GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

92 JUL 23 AM 1:07

July 22, 1992

County of Alameda
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

Attention: Ms. Susan L. Hugo Certified Mail

Reference: ARCO Service Station #4931
731 W. MacArthur Street
Oakland, California 94611

Ms. Hugo:

As requested of ARCO Products Company, we are forwarding the Quarterly Monitoring Report dated July 17, 1992 for the above referenced location. This report documents ground-water monitoring and sampling for the second quarter of 1992.

If you have any questions, please call.

Sincerely,

John F. Vargas
Senior Geologist

JFV:rcm

Enclosure

cc: Mr. Michael Whelan, ARCO Products Company
Mr. H. C. Winsor, ARCO Products Company
Mr. Lester Feldman, Regional Water Quality Control Board
(Certified Mail)

GeoStrategies Inc.

QUARTERLY MONITORING REPORT - SECOND QUARTER 1992

ARCO Service Station No. 4931
731 West MacArthur Boulevard
Oakland, California

790901-18

July 17, 1992

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

July 17, 1992

ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Attn: Mr. Michael Whelan

Re: QUARTERLY MONITORING REPORT - Second Quarter 1992
ARCO Service Station No. 4931
731 West MacArthur Boulevard
Oakland, California

Gentlemen:

This Quarterly Monitoring Report has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1992 second quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the ARCO Products Company contractor.

There are currently eleven monitoring wells at the site; Wells A-2 through A-12 (Plate 2). These wells were installed between 1982 and 1987 by Groundwater Technology, Inc. and Pacific Environmental Group. Wells A-2 through A-10 are on-site and Wells A-11 and A-12 are off-site. These wells were installed to evaluate the horizontal and vertical extent of petroleum hydrocarbons in groundwater beneath the site.

Quarterly monitoring and sampling of site wells began in 1989. Ground-water samples have been analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020.

790901-18

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well prior to sampling. Static ground-water levels were measured from the surveyed top of the well box and recorded to the nearest ± 0.01 foot. Water-level data were referenced to Mean Sea Level (MSL) datum and used to construct a quarterly potentiometric map (Plate 2). Shallow ground-water flow is to the southwest at an approximate hydraulic gradient of 0.05.

Each well was checked for the presence of floating product. Floating product was observed in Wells A-4 and A-8 at measured thicknesses of 0.02 and 1.30 feet, respectively. Depth to groundwater and floating product measurements are summarized in the attached EMCON Associates (EMCON) ground - water sampling report (Appendix A).

Ground-water samples were collected on April 29, 1992. Samples were analyzed for TPH-Gasoline, according to EPA Method 8015 (Modified) and for BTEX according to EPA Method 8020. The ground-water samples were analyzed by Sequoia Analytical (Sequoia), a California State-certified laboratory located in Redwood City, California. A table of current chemical analytical data is included in the EMCON report in Appendix A. Current chemical analytical data have also been added to the Historical Ground-water Quality Database presented in Table 2. Chemical isoconcentration maps for benzene and TPH-Gasoline are presented on Plate 3 and 4, respectively.

DISCUSSION

Based on current quarter results, petroleum hydrocarbons have been detected only in on-site wells.

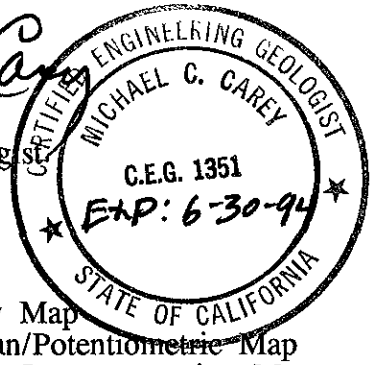
If you have any questions, please call.

GeoStrategies Inc. by,

Robert C. Mallory
Geologist

Michael Carey

Michael C. Carey
Engineering Geologist
C.E.G. 1351



RCM/MCC/kjj

Plate 1. Vicinity Map
Plate 2. Site Plan/Potentiometric Map
Plate 3. Benzene Isoconcentration Map

Appendix A: EMCON Ground-water Sampling Report

QC Review: JHP

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
20-Mar-89	A-2	3.45	55.38	51.93	0.00
24-May-89	A-2	6.80	55.38	48.58	0.00
18-Aug-89	A-2	10.82	55.38	44.56	0.00
27-Oct-89	A-2	8.25	55.38	47.13	0.00
15-Jan-90	A-2	4.87	55.38	50.51	0.00
04-Apr-90	A-2	7.03	55.38	48.35	0.00
30-Jul-90	A-2	10.01	55.38	45.37	0.00
29-Oct-90	A-2	11.60	55.38	43.78	0.00
16-Jan-91	A-2	9.43	55.38	45.95	0.00
12-Apr-91	A-2	3.65	55.38	51.73	0.00
10-Jul-91	A-2	9.57	55.38	45.81	0.00
21-Oct-91	A-2	11.54	55.38	43.84	0.00
01-Feb-92	A-2	11.20	55.38	44.18	0.00
29-Apr-92	A-2	7.18	55.38	48.20	0.00
20-Mar-89	A-3	7.51	54.48	46.97	0.00
24-May-89	A-3	10.29	54.48	44.19	0.00
18-Aug-89	A-3	11.60	54.48	42.88	0.00
27-Oct-89	A-3	10.16	54.48	44.32	0.00
15-Jan-90	A-3	8.55	54.48	45.93	0.00
04-Apr-90	A-3	10.66	54.48	43.82	0.00
30-Jul-90	A-3	11.26	54.48	43.22	0.00
29-Oct-90	A-3	11.86	54.48	42.62	0.00
16-Jan-91	A-3	11.46	54.48	43.02	0.00
12-Apr-91	A-3	9.28	54.48	45.20	0.00
10-Jul-91	A-3	11.29	54.48	43.19	0.00
21-Oct-91	A-3	11.51	54.48	42.97	0.00
02-Feb-92	A-3	N/A	54.48	-----	----
29-Apr-92	A-3	N/A	54.48	-----	----
21-Mar-86	A-4	-----	54.62	-----	3.50

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
07-Jan-88	A-4	-----	54.62	-----	0.02
20-Mar-89	A-4	8.13	54.62	46.49	0.00
24-May-89	A-4	11.40	54.62	43.22	0.00
18-Aug-89	A-4	11.91	54.62	42.72	0.01
27-Oct-89	A-4	11.37	54.62	43.26	0.01
15-Jan-90	A-4	9.74	54.62	44.89	0.01
04-Apr-90	A-4	11.19	54.62	43.43	0.00
30-Jul-90	A-4	11.71	54.62	42.92	0.01
29-Oct-90	A-4	12.21	54.62	42.43	0.03
16-Jan-91	A-4	11.89	54.62	42.74	0.01
12-Apr-91	A-4	9.54	54.62	45.08	0.00
10-Jul-91	A-4	11.55	54.62	43.07	0.00
20-Sep-91	A-4	12.12	54.62	42.50	0.00
21-Oct-91	A-4	11.76	54.62	42.88	0.03
02-Feb-92	A-4	11.18	54.62	43.46	0.02
29-Apr-92	A-4	10.78	54.62	43.86	0.02
20-Mar-89	A-5	8.09	54.15	46.06	0.00
24-May-89	A-5	11.13	54.15	43.02	0.00
18-Aug-89	A-5	11.58	54.15	42.57	0.00
27-Oct-89	A-5	10.68	54.15	43.47	0.00
15-Jan-90	A-5	9.24	54.15	44.91	0.00
04-Apr-90	A-5	10.93	54.15	43.22	0.00
30-Jul-90	A-5	11.48	54.15	42.67	0.00
29-Oct-90	A-5	11.77	54.15	42.38	0.00
16-Jan-91	A-5	11.36	54.15	42.79	0.00
12-Apr-91	A-5	9.64	54.15	44.51	0.00
10-Jul-91	A-5	11.30	54.15	42.85	0.00
21-Oct-91	A-5	11.48	54.15	42.67	0.00
02-Feb-92	A-5	10.73	54.15	43.42	0.00
29-Apr-92	A-5	10.58	54.15	43.57	0.00

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
20-Mar-89	A-6	6.43	55.13	48.70	0.00
24-May-89	A-6	9.43	55.13	45.70	0.00
18-Aug-89	A-6	10.10	55.13	45.03	0.00
27-Oct-89	A-6	9.16	55.13	45.97	0.00
15-Jan-90	A-6	8.02	55.13	47.11	0.00
04-Apr-90	A-6	9.29	55.13	45.84	0.00
30-Jul-90	A-6	9.93	55.13	45.20	0.00
29-Oct-90	A-6	10.42	55.13	44.71	0.00
16-Jan-91	A-6	10.15	55.13	44.98	0.00
12-Apr-91	A-6	8.05	55.13	47.08	0.00
10-Jul-91	A-6	10.03	55.13	45.10	0.00
21-Oct-91	A-6	10.30	55.13	44.83	0.00
02-Feb-92	A-6	9.81	55.13	45.32	0.00
29-Apr-92	A-6	N/A	55.13	-----	----
20-Mar-89	A-7	6.29	54.67	48.38	0.00
24-May-89	A-7	9.26	54.67	45.41	0.00
18-Aug-89	A-7	9.97	54.67	44.70	0.00
27-Oct-89	A-7	9.02	54.67	45.65	0.00
15-Jan-90	A-7	7.90	54.67	46.77	0.00
04-Apr-90	A-7	9.15	54.67	45.52	0.00
30-Jul-90	A-7	9.80	54.67	44.87	0.00
29-Oct-90	A-7	10.30	54.67	44.37	0.00
16-Jan-91	A-7	11.35	54.67	43.32	0.00
12-Apr-91	A-7	7.90	54.67	46.77	0.00
10-Jul-91	A-7	9.82	54.67	44.85	0.00
21-Oct-91	A-7	10.12	54.67	44.55	0.00
02-Feb-92	A-7	9.28	54.67	45.39	0.00
29-Apr-92	A-7	8.85	54.67	45.82	0.00

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
21-Mar-86	A-8	-----	53.61	-----	0.02
07-Jan-88	A-8	-----	53.61	-----	0.18
20-Mar-89	A-8	8.21	53.61	45.93	0.66
24-May-89	A-8	11.41	53.61	43.16	1.20
18-Aug-89	A-8	10.88	53.61	43.35	0.77
27-Oct-89	A-8	11.66	53.61	43.00	1.31
15-Jan-90	A-8	9.84	53.61	44.47	0.87
04-Apr-90	A-8	11.35	53.61	42.46	0.25
30-Jul-90	A-8	10.48	53.61	44.53	1.75
29-Oct-90	A-8	11.39	53.61	42.30	0.10
16-Jan-91	A-8	11.11	53.61	42.51	0.01
12-Apr-91	A-8	9.16	53.61	44.46	0.01
10-Jul-91	A-8	10.73	53.61	42.89	0.01
21-Oct-91	A-8	10.98	53.61	42.72	0.11
02-Feb-92	A-8	10.80	53.61	43.93	1.40
29-Apr-92	A-8	11.15	53.61	43.50	1.30
20-Mar-89	A-9	6.28	52.96	46.68	0.00
24-May-89	A-9	10.12	52.96	42.84	0.00
18-Aug-89	A-9	9.51	52.96	43.45	0.00
27-Oct-89	A-9	8.56	52.96	44.40	0.00
15-Jan-90	A-9	7.20	52.96	45.76	0.00
04-Apr-90	A-9	8.78	52.96	44.18	0.00
30-Jul-90	A-9	10.16	52.96	42.80	0.00
29-Oct-90	A-9	10.71	52.96	42.25	0.00
16-Jan-91	A-9	10.44	52.96	42.52	0.00
12-Apr-91	A-9	8.69	52.96	44.27	0.00
10-Jul-91	A-9	10.23	52.96	42.73	0.00
20-Sep-91	A-9	10.47	52.96	42.49	0.00
21-Oct-91	A-9	10.39	52.96	42.57	0.00
02-Feb-92	A-9	9.05	52.96	43.91	0.00

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
29-Apr-92	A-9	9.56	52.96	43.40	0.00
20-Mar-89	A-10	8.52	54.16	45.64	0.00
24-May-89	A-10	11.31	54.16	42.85	0.00
18-Aug-89	A-10	11.82	54.16	42.34	0.00
27-Oct-89	A-10	10.94	54.16	43.22	0.00
15-Jan-90	A-10	9.58	54.16	44.58	0.00
04-Apr-90	A-10	N/A	54.16	-----	----
30-Jul-90	A-10	11.67	54.16	42.49	0.00
29-Oct-90	A-10	12.11	54.16	42.05	0.00
16-Jan-91	A-10	11.60	54.16	42.56	0.00
12-Apr-91	A-10	10.04	54.16	44.12	0.00
10-Jul-91	A-10	11.55	54.16	42.61	0.00
21-Oct-91	A-10	11.79	54.16	42.37	0.00
02-Feb-92	A-10	N/A	54.16	-----	----
29-Apr-92	A-10	10.85	54.16	43.31	0.00
20-Mar-89	A-11	8.11	53.75	45.64	0.00
24-May-89	A-11	10.92	53.75	42.83	0.00
18-Aug-89	A-11	11.52	53.75	42.23	0.00
27-Oct-89	A-11	10.63	53.75	43.12	0.00
15-Jan-90	A-11	9.22	53.75	44.53	0.00
04-Apr-90	A-11	10.85	53.75	42.90	0.00
30-Jul-90	A-11	11.29	53.75	42.46	0.00
29-Oct-90	A-11	11.66	53.75	42.09	0.00
16-Jan-91	A-11	11.31	53.75	42.44	0.00
12-Apr-91	A-11	9.55	53.75	44.20	0.00
10-Jul-91	A-11	11.18	53.75	42.57	0.00
21-Oct-91	A-11	11.24	53.75	42.51	0.00
02-Feb-92	A-11	10.70	53.75	43.05	0.00
29-Apr-92	A-11	10.57	53.75	43.18	0.00

TABLE 1

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
20-Mar-89	A-12	8.00	52.05	44.05	0.00
24-May-89	A-12	10.35	52.05	41.70	0.00
18-Aug-89	A-12	10.75	52.05	41.30	0.00
27-Oct-89	A-12	10.06	52.05	41.99	0.00
15-Jan-90	A-12	8.88	52.05	43.17	0.00
04-Apr-90	A-12	10.30	52.05	41.75	0.00
30-Jul-90	A-12	10.66	52.05	41.39	0.00
29-Oct-90	A-12	10.90	52.05	41.15	0.00
16-Jan-91	A-12	10.60	52.05	41.45	0.00
12-Apr-91	A-12	9.45	52.05	42.60	0.00
10-Jul-91	A-12	10.56	52.05	41.49	0.00
21-Oct-91	A-12	10.62	52.05	41.43	0.00
02-Feb-92	A-12	10.10	52.05	41.95	0.00
29-Apr-92	A-12	10.19	52.05	41.86	0.00

N\A = Not accessible

Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
2. Static water-levels corrected for floating product (conversion factor = 0.80).
3. Wells A-3 and A-10 were not monitored on February 2, 1992 due to site construction activities.
4. Wells A-3 and A-6 were not monitored on April 29, 1992 due to site construction activities.
5. Water-level data prior to March, 1989 are not available.

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
21-Mar-86	A-2	31000.	----	----	----	----
07-Jan-88	A-2	12000.	920.	1500.	----	4000.
20-Mar-89	A-2	22000.	1200.	1800.	1200.	7700.
24-May-89	A-2	9000.	460.	260.	250.	2400.
18-Aug-89	A-2	14000.	900.	200.	<200.	1300.
27-Oct-89	A-2	16000.	1200.	340.	90.	3100.
15-Jan-90	A-2	9900.	1100.	460.	150.	2900.
04-Apr-90	A-2	16000.	1100.	400.	380.	3900.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
29-Oct-90	A-2	14000.	1100.	210.	66.	2700.
16-Jan-91	A-2	15000.	1200.	800.	190.	4600.
12-Apr-91	A-2	16000	640	290	280	2600
21-Oct-91	A-2	26000	1100	560	81	3900
02-Feb-92	A-2	11000	150	13	91	94
29-Apr-92	A-2	5400	120	16	129	19
21-Mar-86	A-3	1000.	----	----	----	----
07-Jan-88	A-3	250.	2.3	8.	----	21.
20-Mar-89	A-3	230.	1.6	<1.	3.	3.
24-May-89	A-3	170.	0.9	2.	1.	<3.
18-Aug-89	A-3	180.	0.7	1.	<1.	<3.
27-Oct-89	A-3	120.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-3	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-3	88.	1.2	2.0	0.8	4.
30-Jul-90	A-3	120.	8.3	2.9	2.3	12.
29-Oct-90	A-3	780.	10.	27.	18.	85.
16-Jan-91	A-3	69.	2.0	3.5	<0.5	9.6
12-Apr-91	A-3	<30	<0.30	<0.30	<0.30	<0.30
10-Jul-91	A-3	59	<0.30	<0.30	0.50	0.51

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
21-Oct-91	A-3	56	0.44	0.77	0.41	1.3
01-Feb-92	A-3	Not accessible				
29-Apr-92	A-3	Not accessible				
21-Mar-86	A-4	Floating product				
07-Jan-88	A-4	Floating product				
20-Mar-89	A-4	360000.	1500.	3700.	6500.	35000.
24-May-89	A-4	1500000.	1000.	2000.	6000.	23000.
18-Aug-89	A-4	Floating product				
27-Oct-89	A-4	Floating product				
15-Jan-90	A-4	Floating product				
04-Apr-90	A-4	40000.	680.	320.	1400.	4900.
30-Jul-90	A-4	Floating product				
29-Oct-90	A-4	Floating product				
16-Jan-91	A-4	Floating product				
12-Apr-91	A-4	1800	<60	90	650	1700
10-Jul-91	A-4	61000	2700	8500	1700	8200
20-Sep-91	A-4	N/A	1200	5300	1500	11000
21-Oct-91	A-4	Floating product				
01-Feb-92	A-4	Floating product				
29-Apr-92	A-4	Floating product				
21-Mar-86	A-5	88.	----	----	----	----
07-Jan-88	A-5	<50.	0.5	1.	----	4.
20-Mar-89	A-5	60.	0.5	1.	2.	10.
24-May-89	A-5	<50.	0.5	<1.	<1.	<3.
18-Aug-89	A-5	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-5	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-5	<50.	<0.5	<0.5	<0.5	<0.5

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
29-Oct-90	A-5	280.	<0.5	<0.5	<0.5	<0.5
16-Jan-91	A-5	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-5	<30	<0.30	<0.30	<0.30	0.84
10-Jul-91	A-5	<30	<0.30	<0.30	<0.30	<0.30
21-Oct-91	A-5	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-5	<30	1.7	<0.30	<0.30	<0.30
29-Apr-92	A-5	<30	<0.30	<0.30	<0.30	<0.30
21-Mar-86	A-6	<10.	----	----	----	----
07-Jan-88	A-6	390.	54.	89.	----	110.
20-Mar-89	A-6	220.	33.	21.	9.	39.
24-May-89	A-6	110.	13.	6.	3.	13.
18-Aug-89	A-6	<50.	2.1	1.	<1.	<3.
27-Oct-89	A-6	55.	3.8	1.6	1.7	6.
15-Jan-90	A-6	100.	12.	2.5	5.5	18.
04-Apr-90	A-6	100.	17.	7.1	5.5	18.
30-Jul-90	A-6	<50.	2.6	<0.5	<0.5	1.2
29-Oct-90	A-6	<50.	0.7	<0.5	<0.5	<0.5
16-Jan-91	A-6	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-6	430	24	5.1	9.4	32
10-Jul-91	A-6	<30	1.4	0.39	0.47	1.5
21-Oct-91	A-6	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-6	<30	2.0	0.40	0.58	1.7
29-Apr-92	A-6	Not accessible				
07-Jan-88	A-7	<50.	<0.5	1.	----	4.
20-Mar-89	A-7	<50.	0.9	<1.	<1.	<3.
24-May-89	A-7	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-7	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-7	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-7	<50.	<0.5	<0.5	<0.5	<1.

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
04-Apr-90	A-7	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-7	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-7	<50.	2.7	7.6	1.1	3.0
16-Jan-91	A-7	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-7	<30	<0.30	<0.30	<0.30	0.48
10-Jul-91	A-7	<30	<0.30	0.49	<0.30	1.2
21-Oct-91	A-7	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-7	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-7	<30	<0.30	<0.30	<0.30	<0.30
21-Mar-86	A-8	Floating Product				
07-Jan-88	A-8	Floating Product				
20-Mar-89	A-8	Floating Product				
24-May-89	A-8	Floating Product				
18-Aug-89	A-8	Floating Product				
27-Oct-89	A-8	Floating Product				
15-Jan-90	A-8	Floating Product				
04-Apr-90	A-8	Floating Product				
30-Jul-90	A-8	Floating Product				
29-Oct-90	A-8	Floating Product				
16-Jan-91	A-8	Floating Product				
12-Apr-91	A-8	Floating Product				
10-Jul-91	A-8	Floating Product				
21-Oct-91	A-8	Floating Product				
01-Feb-92	A-8	Floating Product				
29-Apr-92	A-8	Floating Product				
07-Jan-88	A-9	300.	45.	14.	----	43.
21-Mar-89	A-9	50.	2.8	1.	1.	3.
24-May-89	A-9	120.	26.	12.	4.	79.
18-Aug-89	A-9	14000.	400.	800.	400.	2000.

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
27-Oct-89	A-9	1700.	150.	36.	30.	110.
15-Jan-90	A-9	860.	140.	58.	38.	140.
04-Apr-90	A-9	620.	36.	13.	9.4	32.
30-Jul-90	A-9	180.	77.	1.6	2.1	4.2
29-Oct-90	A-9	110.	30.	3.7	4.1	8.3
16-Jan-91	A-9	<50.	15.	<0.5	<0.5	0.6
12-Apr-91	A-9	130	52	0.83	5.3	6.0
10-Jul-91	A-9	<30	7.8	<0.30	<0.30	<0.30
20-Sep-91	A-9	N/A	21	<2.0	<2.0	<2.0
21-Oct-91	A-9	240	63	0.65	5.1	1.6
01-Feb-92	A-9	320	77	0.95	11	6.5
29-Apr-92	A-9	170	52	<0.30	5.6	1.4
07-Jan-88	A-10	<50.	0.6	11.	----	4.
20-Mar-89	A-10	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-10	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-10	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-10	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-10	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-10	Not accessible				
30-Jul-90	A-10	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-10	<50.	2.3	6.9	1.2	3.0
16-Jan-91	A-10	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-10	<30	0.67	0.55	<0.30	0.90
10-Jul-91	A-10	<30	<0.30	<0.30	<0.30	<0.30
21-Oct-91	A-10	<30	<0.30	<0.30	<0.30	<0.30
02-Feb-92	A-10	Not accessible				
29-Apr-92	A-10	<30	<0.30	<0.30	<0.30	<0.30
07-Jan-88	A-11	<50.	1.1	2.	----	5.
20-Mar-89	A-11	<50.	<0.5	<1.	<1.	<3.

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
24-May-89	A-11	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-11	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-11	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-11	<50.	<0.5	0.6	<0.5	0.5
29-Oct-90	A-11	<50.	0.6	2.4	0.6	1.5
16-Jan-91	A-11	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-11	<30	<0.30	0.37	<0.30	<0.30
10-Jul-91	A-11	<30	0.61	0.46	<0.30	1.0
21-Oct-91	A-11	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-11	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-11	<30	<0.30	<0.30	<0.30	<0.30
07-Jan-88	A-12	<50.	<0.5	2.	----	<4.
20-Mar-89	A-12	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-12	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-12	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-12	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5
16-Jan-91	A-12	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-12	<30	<0.30	<0.30	<0.30	<0.30
10-Jul-91	A-12	<30	<0.30	<0.30	<0.30	<0.30
21-Oct-91	A-12	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-12	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-12	<30	<0.30	<0.30	<0.30	<0.30

TABLE 2

HISTORICAL GROUND WATER QUALITY DATABASE

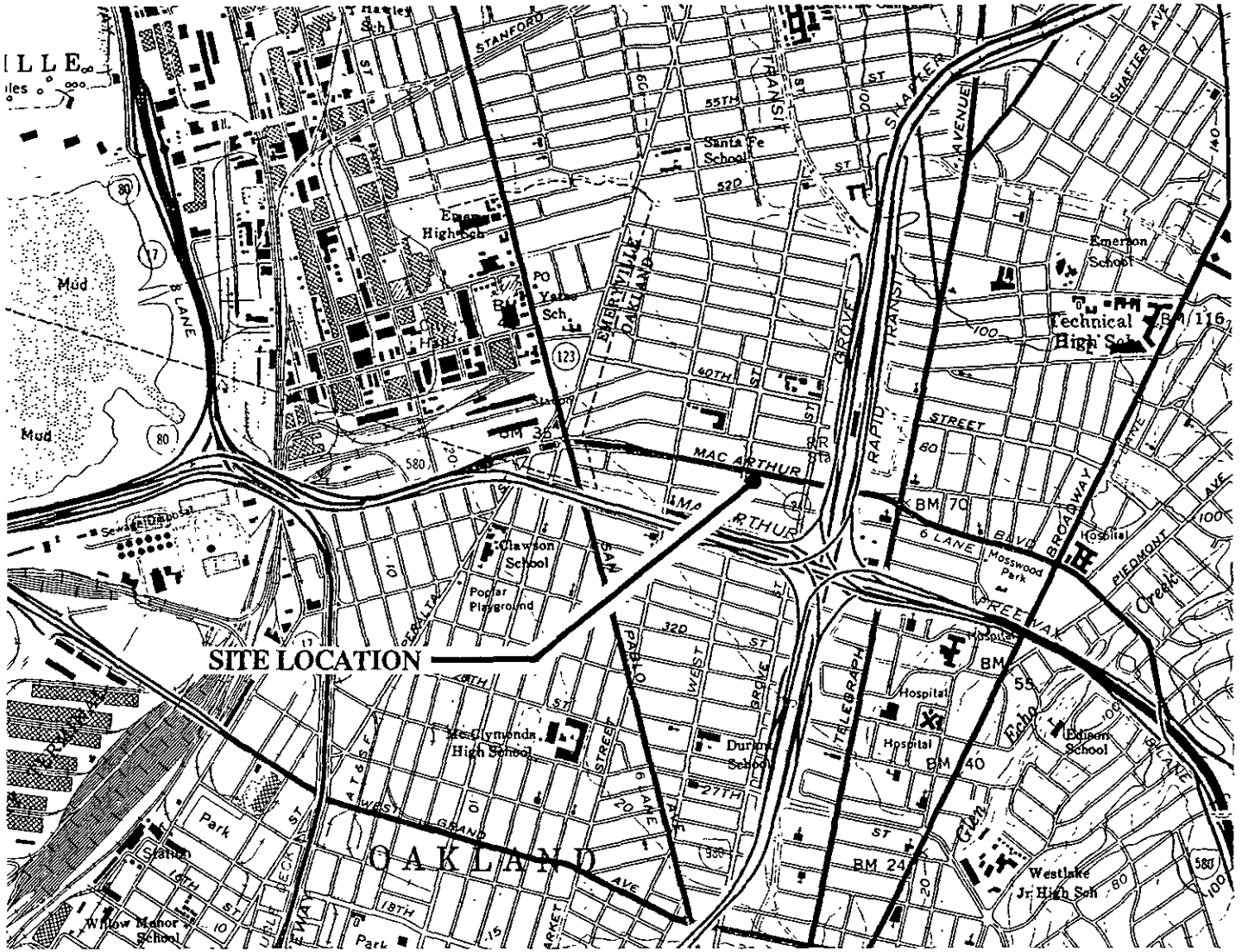
SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)

Current Regional Water Quality Control Board Mazimum Contaminant Levels
Benzene 1. ppb Xylenes 1750. ppb Ethylbenzene 680.ppb

Current DHS Action Levels Toluene 100.0 ppb

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPB = Parts Per Billion
NOTE 1. All data shown as <X are reported as ND (none detected).
2. Ethylbenzene & Xylenes were combined in 1986 and 1988.
3. Wells A-4 and A-9 were sampled in September, 1991 for water discharge permits for the proposed groundwater treatment system.

ILLUSTRATIONS



N

0 2000

Scale in Feet

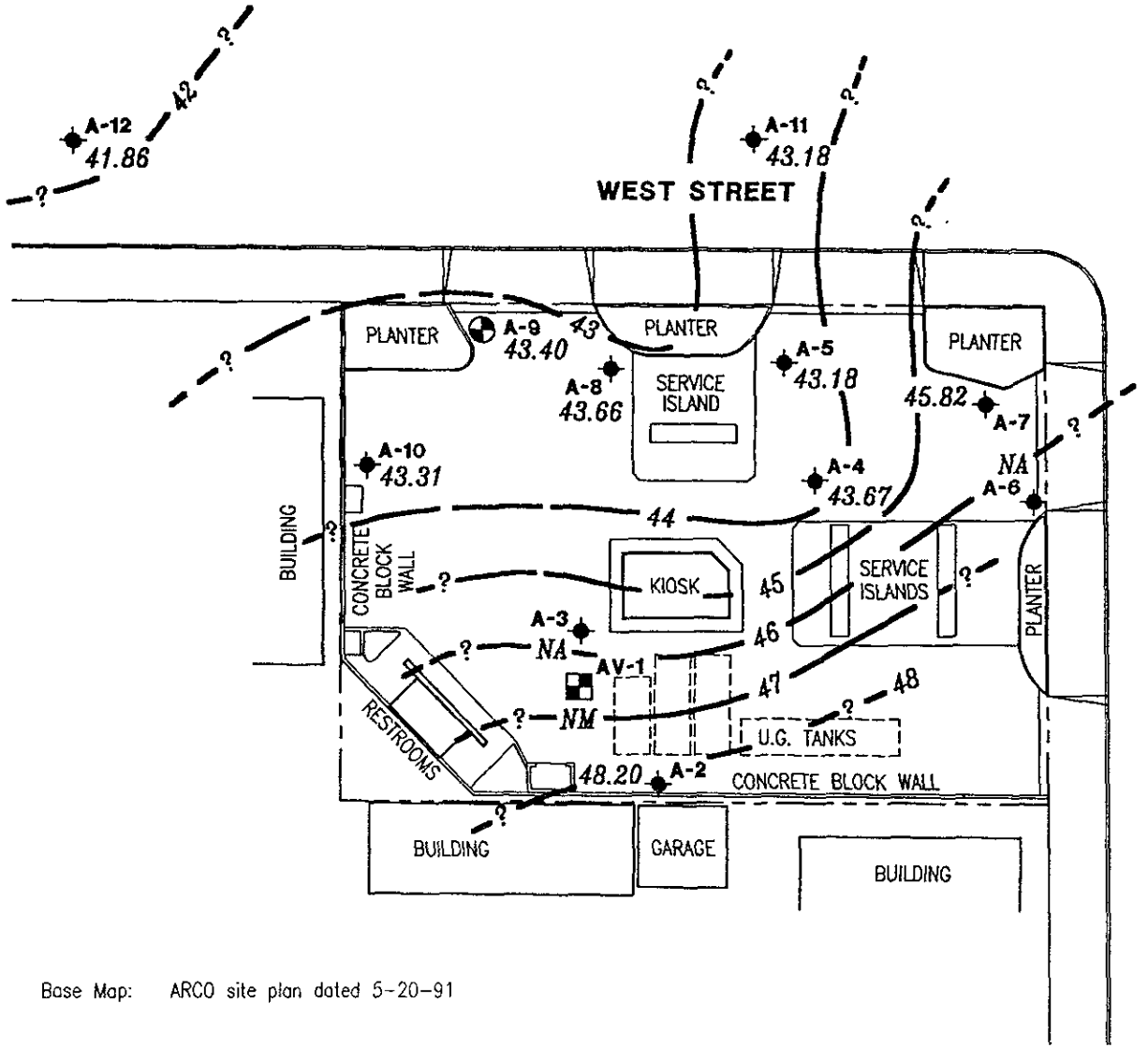
Base Map: USGS Topographic Map

GeoStrategies inc.

VICINITY MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7909		9/91	



EXPLANATION

- Ground–water monitoring well
- Recovery well
- Vapor extraction well
- 99.99 — Ground–water elevation contour. Approximate Gradient = 0.05
- *99.99* — Ground–water elevation in feet referenced to Mean Sea Level (MSL) measured on April 29, 1992
- *NM* — Not Measured
- *NA* — Not Accessible

NOTES:
1. Contours may be influenced by irrigation practices and/or site construction activities.
2. Well A–8 was not used in contouring due to the depression of groundwater caused by Floating Product.

Base Map: ARCO site plan dated 5–20–91

N

0 40

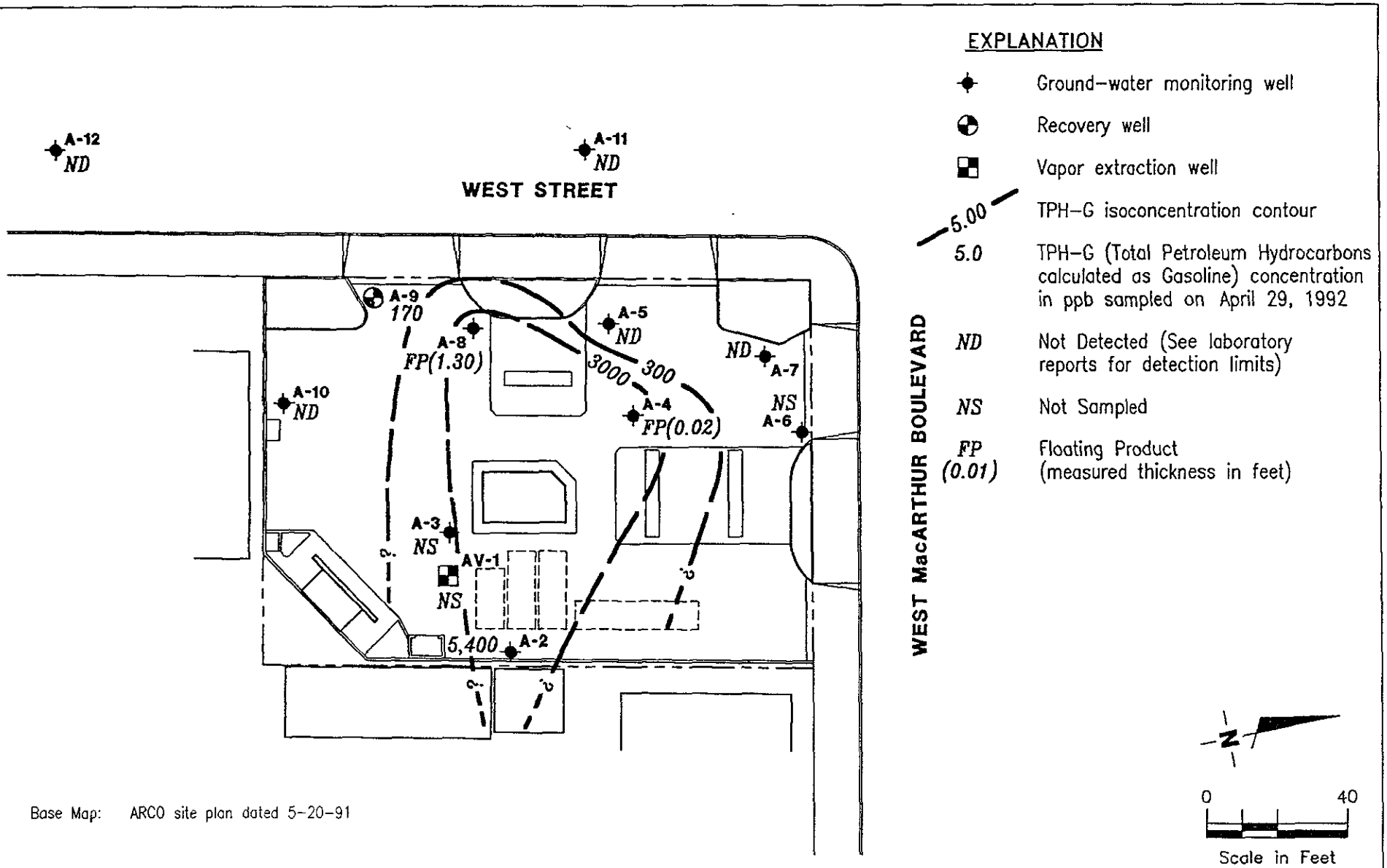
Scale in Feet

GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
790901–18	RCM	6/92	7/92



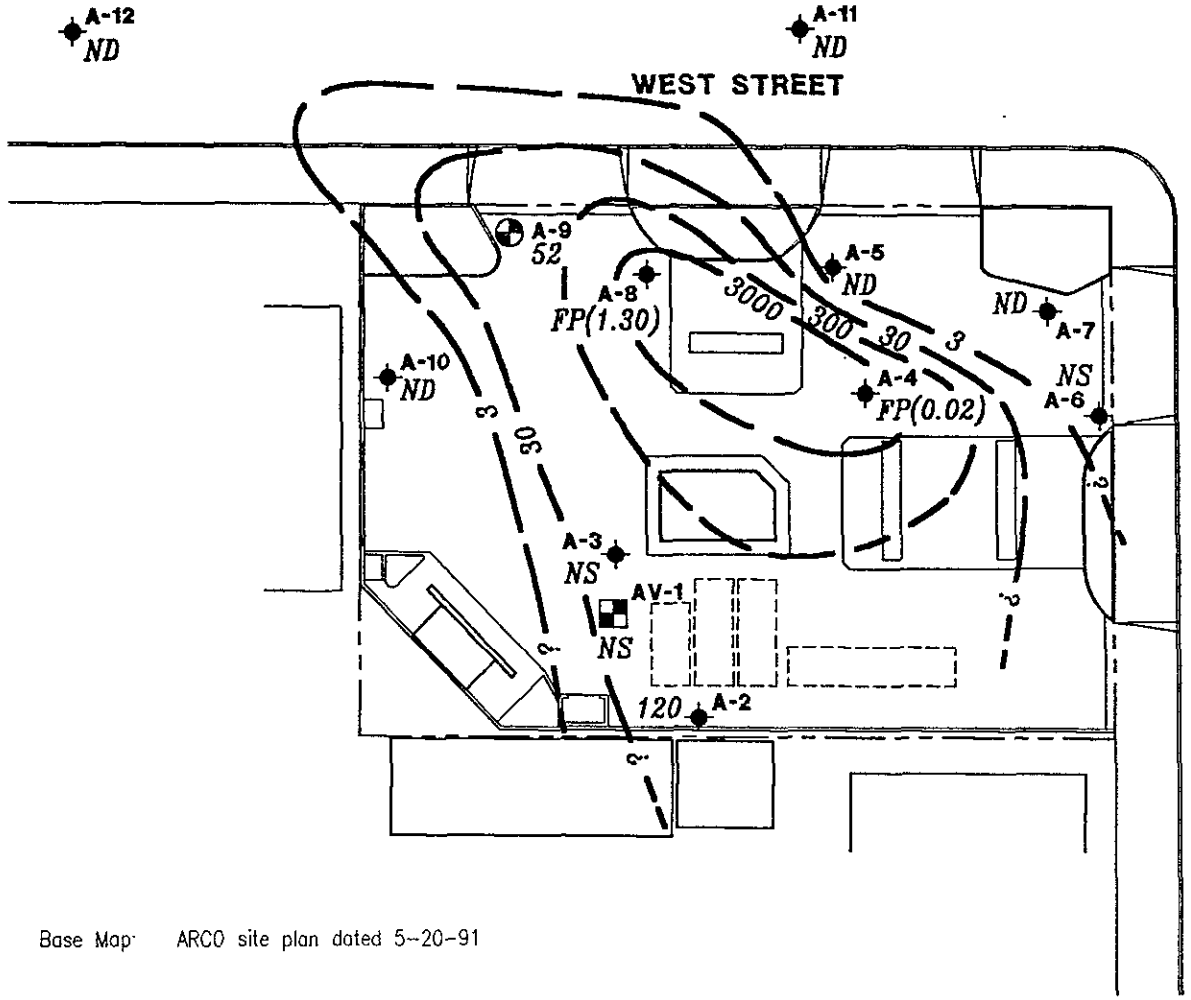
Base Map: ARCO site plan dated 5-20-91

GeoStrategies Inc.

TPH-G ISOCONCENTRATION MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
790901-18		6/92	7/92



EXPLANATION

- Ground–water monitoring well
- Recovery well
- Vapor extraction well
- 0.05 — Benzene isoconcentration contour
- *0.05* — Benzene concentration in ppb sampled on April 29, 1992
- *ND* — Not Detected (See laboratory reports for detection limits)
- *NS* — Not Sampled
- *FP (0.01)* — Floating Product (measured thickness in feet)

N

0 40

Scale in Feet

Base Map: ARCO site plan dated 5–20–91

GeoStrategies Inc.

BENZENE ISOCONCENTRATION MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 4

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
790901–18		6/92	

APPENDIX A
EMCON GROUND-WATER SAMPLING REPORT

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

Date May 15, 1992
Project G70-32.01

To:
Mr. John Vargas
GeoStrategies, Inc.
2140 West Winton Avenue
Hayward, California 94545

We are enclosing:

Copies	Description
1	Depth To Water / Floating Product Survey Results
1	Summary of Groundwater Monitoring Data
1	Certified Analytical Reports with Chain-of-Custody
11	Water Sample Field Data Sheets

For your: X Information Sent by: X Mail

Comments:

Enclosed are the data from the second quarter 1992 monitoring event at ARCO service station 4931, 731 West MacArthur Boulevard, Oakland, California. Please call if you have any questions: (408) 453-2266.

Mark Knuttel MK

Reviewed by:

REGISTERED PROFESSIONAL ENGINEER ROBERT CURTIS PORTER INDUSTRIAL STATE OF CALIFORNIA
No. 4024
Exp. 6/30/92

Robert Porter, Senior Project Engineer.

1938 Junction Avenue, San Jose, California 95131-2102, (408) 453-0719, Fax (408) 453-0452

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : G70-32.01 STATION ADDRESS : 731 West MacArthur Blvd. Oakland, DATE : 4-29-92

ARCO STATION # : 4931 FIELD TECHNICIAN : J WATSON DAY : WEDNESDAY

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	A-7	OK	OK	NR	2008	OK	8.85	8.85	NO	NO	22.80	
2	A-11	OK	OK	NR	2008	OK	10.57	10.55	NO	NO	27.90	
3	A-12	OK	OK	NR	2268	OK	10.19	10.21	NO	NO	29.00	
4	A-10	OK	OK	NR	2008	OK	10.95	10.96	NO	NO	28.00	
5	A-5	OK	OK	NR	2008	OK	10.59	10.59	NO	NO	23.60	
6	A-6	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	WELL BURIED UNDER SOIL STOCK PILE
7	A-9	NO	NO	OK	2268	OK	9.56	9.56	NO	NO	38.60	NEEDS NEW LID WATER IN WELL 15/16 SOCKET COVERS TOP OF CASING
8	A-3	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	WELL IS BURIED UNDER GRAVEL PILE
9	A-2	OK	OK	NR	2008	OK	7.18	7.19	NO	NO	19.40	
10	A-4	OK	OK	NR	DIFFERENT KEY	OK	10.97	10.97	10.95	.02	19.80	
11	A-8	OK	OK	NR	2008	OK	11.15	11.15	9.85	1.30	19.90	

Summary of Groundwater Monitoring Data
Second Quarter 1992
ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California
micrograms per liter (µg/l) and milligrams per liter (mg/l)

Well ID and Sample Depth	Sampling Date	Depth To Water (feet)	Floating Product Thickness (feet)	TPH[1] as Gasoline (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)
A-2(19)	04/29/92	7.18	ND.[2]	5,400	120	16	129	19
A-3	IW.[3]	IW.	IW.	IW.	IW.	IW.	IW.	IW.
A-4	NS.[4]	10.97	0.02	NS.	NS.	NS.	NS.	NS.
A-5(21)	04/29/92	10.58	ND.	<30	<0.30	<0.30	<0.30	<0.30
A-6	IW	IW	IW.	IW	IW	IW	IW	IW
A-7(21)	04/29/92	8.85	ND.	<30	<0.30	<0.30	<0.30	<0.30
A-8	NS.	11.15	1.30	NS.	NS.	NS.	NS.	NS.
A-9(37)	04/29/92	9.56	ND.	170	52	<0.30	5.6	1.4
A-10(27)	04/29/92	10.85	ND.	<30	<0.30	<0.30	<0.30	<0.30
A-11(26)	04/29/92	10.57	ND.	<30	<0.30	<0.30	<0.30	<0.30
A-12(28)	04/29/92	10.19	ND.	<30	<0.30	<0.30	<0.30	<0.30
XDup[5]	04/29/92	NA.[6]	ND.	5,100	120	16	110	180
FB-1[7]	04/29/92	NA.	NA.	<30	<0.30	<0.30	<0.30	<0.30
TB-1[8]	04/29/92	NA.	NA.	<30	<0.30	<0.30	<0.30	<0.30

1. TPH. = Total petroleum hydrocarbons
2. ND. = Not detected
3. IW. = Inaccessable well
4. NS. = Not sampled; well was not sampled due to detection of floating product
5. XDup. = duplicate well sample collected at well A-2
6. NA. = Not applicable
7. FB. = Field Blank
8. TB. = Trip Blank

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
Attention: Mark Knuttel

Project: Arco, #4931

Enclosed are the results from 10 water samples received at Sequoia Analytical on April 30,1992. The requested analyses are listed below:

2045666	Water, A-2, (19)	4/29/92	EPA 5030/8015/8020
2045667	Water, A-5, (21)	4/29/92	EPA 5030/8015/8020
2045668	Water, A-7, (21)	4/29/92	EPA 5030/8015/8020
2045669	Water, A-9, (37)	4/29/92	EPA 5030/8015/8020
2045670	Water, A-10, (27)	4/29/92	EPA 5030/8015/8020
2045671	Water, A-11, (26)	4/29/92	EPA 5030/8015/8020
2045672	Water, A-12, (28)	4/29/92	EPA 5030/8015/8020
2045673	Water, X.Dup.	4/29/92	EPA 5030/8015/8020
2045674	Water, FB-1	4/29/92	EPA 5030/8015/8020
2045675	Water, TB-1	4/29/92	EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	Arco, #4931	Sampled:	Apr 29, 1992
1938 Junction Ave.	Matrix Descript:	Water	Received:	Apr 30, 1992
San Jose, CA 95131	Analysis Method:	EPA 5030/8015/8020	Analyzed:	May 12, 1992
Attention: Mark Knuttel	First Sample #:	204-5666	Reported:	May 13, 1992

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
204-5666	A-2, (19)	5,400	120	16	129	19
204-5673	X.Dup.	5,100	120	16	110	180
Detection Limits:		**600**	**6.0**	**6.0**	**6.0**	**6.0**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	Arco, #4931	Sampled:	Apr 29, 1992
1938 Junction Ave.	Matrix Descript:	Water	Received:	Apr 30, 1992
San Jose, CA 95131	Analysis Method:	EPA 5030/8015/8020	Analyzed:	5/4-12/92
Attention: Mark Knuttel	First Sample #:	204-5667	Reported:	May 13, 1992

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
204-5667	A-5, (21)	N.D.	N.D.	N.D.	N.D.	N.D.
204-5668	A-7, (21)	N.D.	N.D.	N.D.	N.D.	N.D.
204-5669	A-9, (37)	170	52	N.D.	5.6	1.4
204-5670	A-10, (27)	N.D.	N.D.	N.D.	N.D.	N.D.
204-5671	A-11, (26)	N.D.	N.D.	N.D.	N.D.	N.D.
204-5672	A-12, (28)	N.D.	N.D.	N.D.	N.D.	N.D.
204-5674	FB-1	N.D.	N.D.	N.D.	N.D.	N.D.
204-5675	TB-1	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
Attention: Mark Knuttel

Client Project ID: Arco, #4931

QC Sample Group: 2045666, 73

Reported: May 13, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M.Nipp	M.Nipp	M.Nipp	M.Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 12, 1992	May 12, 1992	May 12, 1992	May 12, 1992
QC Sample #:	GBLK051292	GBLK051292	GBLK051292	GBLK051292
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	10	10	32
Matrix Spike % Recovery:	100	100	100	107
Conc. Matrix Spike Dup.:	10	10	10	32
Matrix Spike Duplicate % Recovery:	100	100	100	107
Relative % Difference:	0.0	0.0	0.0	0.0

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
Attention: Mark Knuttel

Client Project ID: Arco, #4931

QC Sample Group: 2045667, 70, 72, 74-75

Reported: May 13, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	L.Laikhtman	L.Laikhtman	L.Laikhtman	L.Laikhtman
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 4, 1992	May 4, 1992	May 4, 1992	May 4, 1992
QC Sample #:	BLK050492	BLK050492	BLK050492	BLK050492
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.2	9.3	9.4	28
Matrix Spike % Recovery:	92	93	94	93
Conc. Matrix Spike Dup.:	9.5	9.6	9.6	29
Matrix Spike Duplicate % Recovery:	95	96	96	97
Relative % Difference:	3.2	3.2	2.1	3.6

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}}$	x 100
Relative % Difference:	$\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}}$	x 100

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
Attention: Mark Knuttel

Client Project ID: Arco, #4931

QC Sample Group: 204-5671

Reported: May 13, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	L.Laikhtman	L.Laikhtman	L.Laikhtman	L.Laikhtman
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 5, 1992	May 5, 1992	May 5, 1992	May 5, 1992
QC Sample #:	BLK050592	BLK050592	BLK050592	BLK050592
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.3	9.6	9.2	28
Matrix Spike % Recovery:	93	96	92	93
Conc. Matrix Spike Dup.:	9.8	10	9.6	30
Matrix Spike Duplicate % Recovery:	98	100	96	100
Relative % Difference:	5.2	4.1	4.2	6.9

SEQUOIA ANALYTICAL

Maile A. Springer
Project Manager

% Recovery:	Conc. of M.S. - Conc. of Sample / Spike Conc. Added	x 100
Relative % Difference:	Conc. of M.S. - Conc. of M.S.D. / (Conc. of M.S. + Conc. of M.S.D.) / 2	x 100

COPY

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. EAICGC-92-1

Chain of Custody

ARCO Facility no 4931	City (Facility) OAKLAND	Project manager (Consultant) Mark Knuttila	Laboratory name SEQUOIA
ARCO engineer Kyle Christie	Telephone no. (ARCO) 415-571-2434	Telephone no. (Consultant) 408-453-6719	Fax no. (Consultant) 408-453-0452
Consultant name EMCON ASSOCIATES	Address (Consultant) 1938 JUNCTION AVENUE SAN JOSE		Contract number 07-073

Sample I.D	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐
A 2 (19)		2		X		X	HCl	4-29-92	1605		X				204566					
A 3 (-)		2		X		X	HCl	NO SAMPLE	—		X				204567					
A 4 (-)		2		X		X	HCl	NO SAMPLE	—		X				—					
A 5 (21)		2		X		X	HCl	4-29-92	1428		X				204567					
A 6 (-)		2		X		X	HCl	NO SAMPLE	—		X				—					
A 7 (21)		2		X		X	HCl	4-29-92	1115		X				204568					
A 8 (-)		2		X		X	HCl	NO SAMPLE	—		X				—					
A 9 (27)		2		X		X	HCl	4-29-92	1520		X				204569					
A 10 (27)		2		X		X	HCl	4-29-92	1340		X				204570					
A 11 (26)		2		X		X	HCl	4-29-92	1305		X				204571					
A 12 (28)		2		X		X	HCl	4-29-92	1220		X				204572					
XDup		2		X		X	HCl	4-29-92	—		X				204573					
FB-1		2		X		X	HCl	4-29-92	1525		X				204574					
TB-1		2		X		X	HCl	4-29-92	1900		X				204575					

Special detection Limit/reporting: Lowest possible

Special QA/QC: as normal

Remarks: 2-40 ml HCl vials per well

Sequoia Bottles

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Business Days ☑

Method of shipment: Courier

Condition of sample: Good

Temperature received: Cool

Relinquished by sampler	Date 4-30-92	Time 900	Received by Ben Follett @ 1435
Relinquished by Ben Follett	Date 4-30-92	Time 1525	Received by
Relinquished by	Date	Time	Received by laboratory M. Negrete Date 4/30 Time 1905

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-2 (19)

PURGED BY: J WATAHA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATAHA LOCATION: MacArthur BLVD. OAKLAND

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

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

CASING ELEVATION (feet/MSL):	N/A	VOLUME IN CASING (gal.):	8.00
DEPTH TO WATER (feet):	7.20	CALCULATED PURGE (gal.):	40.01
DEPTH OF WELL (feet):	19.40	ACTUAL PURGE VOL. (gal.):	9.00

DATE PURGED: 04-29-92 Start (2400 Hr) 1128 End (2400 Hr) 1136

DATE SAMPLED: 04-29-92 Start (2400 Hr) 1605 End (2400 Hr) 1610

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1135	8	6.25	588	67.9	BLACK	HEAVY
		DRIED WELL AT 9 GALLONS				
1602	NEVER RECHARGE	6.56	627	69.0	BLACK	HEAVY

D. O. (ppm): NR ODOR: MODERATE COLOR (COBALT 0 - 100): NR TURBIDITY (NTU 0 - 200): NR

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): XDUP TAKEN HERE

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

WELL INTEGRITY: GOOD LOCK #: 2009

REMARKS: DRIED WELL AT 9 GALLONS

WATER LEVEL AT 18.96 AT 1554

TOTAL LEAD SAMPLE TAKEN HERE - WELL DRIED DURING SAMPLING COLLECTED 4 VOA- AND 2/3 LITER AMBER - TOTAL LEAD

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: A-7

Signature: [signature] Reviewed By: RAK Page 1 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-3

PURGED BY: NR CLIENT NAME: ARCO 4931

SAMPLED BY: NR LOCATION: MacArthur Blvd. Oakland

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.): NR

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): NR

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

DATE PURGED: NR Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: NR Start (2400 Hr) — End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
		NO SAMPLE - WELL IS BURIED				

D. O. (ppm): — ODOR: — — (COBALT 0 - 100) — (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): —

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: NR		Other: NR	

WELL INTEGRITY: ____ LOCK #: ____

REMARKS: WELL IS BURIED UNDER GRAVEL PILE - NO SAMPLE 4-29-92

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____

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

Location of previous calibration: ____

Signature: [signature] Reviewed By: MK Page 2 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: G70-32.01 SAMPLE ID: A-4

PURGED BY: NR CLIENT NAME: ARCO 4931

SAMPLED BY: NR LOCATION: MacArthur BLVD OAKLAND

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.): NR

DEPTH TO WATER (feet): ~~NR~~ 10.97 CALCULATED PURGE (gal.): NR

DEPTH OF WELL (feet): ~~NR~~ 19.20 ACTUAL PURGE VOL. (gal.): NR

DATE PURGED: ~~04~~ NR Start (2400 Hr) ____ End (2400 Hr) ____

DATE SAMPLED: NR Start (2400 Hr) ____ End (2400 Hr) ____

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
		NO SAMPLE - WELL CONTAINS .02 FT FLOATING PRODUCT				

D. O. (ppm): ____ ODOR: ____ ____ (COBALT 0 - 100) ____ (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): ____

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: NR		Other: NR	

WELL INTEGRITY: GOOD LOCK #: MASTER LOCK

REMARKS: NO SAMPLE WELL CONTAINS .02 FT FLOATING PRODUCT 4-29-92

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____

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

Location of previous calibration: ____

Signature: [signature] Reviewed By: MK Page 3 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-5 (21)

PURGED BY: J WATALA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATALA LOCATION: MACARTHUR BLVD. OAKLAND

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

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

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): 4.91

DEPTH TO WATER (feet): 10.60 CALCULATED PURGE (gal.): 24.55

DEPTH OF WELL (feet): 23.80 ACTUAL PURGE VOL. (gal.): 25.00

DATE PURGED: 04-29-92 Start (2400 Hr) 1402 End (2400 Hr) 1425

DATE SAMPLED: 04-29-92 Start (2400 Hr) 1428 End (2400 Hr) 1437

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1405	5	7.16	1219	71.6	BROWN	HEAVY
1411	10	6.93	950	70.1	〃	〃
1416	15	6.69	917	69.9	〃	〃
1420	20	6.72	876	69.7	〃	〃
1425	25	6.80	838	69.0	〃	〃

D. O. (ppm): NR ODOR: SLIGHT

COLOR: NR (COBALT 0 - 100) TURBIDITY: NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

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

WELL INTEGRITY: GOOD LOCK #: 2029

REMARKS: ___

Meter Calibration: Date: 4-29-92 Time: 1355 Meter Serial #: K9976134 Temperature °F: 74.6

(EC 1000 960 / 1000) (DI 4.20) (pH 7 7.09 / 7.00) (pH 10 9.91 / 10.00) (pH 4 3.94 / —)

Location of previous calibration: ARCO

Signature: J. Watala Reviewed By: MW Page 4 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-6

PURGED BY: NR CLIENT NAME: ARCO 4931

SAMPLED BY: NR LOCATION: MacArthur BLVD. OAKLAND

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

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

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

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): NR

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

DATE PURGED: NR Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: NR Start (2400 Hr) — End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
		WELL IS BURIED - NO SAMPLE				

D. O. (ppm): — ODOR: — (COBALT 0 - 100) — (NTU 0 - 200) —

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): —

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: NR		Other: NR	

WELL INTEGRITY: — LOCK #: —

REMARKS: WELL IS BURIED UNDER SOIL STOCKPILE - NO SAMPLE 4-29-92

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____

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

Location of previous calibration: ____

Signature: [signature] Reviewed By: ____ Page 5 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-7 (21)

PURGED BY: J WATALUA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATALUA LOCATION: MacArthur BLVD. OAKLAND

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

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

CASING ELEVATION (feet/MSL):	NA	VOLUME IN CASING (gal.):	5.18
DEPTH TO WATER (feet):	8.85	CALCULATED PURGE (gal.):	25.94
DEPTH OF WELL (feet):	22.90	ACTUAL PURGE VOL. (gal.):	18.00

DATE PURGED: 04-29-92 Start (2400 Hr) 1056 End (2400 Hr) 1105

DATE SAMPLED: 04-29-92 Start (2400 Hr) 1115 End (2400 Hr) 1117

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1056	5	6.75	565	68.7	BROWN	HEAVY
1100	10	6.48	595	68.6	"	"
1103	15	6.62	593	69.0	"	"
		DRIED WELL AT 18 GALLONS				
1114	AFTER RECHARGE	6.60	616	69.3	BROWN	HEAVY

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

NR (COBALT 0 - 100) NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: GOOD LOCK #: 2008

REMARKS: DRIED WELL AT 18 GALLONS
WATER LEVEL 14.60 AT 1117

Meter Calibration: Date: 04-29-92 Time: 1050 Meter Serial #: K9976134 Temperature °F: 68.9

(EC 1000 998 / 1000) (DI 3.40) (pH 7 7.11 / 7.00) (pH 10 9.79 / 10.00) (pH 4 3.98 / —)

Location of previous calibration: ____

Signature: [signature] Reviewed By: MW Page 6 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-8

PURGED BY: NR CLIENT NAME: ARCO 4931

SAMPLED BY: NR LOCATION: MacArthur Blvd. Oakland

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.): NR

DEPTH TO WATER (feet): 11.15 CALCULATED PURGE (gal.): NR

DEPTH OF WELL (feet): 19.90 ACTUAL PURGE VOL. (gal.): NR

DATE PURGED: NR Start (2400 Hr) — End (2400 Hr) —

DATE SAMPLED: NR Start (2400 Hr) — End (2400 Hr) —

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
	NO SAMPLE - WELL CONTAINS ≈ 1.30 FT FLOATING PRODUCT					

D. O. (ppm): — ODOR: — (COBALT 0 - 100): — (NTU 0 - 200): —

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): —

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	___ Bailer (Teflon®)
___ Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: NR		Other: NR	

WELL INTEGRITY: GOOD LOCK #: 2005

REMARKS: NO SAMPLE - WELL CONTAINS ≈ 1.30 FT FLOATING PRODUCT 4-29-92

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: ___

Signature: [signature] Reviewed By: MK Page 7 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-9 (37)

PURGED BY: J WATAHA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATAHA LOCATION: MacArthur Blvd Oakland

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

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

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	42.63
DEPTH TO WATER (feet):	9.56	CALCULATED PURGE (gal.):	213.15
DEPTH OF WELL (feet):	38.60	ACTUAL PURGE VOL (gal.):	215.00

DATE PURGED: 4-29-92 Start (2400 Hr) 1448 End (2400 Hr) 1516

DATE SAMPLED: 4-29-92 Start (2400 Hr) 1520 End (2400 Hr) 1535

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1453	43	6.92	704	69.4	CLOUDY	MODERATE
1459	86	6.86	692	68.4	CLEAR	TRACE
1504	129	6.81	691	68.0	"	"
1510	172	6.79	697	67.9	"	"
1516	215	6.94	698	67.4	"	"

D. O. (ppm): NR ODOR: NONE NR (COBALT 0 - 100) NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): FB-1 TAKEN HERE AT 1525

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: GOOD LOCK #: 2265

REMARKS: ____

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____

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

Location of previous calibration: A-5

Signature: [signature] Reviewed By: MWL Page 8 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 SAMPLE ID: A-10 (27)

PURGED BY: J WATAHA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATAHA LOCATION: MacArthur Blvd. Oakland

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

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

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	6.37
DEPTH TO WATER (feet):	10.85	CALCULATED PURGE (gal.):	31.89
DEPTH OF WELL (feet):	28.00	ACTUAL PURGE VOL (gal.):	32.00

DATE PURGED: 04-29-92 Start (2400 Hr) 1318 End (2400 Hr) 1335

DATE SAMPLED: 04-29-92 Start (2400 Hr) 1340 End (2400 Hr) 1342

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1322	6.5	6.49	608	68.8	BROWN	HEAVY
1325	13	6.46	612	67.7	CLOUDY	"
1328	19.5	6.50	610	67.1	"	"
1332	26	6.62	625	66.6	"	"
1335	32	6.56	627	66.2	"	MODERATE

D. O. (ppm): NR ODOR: NONE NR (COBALT 0 - 100) NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: Good LOCK #: 2009

REMARKS: ____

Meter Calibration: Date: ____ Time: ____ Meter Serial #: ____ Temperature °F: ____

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

Location of previous calibration: A-7

Signature: John A Wataha Reviewed By: MK Page 9 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 670-32.01 | SAMPLE ID: A-11 (26)

PURGED BY: J WATAHA | CLIENT NAME: ARCO 4931

SAMPLED BY: J WATAHA | LOCATION: MacArthur BLVD OAKLAND

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

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

CASING ELEVATION (feet/MSL): NR | VOLUME IN CASING (gal.): 6.45

DEPTH TO WATER (feet): 10.55 | CALCULATED PURGE (gal.): 32.27

DEPTH OF WELL (feet): 27.90 | ACTUAL PURGE VOL. (gal.): 33.00

DATE PURGED: 4-29-92 | Start (2400 Hr) 1238 | End (2400 Hr) 1300

DATE SAMPLED: 4-29-92 | Start (2400 Hr) 1325 | End (2400 Hr) 1307

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1242	6.5	6.35	636	67.3	BROWN	HEAVY
1246	13	6.50	611	67.6	"	"
1251	19.5	6.59	602	67.1	"	"
1255	26	6.64	589	67.5	"	"
1300	33	6.69	611	67.2	"	"

D. O. (ppm): NR | ODOR: NONE | NR (COBALT 0 - 100) | NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

PURGING EQUIPMENT

___ 2" Bladder Pump
___ Centrifugal Pump
___ Submersible Pump
___ Well Wizard™
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 #: 2009

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: A-7

Signature: Jahan Wataha | Reviewed By: MW | Page 10 of 11

WATER SAMPLE FIELD DATA SHEET

Rev. 2, 5/91

EMCON ASSOCIATES

PROJECT NO: 610-32.01 SAMPLE ID: A-12 (28)

PURGED BY: J WATAHA CLIENT NAME: ARCO 4931

SAMPLED BY: J WATAHA LOCATION: MacArthur BLVD OAKLAND

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

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

CASING ELEVATION (feet/MSL):	NR	VOLUME IN CASING (gal.):	6.99
DEPTH TO WATER (feet):	10.20	CALCULATED PURGE (gal.):	34.96
DEPTH OF WELL (feet):	29.00	ACTUAL PURGE VOL. (gal.):	35.00

DATE PURGED: 4-29-92 Start (2400 Hr) 1155 End (2400 Hr) 1217

DATE SAMPLED: 4-29-92 Start (2400 Hr) 1220 End (2400 Hr) 1222

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1159	7	6.45	627	68.8	BROWN	HEAVY
1204	14	6.62	628	68.1	"	"
1208	21	6.63	618	67.2	"	"
1212	28	6.65	619	66.9	"	"
1217	35	6.71	624	67.1	"	"

D. O. (ppm): NR ODOR: NONE NR (COBALT 0 - 100) NR (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NR

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

WELL INTEGRITY: GOOD LOCK #: 2263

REMARKS: ___

Meter Calibration: Date: ___ Time: ___ Meter Serial #: ___ Temperature °F: ___

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

Location of previous calibration: A-7

Signature: [signature] Reviewed By: [signature] Page 11 of 17