EXXON COMPANY, U.S.A.

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ENVIRONMENTAL ENGINEERING

W. Y. WANG
SENIOR ENVIRONMENTAL ENGINEER

21 November, 1991

Exxon RAS 7-0104
1725 Park Street
Alameda, California

Ms. Katherine Chesick
Alameda County Health Agency
Division of Hazardous Materials
80 Swan Way, Suite 200
Oakland, California 94621

Dear Ms. Chesick:

Attached for your review and comment is a report entitled **Groundwater Monitoring Results, Fourth Quarter 1991** for the above referenced Exxon station in Alameda. This report, prepared by Harding Lawson Associates of Novato, California, presents the results of the ground water sampling event performed in October, 1991.

The results of this sampling event indicate that petroleum hydrocarbons were detected in all wells at the site. Please note that Exxon has submitted a work plan for remedial action to the County on 23 September, 1991.

Should you have any questions or require additional information, please do not hesitate to call me at (510) 246-8768.

Sincerely,

William Y. Wang

WYW:hs
0559E.5
Attachment

c - w/attachment:
Mr. L. Feldman - San Francisco Bay Region Water Quality Control Board

w/o attachment:
Mr. D. J. Bertoch
Mr. P. J. Brininstool
Mr. G. DeMarzo
Mr. J. R. Hastings
Ms. S. M. Watson - Harding Lawson Associates

Harding Lawson Associates

November 8, 1991

4167,416.02

Exxon Company, U.S.A.
Post Office Box 4032
Concord, California 94520

Attention: Mr. Bill Wang

Gentlemen:

Groundwater Monitoring Results, Fourth Quarter 1991
Exxon Station #7-0104
Alameda, California

This letter presents the results of Harding Lawson Associates' (HLA) fourth quarter of 1991 sampling of seven groundwater monitoring wells at Exxon Station #7-0104, 1725 Park Street, Alameda, California (site). The site history and detailed monitoring well sampling procedures are described in HLA's report *Phase II Evaluation of Petroleum Hydrocarbons, Exxon Service Station R/S #7-0104, 1725 Park Street, Alameda, California*, dated March 21, 1989. This sampling event was conducted on October 22, 1991, and represents HLA's second sampling event authorized by Exxon Company, U.S.A. (Exxon) Work Authorization #90066058.

Groundwater-Level Monitoring and Groundwater Sampling

HLA has obtained monthly groundwater-level and free-phase hydrocarbon measurements from the monitoring wells since September 1989. All measurements were performed with an electric oil-water interface probe or a chalked steel tape. During monthly groundwater monitoring, the groundwater collected from each well was visually inspected for the presence of free-phase petroleum product using a clear Lucite bailer. No measurable free-phase petroleum product has been observed in any of the wells during the course of this investigation.

Prior to groundwater sample collection on October 22, 1991, the monitoring wells were purged a minimum of three well volumes with a PVC bailer or centrifugal pump. The purged water was stored onsite in 55-gallon drums. Measurements of pH, conductivity, and temperature of the purged water were monitored and recorded during purging of the wells. Copies of HLA's Groundwater Sampling Forms documenting sampling activities are attached to this letter.

Groundwater samples were collected from each of the monitoring wells using a stainless steel bailer and decanted into pre-acidified 40-milliliter volatile organic analysis (VOA) vials. A quality assurance/quality control (QA/QC) field blank water sample was prepared in the field by decanting deionized water into VOA vials. The groundwater samples and QA/QC field blank were labeled, placed in a cooler with blue ice, and transported under chain of custody procedures to PACE, Inc., Novato, California. PACE is a state-certified hazardous waste laboratory.

To help prevent potential cross-contamination, all water-level measurement and sampling equipment was decontaminated prior to use by steam cleaning or washing in a low phosphorous soap solution.

Laboratory Analyses

The groundwater samples and field blank were analyzed for total petroleum hydrocarbons (TPH) calibrated as gasoline, and for benzene, toluene, ethylbenzene, and xylenes (BTEX). Groundwater analytical results are summarized in Table 1, along with analytical results from HLA's previous groundwater sampling rounds. Copies of laboratory reports from the October 22, 1991, sampling are attached to this letter.

Groundwater Gradient and Flow Direction

Potentiometric surface elevations from the October 1991 groundwater-level survey are presented in Table 2, along with previously measured potentiometric surface elevations. Potentiometric surface elevations at the site have decreased over the past three months, most likely as a result of the lack of precipitation. Plate 1 presents a generalized potentiometric surface map for the site. As shown on Plate 1, the generalized local direction of groundwater flow is toward the east at an approximate gradient of 0.008 to 0.02 ft/ft. This flow direction is consistent with previous potentiometric surface data obtained during this investigation.

Laboratory Analytical Results

Laboratory analytical results from the October sampling indicate that petroleum hydrocarbon constituents were detected in all seven wells onsite. Detected concentrations of TPH as gasoline ranged from 0.540 to 34 milligrams per liter (mg/l). The highest concentrations of petroleum hydrocarbon constituents were detected in the groundwater sample collected from Monitoring Well MW-2, located downgradient of the fuel storage and distribution systems. No petroleum hydrocarbons were detected in the field blank submitted to the laboratory for analysis.

Review of chemical analyses reveals that concentrations of petroleum constituents have decreased in all monitoring wells during the past quarter. The concentration of benzene exceeds the California State Department of Health Services (DHS) action level

of 0.7 micrograms per liter ($\mu g/l$) in all monitoring wells at the site. The DHS action levels for toluene (100 $\mu g/l$), ethylbenzene (680 $\mu g/l$) and xylenes (620 $\mu g/l$) were exceeded in Wells MW-2, MW-3, and MW-6.

HLA plans to continue quarterly sampling and monthly groundwater level monitoring and is currently developing site soil and groundwater remediation programs. The next quarterly sampling event is scheduled for January 1991.

We trust that this is the information Exxon requires at the present time. HLA recommends that copies of this report be submitted to the Regional Water Quality Control Board and the Alameda County Health Department for their review.

Please call us at 415/892-0821 if you have any questions.

Yours very truly,

HARDING LAWSON ASSOCIATES

Gary A. Lieberman
Staff Geologist

Michael L. Siembieda
Associate Geologist - RG 4007

REGISTERED GEOLOGIST
MICHAEL L. SIEMBIEDA
No: 4007
STATE OF CALIFORNIA

SMW/MLS/amw/T19020-H

Attachments: Table 1 - Summary of Chemical Results of Groundwater Samples
Table 2 - Potentiometric Surface Elevations and Product Thickness Measurements
Plate 1 - Generalized Potentiometric Surface Contour Map, October 22, 1991
Groundwater Sampling Forms
Laboratory Analytical Reports

EXXON ALAMEDA
Table 1. Summary of Chemical Results of Groundwater Samples

Harding Lawson Associates

Well Number	Date	TPH Gasoline mg/l[1]	Benzene µg/l[2]	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	Total Dissolved Solids mg/l
DHS Action Levels			0.7	100	680	620	
MW-1	06/07/88	27	5,000	77	1,100	2,700	NT[3]
	01/17/89	6.8	2,000	91	800	1,600	NT
	06/01/89	1.7	170	6.9	13	230	NT
	09/18/89	2.1	9.0	53	18	130	NT
	12/11/89	5.8	200	42	290	330	NT
	03/07/90	NT	NT	NT	NT	NT	910
	03/13/90	2.3	430	14	16	220	NT
	06/14/90	32	1,400	19	<5[4]	120	NT
	09/19/90	0.95	290	2.9	<0.5	27	NT
	12/17/90	2.1	550	13	350	110	NT
	03/19/91	1.4	900	45	390	150	NT
	07/24/91	9.7	1,300	670	950	2,100	NT
	10/22/91	0.540	220	1.8	110	7.8	NT
MW-2	06/07/88	110	12,000	12,000	2,100	12,000	NT
	01/17/89	30	6,600	3,300	1,600	7,700	NT
	06/01/89	8.7	330	280	680	1,200	NT
	09/18/89	17	580	280	570	220	NT
	12/11/89	32	1,000	850	310	1,200	NT
	03/13/90	39	3,500	1,500	2,100	3,900	NT
	06/14/90	34	3,800	730	1,600	3,900	NT
	09/19/90	63	670	180	390	1,000	NT
	12/17/90	140	3,700	2,500	3,000	8,300	NT
	03/19/91	48	4,500	1,600	2,100	5,500	NT
	07/24/91	49	3,500	2,200	2,000	6,400	NT
	10/22/91	34	3,700	1,100	1,800	5,200	NT
MW-3	06/07/88	28	6,000	80	940	1,900	NT
	01/17/89	5.3	2,500	230	590	1,100	NT
	06/01/89	5.4	330	300	570	680	NT
	09/18/89	12	680	170	350	860	NT
	12/11/89	14	1,100	150	670	690	NT
	03/13/90	18	6,300	200	1,100	1,100	NT
	06/14/90	9.5	1,300	880	310	1,800	NT
	09/19/90	16	5,000	65	1,500	450	NT
	12/17/90	6.7	1,500	64	650	460	NT
	03/19/91	18	4,200	2,100	1,100	1,200	NT
	07/24/91	38	6,200	990	2,900	9,600	NT
	10/22/91	23	3,400	150	2,500	4,400	NT

Well Number	Date	TPH Gasoline mg/l[1]	Benzene µg/l[2]	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	Total Dissolved Solids mg/l
DHS Action Levels			0.7	100	680	620	
MW-4	01/17/89	19	1,000	1,500	360	2,200	NT
	06/01/89	3.6	180	240	63	810	NT
	09/18/89	6.0	290	200	28	510	NT
	12/11/89	13	750	910	510	1,200	NT
	03/07/90	NT	NT	NT	NT	NT	370
	03/13/90	12	1,500	1,500	470	2,800	NT
	06/14/90	12	5,700	400	1,300	760	NT
	09/19/90	5.5	670	180	390	1,000	NT
	12/17/90	14	1,400	620	540	2,100	NT
	03/19/91	11	1,500	740	620	2,100	NT
	07/24/91	10	1,200	440	410	1,200	NT
	10/22/91	4.6	750	190	350	780	NT
MW-5	01/17/89	26	8,700	3,900	990	5,900	NT
	06/01/89	5.2	240	220	130	690	NT
	09/18/89	8.0	340	150	140	460	NT
	12/11/89	15	720	320	450	870	NT
	03/13/90	10	3,400	220	280	800	NT
	06/14/90	12	3,300	160	350	730	NT
	09/19/90	8.5	1,800	85	120	460	NT
	12/17/90	18	2,300	810	430	1,400	NT
	03/19/91	17	2,900	610	580	1,200	NT
	07/24/91	16	3,200	320	690	1,100	NT
	10/22/91	6.6	2,000	64	320	480	NT
MW-6	01/17/89	38	7,400	9,300	2,000	9,900	NT
	06/01/89	23	1,900	2,500	2,000	6,000	NT
	09/18/89	17	650	410	650	320	NT
	12/11/89	29	1,100	810	330	1,500	NT
	03/13/90	38	12,000	15,000	2,500	12,000	NT
	06/14/90	38	9,100	7,800	2,900	12,000	NT
	09/19/90	22	4,200	300	1,400	3,400	NT
	12/17/90	20	3,100	4,100	890	2,700	NT
	03/19/91	180	11,000	55,000	5,600	28,000	NT
	07/24/91	48	5,400	2,300	2,000	9,000	NT
	10/22/91	18	3,100	700	1,400	2,900	NT
MW-7	01/09/90	17	380	180	330	1,300	NT
	03/13/90	16	360	270	83	460	NT
	06/14/90	14	1,200	2,800	75	930	NT

Table 1. Summary of Chemical Results of Groundwater Samples (continued)

Well Number	Date	TPH Gasoline mg/l[1]	Benzene µg/l[2]	Toluene µg/l	Ethyl-benzene µg/l	Xylenes µg/l	Total Dissolved Solids mg/l
DHS Action Levels			0.7	100	680	620	
MW-7 (cont.)	09/19/90	16	2,800	95	2,500	1,700	NT
	12/17/90	75	2,600	7,000	3,300	14,000	NT
	03/19/91	44	1,600	740	3,400	8,600	NT
	07/24/91	18	1,300	160	2,700	1,000	NT
	10/22/91	10	990	26	1,900	490	NT
Field Blank	12/11/89	<0.05	0.88	0.95	0.62	1.7	NT
	12/17/90	<0.05	<0.5	<0.5	<0.5	<0.5	NT
	03/19/91	<0.05	<0.5	<0.5	<0.5	<0.5	NT
	07/24/91	<0.05	<0.5	<0.5	<0.5	<0.6	NT
	10/22/91	<0.05	<0.5	<0.5	<0.5	<0.5	NT
Trip Blank	06/14/90	<0.05	<0.5	<0.5	<0.5	<0.5	NT
	09/19/90	<0.05	0.8	<0.5	0.6	1.0	NT

1 mg/l: milligrams per liter (parts per million)

2 µg/l: micrograms per liter (parts per billion)

3 NT: Not tested

4 <: Numbers preceded by "<" indicate that sample was below the indicated detection limit.

Table 2. Potentiometric Surface and Product Thickness Measurements

Harding Lawson Associates

Well Number	Elevation Top of Well Casing[1]	Date	Depth to Water BTOC[2] (feet)	Depth to Product BTOC (feet)	Product Thickness (feet)	Potentiometric Surface Elevation (feet above MSL)
MW-1	17.35	06-10-88	6.35	NP[3]	NP	11.00
		01-17-89	5.81	NP	NP	11.54
		01-24-89	5.16	NP	NP	12.19
		06-01-89	6.27	NP	Sheen	11.08
		09-18-89	7.11	NP	NP	10.24
		10-20-89	7.28	NP	NP	10.07
		11-22-89	7.02	NP	NP	10.33
		12-11-89	6.60	NP	NP	10.75
		02-13-90	6.02	NP	NP	11.33
		03-13-90	5.91	NP	NP	11.44
		04-18-90	6.18	NP	NP	11.17
		05-23-90	6.29	NP	NP	11.06
		06-14-90	6.19	NP	NP	11.28
		08-21-90	7.03	NP	NP	10.32
		09-19-90	7.26	NP	NP	10.09
		12-17-90	6.75	NP	NP	10.60
		01-31-91	6.78	NP	NP	10.57
		02-25-91	6.59	NP	NP	10.76
		03-19-91	5.85	NP	NP	11.50
		04-22-91	5.72	Sheen	Sheen	11.63
		05-17-91	6.00	NP	NP	11.35
		07-24-91	6.79	NP	NP	10.56
		09-10-91	7.25	NP	NP	10.10
		09-23-91	7.33	NP	NP	10.02
		10-21-91	7.53	NP	NP	9.82
MW-2	16.67	06-10-88	6.20	NP	NP	10.47
		01-17-89	5.96	NP	NP	10.71
		01-24-89	5.04	NP	NP	11.63
		06-01-89	6.32	NP	Sheen	10.35
		09-18-89	6.73	NP	NP	9.94
		10-20-89	6.87	NP	NP	9.80
		11-22-89	6.80	NP	NP	9.87
		12-11-89	6.57	NP	NP	10.10
		02-13-90	6.12	NP	NP	10.55
		03-13-90	6.02	NP	NP	10.65
		04-18-90	6.35	NP	NP	10.32
		05-23-90	6.28	NP	NP	10.39
		06-14-90	6.14	NP	NP	10.53
		08-21-90	6.70	NP	NP	9.97
		09-19-90	6.84	NP	NP	9.83
		12-17-90	6.46	NP	NP	10.21
		01-31-91	6.66	Sheen	Sheen	10.01

Table 2. Potentiometric Surface and Product Thickness Measurements (continued)

Well Number	Elevation Top of Well Casing[1]	Date	Depth to Water BTOC[2] (feet)	Depth to Product BTOC (feet)	Product Thickness (feet)	Potentiometric Surface Elevation (feet above MSL)
MW-2 (cont.)		02-25-91	6.50	NP	NP	10.17
		03-19-91	5.76	Sheen	Sheen	10.91
		04-22-91	5.78	NP	NP	10.89
		05-17-91	6.01	NP	NP	10.66
		07-24-91	6.43	NP	NP	10.24
		09-10-91	6.81	NP	NP	9.86
		09-23-91	6.82	NP	NP	9.85
		10-21-91	7.01	NP	NP	9.66
MW-3	17.11	06-10-88	6.05	NP	NP	11.06
		01-17-89	5.49	NP	NP	11.62
		01-24-89	5.38	NP	NP	11.73
		06-01-89	5.96	NP	NP	11.15
		09-18-89	6.65	NP	NP	10.46
		10-20-89	6.88	NP	NP	10.23
		11-22-89	6.74	NP	NP	10.37
		12-11-89	6.37	NP	NP	10.74
		02-13-90	5.58	NP	NP	11.53
		03-13-90	5.48	NP	NP	11.63
		04-18-90	6.01	NP	NP	11.10
		05-23-90	6.14	NP	NP	10.97
		06-14-90	5.83	NP	NP	11.28
		08-21-90	6.67	NP	NP	10.44
		09-19-90	6.88	NP	NP	10.23
		12-17-90	6.46	NP	NP	10.65
		01-31-91	6.24	NP	NP	10.87
		02-25-91	6.18	NP	NP	10.93
		03-19-91	5.35	NP	NP	11.76
		04-22-91	5.72	NP	NP	11.39
		05-17-91	5.55	NP	NP	11.56
		07-24-91	6.41	NP	NP	10.70
		09-10-91	6.80	NP	NP	10.31
		09-23-91	6.80	NP	NP	10.31
		10-21-91	7.09	NP	NP	10.02
MW-4	17.34	01-17-89	5.36	NP	NP	11.98
		01-24-89	5.46	NP	NP	11.88
		06-01-89	6.01	NP	NP	11.33
		09-18-89	6.80	NP	NP	10.54
		10-20-89	7.08	NP	NP	10.26
		11-22-89	6.82	NP	NP	10.52
		12-11-89	6.37	NP	NP	10.97
		02-13-90	5.49	NP	NP	11.85

Table 2. Potentiometric Surface and Product Thickness Measurements (continued)

Well Number	Elevation Top of Well Casing[1]	Date	Depth to Water BTOC[2] (feet)	Depth to Product BTOC (feet)	Product Thickness (feet)	Potentiometric Surface Elevation (feet above MSL)
MW-4 (cont.)		03-13-90	5.44	NP	NP	11.90
		04-18-90	6.14	NP	NP	11.20
		05-23-90	6.22	NP	NP	11.12
		06-14-90	5.92	NP	NP	11.42
		08-21-90	6.83	NP	NP	10.51
		09-19-90	7.07	NP	NP	10.27
		12-17-90	6.50	NP	NP	10.84
		01-31-91	6.66	NP	NP	10.68
		02-25-91	6.21	NP	NP	11.13
		03-19-91	5.29	NP	NP	12.05
		04-22-91	5.26	NP	NP	12.08
		05-17-91	5.60	NP	NP	11.74
		07-24-91	6.54	NP	NP	10.80
		09-10-91	7.04	NP	NP	10.10
		09-23-91	7.14	NP	NP	10.20
		10-21-91	7.30	Sheen	Sheen	10.04
MW-5	16.71	01-17-89	5.39	NP	NP	11.32
		01-24-89	5.51	NP	NP	11.20
		06-01-89	5.83	NP	Sheen	10.88
		09-18-89	6.52	NP	NP	10.19
		10-20-89	6.72	NP	NP	9.99
		11-22-89	6.54	NP	NP	10.17
		12-11-89	6.21	NP	NP	10.50
		02-13-90	5.60	NP	NP	11.11
		03-13-90	5.54	NP	NP	11.17
		04-18-90	5.75	NP	NP	10.76
		05-23-90	5.98	NP	NP	10.73
		06-14-90	5.81	NP	NP	10.90
		08-21-90	6.51	NP	NP	10.20
		09-19-90	6.70	NP	NP	10.01
		12-17-90	6.24	NP	Sheen	10.47
		01-31-91	6.31	NP	NP	10.40
		02-25-91	6.13	NP	NP	10.58
		03-19-91	5.32	NP	NP	11.39
		04-22-91	5.30	Sheen	Sheen	11.41
		05-17-91	5.59	NP	NP	11.12
		07-24-91	6.33	NP	NP	10.38
		09-10-91	6.66	NP	NP	10.05
		09-23-91	6.75	NP	NP	9.96
		10-21-91	6.92	Sheen	Sheen	9.79

Table 2. Potentiometric Surface and Product Thickness Measurements (continued)

Well Number	Elevation Top of Well Casing[1]	Date	Depth to Water BTOC[2] (feet)	Depth to Product BTOC (feet)	Product Thickness (feet)	Potentiometric Surface Elevation (feet above MSL)
MW-6	17.56	01-17-89	5.59	NP	NP	11.97
		01-24-89	5.27	NP	NP	12.29
		06-01-89	6.25	NP	Sheen	11.31
		09-18-89	6.95	NP	NP	10.61
		10-20-89	7.24	NP	NP	10.32
		11-22-89	7.05	NP	NP	10.51
		12-11-89	6.63	NP	NP	10.93
		02-13-90	5.70	NP	NP	11.86
		03-13-90	5.63	NP	NP	11.93
		04-18-90	6.26	NP	NP	11.30
		05-23-90	6.42	NP	NP	11.14
		06-14-90	6.19	NP	NP	11.37
		08-21-90	7.01	NP	NP	10.55
		09-19-90	7.23	NP	NP	10.33
		12-17-90	6.66	NP	NP	10.90
		01-31-91	6.39	NP	NP	11.17
		02-25-91	6.39	NP	NP	11.17
		03-19-91	5.57	NP	NP	11.99
		04-22-91	5.42	NP	NP	12.14
		05-17-91	5.73	NP	NP	11.83
		07-24-91	6.72	NP	NP	10.84
		09-10-91	7.15	NP	NP	10.41
		09-23-91	7.25	NP	NP	10.31
		10-21-91	7.42	NP	NP	10.14
MW-7	17.12	02-13-90	4.98	NP	NP	12.14
		03-13-90	4.94	NP	NP	12.18
		05-23-90	5.87	NP	NP	11.25
		06-14-90	5.55	NP	NP	11.57
		09-19-90	6.79	NP	NP	10.33
		12-17-90	6.15	NP	NP	10.97
		01-31-91	6.64	NP	NP	10.48
		02-25-91	5.80	NP	NP	11.32
		03-19-91	4.96	NP	NP	12.16
		04-22-91	4.82	Sheen	Sheen	12.30
		05-17-91	5.18	NP	NP	11.94

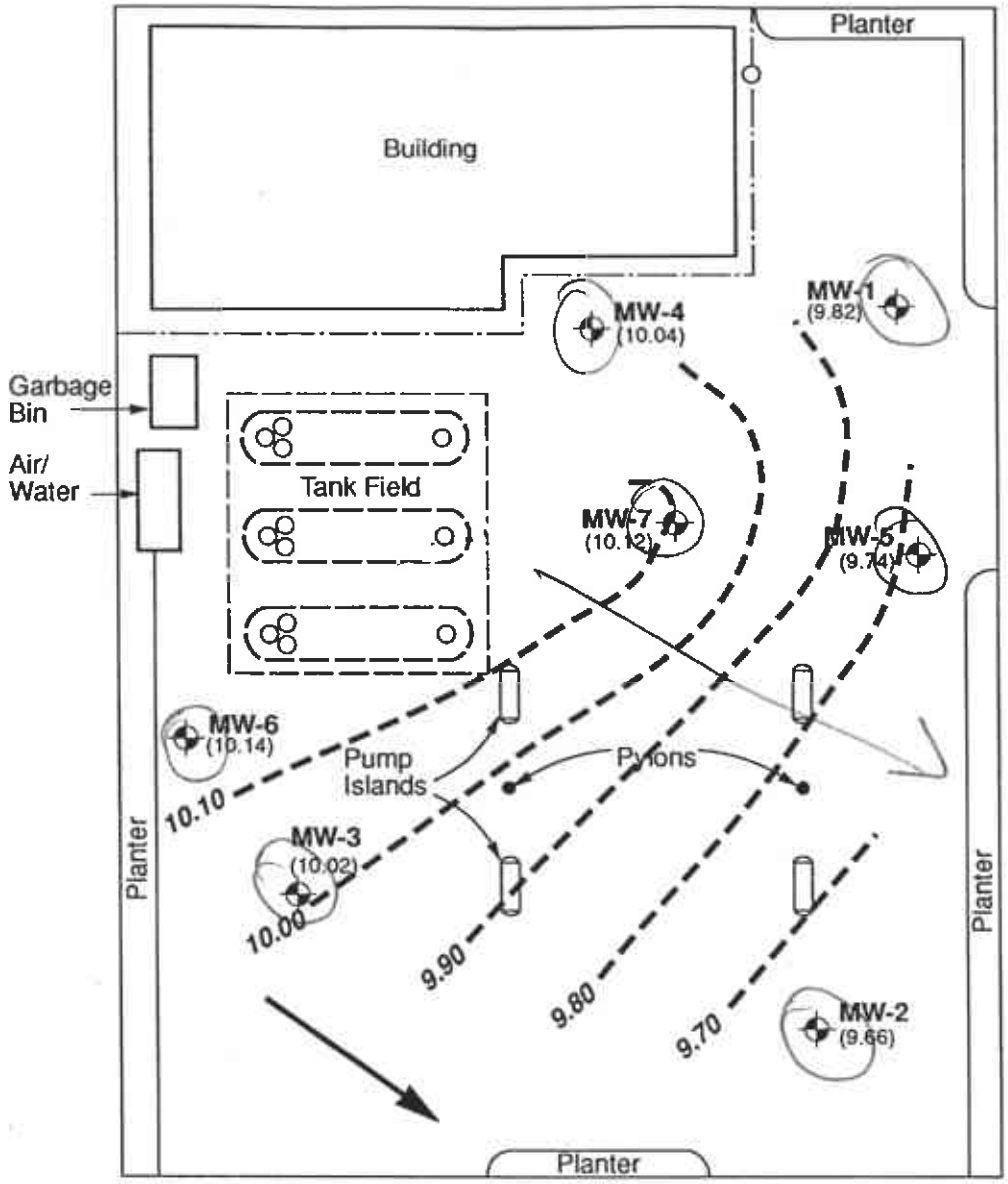
Table 2. Potentiometric Surface and Product Thickness Measurements (continued)

Well Number	Elevation Top of Well Casing[1]	Date	Depth to Water BTOC[2] (feet)	Depth to Product BTOC (feet)	Product Thickness (feet)	Potentiometric Surface Elevation (feet above MSL)
MW-7 (cont.)		07-24-91	6.22	NP	NP	10.90
		09-10-91	6.71	NP	NP	10.41
		09-23-91	6.84	NP	NP	10.28
		10-21-91	7.00	NP	NP	10.12

1 Elevations surveyed to mean sea level.

2 BTOC - Below top of casing.

3 NP: No product.



EXPLANATION

MW-6 — Monitoring well location

(10.14) — Potentiometric surface elevation in feet above Mean Sea Level

-9.80 — Potentiometric surface elevation contour

Approximate groundwater flow direction

N

0 20 40

APPROXIMATE SCALE IN FEET

Harding Lawson Associates
Engineering and Environmental Services

Potentiometric Surface Contours
October 22,1991
Exxon Station #7-0104
Alameda, California

PLATE **1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
PGc	4167,416.02		11/91	

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-1
Well Type: ☒ Monitor ☐ Extraction ☐ Other _____
Well Material: ☒ PVC ☐ St. Steel ☐ Other _____
Date 10-22-91 Time 905
Sampled by KJG (Initials)

Job Name EXXON ALAMEDA
Job Number 04167,326.02
Recorded by _____ (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other _____
Total Depth of Casing (TD in feet BTOC): 20.5
Water Level Depth (WL in feet BTOC): 7.53
Number of Well Volumes to be purged (# Vols)
☐ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other _____

PURGE METHOD

☒ Bailer - Type: _____
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____
☐ Other - Type: _____

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other _____
Depth in feet (BTOC): _____ Screen Interval in feet (BTOC): from _____ to _____

PURGE VOLUME CALCULATION

$(20.5 \text{ TD (feet)} - 7.53 \text{ WL (feet)}) \times 4^2 \text{ D (inches)} \times 3 \text{ \# Vols} \times 0.0408 = 25.4$ gallons
Calculated Purge Volume

PURGE TIME

850 Start 900 Stop _____ Elapsed

PURGE RATE

Initial _____ gpm Final _____ gpm

ACTUAL PURGE VOLUME

26 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0 GAL	6.5	600	19	7100
8	6.7	600	20	7100
16	6.8	600	21	50 NTU
26	6.8	550	21	33.

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	1566	16097		2969

Observations During Purging (Well Condition, Turbidity, Color, Odor): BRN. SLIGHT ODOR, NO SHEEN, TURBID CLEARING
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other DRUM ON SITE

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____
☐ Same As Above
☐ Grab - Type: _____
☐ Other - Type: _____

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2201	3 VOAS	TPH/GAS, BTEX	HCl	PACE	
				RECEIVED	
				NOV 26 1991	
				Alameda Co DEH HHW DIV	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-2
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10-22-91 Time 1020
Sampled by KJB (Initials)

Job Name ESSO N ALAMEDA
Job Number 04167.326.02
Recorded by (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 16.0
Water Level Depth (WL in feet BTOC): 7.00
Number of Well Volumes to be purged (# Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☒ Bailer - Type: PVC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

(16.0 TD (feet) − 7.00 WL (feet)) X 4 D (inches)^2 X 3 # Vols X 0.0408 = 17.6 gallons
Calculated Purge Volume

PURGE TIME

1002 Start 1014 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

13 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0	6.9	750	22	26 NTU
6	6.8	750	22	7 100
12	6.9	750	22	7 100
DRY @	13 GAL			

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	1566	16097		2969

Observations During Purging (Well Condition, Turbidity, Color, Odor): GREY, STRONG ODOR, SHEEN, TURBID FROM BAILER
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other DRUM ON SITE

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: SS
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE IDENTIFICATION Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2202	3 VOAs	TPH/GAS, BTEX	HCL	PACE	

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QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Job Name EXXON ALAMEDA
Job Number 04167.326
Recorded by Karl D. Gross (Signature)

Well No. MW-3
Well Type: ☐ Monitor ☐ Extraction ☐ Other
Well Material: ☐ PVC ☐ St. Steel ☐ Other
Date Time 1045
Sampled by (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in Inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 14.00
Water Level Depth (WL in feet BTOC): 7.10
Number of Well Volumes to be purged (# Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☐ Bailer - Type:
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

(14.0 TD (feet) − 7.10 WL (feet)) × 4 D (inches)^2 × 3 # Vols × 0.0408 = 13.5 gallons Calculated Purge Volume

PURGE TIME

1034 Start 1038 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

10 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0	7.3	500	22	28 NTU
5	7.0	900	22	>100
10	6.9	450	22	>100
~~PF~~ DRY @		10	GAL	

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	1566	16097		2969

Observations During Purging (Well Condition, Turbidity, Color, Odor): GREY, STRONG ODOR, NO SHEEN, TURBID FROM BAI
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other DRUMS ON SITE

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: SS
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2203	3 VOAS	TPH/GAS, BTEX	HCL	PACE	

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QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-4
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10/22/91 Time 0940
Sampled by WJK (Initials)

Job Name Exxon Alameda
Job Number 04167, 326.02
Recorded by [signature] (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 18.0
Water Level Depth (WL in feet BTOC): 7.30
Number of Well Volumes to be purged (# Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☒ Bailer - Type: PVC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

$\left(18 \text{ TD (feet)} - 7.30 \text{ WL (feet)}\right) \times 4^2 \text{ D (inches)} \times 3 \text{ \# Vols} \times 0.0408 = 21$ gallons Calculated Purge Volume

PURGE TIME

0914 Start 0930 Stop 16 Elapsed

PURGE RATE

Initial N/A gpm Final gpm

ACTUAL PURGE VOLUME

21 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other NTU
Initial	6.7	700	20.5	60
8 gal	6.6	725	21.0	97
14 gal	6.5	725	20.5	>100
21	6.5	725	20.5	>100
Note: Nearly dry by end -		Took samples to get extra sample only		

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): mod-strong odor - v. turbid, mod-strong sheen
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drum onsite

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
92204	3 VOA	BTXE - TPH gas	HCL	PACE	

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QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples Time 0720

Type	Sample No.
Field	91102208

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 10-22-91 Time 945
Sampled by KJG (Initials)

Job Name Exxon Alameda
Job Number 04167,326,02
Recorded by Kurt J Lyons (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 19.0
Water Level Depth (WL in feet BTOC): 6.92
Number of Well Volumes to be purged (# Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☒ Bailer - Type: PVC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

(19.0 TD (feet) − 6.92 WL (feet)) × 4 D (inches)^2 × 3 # Vols × 0.0408 = 23.7 gallons
Calculated Purge Volume

PURGE TIME

923 Start 939 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

20 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0 GAL	6.6	700	20	15 NTU
8	6.8	700	21	55
16	6.9	700	21	> 100
20	6.9	700	21	> 100
DRY	@	20	GAL	

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	1566	16097		2969

Observations During Purging (Well Condition, Turbidity, Color, Odor): CLEAR/GREY, STRONG ODOR, SOME SHEEN
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other DRUM ON SITE

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: SS
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2205	3 VOAS	TPH/GAS, BTEX	HCL	PACE	
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				NOV 26 1991	
				Alameda Co DEH HHW DIV	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-6
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Date 10/22/91 Time 1025
Sampled by WTK (Initials)

Job Name Exxon Alameda
Job Number 04167.326.02
Recorded by (Signature)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☑ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 18.5
Water Level Depth (WL in feet BTOC): 7.42
Number of Well Volumes to be purged (# Vols)
☑ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☑ Bailer - Type: PVC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

$(18.5 \text{ (TD, feet)} - 7.42 \text{ (WL, feet)}) \times 4^2 \text{ (D, inches)} \times 3 \text{ (\# Vols)} \times 0.0408 = 22$ gallons (Calculated Purge Volume)

PURGE TIME

1001 Start 1011 Stop 10 Elapsed

PURGE RATE

Initial N/A gpm Final gpm

ACTUAL PURGE VOLUME

18 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐°C ☐°F	Other NTU
INITIAL	6.8	460	20.0	>100
8 gal	6.6	435	21.0	>100
18 gal Dry	6.5	465	21.0	>100

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐°C ☐°F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): Lt green/gray, mod-strong odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drum on site

WELL SAMPLING

SAMPLING METHOD

☑ Bailer - Type: SS
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2206	3 40A	BTXE - TPH 601	HCl	PACE	

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QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-7
Well Type: ☑ Monitor ☐ Extraction ☐ Other
Well Material: ☑ PVC ☐ St. Steel ☐ Other
Job Name Exxon Alameda
Job Number 04167.326.02
Date 10/22/91 Time 0900
Recorded by (Signature)
Sampled by WJF (Initials)

WELL PURGING

PURGE VOLUME

Casing Diameter (D in inches):
☐ 2-inch ☒ 4-inch ☐ 6-inch ☐ Other
Total Depth of Casing (TD in feet BTOC): 16.5
Water Level Depth (WL in feet BTOC): 7.0
Number of Well Volumes to be purged (# Vols)
☒ 3 ☐ 4 ☐ 5 ☐ 10 ☐ Other

PURGE METHOD

☒ Bailer - Type: PVC
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Other - Type:

PUMP INTAKE SETTING

☐ Near Bottom ☐ Near Top ☐ Other
Depth in feet (BTOC): Screen Interval in feet (BTOC): from to

PURGE VOLUME CALCULATION

$$\left(\frac{16.5}{\text{TD (feet)}} - \frac{7.0}{\text{WL (feet)}}\right) \times \frac{4^2}{\text{D (inches)}} \times \frac{18.6\ 3}{\text{\# Vols}} \times 0.0408 = \frac{18.6}{\text{Calculated Purge Volume}} \text{ gallons}$$

PURGE TIME

0840 Start 0852 Stop 12 Elapsed

PURGE RATE

Initial N/A gpm Final gpm

ACTUAL PURGE VOLUME

19 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other NTU
Initial	6.1	725	21.0	48
6 gal	6.2	675	22.0	7100
13 gal	6.3	675	22.5	>100
19 gal	6.3	675	22.0	7100

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.				

Observations During Purging (Well Condition, Turbidity, Color, Odor): Silty grey/brn/gray lt-mod odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drum on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:
☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLE DISTRIBUTION

Sample Series: 9110

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2207	3 VOA	BTEX/TPH gas	HCl	Pace	

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QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

October 28, 1991

30 OCT 91 9:17

Mr. Gary Leiberman
Harding Lawson Associates
7655 Redwood Boulevard
Novato, CA 94948

RE: PACE Project No. 411022.507
Client Reference: Exxon 7-0104

Dear Mr. Leiberman:

Enclosed is the report of laboratory analyses for samples received October 22, 1991.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Carol Reid

Carol Reid
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Harding Lawson Associates
7655 Redwood Boulevard
Novato, CA 94948

October 28, 1991
PACE Project Number: 411022507

Attn: Mr. Gary Leiberman

30 OCT

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106680	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2206	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	2500	18000	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	25	3100	10/23/91
Toluene	ug/L	25	700	10/23/91
Ethylbenzene	ug/L	25	1400	10/23/91
Xylenes, Total	ug/L	25	2900	10/23/91

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 2

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106699	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2205	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	1200	6600	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	12	2000	10/23/91
Toluene	ug/L	12	64	10/23/91
Ethylbenzene	ug/L	12	320	10/23/91
Xylenes, Total	ug/L	12	480	10/23/91

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 3

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

Parameter	Units	MDL		DATE ANALYZED
PACE Sample Number:			70 0106702	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2203	
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	5000	23000	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	50	3400	10/23/91
Toluene	ug/L	50	150	10/23/91
Ethylbenzene	ug/L	50	2500	10/23/91
Xylenes, Total	ug/L	50	4400	10/23/91

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 4

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106710	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2208	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	0.5	ND	10/23/91
Toluene	ug/L	0.5	ND	10/23/91
Ethylbenzene	ug/L	0.5	ND	10/23/91
Xylenes, Total	ug/L	0.5	ND	10/23/91

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

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 5

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106729	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2207	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	2000	10000	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	20	990	10/23/91
Toluene	ug/L	20	26	10/23/91
Ethylbenzene	ug/L	20	1900	10/23/91
Xylenes, Total	ug/L	20	490	10/23/91

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 6

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106737	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2202	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	10000	34000	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	100	3700	10/23/91
Toluene	ug/L	100	1100	10/23/91
Ethylbenzene	ug/L	100	1800	10/23/91
Xylenes, Total	ug/L	100	5200	10/23/91

MDL Method Detection Limit

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Page 7

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106745	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2201	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	540	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	0.5	220	10/23/91
Toluene	ug/L	0.5	1.8	10/23/91
Ethylbenzene	ug/L	0.5	110	10/23/91
Xylenes, Total	ug/L	0.5	7.8	10/23/91

MDL Method Detection Limit

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Page 8

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0106753	
Date Collected:			10/22/91	
Date Received:			10/22/91	
Client Sample ID:			2204	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	10/23/91
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	4600	10/23/91
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	10/23/91
Benzene	ug/L	0.5	750	10/23/91
Toluene	ug/L	0.5	190	10/23/91
Ethylbenzene	ug/L	0.5	350	10/23/91
Xylenes, Total	ug/L	0.5	780	10/23/91

MDL Method Detection Limit

These data have been reviewed and are approved for release.

Mark A. Valentini

Mark A. Valentini, Ph.D.
Regional Director

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Mr. Gary Leiberman
Page 9

QUALITY CONTROL DATA

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

TPH GASOLINE/BTEX
Batch: 70 07120
Samples: 70 0106745, 70 0106753

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	355	100%	88%	12%
Benzene	ug/L	0.5	40.0	103%	103%	0%
Toluene	ug/L	0.5	40.0	102%	104%	1%
Ethylbenzene	ug/L	0.5	40.0	102%	105%	2%
Xylenes, Total	ug/L	0.5	80.0	100%	103%	2%

MDL Method Detection Limit
RPD Relative Percent Difference

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 10

QUALITY CONTROL DATA

October 28, 1991
PACE Project Number: 411022507

Client Reference: Exxon 7-0104

TPH GASOLINE/BTEX
Batch: 70 07127
Samples: 70 0106680, 70 0106699, 70 0106702, 70 0106710, 70 0106729
70 0106737

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	287	86%	87%	1%
Benzene	ug/L	0.5	40.0	104%	103%	0%
Toluene	ug/L	0.5	40.0	100%	97%	3%
Ethylbenzene	ug/L	0.5	40.0	96%	96%	0%
Xylenes, Total	ug/L	0.5	80.0	95%	94%	1%

MDL Method Detection Limit
RPD Relative Percent Difference

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

Consultant Name: Harding Lawson Associates
Address: 7655 Redwood BLVD CA 94948
Project Contact: Gary Lieberman Project #: 04167.326.02
Phone #: 415-892-0821 Fax #: 892 1586
Consultant Work Release #: 911078671 - 900660S8

Exxon Contact: Phone #:
Site RAS #: 7-0104
Site Location:
Laboratory Work Release #:

Sampled by (please print): Bill Fehr Carl Gross
Sampler Signature: Date Sampled: 10/22/91

Sample Description	Collection Date/Time	Matrix	Prsv.	# of Cont.	SOIL: TPH/GAS/BTEX EPA 8015/8020	SOIL: TPH/Diesel EPA 8015	SOIL: Organic Lead DHS Method	WATER: TPH/GAS/BTEX EPA 8015/602	WATER: TPH/Diesel EPA 8015	WATER: Organic Lead DHS Method	TRPH EPA 418.1	Total Oil & Grease SM 5520	Remarks
2206	9110/1025	H_2O	HCl	3				X					10668.0
2205	9110/0945	H_2O	HCl	3				X					69.9
2203	9110/1045	H_2O	HCl	3				X					70.2
2208	9110/0920	H_2O	HCl	3				X					71.0
2207	9110/0900	H_2O	HCl	3				X					72.9
2202	9110/1030	H_2O	HCl	3				X					73.7
2201	9110/0902	H_2O	HCl	3				X					74.5
2204	9110/0940	H_2O	HCl	3				X					75.3
10/1													

Cooler No.	Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
Cooler Seal Intact ☐ Yes ☐ No	HCA	PACE Stephanie	10/22/91	11:45AM

Turnaround Time (circle choice): 24 hr. 48 hr. 72 hr. ~~96 hr.~~ (5 workday (standard))

Shipment Method:

Shipment Date:

Additional Comments:

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Distribution: White - Original Yellow - Exxon Pink - Lab Goldenrod - Consultant Field Staff

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