EXXON COMPANY, U.S.A.
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ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER
ENVIRONMENTAL ENGINEER
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April 8, 1992

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 letter report entitled **Groundwater Monitoring Results, First Quarter 1992** 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 January, 1992.

The results of this sampling event indicate that petroleum hydrocarbons were detected in all wells at the site.

Should you have any questions or require additional information, please do not hesitate to call me at the above listed phone number.

Sincerely,
Marla D. Guensler

Attachment

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

w/o attachment:
Mr. G. DeMarzo
Ms. S. M. Watson - Harding Lawson Associates

MDG:sd
0559E/70104LTR

February 12, 1992

4167,416.02

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

Attention: Mr. William Y. Wang

Gentlemen:

Groundwater Monitoring Results, First Quarter 1992
Exxon Station #7-0104
Alameda, California

This letter presents the results of Harding Lawson Associates' (HLA's) first quarter of 1992 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 January 21, 1992, and represents HLA's first 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. During the past quarterly monitoring round, HLA also collected water levels from the five recently installed extraction wells.

Prior to groundwater sample collection on January 21, 1992, 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 laboratory prepared blank 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 January 21, 1992, sampling are attached to this letter.

Groundwater Gradient and Flow Direction

Potentiometric surface elevations from the January 1992 groundwater-level survey are presented in Table 2, along with previously measured potentiometric surface elevations. The water-level data for the extraction wells were not used in creating the groundwater contour map because the wells have not been surveyed. Potentiometric surface elevations at the site have increased over the past three months, most likely as a result of an increase in 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 0.02 ft/ft. This flow direction is consistent with previous potentiometric surface data obtained during this investigation.

Laboratory Analytical Results

Laboratory analytical results from the January sampling indicate that petroleum hydrocarbon constituents were detected in all seven wells onsite. Detected concentrations of TPH as gasoline ranged from 1.8 to 21 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 not changed significantly 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 (μg/l) in all monitoring wells at the site. The DHS action levels for toluene (100 μg/l), ethylbenzene (680 μg/l) and xylenes (620 μg/l) were exceeded in Wells MW-2, MW-3, MW-5 and MW-6.

HLA plans to continue quarterly sampling and monthly groundwater level monitoring and anticipates completing the installation of an extraction and treatment system at the site during the next quarter. The next quarterly sampling event is scheduled for April 1992.

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

GAL/MLS/kke/T22449-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, January 21, 1992
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
	01/21/92	1.8	650	23	300	64	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
	01/21/92	21	4,600	1,300	1,700	5,100	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

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

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-3	10/22/91	23	3,400	150	2,500	4,400	NT
(con't)	01/21/92	13	2,700	30	1,800	740	NT
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
	01/21/92	6.0	1,300	320	510	1,200	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
	01/21/92	14	4,000	190	630	1,300	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

EXXON ALAMEDA

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

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-6	10/22/91	18	3,100	700	1,400	2,900	NT
(con't)	01/21/92	9.4	2,100	370	1,000	1,100	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
	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
	01/21/92	23	2,200	3,000	1,800	6,100	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
	01/21/92	<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
		11-18-91	7.13	NP	NP	10.22
		12-11-91	7.25	NP	NP	10.10
		01-21-92	6.54	NP	NP	10.81
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

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 (con't)	16.67	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
		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
		11-18-91	6.66	NP	NP	10.01
		12-11-91	6.85	NP	NP	9.82
		01-21-92	6.22	NP	NP	10.45
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
		11-18-91	6.74	NP	NP	10.37
		12-11-91	6.79	NP	NP	10.32
		01-21-92	6.16	NP	NP	10.95

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	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
		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
		11-18-91	6.90	NP	NP	10.44
		12-11-91	7.01	NP	NP	10.33
		01-21-92	6.25	NP	NP	11.09
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

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-5 (con't)	16.71	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
		11-18-91	6.55	NP	NP	10.16
		12-11-91	6.64	NP	NP	10.07
		01-21-92	6.07	Sheen	Sheen	10.64
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
		11-18-91	7.08	NP	NP	10.48
		12-11-91	7.17	NP	NP	10.39
		01-21-92	6.40	NP	NP	11.16

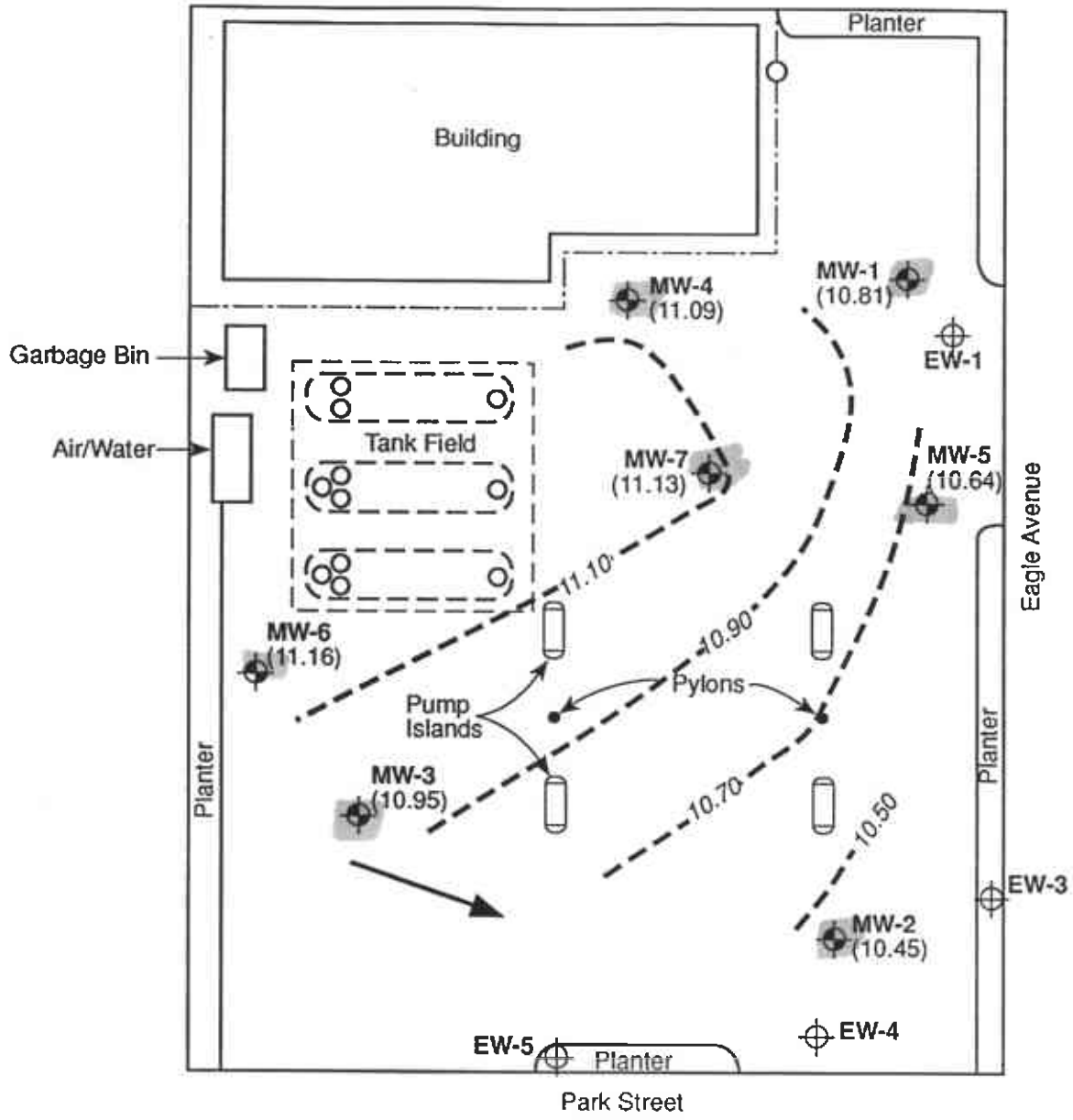
Table 2. Potentiometric Surface and Product Thickness Measurements (continued)

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	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
		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
		11-18-91	6.56	NP	NP	10.56
		12-11-91	6.68	NP	NP	10.44
		01-21-92	5.99	NP	NP	11.13

1 Elevations surveyed to mean sea level.

2 BTOC - Below top of casing.

3 NP: No product.



EXPLANATION

MW-3 ⊕ Monitoring Well Locations

EW-1 ⊕ Extraction Well Location

(11.16) Potentiometric Surface Elevation in Feet Above Mean Sea Level

10.90 Potentiometric Surface Elevation Contour

Approximate Groundwater Flow Direction

N

0 20 40

SCALE IN FEET

Harding Lawson Associates
Engineering and Environmental Services

Generalized Poteniometric Surface
Contour Map - January 21, 1992
Exxon Station #7-0104
Alameda, California

PLATE **1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
NJBc	4167,416.02	GAL	2/92	

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 1-21-92 Time 835
Sampled by RJG (Initials)

Job Name EXXON ALAMEDA
Job Number 04167.416.02
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): 6.54
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

$(20.5 \text{ TD (feet)} - 6.54 \text{ WL (feet)}) \times 4^2 \text{ D (inches)} \times 3 \text{ \# Vols} \times 0.0408 = 27.3$ gallons Calculated Purge Volume

PURGE TIME

812 Start 930 Stop 18 Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

28 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0 GAL	6.8	600	16	> 100
9	6.9	600	18	"
18	6.9	580	18	"
28	6.9	580	19	"

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-TURB FOR BAILING, NO SHEEN, STRANG ODOR
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TOXIC

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2102	3 VOAs	TPH-GAS, BTEX	HCL	PACE	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

OFFICE COPY

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. XLW-2
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 1-21-92 Time 0930
Sampled by DME (Initials)

Job Name Exxon
Job Number 467.4602
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): 15.9
Water Level Depth (WL in feet BTOC): 6.36
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

(15.9 (TD) − 6.36 (WL)) × 4 (D, inches)^2 × 3 (# Vols) × 0.0408 = 19 gallons (Calculated Purge Volume)

PURGE TIME

0901 Start 0908 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

Dry @ 12 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other NTU
Initial	6.1	480	15	21
10	6.4	550	18	>100
~~X~~ 12	6.8	550	18	>100

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	PH3677	EC6095	Tur3249	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, slight odor, sheen
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Baker tank

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2105	3 VOAs	TPHL/BTEX	HCl	Pace	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

RL004

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0748

Harding Lawson Associates
Engineers and Geoscientists

GROUND-WATER SAMPLING FORM

Well No. MW-3
Well Type: ☒ Monitor ☐ Extraction ☐ Other ____
Well Material: ☒ PVC ☐ St. Steel ☐ Other ____
Date 1-21-92 Time 0845
Sampled by DME (Initials)

Job Name Exxon Alameda
Job Number 41167.446.02
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): 14.12
Water Level Depth (WL in feet BTOC): 6.16
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

$(14.12 - 6.16) \times 4^2 \times 3 \times 0.0408 = 16$ gallons

(TD (feet) − WL (feet)) × D (Inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

0820 Start 0838 Stop ____ Elapsed

PURGE RATE

Initial ____ gpm Final ____ gpm

ACTUAL PURGE VOLUME

____ gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other NTU
Initial	6.2	385	15	27
5	6.6	390	17	>100
10	6.7	390	17.5	>100
15	6.8	370	17.5	>100
16	6.9	370	17.0	>100

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	PA 3677	EC 6035	TUR 3249	

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, slight odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Baker tank

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2103	3 VOAs	TPHL/BTEX	HCl	Pace	

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 1-21-92 Time 0915
Sampled by KJG (Initials)

Job Name EXXON ALAMEDA
Job Number 04167.416.02
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): 18.0'
Water Level Depth (WL in feet BTOC): 6.25'
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

$(\underset{\text{TD (feet)}}{18.0} - \underset{\text{WL (feet)}}{6.25}) \times \underset{\text{D (inches)}}{4}^2 \times \underset{\text{\# Vols}}{3} \times 0.0408 = \underset{\text{Calculated Purge Volume}}{23.0}$ gallons

PURGE TIME

900 Start 910 Stop 10 Elapsed

PURGE RATE

Initial ____ gpm Final ____ gpm

ACTUAL PURGE VOLUME

23 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0 GAL	6.6	650	18	> 100
8	6.7	650	18.5	"
16	6.7	650	18.5	"
23	6.7	650	19.0	"

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): TURB FOR BAILING, NO SHEEN, STRONG ODOR
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANK

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2104	3 VOAs	TPH-GAS, BTEX	HCL	PACE	

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: 4167,44602
Recorded by: [signature] (Signature)

Well No.: MW-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date: 1-21-9 Time: 1015
Sampled by: DHE (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): 18.9
Water Level Depth (WL in feet BTOC): 6.07
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

(18.9 TD (feet) − 6.07 WL (feet)) X 4^2 D (inches) X 3 # Vols X 0.0408 = 25.1 Calculated Purge Volume gallons

PURGE TIME

0937 Start 0948 Stop Elapsed

PURGE RATE

Initial — gpm Final — gpm

ACTUAL PURGE VOLUME

Dry @ 18 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒°C ☐°F	Other: NTU
Initial	7.4	525	15.5	78
10	6.8	550	17.0	>100
~~20~~ 18	6.9	550	17.5	>100
~~25~~				

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

Meter Nos. PH 3677 EC 6095 TW 3249

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, slight odor and sheen
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Baker tank

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2107	3 VOAs	TPHG/BTEX	HCl	Pace	

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 1-21-92 Time 0800
Sampled by DME (Initials)

Job Name Exxon Alameda
Job Number 07167.46.02
Recorded by David M Burns (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): 15.5
Water Level Depth (WL in feet BTOC): 6.40
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

$(15.5 - 6.40) \times 4^2 \times 3 \times 0.0408 = 26$ gallons

(TD (feet) − WL (feet)) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

0739 Start 0748 Stop ____ Elapsed

PURGE RATE

Initial ____ gpm Final ____ gpm

ACTUAL PURGE VOLUME

Dry @ 17 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other ATU
Initial	6.1	350	15°	11
10	6.5	320	16°	>100
20 17	6.7	345	17.°	>100
24				

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☐ °C ☐ °F	Other
Meter Nos.	PH3677	EC6095	Turb 324	

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear, slight odor @ 4 gal Cloudy grey
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Baker tank

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
9201	3 VOAs	TPHL / BTEX	HCL	Pace	

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 04167.416.02
Recorded by (Signature)
Date 1-21-92 Time 0950
Sampled by KOE (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): 6.89
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

(16.5 TD (feet) − 6.89 WL (feet)) X 4 D (inches)^2 X 3 # Vols X 0.0408 = 18.8 Calculated Purge Volume gallons

PURGE TIME

0935 Start 0945 Stop Elapsed

PURGE RATE

Initial gpm Final gpm

ACTUAL PURGE VOLUME

gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other TURB
0 GAL	6.5	435	17.5	> 100
6 GAL	6.5	420	17.5	"
12	6.5	360	17.5	"
		335		

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): TURB. FROM BAILING, SHEEN, STRONG ODOR
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other BAKER TANKS

WELL SAMPLING

SAMPLING METHOD

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

SAMPLE DISTRIBUTION

Sample Series: 9201

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
2106	3 VOAS	TPH-GAS, BTEX	HCl	PACE	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
FIELD	2108
@ 1030	

Other Samples

Type	Sample No.

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

January 27, 1992

JAN 92 9:39

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

RE: PACE Project No. 420121.502
Client Reference: Exxon 7-0104

Dear Mr. Leiberman:

Enclosed is the report of laboratory analyses for samples received January 21, 1992.

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

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Harding Lawson Associates
7655 Redwood Boulevard
Novato, CA 94948

January 27, 1992
PACE Project Number: 420121502

Attn: Mr. Gary Leiberman

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007410	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 01	
Parameter	Units	MDL		DATE ANALYZED
			mw - 6	
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	2000	9400	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	20	2100	01/23/92
Toluene	ug/L	20	370	01/23/92
Ethylbenzene	ug/L	20	1000	01/23/92
Xylenes, Total	ug/L	20	1100	01/23/92

MDL Method Detection Limit

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

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 2

January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007429	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 02	
Parameter	Units	MDL	MW-1	DATE ANALYZED
ORGANIC ANALYSIS				
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	500	1800	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	5.0	650	01/23/92
Toluene	ug/L	5.0	23	01/23/92
Ethylbenzene	ug/L	5.0	300	01/23/92
Xylenes, Total	ug/L	5.0	64	01/23/92

MDL Method Detection Limit

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

REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
Page 3

January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007437	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 03	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			mw-3	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	2500	13000	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	25	2700	01/23/92
Toluene	ug/L	25	30	01/23/92
Ethylbenzene	ug/L	25	1800	01/23/92
Xylenes, Total	ug/L	25	740	01/23/92

MDL Method Detection Limit

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

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REPORT OF LABORATORY ANALYSIS

January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007445	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 04	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			Mw-Lt	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	1200	6000	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	12	1300	01/23/92
Toluene	ug/L	12	320	01/23/92
Ethylbenzene	ug/L	12	510	01/23/92
Xylenes, Total	ug/L	12	1200	01/23/92

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
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January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007453	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 05	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			mw-3	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	6200	21000	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	62	4600	01/23/92
Toluene	ug/L	62	1300	01/23/92
Ethylbenzene	ug/L	62	1700	01/23/92
Xylenes, Total	ug/L	62	5100	01/23/92

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
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January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007461	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 06	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			MW	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	6200	23000	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	62	2200	01/23/92
Toluene	ug/L	62	3000	01/23/92
Ethylbenzene	ug/L	62	1800	01/23/92
Xylenes, Total	ug/L	62	6100	01/23/92

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

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January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007470	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 07	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			MW-5	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	5000	14000	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	50	4000	01/23/92
Toluene	ug/L	50	190	01/23/92
Ethylbenzene	ug/L	50	630	01/23/92
Xylenes, Total	ug/L	50	1300	01/23/92

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
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January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

PACE Sample Number:			70 0007488	
Date Collected:			01/21/92	
Date Received:			01/21/92	
Client Sample ID:			92 0121 08	
Parameter	Units	MDL		DATE ANALYZED
ORGANIC ANALYSIS			Field Blank	
TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	01/23/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	01/23/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	01/23/92
Benzene	ug/L	0.5	ND	01/23/92
Toluene	ug/L	0.5	ND	01/23/92
Ethylbenzene	ug/L	0.5	ND	01/23/92
Xylenes, Total	ug/L	0.5	ND	01/23/92

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

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Novato, CA 94949
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REPORT OF LABORATORY ANALYSIS

Mr. Gary Leiberman
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QUALITY CONTROL DATA

January 27, 1992
PACE Project Number: 420121502

Client Reference: Exxon 7-0104

TPH GASOLINE/BTEX
Batch: 70 09372
Samples: 70 0007410, 70 0007429, 70 0007437, 70 0007445, 70 0007453
70 0007461, 70 0007470, 70 0007488

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	290	106%	99%	6%
Benzene	ug/L	0.5	40.0	102%	100%	1%
Toluene	ug/L	0.5	40.0	108%	102%	5%
Ethylbenzene	ug/L	0.5	40.0	103%	102%	0%
Xylenes, Total	ug/L	0.5	80.0	107%	105%	1%

MDL Method Detection Limit
RPD Relative Percent Difference

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(415) 883-6100

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

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

Consultant Name: HARDING LAWSON ASSOCIATES
Address: 200 RUSH LANDING, NOVATO, CA 94947
Project Contact: GARY LIEBERMAN Project #: 04167,416,02
Phone #: (415) 897-0821 Fax #:
Consultant Work Release #: RAS 7-0104 CONTRACT# 9106 4698

Exxon Contact: Phone #:
Site RAS #: 7-0104
Site Location: 1725 PARK ST, ALAMEDA CA
Laboratory Work Release #: 92010862

Sampled by (please print): KARL J. GROSS David M Evans
Sampler Signature: Karl Gross + David M Evans Date Sampled: 1-21-92

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
92012101	1-21-92 0800	H_2O	HCL	3	741.0			X									
92012102	0835	H_2O	HCL	3	742.9			X									
92012103	0845	H_2O	HCL	3	743.7			X									
92012104	0915	H_2O	HCL	3	744.5			X									
92012105	0930	H_2O	HCL	3	745.3			X									
92012106	0950	H_2O	HCL	3	746.1			X									
92012107	1015	H_2O	HCL	3	747.0			X									
92012108	1030	H_2O	HCL	3	748.8			X									

Cooler No. 10 2
Cooler Seal Intact ☐ Yes ☐ No

Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
David M Evans	Stephen Mathys PACE	1/21/92	11:20 AM

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

Shipment Method: HLA DELIVERY
Shipment Date: 1-21-92

Additional Comments:

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

420121.502