EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • **(408) 453-7300** • Fax (408) 437-9526

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Date March 31, 1996
Project 20805-132.002

To:

Ms. Eva Chu
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harborbay Parkway, Suite 250
Alameda, California 94502-6577

① Check w/ method analysis should be used for MTBE
② See if MW-2 is available for GW sampling (DG)
③ Could MTBE from ... site?

ENVIRONMENTAL PROTECTION
96 MAR 20 PM 1:44

We are enclosing:

Copies	Description
1	Fourth quarter 1995 groundwater monitoring results
	for ARCO service station 6041, Dublin, California

For your:			Sent by:		
	X	Use			Regular Mail
		Approval			Standard Air
		Review			Courier
		Information		X	Other: Cert. Mail

Comments:
The enclosed groundwater monitoring report is being sent to you per the request of ARCO Products Company. Plaese call if you have questions or comments.

John C. Young
Project Manager

cc: Copy entire document:
Kevin Graves, RWQCB - SFBR
Michael Whelan, ARCO Products Company
Ivy Inouye, EMCON
File

Copy tranmsmittal and Table 2:
Scott T. Hooton, BP Oil Company

ARCO Products Company

Date:

March 31, 1996

Re: ARCO Station #

6041 • 7249 Village Parkway • Dublin, CA
Fourth Quarter 1995 Groundwater Monitoring Results

" I declare, that to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached proposal or report are true and correct."

Submitted by:

Michael R. Whelan

Michael R. Whelan
Environmental Engineer

EMCON
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

February 26, 1996
Project 20805-132.002

Mr. Michael Whelan
ARCO Products Company
P.O. Box 612530
San Jose, California 95161

Re: Fourth quarter 1995 groundwater monitoring program results, ARCO service station 6041, Dublin, California

Dear Mr. Whelan:

This letter presents the results of the fourth quarter 1995 groundwater monitoring program at ARCO Products Company (ARCO) service station 6041, 7249 Village Parkway, Dublin, California (Figure 1). The quarterly monitoring program complies with Alameda County Health Care Services Agency (ACHCSA) requirements regarding underground tank investigations.

MONITORING PROGRAM FIELD PROCEDURES

A program of quarterly groundwater monitoring was initiated during the third quarter of 1991 to provide information concerning water quality, flow direction, and gradient, and to meet ACHCSA and Regional Water Quality Control Board (RWQCB) requirements regarding underground fuel tank investigations. Water levels are measured quarterly in wells MW-1 through MW-6. Wells MW-5 and MW-6 are sampled annually, during the first quarter of the year. Well MW-4 is sampled semiannually, during the first and third quarters. Wells MW-1, MW-2, and MW-3 are sampled quarterly.

Beginning in the first quarter of 1996, wells MW-4, MW-5, and MW-6 will be sampled annually, during the first quarter. Wells MW-1, MW-2, and MW-3 will be sampled quarterly. Water levels will be measured in all wells quarterly.

EMCON performed the fourth quarter 1995 groundwater monitoring event on November 28, 1995. Field work this quarter included (1) measuring depths to groundwater and subjectively analyzing groundwater for the presence of floating product in wells MW-1 through MW-6; (2) purging and subsequently sampling groundwater monitoring wells MW-1 through MW-3 for laboratory analysis; and (3) directing a state-certified laboratory to analyze the groundwater samples. Copies of all field data sheets from the fourth quarter 1995 groundwater monitoring event are included in Appendix A.

MONITORING PROGRAM RESULTS

Results of the fourth quarter 1995 groundwater monitoring event are summarized in Table 1 and illustrated in Figure 2. Historical groundwater elevation data are summarized in Table 2. Table 3 summarizes historical analytical data for analysis of petroleum hydrocarbons and their constituents. Table 4 summarizes historical groundwater elevation data for the British Petroleum (BP) station at 7197 Village Parkway, the former Shell station at 7194 Amador Valley Boulevard, and the UNOCAL station at 7375 Amador Valley Boulevard. Figure 3 illustrates vicinity groundwater elevation data for all four service stations (ARCO, BP, Shell, and UNOCAL) during the fourth quarter of 1995. Copies of the fourth quarter 1995 analytical results and chain-of-custody documentation are included in Appendix B.

On-site groundwater contours and analytical data for the fourth quarter of 1995 are presented in Figure 2. The approximate groundwater flow direction and gradient for the site vicinity were calculated using groundwater elevation data collected from the UNOCAL, ARCO, and BP stations during the November 28, 1995, cooperative sampling event. Based on data collected from wells MW-3 (UNOCAL), AW-4 (BP), and MW-5 (ARCO), groundwater flows north, with an approximate hydraulic gradient of 0.006 foot per foot (Figure 3).

LIMITATIONS

No monitoring event is thorough enough to describe all geologic and hydrogeologic conditions of interest at a given site. If conditions have not been identified during the monitoring event, such a finding should not therefore be construed as a guarantee of the absence of such conditions at the site, but rather as the result of the scope, limitations, and cost of work performed during the monitoring event.

SITE STATUS UPDATE

This update reports site activities performed during the fourth quarter of 1995 and the anticipated site activities for the first quarter of 1996.

Fourth Quarter 1995 Activities

- Prepared and submitted quarterly groundwater monitoring report for third quarter 1995.
- Performed quarterly groundwater monitoring for fourth quarter 1995.

Work Anticipated for First Quarter 1996

- Prepare and submit quarterly groundwater monitoring report for fourth quarter 1995.
- Perform quarterly groundwater monitoring for first quarter 1996.
- Investigate the cause of elevated concentrations of MTBE detected in groundwater samples collected from monitoring well MW-3.

Please call if you have questions.

Sincerely,

EMCON

REGISTERED GEOLOGIST
JOHN CHARLES YOUNG
7/96
NO. 6407
STATE OF CALIFORNIA

John C. Young, R.G. 6407
Project Manager

Attachments:
- Table 1 - Groundwater Monitoring Data, Fourth Quarter 1995
- Table 2 - Historical Groundwater Elevation Data
- Table 3 - Historical Groundwater Analytical Data, Petroleum Hydrocarbons and Their Constituents
- Table 4 - Historical Groundwater Elevation Data (BP, Shell, and UNOCAL Stations)
- Figure 1 - Site Location
- Figure 2 - Groundwater Data, Fourth Quarter 1995
- Figure 3 - Vicinity Groundwater contours (ARCO, BP, Shell, and UNOCAL Stations), Fourth Quarter 1995
- Appendix A - Field Data Sheets, Fourth Quarter 1995 Groundwater Monitoring Event
- Appendix B - Analytical Results and Chain-of-Custody Documentation, Fourth Quarter 1995

Table 1
Groundwater Monitoring Data
Fourth Quarter 1995

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation	Depth to Water	Groundwater Elevation	Floating Product Thickness	Groundwater Flow Direction	Hydraulic Gradient	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		ft-MSL	feet	ft-MSL	feet	MWN	ft/ft		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	11-28-95	336.56	11.01	325.55	ND	N	0.006	11-28-95	570	2.2	<0.5	1.4	0.9	--	--
MW-2	11-28-95	334.80	9.06	325.74	ND	N	0.006	11-28-95	<50	<0.5	<0.5	<0.5	0.8	--	--
MW-3	11-28-95	335.53	9.91	325.62	ND	N	0.006	11-28-95	81	1.5	<0.5	1.4	<0.5	--	15000
MW-4	11-28-95	334.22	8.21	326.01	ND	N	0.006	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-5	11-28-95	335.87	10.12	325.75	ND	N	0.006	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-6	11-28-95	335.84	10.28	325.56	ND	N	0.006	11-28-95	Not sampled: not scheduled for chemical analysis						

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ft/ft: foot per foot
TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United Statest Environmental Protection Agency
MTBE: methyl-tert-butyl ether
ND: none detected
N: north
-- : not analyzed

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20805-132.002

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-1	09-20-91	336.56	11.20	325.36	ND	NR	NR
MW-1	10-22-91	336.56	11.48	325.08	ND	NR	NR
MW-1	11-27-91	336.56	11.27	325.29	ND	NR	NR
MW-1	12-16-91	336.56	11.55	325.01	ND	NR	NR
MW-1	01-18-92	336.56	11.37	325.19	ND	NR	NR
MW-1	02-21-92	336.56	9.13	327.43	ND	NR	NR
MW-1	03-16-92	336.56	9.70	326.86	ND	NR	NR
MW-1	04-24-92	336.56	10.20	326.36	ND	NR	NR
MW-1	05-15-92	336.56	10.46	326.10	ND	NR	NR
MW-1	06-09-92	336.56	10.73	325.83	ND	NR	NR
MW-1	07-28-92	336.56	11.04	325.52	ND	NR	NR
MW-1	08-24-92	336.56	11.32	325.24	ND	NR	NR
MW-1	09-09-92	336.56	11.54	325.02	ND	NR	NR
MW-1	10-26-92	336.56	11.80	324.76	ND	NR	NR
MW-1	11-10-92	336.56	11.74	324.82	ND	NR	NR
MW-1	12-14-92	336.56	10.77	325.79	ND	NR	NR
MW-1	01-15-93	336.56	8.88	327.68	ND	NR	NR
MW-1	02-10-93	336.56	9.66	326.90	ND	NR	NR
MW-1	03-29-93	336.56	8.31	328.25	ND	NR	NR
MW-1	04-27-93	336.56	9.03	327.53	ND	NR	NR
MW-1	05-10-93	336.56	9.50	327.06	ND	NR	NR
MW-1	06-18-93	336.56	10.16	326.40	ND	NR	NR
MW-1	07-28-93	336.56	10.68	325.88	ND	NR	NR
MW-1	08-30-93	336.56	10.59	325.97	ND	NR	NR
MW-1	09-28-93	336.56	10.82	325.74	ND	NR	NR
MW-1	10-31-93	336.56	10.94	325.62	ND	NR	NR
MW-1	11-11-93	336.56	10.70	325.86	ND	NR	NR
MW-1	12-15-93	336.56	10.56	326.00	ND	NR	NR
MW-1	02-11-94	336.56	10.35	326.21	ND	NR	NR
MW-1	03-13-94	336.56	9.99	326.57	ND	NR	NR
MW-1	05-17-94	336.56	9.82	326.74	ND	NR	NR
MW-1	08-25-94	336.56	10.11	326.45	ND	NR	NR
MW-1	09-22-94	336.56	11.20	325.36	ND	NR	NR
MW-1	11-18-94	336.56	10.25	326.31	ND	NR	NR
MW-1	02-15-95	336.56	8.53	328.03	ND	NR	NR
MW-1	05-24-95	336.56	9.00	327.56	ND	ESE	0.002
MW-1	08-25-95	336.56	10.30	326.26	ND	NW	0.006
MW-1	11-28-95	336.56	11.01	325.55	ND	N	0.006

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-2	09-20-91	334.80	9.22	325.58	ND	NR	NR
MW-2	10-22-91	334.80	9.66	325.14	ND	NR	NR
MW-2	11-27-91	334.80	9.48	325.32	ND	NR	NR
MW-2	12-16-91	334.80	9.76	325.04	ND	NR	NR
MW-2	01-18-92	334.80	9.47	325.33	ND	NR	NR
MW-2	02-21-92	334.80	7.62	327.18	ND	NR	NR
MW-2	03-16-92	334.80	7.84	326.96	ND	NR	NR
MW-2	04-24-92	334.80	8.34	326.46	ND	NR	NR
MW-2	05-15-92	334.80	8.62	326.18	ND	NR	NR
MW-2	06-09-92	334.80	8.88	325.92	ND	NR	NR
MW-2	07-28-92	334.80	9.38	325.42	ND	NR	NR
MW-2	08-24-92	334.80	9.81	324.99	ND	NR	NR
MW-2	09-09-92	334.80	9.92	324.88	ND	NR	NR
MW-2	10-26-92	334.80	10.13	324.67	ND	NR	NR
MW-2	11-10-92	334.80	10.12	324.68	ND	NR	NR
MW-2	12-14-92	334.80	8.99	325.81	ND	NR	NR
MW-2	01-15-93	334.80	7.20	327.60	ND	NR	NR
MW-2	02-10-93	334.80	7.30	327.50	ND	NR	NR
MW-2	03-29-93	334.80	6.60	328.20	ND	NR	NR
MW-2	04-27-93	334.80	7.10	327.70	ND	NR	NR
MW-2	05-10-93	334.80	7.40	327.40	ND	NR	NR
MW-2	06-18-93	334.80	8.02	326.78	ND	NR	NR
MW-2	07-28-93	334.80	8.47	326.33	ND	NR	NR
MW-2	08-30-93	334.80	8.80	326.00	ND	NR	NR
MW-2	09-28-93	334.80	9.19	325.61	ND	NR	NR
MW-2	10-31-93	334.80	9.12	325.68	ND	NR	NR
MW-2	11-11-93	334.80	9.02	325.78	ND	NR	NR
MW-2	12-15-93	334.80	8.82	325.98	ND	NR	NR
MW-2	02-11-94	334.80	8.59	326.21	ND	NR	NR
MW-2	03-13-94	334.80	8.09	326.71	ND	NR	NR
MW-2	05-17-94	334.80	7.99	326.81	ND	NR	NR
MW-2	08-25-94	334.80	9.23	325.57	ND	NR	NR
MW-2	09-22-94	334.80	9.47	325.33	ND	NR	NR
MW-2	11-18-94	334.80	8.70	326.10	ND	NR	NR
MW-2	02-15-95	334.80	6.75	328.05	ND	NR	NR
MW-2	05-24-95	334.80	6.88	327.92	ND	ESE	0.002
MW-2	08-25-95	334.80	7.91	326.89	ND	NW	0.006
MW-2	11-28-95	334.80	9.06	325.74	ND	N	0.006

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-3	09-20-91	335.53	10.16	325.37	ND	NR	NR
MW-3	10-22-91	335.53	10.48	325.05	ND	NR	NR
MW-3	11-27-91	335.53	10.17	325.36	ND	NR	NR
MW-3	12-16-91	335.53	10.25	325.28	ND	NR	NR
MW-3	01-18-92	335.53	10.71	324.82	ND	NR	NR
MW-3	02-21-92	335.53	8.68	326.85	ND	NR	NR
MW-3	03-16-92	335.53	8.91	326.62	ND	NR	NR
MW-3	04-24-92	335.53	9.14	326.39	ND	NR	NR
MW-3	05-15-92	335.53	9.54	325.99	ND	NR	NR
MW-3	06-09-92	335.53	9.72	325.81	ND	NR	NR
MW-3	07-28-92	335.53	10.15	325.38	ND	NR	NR
MW-3	08-24-92	335.53	10.42	325.11	ND	NR	NR
MW-3	09-09-92	335.53	10.53	325.00	ND	NR	NR
MW-3	10-26-92	335.53	10.92	324.61	ND	NR	NR
MW-3	11-10-92	335.53	10.72	324.81	ND	NR	NR
MW-3	12-14-92	335.53	9.78	325.75	ND	NR	NR
MW-3	01-15-93	335.53	7.66	327.87	ND	NR	NR
MW-3	02-10-93	335.53	7.87	327.66	ND	NR	NR
MW-3	03-29-93	335.53	7.35	328.18	ND	NR	NR
MW-3	04-27-93	335.53	7.70	327.83	ND	NR	NR
MW-3	05-10-93	335.53	8.46	327.07	ND	NR	NR
MW-3	06-18-93	335.53	9.13	326.40	ND	NR	NR
MW-3	07-28-93	335.53	9.49	326.04	ND	NR	NR
MW-3	08-30-93	335.53	9.62	325.91	ND	NR	NR
MW-3	09-28-93	335.53	9.80	325.73	ND	NR	NR
MW-3	10-31-93	335.53	9.84	325.69	ND	NR	NR
MW-3	11-11-93	335.53	9.81	325.72	ND	NR	NR
MW-3	12-15-93	335.53	10.23	325.30	ND	NR	NR
MW-3	02-11-94	335.53	9.60	325.93	ND	NR	NR
MW-3	03-13-94	335.53	9.03	326.50	ND	NR	NR
MW-3	05-17-94	335.53	9.11	326.42	ND	NR	NR
MW-3	08-25-94	335.53	11.09	324.44	ND	NR	NR
MW-3	09-22-94	335.53	10.21	325.32	ND	NR	NR
MW-3	11-18-94	335.53	9.79	325.74	ND	NR	NR
MW-3	02-15-95	335.53	8.55	326.98	ND	NR	NR
MW-3	05-24-95	335.53	8.17	327.36	ND	ESE	0.002
MW-3	08-25-95	335.53	9.27	326.26	ND	NW	0.006
MW-3	11-28-95	335.53	9.91	325.62	ND	N	0.006

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-4	11-10-92	334.22	9.58	324.64	ND	NR	NR
MW-4	12-14-92	334.22	8.72	325.50	ND	NR	NR
MW-4	01-15-93	334.22	7.27	326.95	ND	NR	NR
MW-4	02-10-93	334.22	6.80	327.42	ND	NR	NR
MW-4	03-29-93	334.22	6.29	327.93	ND	NR	NR
MW-4	04-27-93	334.22	6.33	327.89	ND	NR	NR
MW-4	05-10-93	334.22	6.68	327.54	ND	NR	NR
MW-4	06-18-93	334.22	7.05	327.17	ND	NR	NR
MW-4	07-28-93	334.22	7.77	326.45	ND	NR	NR
MW-4	08-30-93	334.22	8.09	326.13	ND	NR	NR
MW-4	09-28-93	334.22	8.40	325.82	ND	NR	NR
MW-4	10-31-93	334.22	8.56	325.66	ND	NR	NR
MW-4	11-11-93	334.22	8.48	325.74	ND	NR	NR
MW-4	12-15-93	334.22	8.38	325.84	ND	NR	NR
MW-4	02-11-94	334.22	8.15	326.07	ND	NR	NR
MW-4	03-13-94	334.22	7.57	326.65	ND	NR	NR
MW-4	05-17-94	334.22	7.49	326.73	ND	NR	NR
MW-4	08-25-94	334.22	8.79	325.43	ND	NR	NR
MW-4	09-22-94	334.22	8.99	325.23	ND	NR	NR
MW-4	11-18-94	334.22	8.31	325.91	ND	NR	NR
MW-4	02-15-95	334.22	7.85	326.37	ND	NR	NR
MW-4	05-24-95	334.22	6.68	327.54	ND	ESE	0.002
MW-4	08-25-95	334.22	6.93	327.29	ND	NW	0.006
MW-4	11-28-95	334.22	8.21	326.01	ND	N	0.006

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-5	11-10-92	335.87	11.02	324.85	ND	NR	NR
MW-5	12-14-92	335.87	10.17	325.70	ND	NR	NR
MW-5	01-15-93	335.87	8.14	327.73	ND	NR	NR
MW-5	02-10-93	335.87	8.00	327.87	ND	NR	NR
MW-5	03-29-93	335.87	7.52	328.35	ND	NR	NR
MW-5	04-27-93	335.87	8.26	327.61	ND	NR	NR
MW-5	05-10-93	335.87	8.64	327.23	ND	NR	NR
MW-5	06-18-93	335.87	9.26	326.61	ND	NR	NR
MW-5	07-28-93	335.87	9.65	326.22	ND	NR	NR
MW-5	08-30-93	335.87	9.81	326.06	ND	NR	NR
MW-5	09-28-93	335.87	9.99	325.88	ND	NR	NR
MW-5	10-31-93	335.87	10.02	325.85	ND	NR	NR
MW-5	11-11-93	335.87	10.09	325.78	ND	NR	NR
MW-5	12-15-93	335.87	10.08	325.79	ND	NR	NR
MW-5	02-11-94	335.87	9.63	326.24	ND	NR	NR
MW-5	03-13-94	335.87	9.26	326.61	ND	NR	NR
MW-5	05-17-94	335.87	8.99	326.88	ND	NR	NR
MW-5	08-25-94	335.87	10.23	325.64	ND	NR	NR
MW-5	09-22-94	335.87	10.39	325.48	ND	NR	NR
MW-5	11-18-94	335.87	9.65	326.22	ND	NR	NR
MW-5	02-15-95	335.87	7.80	328.07	ND	NR	NR
MW-5	05-24-95	335.87	8.10	327.77	ND	ESE	0.002
MW-5	08-25-95	335.87	9.43	326.44	ND	NW	0.006
MW-5	11-28-95	335.87	10.12	325.75	ND	N	0.006

Table 2
Historical Groundwater Elevation Data

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Level Field Date	Top of Casing Elevation ft-MSL	Depth to Water feet	Groundwater Elevation ft-MSL	Floating Product Thickness feet	Groundwater Flow Direction MWN	Hydraulic Gradient foot/foot
MW-6	11-10-92	335.84	11.03	324.81	ND	NR	NR
MW-6	12-14-92	335.84	10.03	325.81	ND	NR	NR
MW-6	01-15-93	335.84	7.64	328.20	ND	NR	NR
MW-6	02-10-93	335.84	8.22	327.62	ND	NR	NR
MW-6	03-29-93	335.84	7.59	328.25	ND	NR	NR
MW-6	04-27-93	335.84	8.20	327.64	ND	NR	NR
MW-6	05-10-93	335.84	8.85	326.99	ND	NR	NR
MW-6	06-18-93	335.84	9.26	326.58	ND	NR	NR
MW-6	07-28-93	335.84	9.83	326.01	ND	NR	NR
MW-6	08-30-93	335.84	10.15	325.69	ND	NR	NR
MW-6	09-28-93	335.84	9.95	325.89	ND	NR	NR
MW-6	10-31-93	335.84	10.16	325.68	ND	NR	NR
MW-6	11-11-93	335.84	10.02	325.82	ND	NR	NR
MW-6	12-15-93	335.84	10.28	325.56	ND	NR	NR
MW-6	02-11-94	335.84	9.66	326.18	ND	NR	NR
MW-6	03-13-94	335.84	9.28	326.56	ND	NR	NR
MW-6	05-17-94	335.84	9.10	326.74	ND	NR	NR
MW-6	08-25-94	335.84	10.39	325.45	ND	NR	NR
MW-6	09-22-94	335.84	10.50	325.34	ND	NR	NR
MW-6	11-18-94	335.84	9.54	326.30	ND	NR	NR
MW-6	02-15-95	335.84	7.81	328.03	ND	NR	NR
MW-6	05-24-95	335.84	8.35	327.49	ND	ESE	0.002
MW-6	08-25-95	335.84	9.71	326.13	ND	NW	0.006
MW-6	11-28-95	335.84	10.28	325.56	ND	N	0.006

ft-MSL: elevation in feet, relative to mean sea level
MWN: ground-water flow direction and gradient apply to the entire monitoring well network
ND: none detected
NR: not reported; data not available or not measurable
ESE: east-southeast
NW: northwest
N: north

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	09-20-91	410	28	36	4.3	89	--	--
MW-1	12-16-91	840	50	50	3.9	12	--	--
MW-1	03-16-92	780	22	12	45	22	--	--
MW-1	06-09-92	700	8.8	15	16	18	--	--
MW-1	09-09-92	400	5.4	8.4	4.6	6.7	--	--
MW-1	11-10-92	2800	93	56	190	390	--	--
MW-1	02-10-93	9700	180	100	450	740	--	--
MW-1	05-10-93	6400	120	12	410	300	--	--
MW-1	08-30-93	2000	2.5	<2.5	110	61	--	--
MW-1	11-11-93	2100	<2.5	<2.5	66	20	--	--
MW-1	02-11-94	2000	<2.5	<2.5	25	5.7	--	--
MW-1	05-17-94	1400	79	1.4	11	2.4	--	--
MW-1	08-25-94	880	2.4	<1	4.6	<1	--	--
MW-1	11-18-94	2500	1.5	<0.5	1.4	<1	--	--
MW-1	02-15-95	820	15	<1	5.2	1.4	--	--
MW-1	05-24-95	640	12	<1	7.3	<1	--	--
MW-1	08-25-95	780	2	<1	2	2	2500	--
MW-1	11-28-95	570	2.2	<0.5	1.4	0.9	--	--
MW-2	09-20-91	130	6.6	0.96	1.4	1.5	--	--
MW-2	12-16-91	83	0.96	<0.3	<0.3	<0.3	--	--
MW-2	03-16-92	430	130	<2.5	37	5	--	--
MW-2	06-09-92	120	3.7	<0.5	5.7	<0.5	--	--
MW-2	09-09-92	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	11-10-92	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	02-10-93	740	110	<5	35	<5	--	--
MW-2	05-10-93	2000	650	14	86	28	--	--
MW-2	08-30-93	170	1.4	7.9	1.6	15	--	--
MW-2	11-11-93	78	<0.5	2.8	0.7	5.9	--	--
MW-2	02-11-94	<50	2.4	0.7	<0.5	<0.5	--	--
MW-2	05-17-94	150	19	<0.5	2.5	1.2	--	--
MW-2	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-2	11-18-94	237	1.9	0.6	<0.5	<1	--	--
MW-2	02-15-95	730	110	1.7	25	66	--	--
MW-2	05-24-95	370	110	<1	17	1.9	--	--
MW-2	08-25-95	150	6	<1	<1	<1	2700	--
MW-2	11-28-95	<50	<0.5	<0.5	<0.5	0.8	--	--

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3	09-20-91	990	50	100	11	200	--	--
MW-3	12-16-91	1000	180	5.1	23	4.3	--	--
MW-3	03-16-92	430	86	<1.0	22	3.4	--	--
MW-3	06-09-92	1800	290	2.4	49	17	--	--
MW-3	09-09-92	2600	550	<5	120	12	--	--
MW-3	11-10-92	1100	280	<5	100	<5	--	--
MW-3	02-10-93	980	190	<5	52	<5	--	--
MW-3	05-10-93	1100	280	<2.5	70	<2.5	--	--
MW-3	08-30-93	470	120	<1	22	<1	--	--
MW-3	11-11-93	830	96	<2.5	25	<2.5	--	--
MW-3	02-11-94	220	42	<1.0	84	<1.0	--	--
MW-3	05-17-94	200	44	<0.5	9.3	<0.5	--	--
MW-3	08-25-94	100	4.3	<0.5	1.1	<0.5	--	--
MW-3	11-18-94	1850	3.5	<0.5	0.9	<1	--	--
MW-3	02-15-95	100	14	<0.5	6.3	<0.5	--	--
MW-3	05-24-95	110	8	<0.5	2.7	<0.5	--	--
MW-3	08-25-95	210	3.6	<0.5	2.9	0.6	20000	--
MW-3	11-28-95	81	1.5	<0.5	1.4	<0.5	--	15000
MW-4	11-10-92	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	02-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	08-30-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	11-11-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	11-18-94	<50	<0.5	<0.5	<0.5	<1	--	--
MW-4	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-4	08-25-95	<50	<0.5	<0.5	<0.5	<0.5	<3	--
MW-4	11-28-95	Not sampled: not scheduled for chemical analysis						

Table 3
Historical Groundwater Analytical Data
Petroleum Hydrocarbons and Their Constituents

ARCO Service Station 6041
7249 Village Parkway, Dublin, California

Date: 02-12-96

Well Designation	Water Sample Field Date	TPHG LUFT Method	Benzene EPA 8020	Toluene EPA 8020	Ethylbenzene EPA 8020	Total Xylenes EPA 8020	MTBE EPA 8020	MTBE EPA 8240
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-5	11-10-92	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	02-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	05-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	08-30-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	11-11-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	11-18-94	<50	<0.5	<0.5	<0.5	<1	--	--
MW-5	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-5	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-5	08-25-95	Not sampled: not scheduled for chemical analysis						
MW-5	11-28-95	Not sampled: not scheduled for chemical analysis						
MW-6	11-10-92	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	02-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	05-10-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	08-30-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	11-11-93	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	02-11-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	05-17-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	08-25-94	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	11-18-94	<50	<0.5	<0.5	<0.5	<1	--	--
MW-6	02-15-95	<50	<0.5	<0.5	<0.5	<0.5	--	--
MW-6	05-24-95	Not sampled: not scheduled for chemical analysis						
MW-6	08-25-95	Not sampled: not scheduled for chemical analysis						
MW-6	11-28-95	Not sampled: not scheduled for chemical analysis						

TPHG: total petroleum hydrocarbons as gasoline, California DHS LUFT Method
µg/L: micrograms per liter
EPA: United Statest Environmental Protection Agency
MTBE: Methyl-tert-butyl ether
- - : not analyzed

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation	Depth to Water	Ground-Water Elevation	Comments
		ft-MSL	feet	ft-MSL	
BP Station 1116					
MW-1	11-10-92	335.17	10.67	324.50	
MW-1	02-10-93	335.17	5.25	329.92	
MW-1	05-21-93	335.17	5.73	329.44	
MW-1	08-12-93	335.17	8.99	326.18	
MW-1	11-11-93	335.17	9.65	325.52	
MW-1	02-11-94	335.17	8.72	326.45	
MW-1	10-04-94	335.17	9.66	325.51	
MW-1	11-18-94	335.17	Not surveyed:		
MW-1	02-15-95	335.17	6.56	328.61	
MW-1	05-24-95	335.17	6.80	328.37	
MW-1	08-25-95	335.17	8.61	326.56	
MW-1	11-28-95	335.17	9.54	325.63	
MW-2	11-10-92	334.58	10.27	324.31	
MW-2	02-10-93	334.58	6.46	328.12	
MW-2	05-21-93	334.58	6.96	327.62	
MW-2	08-12-93	334.58	8.58	326.00	
MW-2	11-11-93	334.58	9.28	325.30	
MW-2	02-11-94	334.58	8.10	326.48	
MW-2	10-04-94	334.58	9.27	325.31	
MW-2	11-18-94	334.58	Not surveyed:		
MW-2	02-15-95	334.58	5.97	328.61	
MW-2	05-24-95	334.58	6.50	328.08	
MW-2	08-25-95	334.58	8.30	326.28	
MW-2	11-28-95	334.58	9.05	325.53	
MW-3	11-10-92	335.13	10.78	324.35	
MW-3	02-10-93	335.13	7.16	327.97	
MW-3	05-21-93	335.13	7.69	327.44	
MW-3	08-12-93	335.13	9.11	326.02	
MW-3	11-11-93	335.13	9.78	325.35	
MW-3	02-11-94	335.13	8.60	326.53	
MW-3	10-04-94	335.13	9.81	325.32	
MW-3	11-18-94	335.13	Not surveyed:		
MW-3	02-15-95	335.13	6.61	328.52	
MW-3	05-24-95	335.13	6.83	328.30	
MW-3	08-25-95	335.13	8.84	326.29	
MW-3	11-28-95	335.13	8.57	326.56	

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
AW-4	11-10-92	333.41	9.10	324.31	
AW-4	02-10-93	333.41	Not surveyed: well was inaccessible		
AW-4	05-21-93	333.41	Not surveyed: well was inaccessible		
AW-4	08-12-93	333.41	Not surveyed: well was inaccessible		
AW-4	11-11-93	333.41	8.00	325.41	
AW-4	02-11-94	333.41	6.84	326.57	
AW-4	10-04-94	333.41	8.04	325.37	
AW-4	11-18-94	333.41	6.80	326.61	
AW-4	02-15-95	333.41	4.91	328.50	
AW-4	05-24-95	333.41	5.32	328.09	
AW-4	08-25-95	333.41	7.22	326.19	
AW-4	11-28-95	333.41	7.81	325.60	
AW-5	11-10-92	334.81	10.27	324.54	
AW-5	02-10-93	334.81	7.29	327.52	
AW-5	05-21-93	334.81	7.77	327.04	
AW-5	08-12-93	334.81	8.87	325.94	
AW-5	11-11-93	334.81	9.13	325.68	
AW-5	02-11-94	334.81	8.20	326.61	
AW-5	10-04-94	334.81	8.70	326.11	
AW-5	11-18-94	334.81	8.20	326.61	
AW-5	02-15-95	334.81	6.65	328.16	
AW-5	05-24-95	334.81	7.27	327.54	
AW-5	08-25-95	334.81	8.52	326.29	
AW-5	11-28-95	334.81	9.32	325.49	
AW-6	11-10-92	334.90	10.10	324.80	
AW-6	02-10-93	334.90	7.13	327.77	
AW-6	05-21-93	334.90	7.64	327.26	
AW-6	08-12-93	334.90	8.64	326.26	
AW-6	11-11-93	334.90	8.67	326.23	
AW-6	02-11-94	334.90	8.04	326.86	
AW-6	10-04-94	334.90	9.33	325.57	
AW-6	11-18-94	334.90	7.17	327.73	
AW-6	02-15-95	334.90	6.19	328.71	
AW-6	05-24-95	334.90	6.87	328.03	
AW-6	08-25-95	334.90	8.29	326.61	
AW-6	11-28-95	334.90	9.20	325.70	

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
Former Shell Station					
MW-1	11-10-92	334.83	10.04	324.79	
MW-1	02-10-93	334.83	7.24	327.59	
MW-1	05-10-93	334.83	7.78	327.05	
MW-1	08-12-93	334.83	8.54	326.29	
MW-1	11-11-93	334.83	8.56	326.27	
MW-1	02-11-94	334.83	8.62	326.21	
MW-1	08-25-94	334.83	9.24	325.59	
MW-1	11-23-94	334.83	8.74	326.09	
MW-1	02-15-95	334.83	6.84	327.99	
MW-1	05-24-95	334.83	7.91	326.92	
MW-1	08-25-95	334.83	8.11	326.72	
MW-1	11-28-95	334.83			Not surveyed: not scheduled for monitoring
MW-2	11-10-92	336.96	12.05	324.91	
MW-2	02-10-93	336.96	9.28	327.68	
MW-2	05-10-93	336.96	9.65	327.31	
MW-2	08-12-93	336.96	10.70	326.26	
MW-2	11-11-93	336.96	11.36	325.60	
MW-2	02-11-94	336.96	11.04	325.92	
MW-2	08-25-94	336.96	11.29	325.67	
MW-2	11-23-94	336.96	10.92	326.04	
MW-2	02-15-95	336.96	8.90	328.06	
MW-2	05-24-95	336.96	10.02	326.94	
MW-2	08-25-95	336.96	10.24	326.72	
MW-2	11-28-95	336.96			Not surveyed: not scheduled for monitoring
MW-3	11-10-92	336.93	11.84	325.09	
MW-3	02-10-93	336.93	8.82	328.11	
MW-3	05-10-93	336.93	10.88	326.05	
MW-3	08-12-93	336.93	10.36	326.57	
MW-3	11-11-93	336.93	10.64	326.29	
MW-3	02-11-94	336.93	10.68	326.25	
MW-3	08-25-94	336.93	11.30	325.63	
MW-3	11-23-94	336.93	10.48	326.45	
MW-3	02-15-95	336.93	8.35	328.58	
MW-3	05-24-95	336.93	9.67	327.26	
MW-3	08-25-95	336.93	9.36	327.57	
MW-3	11-28-95	336.93			Not surveyed: not scheduled for monitoring

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-4	11-10-92	337.14	12.12	325.02	
MW-4	02-10-93	337.14	9.40	327.74	
MW-4	05-10-93	337.14	9.54	327.60	
MW-4	08-12-93	337.14	10.68	326.46	
MW-4	11-11-93	337.14	11.97	325.17	
MW-4	02-11-94	337.14	10.71	326.43	
MW-4	08-25-94	337.14	10.84	326.30	
MW-4	11-23-94	337.14	10.78	326.36	
MW-4	02-15-95	337.14	9.49	327.65	
MW-4	05-24-95	337.14	10.73	326.41	
MW-4	08-25-95	337.14	10.22	326.92	
MW-4	11-28-95	337.14	Not surveyed: not scheduled for monitoring		
MW-5	11-10-92	334.96	9.65	325.31	
MW-5	02-10-93	334.96	7.97	326.99	
MW-5	05-10-93	334.96	Not surveyed:		
MW-5	08-12-93	334.96	8.75	326.21	
MW-5	11-11-93	334.96	9.32	325.64	
MW-5	02-11-94	334.96	8.97	325.99	
MW-5	08-25-94	334.96	9.19	325.77	
MW-5	11-23-94	334.96	8.78	326.18	
MW-5	02-15-95	334.96	6.88	328.08	
MW-5	05-24-95	334.96	8.04	326.92	
MW-5	08-25-95	334.96	8.34	326.62	
MW-5	11-28-95	334.96	Not surveyed: not scheduled for monitoring		
MW-6	11-10-92	335.42	10.56	324.86	
MW-6	02-10-93	335.42	7.65	327.77	
MW-6	05-10-93	335.42	8.10	327.32	
MW-6	08-12-93	335.42	9.18	326.24	
MW-6	11-11-93	335.42	9.38	326.04	
MW-6	02-11-94	335.42	9.02	326.40	
MW-6	08-25-94	335.42	9.79	325.63	
MW-6	11-23-94	335.42	9.20	326.22	
MW-6	02-15-95	335.42	7.36	328.06	
MW-6	05-24-95	335.42	8.80	326.62	
MW-6	08-25-95	335.42	8.50	326.92	
MW-6	11-28-95	335.42	Not surveyed: not scheduled for monitoring		

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-7	11-10-92	333.23	8.82	324.41	
MW-7	02-10-93	333.23	6.06	327.17	
MW-7	05-10-93	333.23	6.68	326.55	
MW-7	08-12-93	333.23	6.83	326.40	
MW-7	11-11-93	333.23	6.90	326.33	
MW-7	02-11-94	333.23	6.12	327.11	
MW-7	08-25-94	333.23	6.76	326.47	
MW-7	11-23-94	333.23	6.75	326.48	
MW-7	02-15-95	333.23	5.40	327.83	
MW-7	05-24-95	333.23	6.82	326.41	
MW-7	08-25-95	333.23	6.46	326.77	
MW-7	11-28-95	333.23			Not surveyed: not scheduled for monitoring
MW-8	11-10-92	335.80	10.41	325.39	
MW-8	02-10-93	335.80	7.35	328.45	
MW-8	05-10-93	335.80	8.00	327.80	
MW-8	08-12-93	335.80	9.00	326.80	
MW-8	11-11-93	335.80	9.47	326.33	
MW-8	02-11-94	335.80	8.80	327.00	
MW-8	08-25-94	335.80	9.52	326.28	
MW-8	11-23-94	335.80	9.08	326.72	
MW-8	02-15-95	335.80	6.67	329.13	
MW-8	05-24-95	335.80	7.56	328.24	
MW-8	08-25-95	335.80	8.60	327.20	
MW-8	11-28-95	335.80			Not surveyed: not scheduled for monitoring
MW-9	11-10-92	334.57	9.61	324.96	
MW-9	02-10-93	334.57	7.20	327.37	
MW-9	05-10-93	334.57	7.56	327.01	
MW-9	08-12-93	334.57	8.25	326.32	
MW-9	11-11-93	334.57	10.30	324.27	
MW-9	02-11-94	334.57	8.88	325.69	
MW-9	08-25-94	334.57	8.79	325.78	
MW-9	11-23-94	334.57	8.65	325.92	
MW-9	02-15-95	334.57	7.36	327.21	
MW-9	05-24-95	334.57	7.75	326.82	
MW-9	08-25-95	334.57	7.90	326.67	
MW-9	11-28-95	334.57			Not surveyed: not scheduled for monitoring

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-11	11-10-92	334.20	9.47	324.73	
MW-11	02-10-93	334.20	6.79	327.41	
MW-11	05-10-93	334.20	7.18	327.02	
MW-11	08-12-93	334.20	8.10	326.10	
MW-11	11-11-93	334.20	8.56	325.64	
MW-11	02-11-94	334.20	8.21	325.99	
MW-11	08-25-94	334.20	8.68	325.52	
MW-11	11-23-94	334.20	8.27	325.93	
MW-11	02-15-95	334.20	6.46	327.74	
MW-11	05-24-95	334.20	7.69	326.51	
MW-11	08-25-95	334.20	7.70	326.50	
MW-11	11-28-95	334.20			Not surveyed: not scheduled for monitoring
MW-12	11-10-92	332.53	8.32	324.21	
MW-12	02-10-93	332.53	6.75	325.78	
MW-12	05-10-93	332.53			Not surveyed:
MW-12	08-12-93	332.53	6.23	326.30	
MW-12	11-11-93	332.53	7.43	325.10	
MW-12	02-11-94	332.53	7.18	325.35	
MW-12	08-25-94	332.53	7.24	325.29	
MW-12	11-23-94	332.53	7.16	325.37	
MW-12	02-15-95	332.53	5.16	327.37	
MW-12	05-24-95	332.53	6.95	325.58	
MW-12	08-25-95	332.53	5.63	326.90	
MW-12	11-28-95	332.53			Not surveyed: not scheduled for monitoring
MW-13	11-10-92	335.64	10.69	324.95	
MW-13	02-10-93	335.64	7.49	328.15	
MW-13	05-10-93	335.64	8.06	327.58	
MW-13	08-12-93	335.64	8.73	326.91	
MW-13	11-11-93	335.64	9.15	326.49	
MW-13	02-11-94	335.64	9.12	326.52	
MW-13	08-25-94	335.64	9.32	326.32	
MW-13	11-23-94	335.64	9.37	326.27	
MW-13	02-15-95	335.64	8.42	327.22	
MW-13	05-24-95	335.64	9.90	325.74	
MW-13	08-25-95	335.64	8.32	327.32	
MW-13	11-28-95	335.64			Not surveyed: not scheduled for monitoring
RW-1	08-25-94	336.19	10.56	325.63	
RW-1	11-23-94	336.19	10.07	326.12	
RW-1	02-15-95	336.19	8.20	327.99	
RW-1	05-24-95	336.19	9.66	326.53	
RW-1	08-25-95	336.19	9.37	326.82	
RW-1	11-28-95	336.19			Not surveyed: not scheduled for monitoring

Table 4
Historical Groundwater Elevation Data

BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
UNOCAL Station					
MW-1	11-10-92	336.72	11.97	324.75	
MW-1	02-10-93	336.72	8.63	328.09	
MW-1	05-10-93	336.72	9.57	327.15	
MW-1	08-12-93	336.08	9.91	326.17	
MW-1	11-11-93	336.07	10.17	325.90	
MW-1	02-11-94	336.07	9.72	326.35	
MW-1	05-17-94	336.07	9.26	326.81	
MW-1	08-25-94	336.07	10.58	325.49	
MW-1	11-18-94	336.07	9.69	326.38	
MW-1	02-17-95	336.07	7.80	328.27	
MW-1	05-24-95	336.07	8.98	327.09	
MW-1	08-25-95	336.07	9.68	326.39	
MW-1	11-28-95	336.07	10.45	325.62	
MW-2	11-10-92	337.36	12.15	325.21	
MW-2	02-10-93	337.36	8.81	328.55	
MW-2	05-10-93	337.36	9.75	327.61	
MW-2	08-12-93	336.78	10.11	326.67	
MW-2	11-11-93	336.78	10.51	326.27	
MW-2	02-11-94	336.78	9.85	326.93	
MW-2	05-17-94	336.78	9.31	327.47	
MW-2	08-25-94	336.78	10.75	326.03	
MW-2	11-18-94	336.78	9.95	326.83	
MW-2	02-17-95	336.78	7.58	329.20	
MW-2	05-24-95	336.78	8.33	328.45	
MW-2	08-25-95	336.78	9.76	327.02	
MW-2	11-28-95	336.78	10.65	326.13	
MW-3	11-10-92	337.53	12.33	325.20	
MW-3	02-10-93	337.53	8.95	328.58	
MW-3	05-10-93	337.53	9.91	327.62	
MW-3	08-12-93	336.98	10.34	326.64	
MW-3	11-11-93	336.98	10.64	326.34	
MW-3	02-11-94	336.98	10.01	326.97	
MW-3	05-17-94	336.98	9.49	327.49	
MW-3	08-25-94	336.98	10.93	326.05	
MW-3	11-18-94	336.98	10.15	326.83	
MW-3	02-17-95	336.98	7.62	329.36	
MW-3	05-24-95	336.98	8.26	328.72	
MW-3	08-25-95	336.98	10.03	326.95	
MW-3	11-28-95	336.98	10.85	326.13	

Table 4
Historical Groundwater Elevation Data

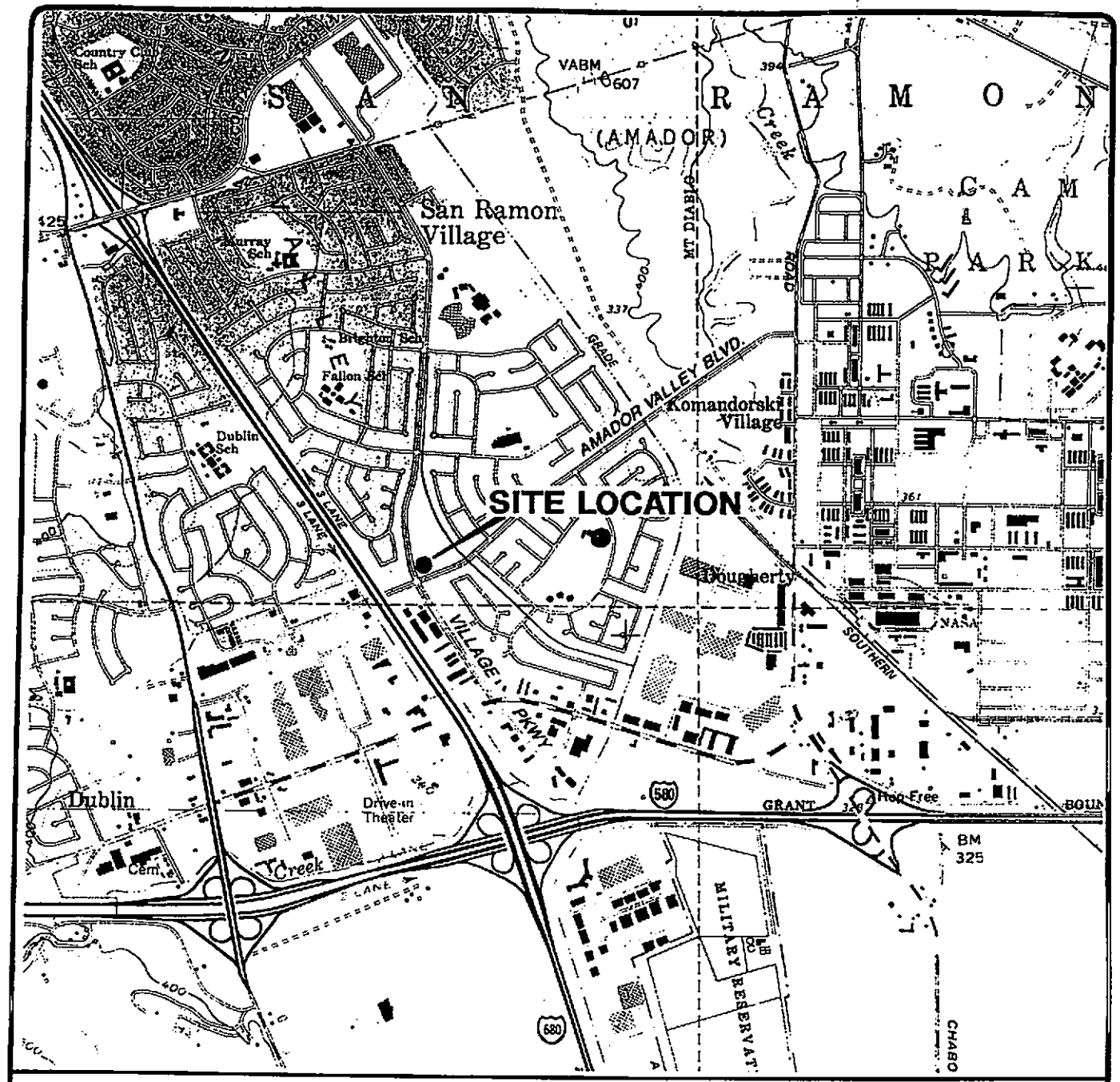
BP Station 1116, 7197 Village Parkway
Former Shell Station, 7194 Amador Valley Boulevard
UNOCAL Station, 7375 Amador Valley Boulevard

Date: 02-14-96

Well Designation	Water Level Field Date	TOC Elevation ft-MSL	Depth to Water feet	Ground-Water Elevation ft-MSL	Comments
MW-4	11-10-92	337.00	12.32	324.68	
MW-4	02-10-93	337.00	8.94	328.06	
MW-4	05-10-93	337.00	9.90	327.10	
MW-4	08-12-93	336.42	10.32	326.10	
MW-4	11-11-93	336.43	10.48	325.95	
MW-4	02-11-94	336.43	10.10	326.33	
MW-4	05-17-94	336.43	9.63	326.80	
MW-4	08-25-94	336.43	10.94	325.49	
MW-4	11-18-94	336.43	10.10	326.33	
MW-4	02-17-95	336.43	8.12	328.31	
MW-4	05-24-95	336.43	8.68	327.75	
MW-4	08-25-95	336.43	10.08	326.35	
MW-4	11-28-95	336.43	10.81	325.62	
MW-5	02-11-94	335.96	10.08	325.88	
MW-5	05-17-94	335.96	9.24	326.72	
MW-5	08-25-94	335.96	10.43	325.53	
MW-5	11-18-94	335.96	10.09	325.87	
MW-5	02-17-95	335.96	7.76	328.20	
MW-5	05-24-95	335.96	7.98	327.98	
MW-5	08-25-95	335.96	9.57	326.39	
MW-5	11-28-95	335.96	10.33	325.63	

TOC: top of casing
ft-MSL: elevation in feet, relative to mean sea level

152753



Base map from USGS 7.5' Quad. Map:
Dublin, California. (Photorevised 1980).

Scale : 0 2000 4000 Feet

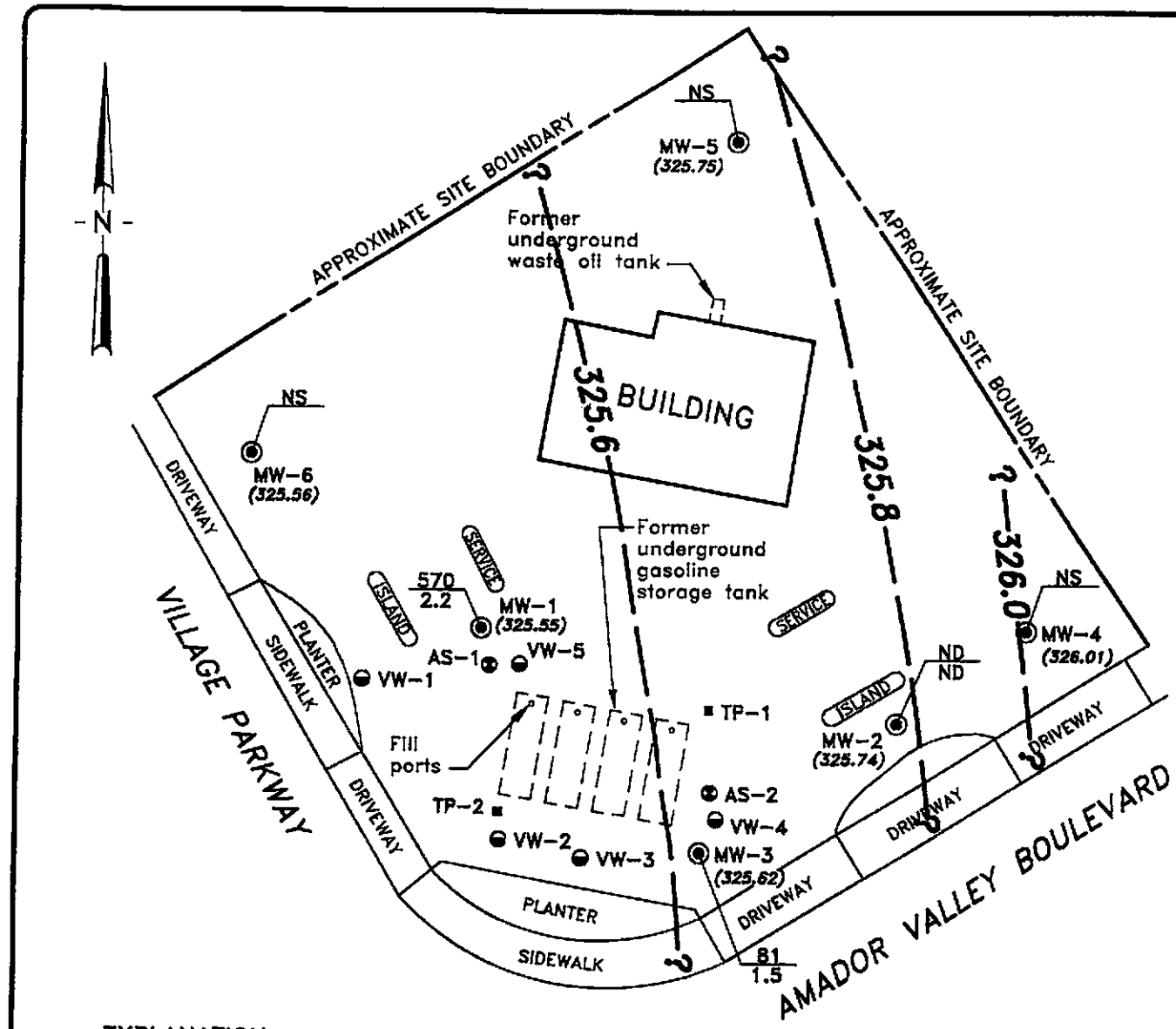
N

EMCON

ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

SITE LOCATION

FIGURE
1
PROJECT NO.
805-132.02



EXPLANATION

- ◉ Groundwater monitoring well
- ■ Tank pit observation well
- ◒ Vapor extraction well
- ◒ Air sparge well
- NS Not sampled; not scheduled for chemical analysis
- NS Not detected at or above the method reporting limit for TPHG (50 µg/L) and benzene (0.5 µg/L)
- (325.55) Groundwater elevation (Ft.–MSL) measured 11/28/95
- ? — Groundwater elevation contour (Ft.–MSL)
- 570 / 2.2 — TPHG concentration (µg/L); sampled 11/28/95; Benzene concentration (µg/L); sampled 11/28/95

SCALE: 0 40 80 FEET (Approximate)

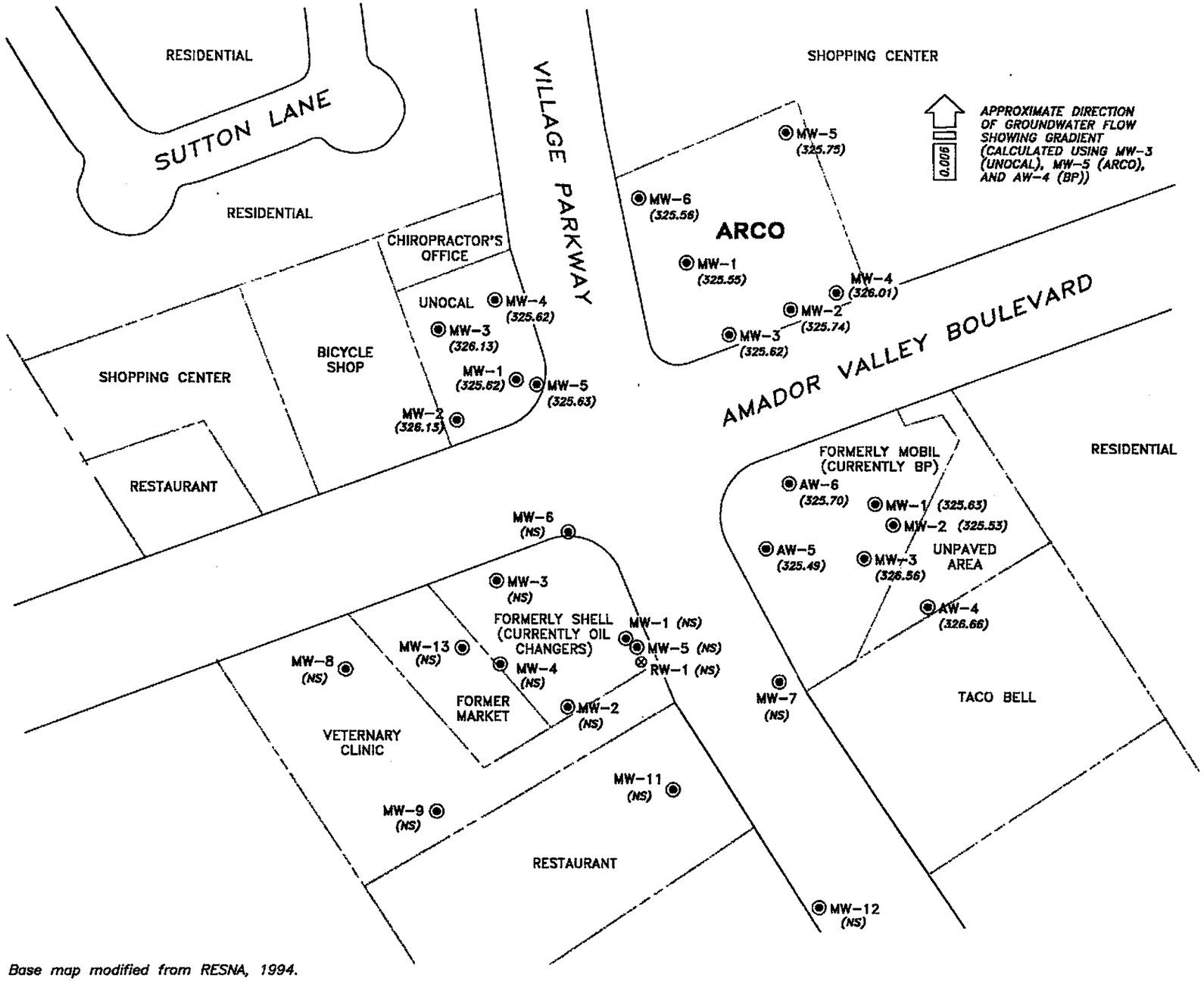
EMCON

ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

GROUNDWATER DATA
FOURTH QUARTER 1995

FIGURE 2

PROJECT NO. 805-132.02



EXPLANATION

- ◉ Groundwater monitoring well
- ⊗ Recovery well
- (326.01) Groundwater elevation (Ft.-MSL); measured 11/28/95
- NS Not surveyed; wells at the former Shell site were not monitored during fourth quarter 1995

Base map modified from RESNA, 1994.

EMCON

SCALE: 0 40 80 FEET

ARCO PRODUCTS COMPANY
SERVICE STATION 6041, 7249 VILLAGE PARKWAY
QUARTERLY GROUNDWATER MONITORING
DUBLIN, CALIFORNIA

GROUNDWATER DATA
FOURTH QUARTER 1995

FIGURE
3
PROJECT NO.
805-132.02

G:\805-132\G00 REV 0 02/21/96 13:01:53 KAJ DJ

APPENDIX A

FIELD DATA SHEETS, FOURTH QUARTER 1995 GROUNDWATER MONITORING EVENT

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 1775-244.01 STATION ADDRESS : 7249 Village Parkway, Dublin DATE : 11/28/95

ARCO STATION # : 6041 FIELD TECHNICIAN : D. Cambelin DAY : Tue.

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	MW-4	OK	15/16	OK	ARCO	OK	8.21	8.21	ND	ND	14.5	
2	MW-5	↓	15/16	↓	↓	↓	10.12	10.12	ND	ND	17.4	
3	MW-6		15/16				10.28	10.28	ND	ND	15.8	
4	MW-2		15/16				9.06	9.06	ND	ND	14.0	
5	MW-3		15/16				9.91	9.91	ND	ND	14.7	
6	MW-1	↓	15/16	↓	↓	↓	11.01	11.01	ND	ND	17.5	

SURVEY POINTS ARE TOP OF WELL CASINGS

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775.244.01 SAMPLE ID: MW-1

PURGED BY: D. Gamberlin CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gamberlin LOCATION: Dblin, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 4.24

DEPTH TO WATER (feet): 11.01 CALCULATED PURGE (gal.): 12.72

DEPTH OF WELL (feet): 17.5 ACTUAL PURGE VOL. (gal.): 8.0

DATE PURGED: 11/28/95 Start (2400 Hr) 1135 End (2400 Hr) 1142

DATE SAMPLED: 11/28/95 Start (2400 Hr) 1152 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1138	4.5	6.54	3210	74.0	Grey	Light
1142	Well Dry at 8.0g					
1152	Recharge	6.61	3220	74.4		

D. O. (ppm): NR ODOR: None

COLOR: NR (COBALT 0 - 500)

TURBIDITY: NR (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 11/28/95 Time: 1040 Meter Serial #: 4972 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: [signature] Reviewed By: [signature] Page 1 of 3

Rev. 3, 2/94

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 1775 244.01 SAMPLE ID: MW-2

PURGED BY: D. Gamblin CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gamblin LOCATION: Dublin, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 3.23

DEPTH TO WATER (feet): 9.06 CALCULATED PURGE (gal.): 9.68

DEPTH OF WELL (feet): 14.0 ACTUAL PURGE VOL. (gal.): 10.0

DATE PURGED: 11/28/95 Start (2400 Hr) 1113 End (2400 Hr) 1124

DATE SAMPLED: 11/28/95 Start (2400 Hr) 1128 End (2400 Hr) ___

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1116	3.5	6.53	3810	72.7	Grey	Mod
1119	7.0	6.53	3910	73.7	Grey	Mod
1124	10.0	6.55	3890	73.8	Grey	Mod

D. O. (ppm): NR ODOR: None

COLOR: NR (COBALT 0 - 500)

TURBIDITY: NR (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
___ Bailer (Teflon®)
X Bailer (PVC)
___ Bailer (Stainless Steel)
___ Dedicated
Other: ___

SAMPLING EQUIPMENT

___ 2" Bladder Pump
___ DDL Sampler
___ Dipper
___ Well Wizard™
X Bailer (Teflon®)
___ Bailer (Stainless Steel)
___ Submersible Pump
___ Dedicated
Other: ___

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 11/28/95 Time: 1040 Meter Serial #: 4972 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-3

Signature: D. Gamblin Reviewed By: SA Page 2 of 3

Rev. 3, 2/94

EMCON ASSOCIATES

WATER SAMPLE FIELD DATA SHEET

PROJECT NO: 1775-244.01 SAMPLE ID: MW-3

PURGED BY: D. Gambelin CLIENT NAME: ARCO 6041

SAMPLED BY: D. Gambelin LOCATION: Dublin, CA

TYPE: Ground Water X Surface Water ___ Treatment Effluent ___ Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 3.13

DEPTH TO WATER (feet): 9.91 CALCULATED PURGE (gal.): 9.39

DEPTH OF WELL (feet): 14.7 ACTUAL PURGE VOL. (gal.): 6.0

DATE PURGED: 11/28/95 Start (2400 Hr) 1057 End (2400 Hr) 1103

DATE SAMPLED: 11/28/95 Start (2400 Hr) 1200 End (2400 Hr) ———

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1059	3.5	6.55	2670	72.5	Tan	Light
1103	Well Dry at 6.0 g					
1200	Recharge	6.54	2820	74.9	Tan	Light

D. O. (ppm): NR ODOR: None NR (COBALT 0 - 500) NR (NTU 0 - 200 or 0 - 1000)

Field QC samples collected at this well: NR

Parameters field filtered at this well: NR

PURGING EQUIPMENT

- ___ 2" Bladder Pump
- ___ Centrifugal Pump
- ___ Submersible Pump
- ___ Well Wizard™
- ___ Bailer (Teflon®)
- X Bailer (PVC)
- ___ Bailer (Stainless Steel)
- ___ Dedicated

Other: ___

SAMPLING EQUIPMENT

- ___ 2" Bladder Pump
- ___ DDL Sampler
- ___ Dipper
- ___ Well Wizard™
- X Bailer (Teflon®)
- ___ Bailer (Stainless Steel)
- ___ Submersible Pump
- ___ Dedicated

Other: ___

WELL INTEGRITY: Good LOCK #: ARCO

REMARKS: ___

Meter Calibration: Date: 11/28/95 Time: 1040 Meter Serial #: 4972 Temperature °F: 68.3

(EC 1000 993 / 1000) (DI 30) (pH 7 7.42 / 7.00) (pH 10 9.38 / 10.00) (pH 4 3.60 / ———)

Location of previous calibration: ___

Signature: [signature] Reviewed By: [initials] Page 3 of 3

MPDS Services Inc.
2401 Stanwell Drive
Concord, California 94520

Unocal #5366
7375 Amador Valley Rd
Dublin

TABLE 1

SUMMARY OF MONITORING DATA
UNOCAL MONITORING WELLS

Well #	Ground Water Elevation (feet)	Depth to Water (feet)♦	Total Well Depth (feet)♦	Product Thickness (feet)	Sheen	Well Casing Elevation (feet)*
Monitored and Sampled on Nov. 28, 95						
MW1	325.62	10.45	19.51	ø	no	336.07
MW2	326.13	10.65	19.28	ø	--	336.78
MW3	326.13	10.85	18.95	ø	--	336.98
MW4	325.62	10.81	19.41	ø	--	336.43
MW5	325.63	10.33	2001	ø	no	335.96

ALISTO ENGINEERING GROUP
GROUNDWATER MONITORING

Client: BP Oil
Alisto Project No: 10-017-5-2
Service Station No: 11116

Date: 11-28-95
Field Personnel: Dave Crisafi
Site Address: 7197 V. Valley Pkwy Dublin, CA

FIELD ACTIVITY:

X Groundwater Monitoring
X Groundwater Sampling
___ Well Development

QUALITY CONTROL SAMPLES:

___ QC-1 Sample Duplicate (Well ID)
___ QC-2 Trip Blank
___ QC-3 Rinsate Blank

Well ID	Well Diam	Order Measured/ Sampled	Total Depth	Depth to Water	Depth to Product	Product Thick-ness	Comments
AW-4	4		34.15	7.81			
AW-5	4		32.90	9.32			
AW-6	4	✓	16.50	9.20			
MW1			25.90	9.54			Semi / Not Sampled
MW2			25.45	9.05			Semi / NS
MW3			25.90	8.57			Semi / NS

Notes:

FORM: FS2/121592

APPENDIX B

ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION, FOURTH QUARTER 1995

Columbia Analytical Services, Inc.

December 12, 1995

Service Request No: S9501496

John Young
EMCON
1921 Ringwood Avenue
San Jose, CA 95131

Re: **0805-132.02 / TO# 17075.00 / 6041 Dublin**

Dear Mr. Young:

The following pages contain analytical results for sample(s) received by the laboratory on November 28, 1995. Results of sample analyses are followed by Appendix A which contains sample custody documentation and quality assurance deliverables requested for this project. The work requested has been assigned the Service Request No. listed above - to help expedite our service please refer to this number when contacting the laboratory.

Analytical results were produced by procedures consistent with Columbia Analytical Services' (CAS) Quality Assurance Manual (with any deviations noted). Signature of this CAS Analytical Report below confirms that pages 2 through 11, following, have been thoroughly reviewed and approved for release in accord with CAS Standard Operating Procedure ADM-DatRev3.

Please feel welcome to contact me should you have questions or further needs.

Sincerely:

Steven L. Green
Project Chemist

Annelise J. Bazar
Regional QA Coordinator

SLG/ajb

1921 Ringwood Avenue • San Jose, California 95131 • Telephone 408/437-2400 • Fax 408/437-9356

COLUMBIA ANALYTICAL SERVICES, Inc.

Acronyms

A2LA	American Association for Laboratory Accreditation
ASTM	American Society for Testing and Materials
BOD	Biochemical Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAM	California Assessment Metals
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DLCS	Duplicate Laboratory Control Sample
DMS	Duplicate Matrix Spike
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP	Inductively Coupled Plasma atomic emission spectrometry
ICV	Initial Calibration Verification sample
J	Estimated concentration. The value is less than the MRL, but greater than or equal to the MDL. If the value is equal to the MRL, the result is actually <MRL before rounding.
LCS	Laboratory Control Sample
LUFT	Leaking Underground Fuel Tank
M	Modified
MBAS	Methylene Blue Active Substances
MCL	Maximum Contaminant Level. The highest permissible concentration of a substance allowed in drinking water as established by the U. S. EPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
MTBE	Methyl tert-Butyl Ether
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the paper industry for Air and Stream Improvement
ND	Not Detected at or above the method reporting/detection limit (MRL/MDL)
NIOSH	National Institute for Occupational Safety and Health
NTU	Nephelometric Turbidity Units
ppb	Parts Per Billion
ppm	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
RPD	Relative Percent Difference
SIM	Selected Ion Monitoring
SM	Standard Methods for the Examination of Water and Wastewater, 18th Ed., 1992
STLC	Solubility Threshold Limit Concentration
SW	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Ed., 1986 and as amended by Updates I, II, IIA, and IIB.
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
tr	Trace level. The concentration of an analyte that is less than the PQL but greater than or equal to the MDL. If the value is equal to the PQL, the result is actually <PQL before rounding.
TRPH	Total Recoverable Petroleum Hydrocarbons
TSS	Total Suspended Solids
TTLC	Total Threshold Limit Concentration
VOA	Volatile Organic Analyte(s)

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S951496
Project:	0805-132.02 / TO# 17075.00 / 6041 Dublin	**Date Collected:**	11/28/95
Sample Matrix:	Water	**Date Received:**	11/28/95
		Date Extracted:	NA
		Date Analyzed:	12/7/95

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Analyte:	**TPH as Gasoline**	**Benzene**	**Toluene**	**Ethyl-benzene**	**Xylenes, Total**
Units:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:	50	0.5	0.5	0.5	0.5
Sample Name	**Lab Code**				
MW-2 (13)	S9501496-001	ND	ND	ND	ND	0.8
MW-3 (14)	S9501496-002	81	1.5	ND	1.4	ND
MW-1 (17)	S9501496-003	570	2.2	ND	1.4	0.9
Method Blank	S951207-WB	ND	ND	ND	ND	ND

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	ARCO Products Company	**Service Request:**	S951496
Project:	0805-132.02 / TO# 17075.00 / 6041 Dublin	**Date Collected:**	11/28/95
Sample Matrix:	Water	**Date Received:**	11/28/95
		Date Extracted:	NA

Volatile Organic Compounds
EPA Method 8240
Units: ug/L (ppb)

		Sample Name:	**MW-3(14)**	**Method Blank**
		Lab Code:	S9501496-002	S951201-WB
		Date Analyzed:	12/1/95	12/1/95
Analyte	**MRL**			
Methyl-tert-butyl ether	1		15,000	ND

3844/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S951496
Project:	0805-132.02 / TO# 17075.00 / 6041 Dublin	**Date Collected:**	11/28/95
Sample Matrix:	Water	**Date Received:**	11/28/95
		Date Extracted:	NA
		Date Analyzed:	12/7/95

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Lab Code	PID Detector Percent Recovery 4-Bromofluorobenzene	FID Detector Percent Recovery α,α,α–Trifluorotoluene
MW-2 (13)	S9501496-001	94	96
MW-3 (14)	S9501496-002	95	94
MW-1 (17)	S9501496-003	84	97*
MS	S9501512-001MS	92	103
DMS	S9501512-001DMS	91	100
Method Blank	S951207-WB	93	92
	CAS Acceptance Limits:	69-116	69-116

* The surrogate used for this sample was 4-bromofluorobenzene.

SUR2/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-132.02 / TO# 17075.00 / 6041 Dublin

Service Request: S951496
Date Analyzed: 12/7/95

Initial Calibration Verification (ICV) Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ppb

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	24.6	98	85-115
Toluene	25	24.5	98	85-115
Ethylbenzene	25	24.3	97	85-115
Xylenes, Total	75	74.6	99	85-115
Gasoline	250	234	94	90-110

ICV25AL/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S951496
Project:	0805-132.02 / TO# 17075.00 / 6041 Dublin	**Date Collected:**	11/28/95
Sample Matrix:	Water	**Date Received:**	11/28/95
		Date Extracted:	NA
		Date Analyzed:	12/7/95

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S9501512-001

	Spike Level		Sample	Spike Result		Percent Recovery		CAS	Relative
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Acceptance Limits	**Percent Difference**
Gasoline	250	250	ND	220	220	88	88	67-121	<1

DMS1S/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-132.02 / TO# 17075.00 / 6041 Dublin
Sample Matrix: Water

Service Request: S951496
Date Collected: 11/28/95
Date Received: 11/28/95
Date Extracted: NA
Date Analyzed: 12/1/95

Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

		Percent Recovery		
Sample Name	**Lab Code**	1,2-Dichloroethane-D_4	Toluene-D_8	4-Bromofluorobenzene
MW-3(14)	S9501496-002	100	107	90
MW-3(14)MS	S9501496-002MS	104	104	93
MW-3(14)DMS	S9501496-002DMS	102	104	93
Method Blank	S951201-WB	97	101	90
CAS Acceptance Limits:		76-114	88-110	86-115

SUR3/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: ARCO Products Company
Project: 0805-132.02 / TO# 17075.00 / 6041 Dublin

Service Request: S951496
Date Analyzed: 11/28/95

Initial Calibration Verification (ICV) Summary
Volatile Organic Compounds
EPA Method 624
Units: ppb

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Methyl-tert-butyl ether	50	63.7	127	70-130

ICV41/060194

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	ARCO Products Company	**Service Request:**	S951496
Project:	0805-132.02 / TO# 17075.00 / 6041 Dublin	**Date Collected:**	11/28/95
Sample Matrix:	Water	**Date Received:**	11/28/95
		Date Extracted:	NA
		Date Analyzed:	12/1/95

Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds
EPA Method 8240
Units: ug/L (ppb)

Sample Name: MW-3(14)
Lab Code: S9501496-002

	Spike Level		Sample	Spike Result		Percent Recovery		CAS Acceptance	Relative Percent
Analyte	MS	DMS	**Result**	MS	DMS	MS	DMS	Limits	**Difference**
Methyl-tert-butyl ether	10,000	10,000	15,000	26,000	27,000	110	120	61-145	4

DMS1S/060194

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. 17075.00

Chain of Custody

ARCO Facility no. 6041	City (Facility) Dublin	Project manager (Consultant) John Young	Laboratory name CAS
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408)453-7300	Fax no. (Consultant) (408)453-0452
Consultant name EMCON	Address (Consultant) 1921 Ringwood Ave San Jose, CA 95131		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 8020/EPA 8020	BTEX/TPH EPA 8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240 GC/MS MTBE Only (no other)	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
1 MW-2	(13)	2		X		X	HCl	11/28/95	1128		X											
2 MW-3	(14)	3		X		X	HCl	↓	1200		X					X						
3 MW-1	(17)	2		X		X	HCL	↓	1152		X											

Method of shipment: Sampler will deliver

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks: ~~#0905-132.02~~
2 - 40ml HCL VOAs MW-1 & MW-2
3 - 40ml HCL VOAs MW-3

Lab number: 9501496

Turnaround time
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☒

Condition of sample: ok		Temperature received: Cool	
Relinquished by sampler: Dan Eblin	Date 11/28/95 Time 1330	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory: Jesse Brown	Date 11-28-95 Time 1330

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APC-3292 (2-91)