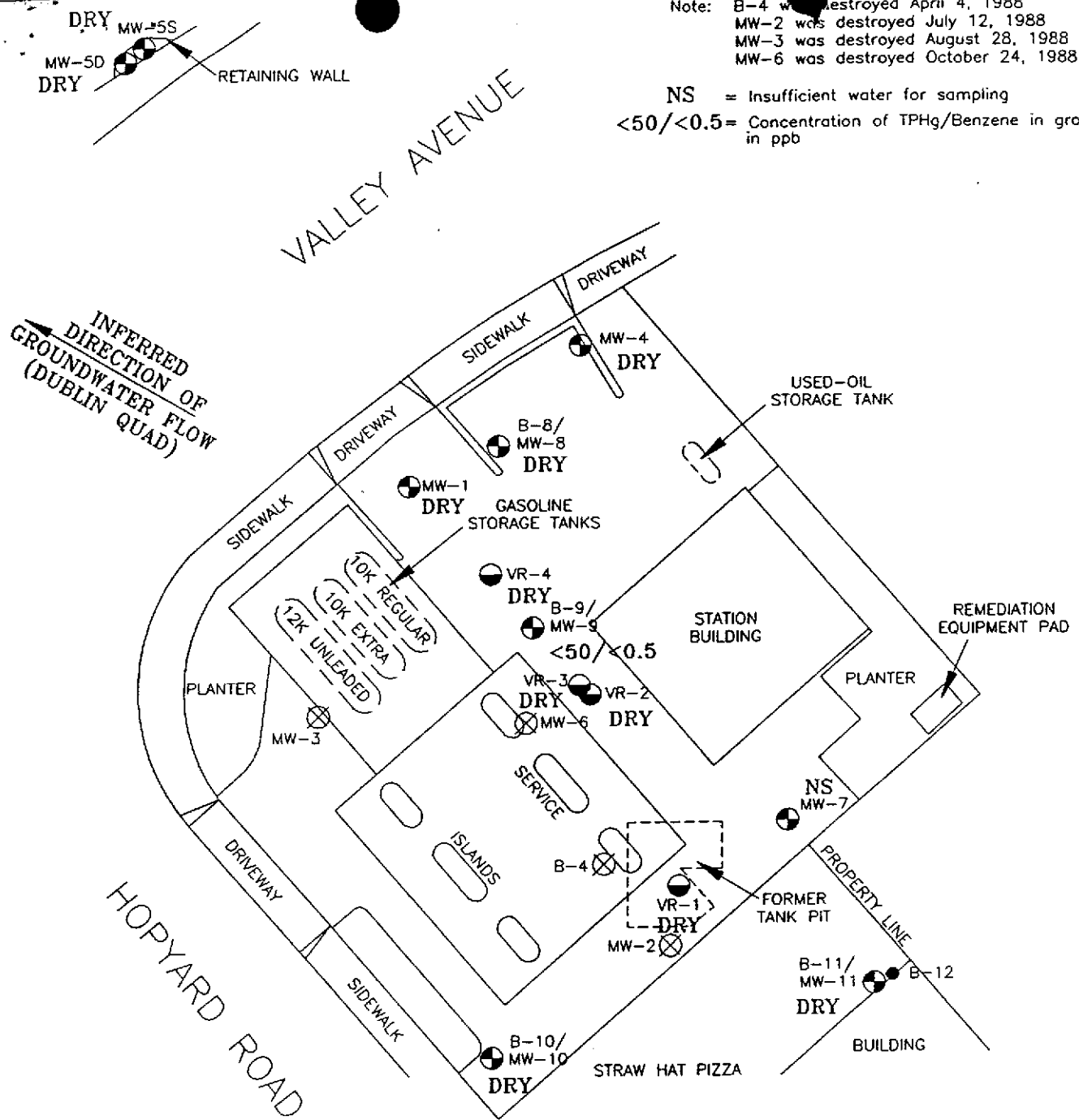
Work to be Performed Next 12 Months

Estimated Completion Date 09/30/93

- o Submit final report for fourth quarter 1992 Quarterly Monitoring.
- o Continue quarterly groundwater monitoring and sampling program initiated in March 1991, to evaluate the trends of gasoline hydrocarbons below the site.
- o Perform monthly Operation and Maintenance on the Interim Remediation System.

Note: B-4 was destroyed April 4, 1988
 MW-2 was destroyed July 12, 1988
 MW-3 was destroyed August 28, 1988
 MW-6 was destroyed October 24, 1988

NS = Insufficient water for sampling
 <50/<0.5 = Concentration of TPHg/Benzene in groundwater in ppb



EXPLANATION

- B-11/
MW-11 ● = Monitoring well
(RESNA, April, May, and July 1988; October 1989)
- VR-4 ● = Vapor recovery well
(RESNA, October 1989)
- B-12 ● = Soil boring
(RESNA, October 1989)
- MW-6 ⊗ = Destroyed well

Approximate Scale



Source: Surveyed by Ron Archer, Civil Engineer, July 27, 1989.
 Revised January 22, 1990.

RESNA
 Working to Restore Nature

GENERALIZED SITE PLAN
 Exxon Station 7-3399
 2991 Hopyard Road
 Pleasanton, California

PLATE
 2

PROJECT 18034.15

LETTER REPORT
SECOND QUARTER 1992
GROUNDWATER MONITORING
AND
REMEDIAATION ACTIVITIES

at
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

RESNA Job No. 18034-15

7-20-92

42501 Albrae Street
Fremont, California 94538
Phone: (510) 440-3300
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July 20, 1992
RESNA 18034-15

Ms. Marla D. Guensler
Exxon Company, U.S.A.
2300 Clayton Road, Suite 250
P.O. Box 4032
Concord, California 94520

Subject: Letter Report on Second Quarter 1992 Groundwater Monitoring and Remediation Activities, at Exxon Station No. 7-3399, 2991 Hopyard Road, Pleasanton, California.

Dear Ms. Guensler:

This report presents the results of the second quarter 1992 groundwater monitoring and sampling and an update of remediation activities, at Exxon Service Station No. 7-3399. The Exxon station is located at the intersection of Hopyard Road and Valley Avenue in Pleasanton, California (Plate 1). The monitoring program included measuring depth to groundwater, subjectively evaluating water from each of the wells for evidence of hydrocarbons, and purging the wells and collecting water samples for laboratory analysis.

Site Setting and Background

The original service station on the site was demolished in September 1988, and new station facilities were constructed between September 1988 and February 1989. The fuel underground storage tanks (USTs) in the southeastern part of the site were removed in July 1988, prior to station demolition. The current station facilities include four USTs containing premium unleaded, super-regular unleaded, and regular unleaded gasoline, and waste oil (Plate 2).

Nine groundwater monitoring wells currently are used to monitor groundwater at the site (Plate 2). Seven of the nine wells, designated MW-1, MW-4, MW-5s, MW-7, MW-9, MW-10, and MW-11, are screened in the uppermost aquifer beneath the site. The remaining two wells, MW-5d and MW-8, are screened in the underlying second and third aquifers, respectively.

A groundwater recovery system was in operation between 1988 and 1990. Groundwater was pumped from well MW-7, then the water passed through an oil-water separator, and into the sanitary sewer under a permit from the Dublin-San Ramon Services District. Continued groundwater recovery from well MW-7 is pending sufficient water in the shallow aquifer.

Because of the drop in water level since 1988, the sand and gravel zone has been mostly unsaturated. A vapor extraction and treatment system consisting of a 100-cubic-feet-per-minute vacuum pump and catalytic oxidizer was installed at the site in November 1990. The vacuum system is connected to six wells; shallow well VR-1, installed in the backfill material of the former UST pit; shallow wells VR-3 and VR-4, installed in the unsaturated silty clay overlying the uppermost aquifer; and deeper wells VR-2, MW-1, and MW-9, installed in sand and gravel in the uppermost aquifer. Hydrocarbon vapors were recovered until low vapor concentrations precluded use of the catalytic oxidizer in June 1990.

The vapor system was permitted by the Bay Area Air Quality Management District under Authority to Construct No. 5125, dated August 2, 1990, and under permit to operate, dated January 4, 1991. After start up testing in late November, the system began operating on December 7, 1990. During December 1990 and January 1991, influent vapor samples were collected on a weekly and a biweekly basis, and after January were collected on a monthly basis. On March 10, 1992, the existing vapor treatment system was modified to a vapor scrub carbon system.

MONITORING

Field Activities

The monitoring program conducted by RESNA included measuring depth to water, subjectively evaluating initial groundwater samples from wells MW-4, MW-5d, MW-5s, MW-8, and MW-11, and purging and sampling groundwater from monitoring wells MW-7 and MW-8 for laboratory analysis. Wells MW-1, MW-9, and MW-10 are coupled to the vapor extraction system and were inaccessible on this sampling event. Wells MW-4, MW-5d, MW-5s, and MW-11 contained insufficient water for sampling. Site visits are made monthly to measure the water level in wells and quarterly to sample groundwater for laboratory analysis. Monthly monitoring was performed on April 14 and May 21, 1992, and quarterly sampling was performed on June 8, 1992, using the field procedures described in the Appendices. Accumulation, storage, and disposal of purged groundwater are also described in the Appendices.

Results of Groundwater Monitoring

Between March and June 1992, depth to water measurements from wells in the uppermost aquifer indicated essentially no change since the previous monitoring event. The water level in MW-5d (second aquifer) was just above the total depth of the well; while, the water level in MW-8 (third aquifer) fell approximately 15.1 feet. No floating product or sheen was observed in the water samples from the wells. Cumulative results of depth to water measurements and subjective evaluations are presented in Table 1. The field activities were performed using the procedures described in the Appendices.

Due to insufficient water levels in the uppermost aquifer on March 14, May 21, and June 8, 1992, groundwater elevation maps were not constructed. Previous water level data suggest the groundwater flow is generally southward and the hydraulic gradient beneath much of the site is essentially flat.

Laboratory Methods and Results of Groundwater Sampling

Groundwater samples from MW-7 and MW-8 were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by Environmental Protection Agency (EPA) modified Method 8015, and benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 602. The analyses were performed by PACE Incorporated (Hazardous Waste Testing Laboratory Certification No. 147) of Novato, California.

Results of laboratory analyses of water samples from wells MW-7 and MW-8 indicate no detectable concentrations of TPHg and BTEX. These analytical results indicate that BTEX compounds previously detected in groundwater were not present above the method detection limit in the water samples from this sampling event (Table 2). Chain of Custody Records and certified analysis reports are enclosed in Appendices. Groundwater analytical data is insufficient to allow the construction of concentration contour maps.

REMEDIATION

Groundwater Recovery

During this monitoring period, groundwater recovery from the upper aquifer was not undertaken due to insufficient water. Recovery activities will resume when the groundwater rises to a sufficient level for pumping.

Water Storage and Disposal

Purged ground water was temporarily stored onsite in 17E, 55-gallon liquid-waste drums approved for this purpose by the Department of Transportation. The purged water was discharged through the oil-water separator onsite and into the sanitary sewer under a permit from the Dublin-San Ramon Services District.

Soil-Vapor Extraction System

Influent and effluent vapor samples have previously been collected at the catalytic oxidizer's inlet port using evacuated aerosol containers (280 cubic centimeter Vacuum Samplers). These Vacuum Samplers were fitted with a septum port and needle guide, through which the containers were filled for subsequent laboratory analysis.

Since November 1990, the existing catalytic oxidizer has effectively reduced vapor concentrations to levels below 0.5 ppm TPHg (Table 3). To continue vapor extraction of low hydrocarbon concentrations, the current cat-ox unit was shut off on July 24, 1991, and the existing system underwent modification to an activated carbon abatement system on March 10, 1992. System start-up is pending.

Please call if you have questions.

Sincerely,
RESNA Industries

A handwritten signature in cursive script, appearing to read "Keith M. McVicker".

Keith M. McVicker
Project Geologist

A handwritten signature in cursive script, appearing to read "Mark E. Detterman".

Mark E. Detterman
Project Manager, R.G. 4799

Enclosures: Table 1, Cumulative Results of Subjective Evaluation of Water Samples
Table 2, Cumulative Results of Groundwater Analyses
Table 3, Cumulative Results of Influent and Effluent Vapor Samples
Plate 1, Site Vicinity Map
Plate 2, Generalized Site Plan

Appendices: Groundwater Sampling Protocol
Subjective Evaluation of Groundwater and Well Purge Data Sheets
Chain of Custody Records and Laboratory Analysis Reports

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 1 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-1 (Wellhead Elevation = 321.44 ft)				
04/06/88	36.34	285.00	None	None
04/08/88	36.29	285.15	None	None
04/19/88	36.36	285.08	None	None
06/06/88	38.16	283.28	None	None
06/23/88	38.71	282.73	None	None
06/28/88	39.16	282.28	--	--
07/06/88	39.73	281.71	None	None
07/13/88	40.22	281.22	None	None
08/12/88		Well buried under excavated soil		
08/26/88	41.90	279.54	--	--
09/07/88	42.27	279.17	None	None
12/07/88	43.94	277.50	None	None
12/19/88	43.70	277.74	None	None
02/09/89	42.53	278.91	--	--
03/08/89	41.96	279.48	None	None
04/03/89	41.59	279.85	--	--
04/26/89	41.67	279.77	--	--
06/30/89	43.79	277.65	None	None
07/17/89	44.74	276.70	None	None
07/18/89	44.76	276.68	--	--
07/19/89	44.82	276.62	--	--
07/20/89	44.85	276.59	None	None
07/21/89	44.95	276.49	--	--
07/26/89	45.42	276.02	None	None
08/02/89	--	NA	NA	NA
08/03/89	46.18	275.26	--	--
08/17/89	47.12	274.32	--	--
09/13/89	49.08	272.36	None	None
11/28/89	50.21	271.23	None	None
01/09/90	49.31	272.13	None	None
01/26/90	49.29	272.15	None	None
02/23/90	49.02#	272.42	None	None
02/23/90	49.02	272.42	None	None
03/26/90	48.71#	272.73	None	None
03/26/90	48.70	272.74	None	None
04/18/90	48.79	272.65	None	None
05/17/90	49.40	272.04	None	None
06/11/90	50.83	270.61	None	None
07/30/90	52.17	269.27	None	None
08/27/90	53.44	268.00	None	None
09/28/90	53.40	268.04	None	None
12/27/90	--	NA	NA	NA
03/20/91	53.35	268.08	--	--
06/20/91	53.55	267.89	None	None
09/12/91	--	NA	None	None
12/30/91	--	NA	NA	NA
01/30/92	--	NA	NA	NA
03/02/92	--	NA	NA	NA
03/24/92	--	NA	NA	NA
04/14/92	--	NA	NA	NA
05/21/92	--	NA	NA	NA
06/08/92	--	NA	NA	NA

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 2 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-2				
04/02/88	--	--	3.0	Heavy
04/04/88	--	--	18.0	Heavy
04/05/88	--	--	18.0	Heavy
04/06/88	39.31	--	38.4	Heavy
04/08/88	--*	--	--*	--*
04/19/88	38.90	--	29.76**	Heavy
06/06/88	38.78	--	3.12	Heavy
06/23/88	39.23	--	1.50	Heavy
06/28/88	39.72	--	--	--
07/06/88	40.31	--	None	Slight
07/12/88	Well destroyed due to excavation (old pit)			
MW-3				
04/06/88	37.19	--	None	None
04/08/88	37.14	--	None	None
04/19/88	37.22	--	None	None
06/06/88	39.02	--	None	None
06/23/88	39.58	--	None	None
06/28/88	40.04	--	--	--
07/06/88	40.60	--	None	None
07/13/88	41.09	--	None	None
08/12/88	Well buried under excavated soil			
08/26/88	42.77	--	--	--
08/29/88	Well destroyed due to excavation (new pit)			
MW-4 (Wellhead elevation = 321.56 ft)				
04/08/88	36.41	285.15	None	None
04/19/88	36.51	285.05	None	None
06/06/88	38.26	283.30	None	None
06/23/88	38.83	282.73	None	None
06/28/88	39.28	282.28	--	--
07/06/88	39.85	281.71	None	None
07/13/88	40.31	281.25	None	None
08/12/88	Well buried under excavated soil			
08/26/88	42.01	279.55	--	--
09/07/88	Not accessible due to construction			
12/07/88	Not accessible due to construction			
12/19/88	43.83	277.73	None	None
02/09/89	42.67	278.89	--	--
03/08/89	42.11	279.45	None	None
04/03/89	41.73	279.83	--	--
04/26/89	41.79	279.77	--	--
06/30/89	43.88	277.68	None	None
07/17/89	44.85	276.71	None	None
07/18/89	44.88	276.68	--	--
07/19/89	44.92	276.64	--	--

See notes on page 8 of 8.

TABLE 1
CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 3 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-4 (continued)				
07/20/89	44.98	276.58	None	None
07/21/89	45.04	276.52	--	--
07/26/89	45.50	276.06	None	None
08/02/89	--	NA	NA	NA
08/03/89	46.28	275.28	--	--
08/17/89	47.22	274.34	--	--
09/13/89	49.19	272.37	None	None
11/28/89	50.34	271.22	None	None
01/09/90	49.47	272.09	None	None
01/26/90	49.36	272.20	None	None
02/23/90	49.18#	272.38	None	None
02/23/90	49.15	272.41	None	None
03/26/90	48.84#	272.72	None	None
03/26/90	48.83	272.73	None	None
04/18/90	48.90	272.66	None	None
05/17/90	50.03	271.53	None	None
06/11/90	50.98	270.58	None	None
07/30/90	53.57	267.99	None	None
08/27/90	53.61	267.95	None	None
09/28/90	53.57	267.99	None	None
12/27/90	53.68	267.88	None	None
03/20/91	53.56	268.00	None	None
06/20/91	53.75	267.81	None	None
09/12/91	53.70	267.86	None	None
12/30/91	Dry	NA	NA	NA
01/30/92	Dry	NA	NA	NA
03/02/92	53.83	267.73	None	None
03/24/92	53.73	267.83	None	None
04/14/92	53.76	267.80	None	None
05/21/92	54.73	266.83	None	None
06/08/92	53.80	267.76	None	None
B-4				
04/02/88	--	NA	None	None
MW-5d (Wellhead Elevation = 321.79 ft)				
05/25/88	38.55	283.24	None	None
06/06/88	38.90	282.89	None	None
06/23/88	39.56	282.23	None	None
06/28/88	40.23	281.33	--	--
07/06/88	40.69	281.10	None	None
07/13/88	41.22	280.57	None	None
08/12/88	42.34	279.45	--	--
08/26/88	42.60	279.19	--	--
09/07/88	42.99	278.80	--	--
12/07/88	44.58	277.21	None	None
02/09/89		Casing head damaged by construction		
03/08/89		Casing head cut to lower elevation		
	42.49	279.30	None	None
04/03/89	42.21	279.58	--	--
04/26/89	42.36	279.43	--	--
06/30/89	44.79	277.00	None	None
07/17/89	45.73	276.06	None	None
07/18/89	45.75	276.04	--	--

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 4 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-5d				
07/19/89	44.89	276.90	--	--
07/20/89	46.02	275.77	None	None
07/21/89	46.18	275.38	--	--
07/26/89	46.83	274.96	None	None
08/02/89	--	NA	NA	NA
08/03/89	47.67	274.12	--	--
08/17/89	48.27	273.52	--	--
09/13/89	50.60	271.19	None	None
11/28/89	51.16	270.63	None	None
01/09/90	50.42	271.37	None	None
01/26/90	50.10	271.66	None	None
02/23/90	50.08	271.77	None	None
03/26/90	49.80#	271.99	None	None
03/26/90	49.77	272.02	None	None
04/18/90	49.80	271.99	None	None
05/17/90	51.32	270.47	None	None
06/11/90	52.10	269.69	None	None
07/30/90	53.47	268.32	None	None
08/27/90	58.24	263.55	None	None
09/28/90	60.70	261.09	None	None
12/27/90	62.52	259.27	None	None
03/20/91	59.18	262.61	None	None
06/20/91	65.02	256.77	None	None
09/12/91	DRY	NA	NA	NA
12/30/91	DRY	NA	NA	NA
01/30/92	DRY	NA	NA	NA
03/02/92	DRY	NA	NA	NA
04/14/92	74.98	246.81	None	None
05/21/92	74.42	247.37	None	None
06/08/92	75.67	246.12	None	None
MW-5s (Wellhead Elevation = 321.64 ft)				
05/25/88	38.46	283.18	None	None
06/06/88	38.86	282.78	None	None
06/23/88	39.52	282.12	None	None
06/28/88	39.84	281.80	--	--
07/06/88	40.45	281.19	None	None
07/13/88	40.90	280.74	None	None
07/22/88	41.30	280.34	None	None
08/05/88	23.84v	297.80	None	None
08/12/88	42.21	279.43	--	--
08/26/88	42.55	279.09	--	--
09/07/88	42.94	278.70	None	None
12/07/88	44.67	276.97	None	None
02/09/89	43.19	278.45	--	--
03/08/89		Casing head cut to lower elevation		
	42.11	279.53	None	None
04/26/89	41.84	279.80	--	--
06/30/89	43.95	277.69	None	None
07/17/89	44.91	276.73	None	None
07/18/89	44.93	276.71	--	--
07/19/89	44.98	276.66	--	--
07/20/89	45.02	276.62	None	None

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 5 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-5a (continued)				
07/21/89	45.10	276.54	--	--
07/26/89	45.57	276.07	None	None
08/02/89	--	--	NA	NA
08/03/89	46.31	275.33	--	--
08/17/89	47.25	274.39	--	--
09/13/89	49.22	272.42	None	None
11/28/89	50.39	271.25	None	None
01/09/90	49.51	272.13	None	None
01/26/90	49.40	272.24	None	None
02/23/90	49.20#	272.44	None	None
02/23/90	49.20	272.44	None	None
03/26/90	48.89#	272.75	None	None
03/26/90	48.88	272.76	None	None
04/18/90	48.95	272.69	None	None
05/17/90	50.06	271.58	None	None
06/11/90	50.98	270.66	None	None
07/30/90	53.40	268.24	None	None
08/27/90	53.60	268.04	None	None
09/28/90	53.55	268.09	None	None
12/27/90	53.61	268.03	None	None
03/20/91	53.56	268.08	None	None
06/20/91	53.73	267.91	None	None
09/12/91	53.78	267.86	None	None
12/30/91	53.80	267.84	None	None
01/24/92	53.82	267.82	None	None
03/02/92	53.82	267.82	None	None
04/14/92	53.74	267.90	None	None
05/21/92	53.77	267.87	None	None
06/08/92	53.81	267.83	None	None
MW-6				
05/11/88	37.71	--	None	None
06/06/88	38.70	--	None	None
06/23/88	39.23	--	None	None
06/28/88	39.74	--	None	None
07/13/88	40.78	--	None	None
08/05/88	41.72	--	None	None
08/12/88	42.14	--	--	--
08/17/88		Well buried under excavated soil	--	--
08/26/88	42.51	--	--	--
09/07/88	42.85	--	None	None
10/24/88		Well destroyed for station construction		
MW-7 (Wellhead Elevation = 321.27 ft)				
07/13/88	40.50	280.77	None	None
07/22/88	41.85#	279.42	None##	None##
08/05/88	41.45#	279.82	None##	None##
08/12/88	42.69	278.58	--	--
09/07/88	42.60	278.67	--	--
12/07/88		Not accessible		
01/17/89	43.20	278.07	--	--
02/09/89		Not accessible, pump equipment in well		
10/12/89	49.93	271.34	None	None
11/28/89	57.61#	264.03	--	--

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 6 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-7 (continued)				
01/09/90	57.57#	263.70	--	--
01/26/90	57.54#	263.73	None	None
01/26/90	49.08	272.19	None	None
02/23/90	55.26#	266.01	None	None
02/23/90	48.93	272.34	None	None
03/26/90	57.52#	263.73	None	None
03/26/90	48.60	272.67	None	None
04/18/90	57.55#	263.72	None	None
05/17/90	57.40#	263.87	None	None
06/11/90	50.68	270.59	None	None
07/30/90	--	NA	None	None
08/27/90	53.05	268.22	None	None
09/28/90	--	NA	NA	NA
12/27/90	--	NA	NA	NA
03/20/91	54.11	267.16	--	--
06/20/91	55.14	266.13	None	None
09/12/91	55.84	265.43	None	None
12/30/91	55.21	266.06	None	None
01/30/92	54.88	266.39	None	None
03/02/92	NA	--	--	--
03/24/92	NA	--	--	--
04/14/92	NA	--	--	--
05/21/92	53.36	267.91	None	None
06/08/92	54.20	267.07	None	None
MW-8 (Wellhead Elevation = 321.86 ft)				
10/01/89	53.88	267.98	None	None
11/28/89	53.74	268.12	None	None
01/09/90	57.90	263.96	None	None
01/26/90	53.57	268.29	None	None
02/23/90	52.16	269.70	None	None
03/26/90	52.80#	269.06	None	None
04/18/90	51.60	270.26	None	None
05/17/90	58.21	263.65	None	None
06/11/90	58.65	263.21	None	None
07/30/90	64.33	257.53	None	None
08/27/90	70.41	251.45	None	None
09/28/90	71.93	249.93	None	None
12/27/90	66.60	255.26	None	None
03/20/91	60.75	261.11	None	None
06/20/91	88.77	233.09	None	None
09/12/91	103.17	218.69	None	None
12/30/91	81.15	240.71	None	None
01/30/92	81.69	240.17	None	None
03/02/92	78.45	243.41	None	None
03/24/92	76.55	245.31	None	None
04/14/92	75.56	246.30	None	None
05/21/92	86.99	234.87	None	None
06/08/92	91.69	230.17	None	None
MW-9 (Wellhead elevation = 321.44 ft)				
10/12/89	50.24	271.20	None	None
11/28/89	50.59	270.85	1.0	Heavy
12/01/89	50.32	271.12	0.25	Heavy
12/07/89	50.13	271.31	1.92	Heavy
12/13/89	49.91	271.53	None	Slight
12/20/89	49.78	271.66	None	Slight
01/02/90	--	NA	None	Slight

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 7 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-9 (continued)				
01/09/90	49.39	272.05	None	Slight
01/26/90	49.30	272.14	None	None
02/23/90	49.06#	272.38	None	None
02/23/90	49.05	272.39	None	None
03/26/90	48.75#	272.69	None	None
03/26/90	48.73	272.71	None	Very Slight
04/18/90	48.81	272.63	None	Slight
05/17/90	49.96	271.48	None	Slight
06/11/90	51.58	269.86	4.5	NA
07/30/90	Dry	NA	NA	NA
08/27/90	Dry	NA	NA	NA
09/28/90	Dry	NA	NA	NA
12/27/90	--	NA	NA	NA
03/20/91	Dry	NA	None	Very Slight
06/20/91	49.63	271.81	None	None
09/12/91	--	NA	NA	NA
12/30/91	--	NA	NA	NA
01/30/92	--	NA	NA	NA
03/02/92	--	NA	NA	NA
03/24/92	--	NA	NA	NA
04/14/92	--	NA	NA	NA
05/21/92	--	NA	NA	NA
06/08/92	--	NA	NA	NA
MW-10 (Wellhead Elevation = 322.99 ft)				
10/12/89	51.93	271.06	None	None
11/28/89	51.88	271.11	None	None
12/20/89	51.47	271.52	None	None
01/09/90	50.98	272.01	None	None
01/26/90	50.87	272.12	None	None
02/23/90	50.67#	272.32	None	None
02/23/90	50.65	272.34	None	None
03/26/90	50.36#	272.63	None	None
03/26/90	50.35	272.64	None	None
04/18/90	50.45	272.54	None	None
06/11/90	51.16	271.83	None	None
07/30/90	55.72	267.27	None	None
08/27/90	57.75	265.24	None	None
09/28/90	--	NA	NA	NA
12/27/90	58.08	264.91	None	None
03/20/91	57.80	265.19	None	None
06/20/91	58.00	264.99	None	None
09/12/91	DRY	NA	NA	NA
12/30/91	--	NA	NA	NA
01/30/92	DRY	NA	NA	NA
03/02/92	DRY	NA	NA	NA
03/24/92	58.53	264.46	None	None
04/14/92	DRY	NA	NA	NA
05/21/92	DRY	NA	NA	NA
06/08/92	DRY	NA	NA	NA
MW-11 (Wellhead Elevation = 321.77 ft)				
11/10/89	50.64	271.13	None	None
11/28/89	50.51	271.26	None	Very Slight
12/20/89	51.47	270.30	None	None
01/09/90	49.68	272.09	None	None
01/26/90	49.55	272.22	None	None
02/23/90	49.37#	272.40	None	None

See notes on page 8 of 8.

TABLE 1
 CUMULATIVE RESULTS OF SUBJECTIVE EVALUATION OF WATER SAMPLES
 (page 8 of 8)

Date	Depth to Water (ft)	Groundwater Elevation (ft)	Floating Product (in)	Sheen
MW-11 (continued)				
02/23/90	49.35	272.42	None	None
03/26/90	49.03#	272.74	None	None
03/26/90	49.03	272.74	None	None
04/18/90	49.12	272.65	None	None
05/17/90	50.30	271.47	None	None
06/11/90	51.16	270.61	None	None
07/30/90	53.50	268.27	None	None
08/27/90	53.65	268.12	None	None
09/28/90	53.62	268.15	None	None
12/27/90	53.63	268.14	None	None
03/20/91	53.26	268.51	None	None
06/20/91	53.60	268.17	None	None
09/12/91	53.60	268.17	None	None
12/30/91	53.95	267.82	None	None
01/30/92	53.65	268.13	None	None
03/02/92	53.68	268.09	None	None
03/24/92	53.70	268.07	None	None
04/14/92	53.66	268.11	None	None
05/21/92	53.62	268.15	None	None
06/08/92	53.61	268.16	None	None
VR-1				
03/24/92	24.77	--	None	None

Depth to groundwater is in feet below top of casing.
 Elevation is in feet above mean sea level.

-- = Not measured

NA = Not applicable

* = Not measured because of installed product-skimmer pump.

** = Thickness of floating product after the well was allowed to recharge for approximately 3 hours.

v = Anomalous water level possibly due to recharge from a perched water zone.

= Water level during pumping of MW-7.

= Water inspected in oil-water separator tank.

TABLE 2
 CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
 (page 1 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-1								
4/02/88	W-38-MW1	<0.5	1.7	<0.5	<0.5	<20	--	--
7/06/88	W-40-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-42-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/07/88	W-43-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW1	1.6	<0.5	<0.5	<0.5	<20	--	--
6/30/89	W-44-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-45-MW1	<0.5	<0.5	<0.5	<0.5	23	--	--
7/20/89	W-45-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-46-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-46-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-50-MW1	39	0.60	<0.50	5.1	220	--	--
12/20/89	W-50-MW1	56	0.72	<0.50	0.71	220	--	--
1/25/90	W-50-MW1	18	1.6	<0.50	1.8	57	--	--
2/27/90	W-50-MW1	3.2	2.3	<0.50	3.2	55	--	--
3/26/90	W-49-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
4/18/90	W-49-MW1	1.1	1.6	<0.50	3.1	25	--	--
5/17/90	W-49-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/11/90	W-52-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/30/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/27/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/28/90	W-53-MW1	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-2								
7/06/88	W-41-MW	25,700	18,500	2,900	21,400	62,000	--	--
7/12/88				Well destroyed				
MW-3								
4/06/88	W-39-MW3	<0.5	<0.5	<0.5	<0.5	20	--	--
7/06/88	W-41-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-43-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/26/88	W-44-MW3	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/29/88				Well destroyed				
MW-4								
4/11/88	W-37-MW4	1.8	16.3	0.6	7.1	80	--	--
7/06/88	W-41-MW4	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-42-MW4	<0.5	0.9	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW4	3.8	1.0	<0.5	<0.5	440	--	--
6/30/89	W-44-MW4	<0.5	<0.5	<0.5	<0.5	100	--	--
7/17/89	W-45-MW4	<0.5	<0.5	<0.5	<0.5	390	--	--
7/20/89	W-45-MW4	<0.5	<0.5	<0.5	<0.5	200	ND*	--
7/26/89	W-46-MW4	<0.5	<0.5	<0.5	<0.5	66	--	--
8/02/89	W-46-MW4	--	--	--	--	--	--	ND*
9/13/89	W-50-MW4	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-50-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-49-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-54-MW-4	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/27/90	W-54-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/20/91	W-53-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/24/92	W-55-MW-4	<0.5	<0.5	<0.5	<0.5	<50	--	--

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 2 of 4)

Date	Sample No.	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Total Xylenes (ppm)	TPHg (ppm)	EPA 502.2 (ppm)	EPA 524.2 (ppm)
MW-5d								
5/25/88	W-9-MW5a	<0.5	3.1	<0.5	<0.5	<20	--	--
7/06/88	W-41-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-43-MW5d	<0.5	<0.5	<0.5	<0.5	40	--	--
3/08/89	W-43-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/30/80	W-45-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-46-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/20/89	W-47-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-47-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-48-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-51-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-51-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-50-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-56-MW5d	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/27/90	W-63-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/20/91	W-59-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
06/20/91	W-65-MW5d	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-5s								
5/25/88	W-41-MW5b	<0.5	0.9	<0.5	<0.5	<20	--	--
7/06/88	W-41-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/13/88	W-44-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/22/88	W-42-MW5s	0.9	4.1	1.3	8.7	50	--	--
8/05/88	W-25-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/07/88	W-43-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/08/89	W-43-MW5s	<0.5	<0.5	<0.5	<1.0	<20	--	--
6/30/89	W-45-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/17/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/20/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
7/26/89	W-46-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/02/89	W-47-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
9/13/89	W-50-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-50-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-49-MW5s	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-55-MW5s	<0.5	<0.5	<0.5	<0.5	<50	--	--
12/27/90	W-54-MW5s	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-6								
5/17/88	W-40-MW6	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/28/88	W-38-MW6	31.8	7.5	5.4	6.7	440	--	--
7/13/88	W-42-MW6	162.3	7.7	22.5	14.1	290	--	--
8/05/88	W-42-MW6	245	5.2	47.1	23.7	1,180	--	--
9/07/88	W-43-MW6	474	16	262	136	2,920	--	--
10/24/88				Well destroyed				

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 3 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-7 (recovery well)								
7/13/88	W-34-MW7	860	1,910	710	4,420	16,700	--	--
7/22/88	W-50-MW7	136	85	5	58	460	--	--
8/05/88	W-45-MW7	73.3	52.8	2.3	28.1	270	--	--
2/09/89	W-50-MW7	600	688	10	448	6,700	--	--
6/30/89	W-Pump-MW7	180	50	13	40	1,100	--	--
8/02/89	W-TAP-MW7	1.6	<0.5	<0.5	0.60	31	--	--
9/13/89	W-Influent	<0.5	2.6	<0.5	12	87	--	--
12/20/89	W-TAP-MW7	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/20/91	W-55-MW7	<0.5	1.8	0.6	4.1	74	--	--
9/12/91	W-56-MW7	3.5	<0.5	1.7	6.8	<50	--	--
12/30/91	W-55-MW7	<0.5	<0.5	<0.5	<0.5	<50	--	--
6/08/92	W-54-MW7	<0.5	<0.5	<0.5	<0.5	<50	--	--
Well No. 7 (City of Pleasanton)								
7/20/89	Well 7	--	--	--	--	--	ND*	--
8/02/89	W-TAP-CW7	--	--	--	--	--	--	ND*
3/26/90	W-TAP-MW7	<0.50	<0.50	<0.50	<0.50	<20	--	--
MW-8								
10/03/89	W-53-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
12/20/89	W-52-MW8	<0.50	<0.50	<0.50	0.61	<20	--	--
1/31/90	W-55-MW8	<0.50	<0.50	<0.50	0.87	<20	--	--
2/09/90	W-52-MW8	<0.5	<0.5	<0.5	1.1	<20	--	--
	(Blank)	<0.5	<0.5	<0.5	<0.5	<20	--	--
3/26/90	W-55-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
	(Blank)	<0.5	<0.5	<0.5	<0.5	<20	--	--
4/18/90	W-52-MW8	<0.50	0.58	<0.50	1.1	<20	--	--
5/17/90	W-60-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
6/11/90	W-62-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-61-MW8	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/27/90	W-70-MW8	<0.5	<0.5	0.5	0.5	<20	--	--
9/28/90	W-71-MW8	<0.5	<0.5	<0.5	0.5	<50	--	--
12/27/90	W-67-MW8	<0.5	<0.5	<0.5	0.6	<50	--	--
03/20/91	W-60-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
06/20/91	W-88-MW8	<0.5	<0.5	<0.5	0.6	<50	--	--
10/14/91	W-99-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
12/30/91	W-81-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
03/24/92	W-76-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
06/08/92	W-92-MW8	<0.5	<0.5	<0.5	<0.5	<50	--	--
MW-9								
10/13/89	W-50-MW9	1,000	9,200	3,000	13,000	89,000	--	--
12/20/89	W-50-MW9	6,300	31,000	9,500	55,000	190,000	--	--
1/25/90	W-50-MW9	2,400	9,400	2,700	15,000	77,000	--	--
2/27/90	W-50-MW9	1,200	7,100	2,300	14,000	97,000	--	--
3/26/90	W-49-MW9	1,800	7,700	2,000	11,000	89,000	--	--
4/18/90	W-49-MW9	2,000	7,500	2,500	16,000	110,000	--	--
5/17/90	W-50-MW9	1,500	5,700	2,300	14,000	81,000	--	--
6/20/91	W-19-MW9	<0.5	<0.5	<0.5	<0.5	430	--	--
MW-10								
10/12/89	W-52-MW10	<0.5	<0.5	<0.5	1.5	20	--	--
12/20/89	W-52-MW10	<0.5	<0.5	<0.5	1.8	<20	--	--
3/26/90	W-51-MW10	<0.5	<0.5	<0.5	<0.5	<20	--	--
8/01/90	W-57-MW10	<0.5	<0.5	<0.5	<0.5	<20	--	--
VR-1								
3/24/92	W-25-VR1	1.7	<0.5	<0.5	<0.5	<50	--	--

See notes on page 4 of 4.

TABLE 2
CUMULATIVE RESULTS OF GROUNDWATER ANALYSES
(page 4 of 4)

Date	Sample No.	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Total Xylenes (ppb)	TPHg (ppb)	EPA 502.2 (ppb)	EPA 524.2 (ppb)
MW-11								
11/16/89	W-51-MW11	4.1	9.4	0.74	20	150	--	--
12/20/89	W-50-MW11	7.2	7.5	2.9	13	150	--	--
3/26/90	W-50-MW11	<0.5	<0.5	<0.5	2.7	32	--	--
7/30/90	W-54-MW11	<0.5	<0.5	<0.5	3.8	26	--	--

TPHg = total petroleum hydrocarbons as gasoline by EPA modified Method 8015

EPA 502.2 = EPA Method 502.2 (volatile organic compounds)

EPA 524.2 = EPA Method 524.2 (volatile organic compound)

< = Less than the method detection limits of the laboratory

-- = Not analyzed or not applicable

ND = Nondetectable or below the method detection limit(s) of the laboratory

* = Nondetectable concentrations for 58 volatile organic compounds

Sample designation: W-54-MW11

┌─── monitoring well number
└───┬─── depth of sample to the nearest foot
 └─── water

TABLE 3
CUMULATIVE RESULTS OF INFLUENT AND EFFLUENT VAPOR SAMPLES

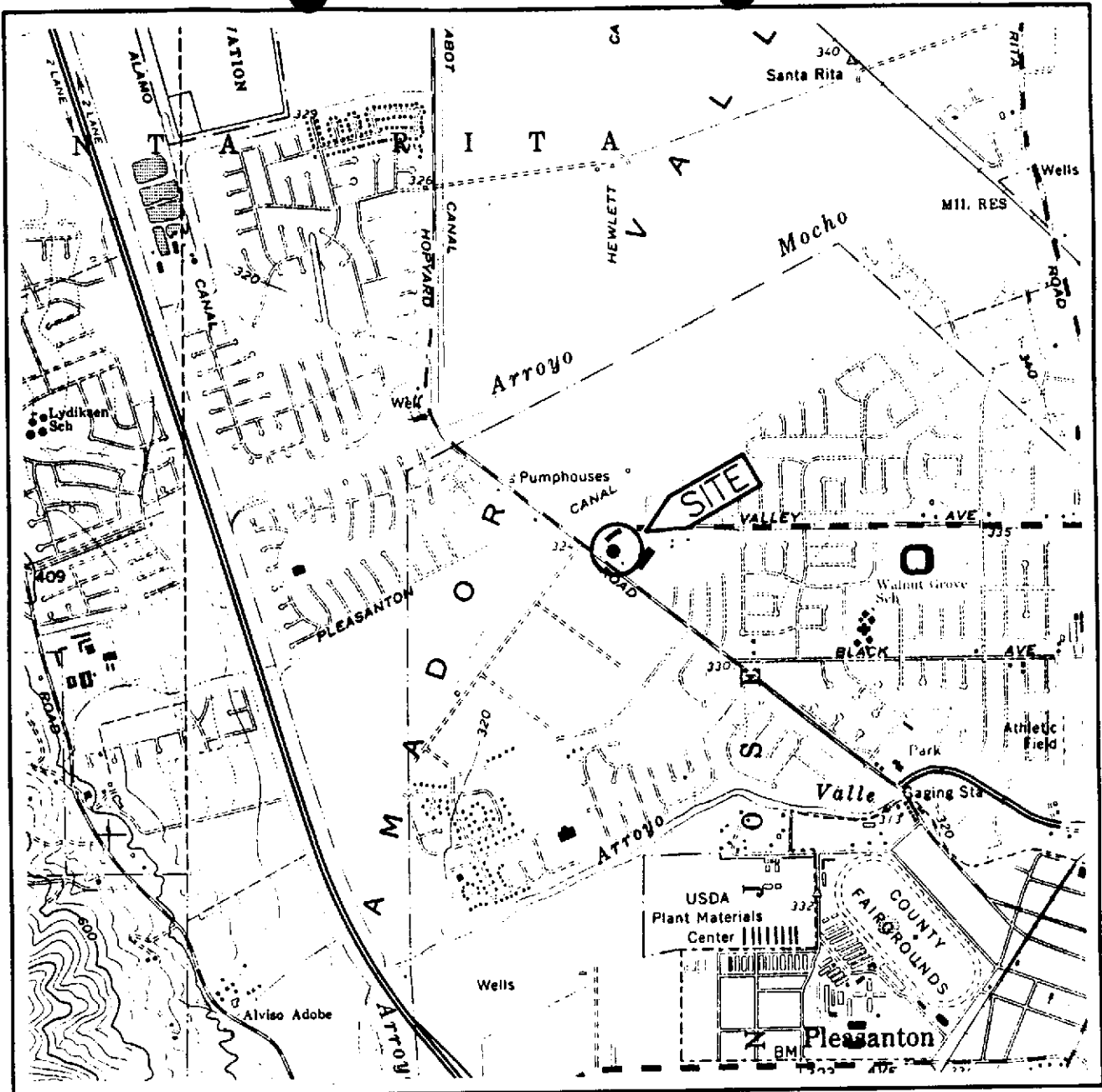
Date	Sample No.	TPHg	Benzene	Toluene	Ethyl- benzene	Total xylenes
11/30/90	influent	1800*	19*	21*	15*	52*
12/11/90	influent	1.4	<0.0001	0.0005	0.0003	0.0008
12/14/90	influent	0.94	<0.0005	0.011	0.0083	0.025
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/17/90	influent	0.20	0.0024	0.0016	0.0010	0.0026
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
12/28/90	influent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
	effluent	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
1/4/91	influent	0.94	0.013	0.0005	0.0006	0.0015
1/14/91	influent	1.2	0.0023	0.0013	0.0009	0.0039
1/28/91	influent	0.96	0.028	0.0008	0.0005	0.0005
2/28/91	System inoperative					
3/18/91	influent	0.91	0.0037	0.0015	0.0018	0.0091
4/22/91	System inoperative					
5/3/91	influent	0.62	<0.0005	<0.0005	<0.0005	0.0009
6/20/91	influent	0.49	0.026	0.041	0.0089	0.050

Results are in parts per million (ppm).

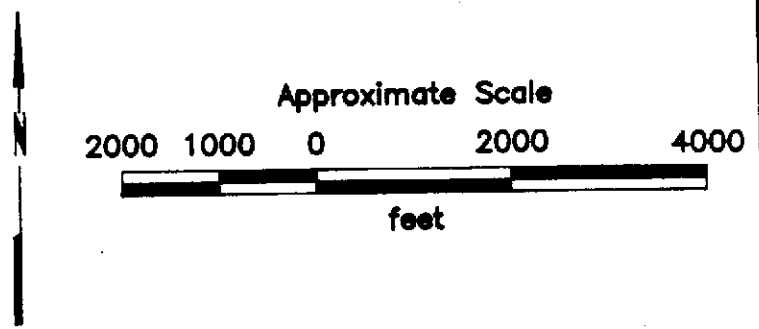
* = Results in milligrams per cubic meter (mg/m³).

TPHg = Total petroleum hydrocarbons as gasoline.

< = Less than the method detection limit of the laboratory.



Source: U.S. Geological Survey
 7.5-Minute Quadrangle
 Dublin, California
 Photorevised 1980

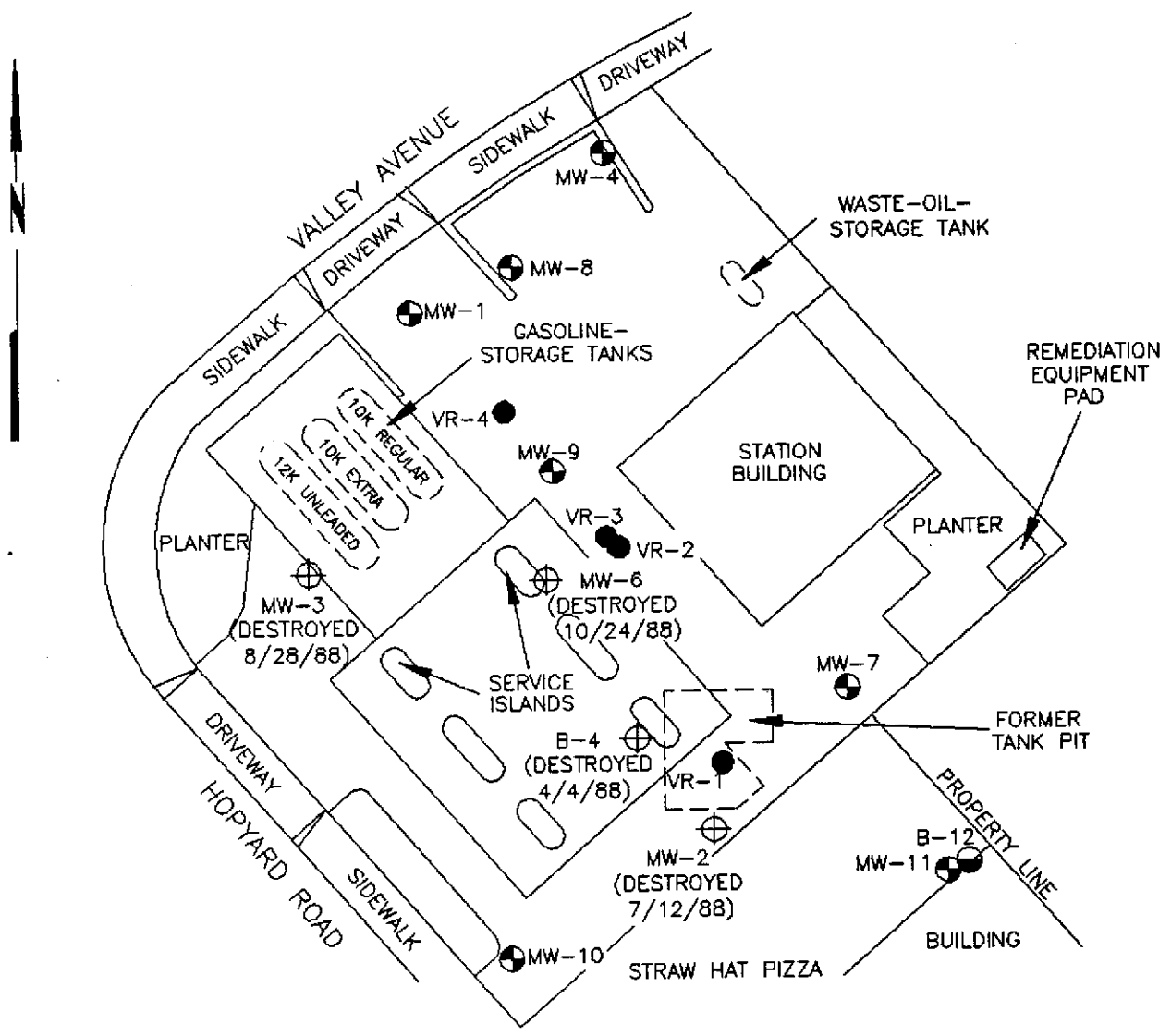
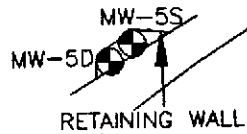


RESNA

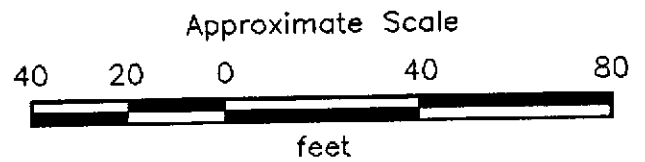
PROJECT NO. 18034-15

SITE VICINITY MAP
 Exxon Station No. 7-3399
 2991 Hopyard Road
 Pleasanton, California

PLATE
 1



- MW-7 = Monitoring well
- VR-1 = Vapor recovery well
- B-12 = Soil boring
- MW-6 = Former well or boring



RESNA

GENERALIZED SITE PLAN
Exxon Station No. 7-3399
2991 Hopyard Road
Pleasanton, California

PLATE

2

PROJECT NO. 18034-15

GROUNDWATER SAMPLING PROTOCOL

Sampling of groundwater is performed by RESNA Industries, Inc., sampling technicians. Monitoring well sampling procedures are summarized as follows:

1. Wells are sampled in approximate order of increasing contamination.
2. Proceed to first well with clean and decontaminated equipment.
3. Measurements depths to liquid surface(s) in the well, and total depth of monitoring well. Note presence of sediment.
4. Field check for presence of floating product; measure apparent thickness.
5. Calculate minimum purge volume (well volumes) then purge well.
6. Monitor groundwater for temperature, pH, and specific conductance during purging. Following stabilization of parameters and removal of minimum volume, allow well to recover adequately.
7. Collect samples using Environmental Protection Agency (EPA) approved sample collection devices, i.e., teflon or stainless steel bailers or pumps.
8. Transfer samples into laboratory-supplied EPA-approved containers.
9. Label samples and log onto chain-of-custody form.
10. Store samples in a chilled ice chest for shipment to state-certified analytical laboratory.
11. Secure wellhead.
12. Decontaminate equipment prior to sampling next well.

Equipment Cleaning and Decontamination

All water samples are placed in precleaned laboratory-supplied bottles. Sample bottles and caps remain sealed until actual usage at the site. All equipment which comes in contact with interior of the well or groundwater is thoroughly cleaned with either a steam cleaner, a trisodium phosphate (TSP) solution or an Alconox™ solution and rinsed with deionized or distilled water before use at the site. This cleaning procedure is followed between each well sampled. If a teflon cord is used, the cord is cleaned. If a nylon or cotton cord is used, a new cord is used in each well.

All equipment blanks are collected prior to sampling. The blanks are analyzed periodically to ensure proper cleaning procedures are used.

Water Level Measurements

Depth to groundwater is measured in each well using a sealed sampling tape or scaled electric sounder prior to purging or sampling. If the well is known or suspected of containing free-phase petroleum hydrocarbons, either an optical interface probe or a bailer is used to measure the hydrocarbon thickness. Measurements are collected and recorded to the nearest 0.01 foot. Each monitoring well's total depth will be measured; this will allow a relative judgement of well sedimentation and need for redevelopment to be made.

Bailer Sheen Check

If no measurable free-phase petroleum hydrocarbons are detected, a clear acrylic bailer is used to determine the presence of a sheen. The color of the water and any film or obvious odor are recorded.

Groundwater Sampling

Prior to groundwater sampling, each well is purged of "standing" groundwater. Either a bailer, hand pump, or submersible pump is used to purge the well. The amount of purging is dependent on the well hydraulics. Samples will be collected when temperature, pH, and specific conductance stabilize and a minimum of three well-casing volumes of water have been removed. Field measurements will be taken after purging each well volume. Physical parameter measurements (temperature, pH, and specific conductance) are closely monitored throughout the well purging process and are used as indicators for assessing sufficient purging. The purging parameters are measured to observe stabilization to a range of values typical for that aquifer and well. Stable field parameters are recognized as indicative of

groundwater aquifer chemistry entering the well. Specific conductance (conductivity) meters are read to the nearest ± 10 umbos/cm and are calibrated daily. pH meters are read to the nearest ± 0.1 pH units and are calibrated daily. Temperature is read to the nearest \pm °F. Calibration of physical parameter meters will follow manufacturer's specifications. Collected field data during purging activities will be entered on the Well Sampling Field Data Sheet.

Following purging, the well is allowed to recharge prior to sampling. When recovery to 80% of the static water level is estimated or observed to exceed two hours, a sample will be collected when sufficient volume is available to fill all sample containers. The well will be purged slowly enough to minimize the volatilization of organic contaminants during well recharge.

In wells where free-phase hydrocarbons are detected, the free-phase portion will be bailed from the well and its volume recorded. If free-phase hydrocarbons persist through bailing, a groundwater sample will not be collected.

Volatile organic groundwater samples are collected so that air passage through the sample does not occur or is minimal (to prevent volatiles from being stripped from the samples). Sample bottles are filled by slowly running the sample down the side of the bottle until there is a positive convex meniscus over the mouth of the bottle. The teflon side of the septum (in cap) is then positioned against the meniscus, the cap is screwed on tightly, the sample is inverted, and the bottle is lightly tapped. If a bubble is evident, the cap is removed, more sample is added, and the bottle is resealed.

Chain-of-Custody

Groundwater sample containers are labeled with a unique sample number, location, and date of collection. All samples are logged into a chain-of-custody form and placed in a secure, chilled ice chest for shipment to a laboratory certified by the State of California.

Sample Storage

Groundwater samples collected in the field are stored in an ice chest cooled to approximately 4 °C while in transit to the office or analytical laboratory. Samples are stored in a refrigerator overnight and during weekends and holidays. The refrigerator is set to 4 °C and is locked with access controlled by a designated sample custodian.

Quality Assurance/Quality Control Objectives

The sampling and analysis procedures employed by RESNA for groundwater sampling and monitoring follow regulatory guidance for quality assurance/quality control (QA/QC). Quality assurance objectives have been established to develop and implement procedures for obtaining and evaluating water quality and field data in an accurate, precise, and complete manner. In this way, sampling procedures and field measurements provide information that is comparable and representative of actual field conditions. Quality control (QC) is maintained by site-specific field protocols and by requiring the analytical laboratory to perform internal and external QC checks. The goal is to provide data that are accurate, precise, complete, comparable, and representative. The definitions as developed by overseeing federal, state, and local agency guidance documents for accuracy, precision, completeness, comparability, and representativeness are:

- **Accuracy** - the degree of agreement of a measurement with an accepted reference or true value.
- **Precision** - a measure of agreement among individual measurements under similar conditions. Usually expressed in terms of the standard deviation.
- **Completeness** - the amount of valid data obtained from a measurement system compared to the amount that was expected to meet the project data goals.
- **Comparability** - express the confidence with which one data set can be compared to another.
- **Representativeness** - a sample or group of samples that reflect the characteristics of the media at the sampling point.

Laboratory and field handling procedures of samples may be monitored by including QC samples for analysis. QC samples may include any combination of the following:

- **Trip Blanks:** Trip blanks are sent to the project site, and travel with project site samples. Trip blanks are **not** opened, and are returned from a project site with the project site samples for analysis.

-
- **Duplicates:** Duplicated samples are collected "second samples" from a selected well and project site. They are collected as either split samples or second-run samples collected from the same well.
 - **Equipment Blank:** Periodic QC samples collected from field equipment rinseate to verify decontamination procedures.

The number and types of QC samples are determined and analyzed on a project-specific basis.

Job Name: EXXON Date: 4-14-92
 Job No.: 18034-9 Sampled by: R. Adair (120 Levels)
 Phase: Mntly Laboratory: _____
 Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full 3 Empty _____

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W*L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
1	N/A							
4	5376	5690'						clear - No Color No Sheen well condition ok.
5d	7498	7753'						clear - cloudy No Color No Sheen well condition ok
5s	5374	5465'						clear - cloudy No Color No Sheen well condition ok
7	2706	3107'						clear - No Color No Sheen well condition ok

Job Name: EXXON Date: 4-14-92
 Job No.: 18034-9 Sampled by: R. Achur (110 levels)
 Phase: Anti Laboratory: _____
 Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full _____ Empty _____

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W*L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
8	75.56	134.0						clear - no color no stream well condition ok
9	N/A							
10	58.53 DRY							well condition ok
11	53.66	54.60						clear - cloudy no color no stream well condition ok

Job Name: Exxon, Pleasanton, Hayward Rd. Date: 5-21-92
 Job No.: 18034-9 Sampled by: Subirachues, R. Adair
 Phase: Mntly Laboratory: _____
 Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full _____ Empty _____

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W'L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
1	N/A							
4	54.73	56.85						clear - No Odor No Sheen Well condition is good
5d	74.42	77.53						clear - cloudy No Odor No Sheen Well condition is good
5s	53.77	54.67						clear cloudy No Odor No Sheen Well condition is good
7	53.36	59.60						4" well, well has a PVC pipe in it for what appears to be a recovery well. well ok

Job Name: EXON, Pleasanton, Hayward Rd Date: 5-21-92

Job No.: 180341-9 Sampled by: Subjectors, R. Adams

Phase: _____ Laboratory: _____

Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full _____ Empty _____

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W*L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
8	86.99	134.0						clear - No Odor No Sreen well condition is good.
9	N/A							
10	58.53	Dry						
11	53.62	54.60						cloudy - No Odor No Sreen well condition is good

Job Name: EXXON Date: 6-8-92

Job No.: 18034-15 Sampled by: R. Adair

Phase: Qtrly Laboratory: Paca

Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full 1 1/2 Empty 1/2

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W'L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
4	53.80'	55.97'	10:30	NOT SAMPLED				clear No Odor No Sheen NOT ENOUGH H ₂ O to Sample
5d	75.67'	77.57'	10:10	NOT SAMPLED				clear No Odor No Sheen
5s	53.81'	54.65'	10:20	NOT SAMPLED				clear No Odor No Sheen
7	54.20'	59.60'	10:40	3.6 7.2 11 SAMPLE	75.4 73.2 — 73.2	1240 1220 — 1260	7.44 7.97 — 7.73	clear well dry @ 7:00 No Odor No Sheen, but redness (57.82' at sample) well went dry @ 40 gallons. Redness color @ 40
8	91.69'	134.0'	10:00	28 56 84 SAMPLE	67.8 70.2 70.1 71.0	690 680 680 680	7.15 7.17 7.23 7.90	clear No Odor No Sheen 91.65' at Sample

Job Name: EXXON Date: 6-8-92

Job No.: 180341-15 Sampled by: R. Actar

Phase: city Laboratory: Pace

Wells Secure: Yes No If no, then comment: _____

Drums at Site: Full _____ Empty _____

Well No.	Depth to Water (ft)	Well Depth (ft)	Time (W/L)	Purge Volume (gal)	Temp. (°C)	Cond. (umho/cm)	pH	Observations
10	—	58.50	10:45	NOT	SAMPLED			DRY WELL
11	53.61	54.66	10:55	NOT	SAMPLED			clear & cloudy No Odor No Green



EXXON COMPANY, U.S.A.
 P.O. Box 4415, Houston, TX 77210-4415
CHAIN OF CUSTODY

Novato, CA
 11 Digital Drive, 94949
 (415) 883-6100

Irvine, CA
 Alton Business Park
 30 Hughes St., Suite 206, 92718
 (714) 380-9559

Consultant Name: Rosam
 Address: 42501 Alhambra, Fremont, CA.
 Project Contact: Keith McVicker Project #: 18034-15
 Phone #: (510) 659-0404 Fax #: 510-651-2218
 Consultant Work Release #: 92049223
 Exxon Contact: Narla Guonsler Phone #: _____
 Site RAS #: 73399
 Site Location: 2991 Hopyard Rd., Pleasanton
 Laboratory Work Release #: _____

Sampled by (please print) <u>Robin A. Adair</u>					SOIL			WATER			Total Oil & Grease SM 5520	Remarks
Sampler Signature <u>Robin A. Adair</u>		Date Sampled <u>6-8-92</u>			TPH/GAS/BTEX EPA 8015/6020	TPH/Diesel EPA 8015	Organic Lead DHS Method	TPH/GAS/BTEX EPA 8015/6020	TPH/Diesel EPA 8015	Organic Lead DHS Method		
Sample Description	Collection Date/Time	Matrix	Prsv.	# of Cont.								
<u>BB1</u>	<u>6:00-7:00</u>	<u>HCl</u>	<u>3</u>	<u>16406.0</u>	<u>XX</u>			<u>XX</u>				<u>do not run per spec w/15/92 spec / told</u>
<u>W-92-MW8</u>	<u>1:15</u>	<u>HCl</u>	<u>3</u>	<u>16407.7</u>	<u>XX</u>			<u>XX</u>				<u>sample for diesel not rec'd (SBA)</u>
<u>W-54-MW7</u>	<u>2:15</u>	<u>HCl</u>	<u>3</u>	<u>16408.7</u>	<u>XX</u>			<u>XX</u>				<u>sample for diesel not rec'd (SBA)</u>

Cooler No.	Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
Cooler Seal Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<u>Robin A. Adair, Rosam</u>	<u>Virginia J. Johnston</u>	<u>6-12-92</u>	<u>13:50</u>
Turnaround Time (circle choice) 24 hr. 48 hr. 72 hr. <u>96 hr.</u> 5 workday (standard)	<u>Virginia J. Johnston</u>	<u>Keith McVicker</u>	<u>6-12</u>	<u>1940</u>
Shipment Method	Additional Comments:			
Shipment Date				
Distribution:	White - Original	Yellow - Exxon	Pink - Lab	Goldenrod - Consultant Field Staff

15/2, 16/4, 2/4 9/11

420612.510

Mr. Keith McVicker
 Page 2

June 22, 1992
 PACE Project Number: 420612518

Client Reference: Exxon 7-3399 (EE)

PACE Sample Number: 70 0164087
 Date Collected: 06/08/92
 Date Received: 06/12/92
 Client Sample ID: W-54'-MW7

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			
TOTAL FUEL HYDROCARBONS, (LIGHT):			
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

MDL Method Detection Limit
 ND Not detected at or above the MDL.

These data have been reviewed and are approved for release.

Mark A. Valentini

Mark A. Valentini, Ph.D.
 Regional Director

Resna/Applied Geosystems
 42501 Albrae St., Suite 100
 Fremont, CA 94538

June 22, 1992
 PACE Project Number: 420612518

Attn: Mr. Keith McVicker

Client Reference: Exxon 7-3399 (EE)

PACE Sample Number: 70 0164079
 Date Collected: 06/08/92
 Date Received: 06/12/92
 Client Sample ID: W-92'-MW8

<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>DATE ANALYZED</u>
------------------	--------------	------------	----------------------

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	06/16/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	06/16/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	06/16/92
Benzene	ug/L	0.5	ND	06/16/92
Toluene	ug/L	0.5	ND	06/16/92
Ethylbenzene	ug/L	0.5	ND	06/16/92
Xylenes, Total	ug/L	0.5	ND	06/16/92

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. Keith McVicker
 Page 3

QUALITY CONTROL DATA

June 22, 1992
 PACE Project Number: 420612518

Client Reference: Exxon 7-3399 (EE)

TPH GASOLINE/BTEX
 Batch: 70 13250
 Samples: 70 0164079, 70 0164087

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	428	101%	100%	0%
Benzene	ug/L	0.5	40.0	98%	99%	1%
Toluene	ug/L	0.5	40.0	102%	102%	0%
Ethylbenzene	ug/L	0.5	40.0	101%	103%	1%
Xylenes, Total	ug/L	0.5	80.0	103%	105%	1%

MDL Method Detection Limit
 RPD Relative Percent Difference