PACIFIC
ENVIRONMENTAL
GROUP, INC.

Rec'd 10/5/95 SH

September 29, 1995
Project 330-084.2B

Mr. Michael Whelan
ARCO Products Company
2155 South Bascom Avenue, Suite 202
Campbell, California 95008

Re: Quarterly Report - Second Quarter 1995
Remedial System Performance Evaluation
ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Dear Mr. Whelan:

This letter, prepared by Pacific Environmental Group, Inc. (PACIFIC) on behalf of ARCO Products Company, presents the results of the second quarter 1995 groundwater monitoring and performance evaluation of the groundwater extraction (GWE) system at the site referenced above. In addition, a summary of work performed and anticipated at the site is included.

QUARTERLY GROUNDWATER MONITORING RESULTS

Groundwater samples were collected by PACIFIC on May 9, 1995, and analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). A groundwater sampling schedule is presented in Table 1. The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment A. Field and laboratory procedures are presented as Attachment B.

Depth to water data collected during the May 1995 sampling event indicate that changes to groundwater elevations across the site are mixed, but on average have risen 0.32 foot since February 23, 1995. Groundwater flow is to the southwest with an approximate gradient of 0.03. This flow direction and gradient are consistent with historical data. Groundwater elevation data are presented in Table 2. A liquid surface elevation contour map based on the May 1995 data is shown on Figure 1.

Results of groundwater monitoring this quarter are generally consistent with previous results. TPH-g and benzene were below detection limits in Wells MW-1, MW-4, MW-5, and MW-6. TPH-g was below detection limit in Well MW-2. The TPH-g concentration in Well MW-3 was 190 parts per billion (ppb). Benzene concentrations in Wells MW-2 and MW-3 were 1.9 and 20 ppb, respectively. Separate-phase hydrocarbons were not observed in any site well this quarter or during any sampling event since December 1991. Groundwater analytical data are presented in Table 3. A TPH-g and benzene concentration map is shown on Figure 2.

REMEDIAL PERFORMANCE EVALUATION

Remedial action consisting of GWE is currently in progress at this site. The GWE system has been in operation since December 21, 1993.

Remedial objectives for the site include: (1) migration control of the impacted groundwater plume, and (2) petroleum hydrocarbon mass reduction. To evaluate GWE system performance, PACIFIC monitors groundwater levels, instantaneous and average flow rate, and evaluates and analyzes samples of system influent and effluent for TPH-g and BTEX compounds.

Below is a brief description of the GWE system and an evaluation of its performance from March 3 to June 9, 1995.

GROUNDWATER EXTRACTION SYSTEM

Description

The GWE system utilizes an electric pump in Well W-2, and three 200-pound granular activated carbon (GAC) vessels arranged in series to treat the extracted groundwater. The carbon vessels are connected and valved so that the vessel order can be rotated following a GAC vessel change-out. Sample ports are located at the treatment system influent, between the GAC vessels, at the effluent, and at the extraction well head. GWE system effluent is discharged into the East Bay Municipal Utility District (EBMUD) sanitary sewer system under a sewer discharge permit that is effective through December 31, 1997.

Migration Control

Progress toward meeting the migration control objective is evaluated by comparison of the groundwater elevation contour map (Figure 1) and TPH-g and benzene concentration map (Figure 2) from previous and current groundwater monitoring events.

As indicated by Figures 1 and 2, although no groundwater depression in response to GWE was recorded during the quarterly depth to water measurement event, TPH-g and

benzene concentrations in downgradient off-site groundwater monitoring wells (except Well MW-3) were either below detection limits or decreased compared to previous quarters. The slight increase in TPH-g and benzene concentrations at Well MW-3 may be the result of higher groundwater table this quarter, exposing the groundwater to other gasoline contaminated soils.

Mass Reduction

Progress toward meeting the mass reduction objective is determined by evaluating the GWE system mass removal data and the TPH-g concentration trends in associated groundwater monitoring wells. GWE system operational data are collected monthly. The system flow and influent sample analysis data are used to estimate TPH-g mass removal values. During the reporting period, GWE removed approximately 0.63 pound (0.10 gallon) of TPH-g and 0.12 pound (0.02 gallon) of benzene from impacted groundwater beneath the site. To date, GWE has removed approximately 2.48 pounds (0.41 gallon) of TPH-g and 0.37 pound (0.05 gallon) of benzene from impacted groundwater beneath the site. GWE system performance data are presented in Table 4. Graphical presentation, the GWE systems TPH-g and benzene mass removal trend and concentration data are shown as Figure 3 and 4, respectively. Treatment system certified analytical reports and chain-of-custody documentation are presented as Attachment C. Progress toward site remediation is presented in the following table.

	Mass Removed			
	03/03/95 through 06/09/95		Cumulative	
Analyte	(lbs)	(gal)	(lbs)	(gal)
Groundwater Extraction				
TPH-g	0.63	0.10	2.48	0.41
Benzene	0.12	0.02	0.37	0.05

lbs = Pounds
gal = Gallons
TPH-g = Total petroleum hydrocarbons calculated as gasoline.

Groundwater Extraction System Operational Data

The GWE system was approximately 68 percent operational during the period. Down-time was associated with a damaged transfer pump which was replaced. During the reporting period, the GWE system discharged treated groundwater at an average flow rate of approximately 0.24 gallon per minute (gpm) for a period discharge of 33,855 gallons. Average flow rates from Well W-2 ranged from 0.1 to 0.34 gpm. Concentrations for TPH-g in Well W-2 ranged from 580 to 5,000 ppb. Benzene concentrations ranged from 40 to 1,000 ppb

GAC loading is currently estimated at approximately 3.1 percent by weight (assumes an 8 percent isotherm). During this quarter, the GWE system was in compliance with all conditions stipulated in the discharge permit. Treatment system analytical data are

presented in Table 5. On the certified analytical reports, the data have been labeled by sample port number which correspond to the following process points: SP-105 is the influent, SP-106 is between the first and second GAC vessels, SP-107 is between the second and third GAC vessels, and SP-108 is the effluent. Operation and maintenance field data sheets are presented as Attachment B.

CONCLUSIONS

Operation, maintenance, and performance optimization of the GWE system will continue through third quarter 1995. PACIFIC will initiate enhancement of bioremediation activity at off-site Well MW-3, by use of an oxygen enhancement product. Specifically, PACIFIC will use magnesium peroxide "socks" manufactured by Regenesis Bioremediation Products. More details about the above will be discussed in the third quarter 1995 report.

SUMMARY OF WORK

Work Performed Second Quarter 1995

- Monitored and optimized performance of GWE system.
- Prepared and submitted first quarter 1995 groundwater monitoring and remedial system performance evaluation.
- Sampled site wells for second quarter 1995 groundwater monitoring program. Sampling performed by PACIFIC.
- Prepared second quarter 1995 groundwater monitoring and remedial system performance evaluation.
- Issued quarterly self-monitoring report to the EBMUD.
- Installed new motor for transfer pump.
- Elevated transfer pump.
- Installed recirculation loop.

Work Anticipated Third Quarter 1995

- Continue to monitor and optimize GWE system.
- Prepare and submit second quarter 1995 groundwater monitoring and remedial system performance evaluation report.
- Sample site wells for third quarter 1995 groundwater monitoring program. Sampling to be performed by PACIFIC.

- Prepare third quarter 1995 groundwater monitoring and remedial system performance evaluation report.
- Issue quarterly self-monitoring report to the EBMUD.
- Initiate product line and dispenser replacement activities.

If there are any questions regarding the contents of this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

Shaw Garakani
Project Engineer

R. Lee Dooley
Senior Geologist
CEG 1006

REGISTERED GEOLOGIST
R.L. DOOLEY
No. 1006
GEOLOGIST
STATE OF CALIFORNIA

Attachments:
Table 1 - Groundwater Sampling Schedule
Table 2 - Liquid Surface Elevation Data
Table 3 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)
Table 4 - Groundwater Extraction System Performance Data
Table 5 - Treatment System Analytical Data - Total Petroleum Hydrocarbons (TPH as Gasoline and BTEX Compounds)
Figure 1 - Liquid Surface Elevation Contour Map
Figure 2 - TPH-g/Benzene Concentration Map
Figure 3 - Groundwater Extraction System Mass Removal Trend
Figure 4 - Groundwater Extraction System Hydrocarbon Concentrations
Attachment A - Certified Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets
Attachment B - Field and Laboratory Procedures
Attachment C - Treatment System Certified Analytical Reports and Chain-of-Custody Documentation

cc: Ms. Susan Hugo, Alameda County Health Care Services Agency
Mr. Kevin Graves, Regional Water Quality Control Board - San Francisco Bay Region

Table 1
Groundwater Sampling Schedule

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Sampling Frequency
MW-1	a	a	a	a	Quarterly
MW-2	a	a	a	a	Quarterly
MW-3	a	a	a	a	Quarterly
MW-4	a	a	a	a	Quarterly
MW-5	a	a	a	a	Quarterly
MW-6	a	a	a	a	Quarterly

a. Samples analyzed for TPH-g and BTEX compounds according to EPA Methods 8015 (modified) and 8020.

Table 2
Liquid Surface Elevation Data

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-1	07/20/89	159.44	8.04	--	151.40
	08/30/89		8.47	--	150.97
	10/04/89		8.50	--	150.94
	01/10/90		6.74	--	152.70
	08/07/90		6.87	--	152.57
	12/06/90		7.35	--	152.09
	12/19/90		7.22	--	152.22
	01/29/91		8.28	--	151.16
	02/20/91		7.98	--	151.46
	04/25/91		6.89	--	152.55
	05/31/91		7.64	--	151.80
	07/08/91		8.17	--	151.27
	08/09/91		8.58	--	150.86
	09/25/91		8.82	--	150.62
	10/17/91		8.96	--	150.48
	11/20/91		8.60	--	150.84
	12/27/91		8.71	--	150.73
	01/19/92		7 83	--	151.61
	02/19/92		6.68	--	152.76
	03/09/92		4.47	--	154.97
	04/15/92	158.91	6.44	--	152.47
	05/12/92		7.31	--	151.60
	06/16/92		7.97	--	150.94
	07/14/92		8.22	--	150.69
	08/07/92		8.46	--	150.45
	09/22/92		6.76	--	152.15
	10/12/92		7.13	--	151.78
	11/23/92		7.24	--	151.67
	12/16/92		6.44	--	152.47
	01/21/93		5.03	--	153.88
	02/22/93		4.93	--	153.98
	03/25/93		5 13	--	153.78
	04/27/93		5 68	--	153.23
	08/04/93		7.91	--	151.00
	10/13/93		8.81	--	150.10
	02/03/94		7.51	--	151.40
	04/29/94		7.20	--	151.71
	08/02/94		8 02	--	150.89
	11/12/94		6 70	--	152.21
	02/23/95		7.77	--	151.14
	05/09/95		7 82	--	151.09
MW-2	07/20/89	158.46	8 15	--	150.31
	08/30/89		8.42	--	150.04
	10/04/89		8.40	--	150.06
	01/10/90		6 12	--	152.34
	08/07/90		6 35	--	152.11
	12/06/90		7 15	--	151.31
	12/19/90		7.38	--	151.08
	01/29/91		8.41	--	150.05
	02/20/91		8 26	--	150.20
	04/25/91		7.70	--	150.76
	05/31/91		8 10	--	150.36
	07/08/91		8 34	--	150.12

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-2	08/09/91		8.51	--	149.95
(cont.)	09/25/91		8.66	--	149.80
	10/17/91		8.80	--	149.66
	11/20/91		8.66	--	149.80
	12/27/91		8.57	Sheen	149.89
	01/19/92		8.25	--	150.21
	02/19/92		7.50	--	150.96
	03/09/92		7.40	--	151.06
	04/15/92	157.92	7.72	--	150.20
	05/12/92		8.01	--	149.91
	06/16/92		8.25	--	149.67
	07/14/92		8.33	--	149.59
	08/07/92		8.42	--	149.50
	09/22/92		6.13	--	151.79
	10/12/92		6.80	--	151.12
	11/23/92		7.15	--	150.77
	12/16/92		6.66	--	151.26
	01/21/93		5.93	--	151.99
	02/22/93		6.01	--	151.91
	03/25/93		5.91	--	152.01
	04/27/93		6.63	--	151.29
	08/04/93		8.02	--	149.90
	10/13/93		8.64	--	149.28
	02/03/94		8.08	--	149.84
	04/29/94		8.14	--	149.78
	08/02/94		8.31	--	149.61
	11/12/94		7.74	--	150.18
	02/23/95		7.53	--	150.39
	05/09/95		7.57	--	150.35
MW-3	07/20/89	154.18	7 58	--	146.60
	08/30/89		8.00	--	146.18
	10/04/89		7.73	Emulsion	146.45
	01/10/90		7.78	--	146.40
	08/07/90		7.66	--	146.52
	12/06/90		7.75	--	146.43
	12/19/90		7 58	--	146.60
	01/29/91		7.60	--	146.58
	02/20/91		7.51	--	146.67
	04/25/91		6.37	--	147.81
	05/31/91		7.19	--	146.99
	07/08/91		7.60	--	146.58
	08/09/91		7.94	--	146.24
	09/25/91		8.23	--	145.95
	10/17/91		8.44	--	145.74
	11/20/91		8.78	--	145.40
	12/27/91		8.05	Sheen	146 13
	01/19/92		7.65	--	146.53
	02/19/92		6.48	--	147.70
	03/09/92		5.45	--	148.73
	04/15/92	153.64	7.75	--	145.89
	05/12/92		7.45	--	146.19
	06/16/92		7.51	--	146.13
	07/14/92		7 60	--	146.04

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-3	08/07/92		7.85	--	145.79
(cont.)	09/22/92		7.73	--	145.91
	10/12/92		7.83	--	145.81
	11/23/92		6.98	--	146.66
	12/16/92		5.96	--	147.68
	01/21/93		4.62	--	149.02
	02/22/93		5.15	--	148.49
	03/25/93		5.45	--	148.19
	04/27/93		5.79	--	147.85
	08/04/93		7.24	--	146.40
	10/13/93		8.03	--	145.61
	02/03/94		6.66	--	146.98
	04/29/94		7.70	--	145.94
	08/02/94		7.47	--	146.17
	11/12/94		5.91	--	147.73
	02/23/95		7 18	--	146.46
	05/09/95		5.96	--	147.68
MW-4	07/20/89	157.08	8.09	--	148.99
	08/30/89		8.45	Sheen	148.63
	10/04/89		8.57	Sheen	148.51
	01/10/90		7.26	--	149.82
	08/07/90		6.87	--	150.21
	12/06/90		8.02	Sheen	149.06
	12/19/90		7.69	--	149.39
	01/29/91		8.39	Sheen	148.69
	02/20/91		8.16	--	148.92
	04/25/91		7.14	--	149.94
	05/31/91		7.64	--	149.44
	07/08/91		8 34	--	148.74
	08/09/91		8.60	--	148.48
	09/25/91		8.80	--	148.28
	10/17/91		8.98	--	148.10
	11/20/91		8.78	--	148.30
	12/27/91		8 82	--	148.26
	01/19/92		8.18	--	148.90
	02/19/92		7.62	--	149.46
	03/09/92		6.68	--	150.40
	04/15/92	156.53	6.96	--	149.57
	05/12/92		7.45	--	149.08
	06/16/92		7 94	--	148.59
	07/14/92		8 21	--	148.32
	08/07/92		8.41	--	148.12
	09/22/92		6.14	--	150.39
	10/12/92		6 45	--	150.08
	11/23/92		7 48	--	149.05
	12/16/92		6.95	--	149.58
	01/21/93		5 53	--	151.00
	02/22/93		5 83	--	150.70
	03/25/93		5.96	--	150 57
	04/27/93		6.30	--	150.23
	08/04/93		7.71	--	148.82
	10/13/93		8.53	--	148.00
	02/03/94		9.27	--	147.26

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-4	04/29/94		9.50	--	147.03
(cont.)	08/02/94		8.69	--	147.84
	11/12/94		6.88	--	149.65
	02/23/95		9.38	--	147.15
	05/09/95		9.00	--	147.53
MW-5	04/15/92	151.33	8.05	--	143.28
	05/12/92		8.44	--	142.89
	06/16/92		8.74	--	142.59
	07/14/92		9.70	--	141.63
	08/07/92		9.10	--	142.23
	09/22/92		9.26	--	142.07
	10/25/92		9.24	--	142.09
	11/23/92		---------- Well Inaccessible ----------		
	12/16/92		8.20	--	143.13
	01/21/93		7.89	--	143.44
	02/22/93		7.29	--	144.04
	03/25/93		7.51	--	143.82
	04/27/93		7.72	--	143.61
	08/05/93		8.66	--	142.67
	10/13/93		9.00	--	142.33
	02/03/94		9.38	--	141.95
	04/29/94		---------- Well Inaccessible ----------		
	08/02/94		8.71	--	142.62
	11/12/94		8.65	--	142.68
	02/23/95		9.23	--	142.10
	05/09/95		7.65	--	143.68
MW-6	04/15/92	153.84	4.55	--	149.29
	05/12/92		5.32	--	148.52
	06/16/92		5 91	--	147.93
	07/14/92		6.08	--	147.76
	08/07/92		6.36	--	147.48
	09/22/92		6.53	--	147.31
	10/25/92		6.54	--	147.30
	11/23/92		5.75	--	148.09
	12/16/92		4 69	--	149.15
	01/21/93		3.82	--	150.02
	02/22/93		3.78	--	150.06
	03/25/93		3.93	--	149.91
	04/27/93		4.30	--	149.54
	08/05/93		5.39	--	148.45
	10/13/93		7 12	--	146.72
	02/03/94		5.17	--	148.67
	04/29/94		4.66	--	149.18
	08/02/94		5.64	--	148 20
	11/12/94		6.32	--	147.52
	02/23/95		5.60	--	148.24
	05/09/95		5.21	--	148.63

SPH = Separate-phase hydrocarbons
MSL = Mean sea level
TOC = Top of casing

Table 3
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, TPH as Diesel, and Oil and Grease)

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TPH as Diesel (ppb)	Oil and Grease (ppb)
MW-1	07/21/89	33	0.77	1.6	15	5	NA	NA
	08/30/89	<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	10/04/89	<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	01/10/90	<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	08/07/90	<20	<0.50	<0.50	<0.50	<0.50	NA	NA
	12/06/90	<50	3.6	2.7	0.60	5.8	NA	NA
	02/20/91	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	07/08/91	<30	<0.30	<0.30	<0.30	<0.30	NA	NA
	09/25/91	<30	57	57	54	1.7	NA	NA
	11/20/91	57	9.2	3.7	0.63	25	NA	NA
	03/09/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	07/14/92	<50	<0.5	0.7	<0.5	1.3	NA	NA
	10/12/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/27/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/04/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/13/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/03/94	<50	1.4	2.1	<0.5	2	NA	NA
	04/29/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/23/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	05/09/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
MW-2	07/21/89	4,200	280	210	38	24	NA	NA
	08/30/89	4,200	160	260	45	240	NA	NA
	10/04/89	4,300	860	300	29	330	NA	NA
	01/10/90	8,000	890	710	120	760	NA	NA
	08/07/90	6,000	880	76	25	80	NA	NA
	12/06/90	1,600	330	69	18	63	NA	NA
	02/20/91	1,300	160	46	13	48	NA	NA
	07/08/91	310	76	18	7.7	24	NA	NA
	09/25/91	83	17	0.69	2.2	4.1	NA	NA
	11/20/91	180	46	6.1	3	8.7	NA	NA
	03/09/92	690	170	25	21	58	NA	NA
	04/15/92	86	20	2.3	3.8	85	NA	NA
	07/14/92	160	46	1.4	1.2	35	NA	NA
	10/12/92	230	59	7	55	11	NA	NA
	01/21/93	450	70	6.6	22	54	NA	NA
	04/27/93	<50	6.6	<0.5	0.7	1.1	NA	NA
	08/04/93	<50	2.1	<0.5	<0.5	<0.5	NA	NA
	10/13/93	<50	14	<0.5	<0.5	<0.5	NA	NA
	02/03/94	<50	4.4	<0.5	<0.5	0.8	NA	NA
	04/29/94	150	38	0.7	4.3	4.8	NA	NA
	08/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94	95	28	0.7	2.5	7.5	NA	NA
	02/23/95	<50	1.8	<0.50	<0.50	<0.50	NA	NA
	05/09/95	<50	1.9	<0.50	<0.50	<0.50	NA	NA
MW-3	07/21/89	430	9	4.8	<0.50	50	NA	NA
	08/30/89	1,200	85	46	84	55	NA	NA
	10/04/89	7,000	580	900	120	670	NA	NA
	01/10/90	940	130	59	21	73	NA	NA
	08/07/90	2,300	180	64	59	120	NA	NA
	12/06/90	460	52	55	14	39	350	NA
	02/20/91	470	36	30	9.3	31	<100	<5,000
	07/08/91	2500	240	470	74	320	NA	NA
	09/25/91	1,100	120	110	34	120	NA	NA

Table 3 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, TPH as Diesel, and Oil and Grease)

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TPH as Diesel (ppb)	Oil and Grease (ppb)
MW-3	11/20/91	1,000	180	140	43	140	NA	NA
(cont.)	03/10/92	1,200	200	110	53	130	NA	NA
	04/15/92	1,600	200	13	110	81	NA	NA
	07/14/92	5,200	620	44	310	250	NA	NA
	10/12/92	850	150	5.2	55	46	NA	NA
	01/21/93	620	100	12	35	35	NA	NA
	04/27/93	1,700	180	83	64	100	NA	NA
	08/04/93	380	70	12	29	41	NA	NA
	10/13/93	780	90	6	40	31	NA	NA
	02/03/94	340	42	8.7	9.2	28	NA	NA
	04/29/94	830	150	38	27	48	NA	NA
	08/02/94	220	25	1.7	7.6	8.3	NA	NA
	11/12/94	160	6.0	<0.5	3.2	4.1	NA	NA
	02/23/95	120	1.3	<0.50	1.1	1.6	NA	NA
	05/09/95	190	20	6.6	8.9	20	NA	NA
MW-4	07/21/89	8,700	720	360	120	640	NA	NA
	08/30/89	7,300	630	220	N/A	320	NA	NA
	10/04/89	21,000	2,300	1,300	280	1,300	NA	NA
	01/10/90	4,300	470	250	63	430	NA	NA
	08/07/90	69,000	8,700	4,200	540	4,600	28,000	<5,000
	12/06/90	---------- Separate-Phase Hydrocarbon Sheen ----------						
	02/20/91	5,200	690	200	95	580	<100	<5,000
	07/08/91	1,700	280	68	37	170	NA	NA
	09/25/91	6,300	2,100	290	210	590	NA	NA
	11/20/91	2,700	1,200	200	110	320	NA	NA
	03/10/92	690	180	80	18	43	NA	NA
	04/15/92	8,500	2,100	750	280	1,000	NA	NA
	07/14/92	10,000	2,900	530	290	930	NA	NA
	10/12/92	19,000	5,200	1,600	490	1,800	690	NA
	01/21/93	22,000	4,400	1,300	580	2,200	1,400	NA
	04/27/93	21,000	4,800	1,200	630	2,400	1,100	NA
	08/04/93	23,000	6,600	1,700	770	2,600	1500	NA
	10/13/93	16,000	3,500	800	470	1,800	670	NA
	02/03/94	850	140	84	7 9	59	59	NA
	04/29/94	68	1.1	<0.5	<0 5	1.7	<50	NA
	08/02/94	52	5.7	<0 5	1.2	1.9	<50	NA
	11/12/94	1,600	230	51	81	190	90	NA
	02/23/95	1,700	340	81	52	130	NA	NA
	05/09/95	<50	<0 50	<0 50	<0.50	<0.50	NA	NA
MW-5	04/15/92	<50	<0.5	<0 5	<0.5	<0.5	NA	NA
	07/14/92	<50	<0.5	<0.5	<0 5	<0.5	NA	NA
	10/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/27/93	<50	0.5	1	<0.5	0 8	NA	NA
	08/05/93	<50	<0.5	<0 5	<0 5	<0.5	NA	NA
	10/14/93	<50	<0 5	<0 5	<0.5	<0.5	NA	NA
	02/03/94	<50	0.8	1.7	<0.5	15	NA	NA
	04/29/94	---------- Well Inaccessible ----------						
	08/02/94	<50	<0.5	<0 5	<0.5	<0 5	NA	NA
	11/12/94	<50	<0.5	<0 5	<0 5	<0.5	NA	NA
	02/23/95	<50	<0.50	0 56	<0.50	0 50	NA	NA
	05/09/95	<50	<0.50	0 56	<0.50	0 50	NA	NA
MW-6	04/15/92	<50	<0.5	<0 5	<0.5	<0.5	NA	NA
	07/15/92	<50	<0 5	<0.5	<0.5	<0.5	NA	NA
	10/25/92	<50	<0.5	<0.5	<0.5	<0.5	NA	NA

Table 3 (continued)
Groundwater Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline, BTEX Compounds, TPH as Diesel, and Oil and Grease)

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TPH as Diesel (ppb)	Oil and Grease (ppb)
MW-6	01/21/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
(cont.)	04/27/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/05/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	10/13/93	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/03/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	04/29/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	08/02/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	11/12/94	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
	02/23/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA
	05/09/95	<50	<0.50	<0.50	<0.50	<0.50	NA	NA

ppb = Parts per billion
NA = Not analyzed
N/A = Not available

Table 4
Groundwater Extraction System Performance Data

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Sample I.D.	Date Sampled		Totalizer Reading (gallons)	Net Volume (gallons)	Average Flow Rate (gpm)	TPH as Gasoline: Influent Concentration (µg/L)	TPH as Gasoline: Net Removed (lbs)	TPH as Gasoline: Removed to Date (lbs)	Benzene: Influent Concentration (µg/L)	Benzene: Net Removed (lbs)	Benzene: Removed to Date (lbs)	Primary Carbon Loading (percent)
INFL	12/21/93	a	22	22	0.21	NS	0.00	0.00	NS	0.000	0.00	0.0
INFL	12/23/93	a	4,855	4,833	1.6	9,300	0.38	0.38	1,200	0.024	0.02	0.5
INFL	12/27/93	a	6,871	2,016	0.36	5,700	0.13	0.51	820	0.017	0.04	0.6
INFL	12/29/93	a	7,192	371	0.13	5,800	0.02	0.53	950	0.003	0.04	0.7
INFL	01/03/94	a	7,925	733	0.10	6,500	0.01	0.54	860	0.006	0.05	0.7
INFL	01/05/94	a	8,162	237	0.08	5,200	0.01	0.55	970	0.002	0.05	0.7
INFL	01/11/94	a	8,907	745	0.08	6,300	0.03	0.58	900	0.006	0.06	0.7
INFL	01/13/94	a	9,175	268	0.09	8,600	0.02	0.60	950	0.002	0.06	0.7
INFL	01/24/94	a	9,306	131	0.08	NS	0.01	0.60	NS	0.001	0.06	0.8
INFL	02/24/94	a	14,555	5,249	0.21	4,200	0.28	0.88	520	0.011	0.07	1.1
INFL	03/24/94	a	23,723	9,168	0.24	6,200	0.40	1.40	1,100	0.062	0.13	1.8
INFL	04/26/94	b	29,543	5,820	0.12	6,400	0.15	1.55	1,400	0.061	0.19	1.9
INFL	05/24/94	c	35,082	5,539	0.14	NS	0.20	1.75	NS	0.043	0.24	2.2
INFL	11/17/94	d,e	35,507	425	N/A	2,100	0.00	1.75	460	0.001	0.24	2.2
INFL	01/10/95	f	36,493	986	0.01	1,100	0.01	1.76	180	0.003	0.24	2.2
INFL	02/07/95	g	41,399	4,906	0.12	3,500	0.09	1.86	370	0.011	0.25	2.3
INFL	03/03/95	h	53,290	11,891	0.34	NS	0.22	2.08	NS	0.035	0.29	2.6
INFL	04/03/95		62,582	9,292	0.21	5,000	0.19	2.27	1,000	0.039	0.33	2.8
INFL	05/01/95		69,809	7,227	0.18	580	0.17	2.44	40	0.031	0.36	3.0
INFL	06/09/95		75,254	5,445	0.10	1,400	0.04	2.48	420	0.010	0.37	3.1
REPORTING PERIOD: 3/03/95 - 6/09/95												
TOTAL POUNDS REMOVED:								**2.48**			**0.37**	
TOTAL GALLONS REMOVED:								**0.41**			**0.05**	
PERIOD POUNDS REMOVED:							**0.63**			**0.12**		
PERIOD GALLONS REMOVED:							**0.10**			**0.02**		
TOTAL GALLONS EXTRACTED:						**75,304**						
PERIOD GALLONS EXTRACTED:						**33,855**						
PERIOD AVERAGE FLOW RATE (gpm):						**0.24**						
PRIMARY BED CAPACITY REMAINING:						**96.9%**						

TPH = Total petroleum hydrocarbons
gpm = Gallons per minute
µg/L = Micrograms per liter
lbs = Pounds
NS = Not sampled
N/A = Not available or not applicable

a. All data prior to 9/1/94 provided by prior consultant.
b. Samples taken 4/21/94; totalizer reading from 4/26/94.
c. Last site visit by Resna on 5/24/94.
d. Pacific Environmental Group, Inc. became consultant for the site 9/1/94.
e. System operated for 2 days in fourth quarter 1994; system down due to extensive repairs required for system and compound.
f. System started on January 10, 1995.
g System auto shutdown 2/14/95; shut down 3/3/95 for repairs.
h. TPH/benzene pounds removed estimated from previous data.

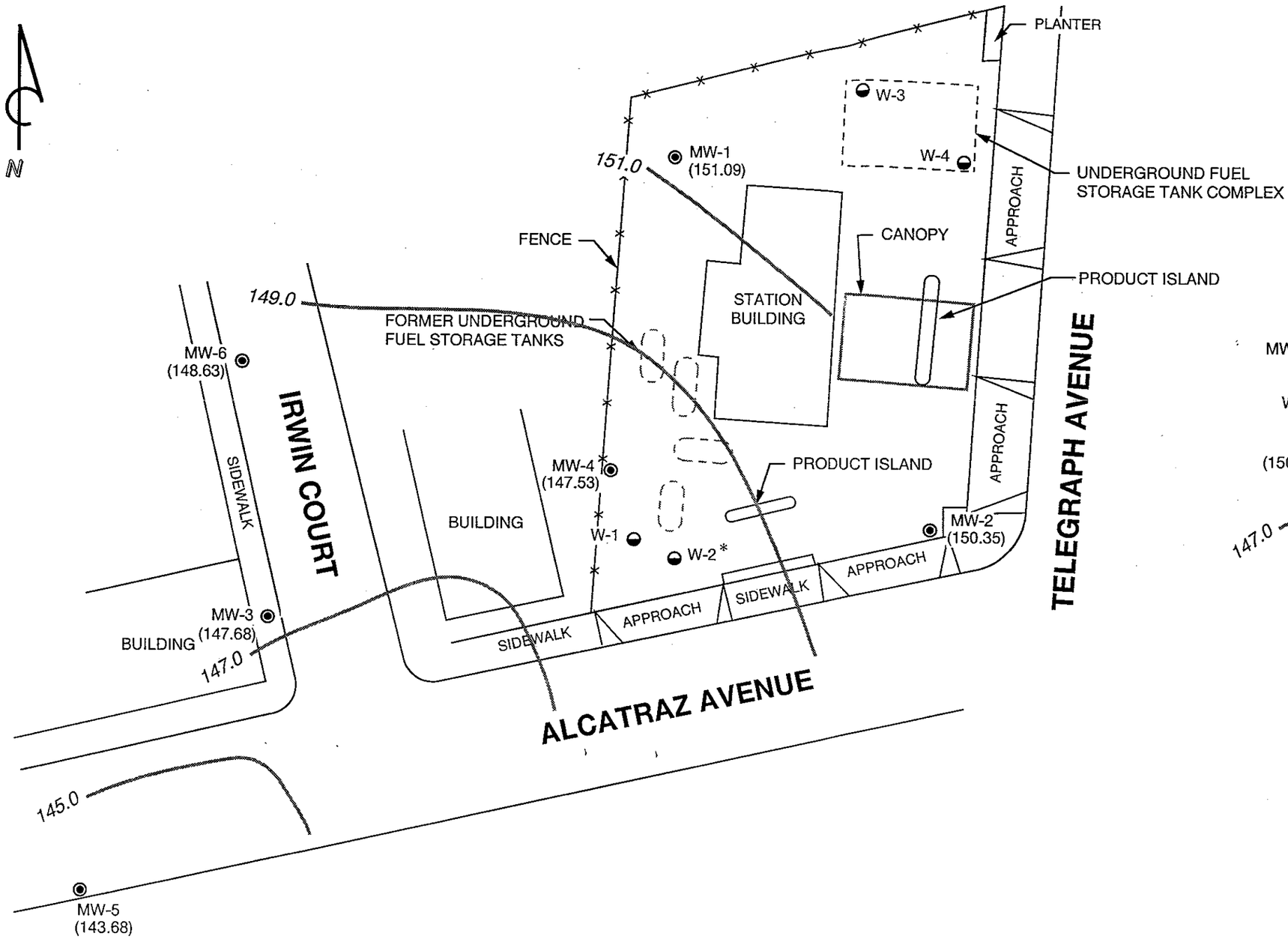
System operation began December 21, 1993, under Resna Industries, Inc.; system shut down 4/27/94 to 11/17/94.
Pounds of hydrocarbons removed to date through March 24, 1994 provided by prior consultant
Benzene mass removal from 12/21/93 through 4/27/94 estimated from data provided by prior consultant.
Carbon loading assumes an 8% isotherm.
See certified analytical reports for detection limits.

Table 5
Treatment System Analytical Data
Total Petroleum Hydrocarbons
(TPH as Gasoline and BTEX Compounds)

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

Sample I.D.	Date Sampled	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)
Influent Samples						
SP-105	01/10/94	1,100	180	2.7	26	51
SP-105	02/07/94	3,500	370	120	67	230
SP-105	04/03/95	5,000	1,000	41	88	300
INFL	05/01/95	580	40	ND	1.2	17
SP-105	06/09/95	1,400	420	7	10	20
Midpoint-1 Samples						
SP-106	01/10/94	ND	ND	ND	ND	ND
SP-106	02/07/94	ND	ND	ND	ND	ND
SP-106	04/03/95	ND	ND	ND	ND	ND
MID-1	05/01/95	ND	ND	ND	ND	ND
SP-106	06/09/95	ND	ND	ND	ND	ND
Midpoint-2 Samples						
MID-2	11/17/94	ND	ND	ND	ND	ND
SP-107	01/10/94	ND	ND	ND	ND	ND
SP-107	02/07/94	ND	ND	ND	ND	ND
SP-107	04/03/95	ND	ND	ND	ND	ND
SP-107	06/09/94	ND	ND	ND	ND	ND
Effluent Samples						
SP-108	01/10/94	ND	ND	ND	ND	ND
SP-108	02/07/94	ND	ND	ND	ND	ND
SP-108	04/03/95	ND	ND	ND	ND	ND
EFFL	05/01/95	ND	ND	ND	ND	ND
SP-108	06/09/95	79	ND	ND	ND	ND

µg/L = Micrograms per liter
ND = Not detected above detection limits
System startup on 12/21/93 by Resna Industries, Inc
Pacific Environmental Group, Inc. (PACIFIC) became consultant 9/01/94.
PACIFIC restarted system on 11/17/94.
See certified analytical reports for individual detection limits.



LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

W-1 ◒ TANK PIT GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

(150.39) LIQUID SURFACE ELEVATION IN FEET - MSL, 5-9-95

147.0 LIQUID SURFACE ELEVATION CONTOUR IN FEET - MSL, 5-9-95

* USED AS A GROUNDWATER EXTRACTION WELL

APPROXIMATE DIRECTION
OF GROUNDWATER FLOW

APPROXIMATE GRADIENT = 0.03

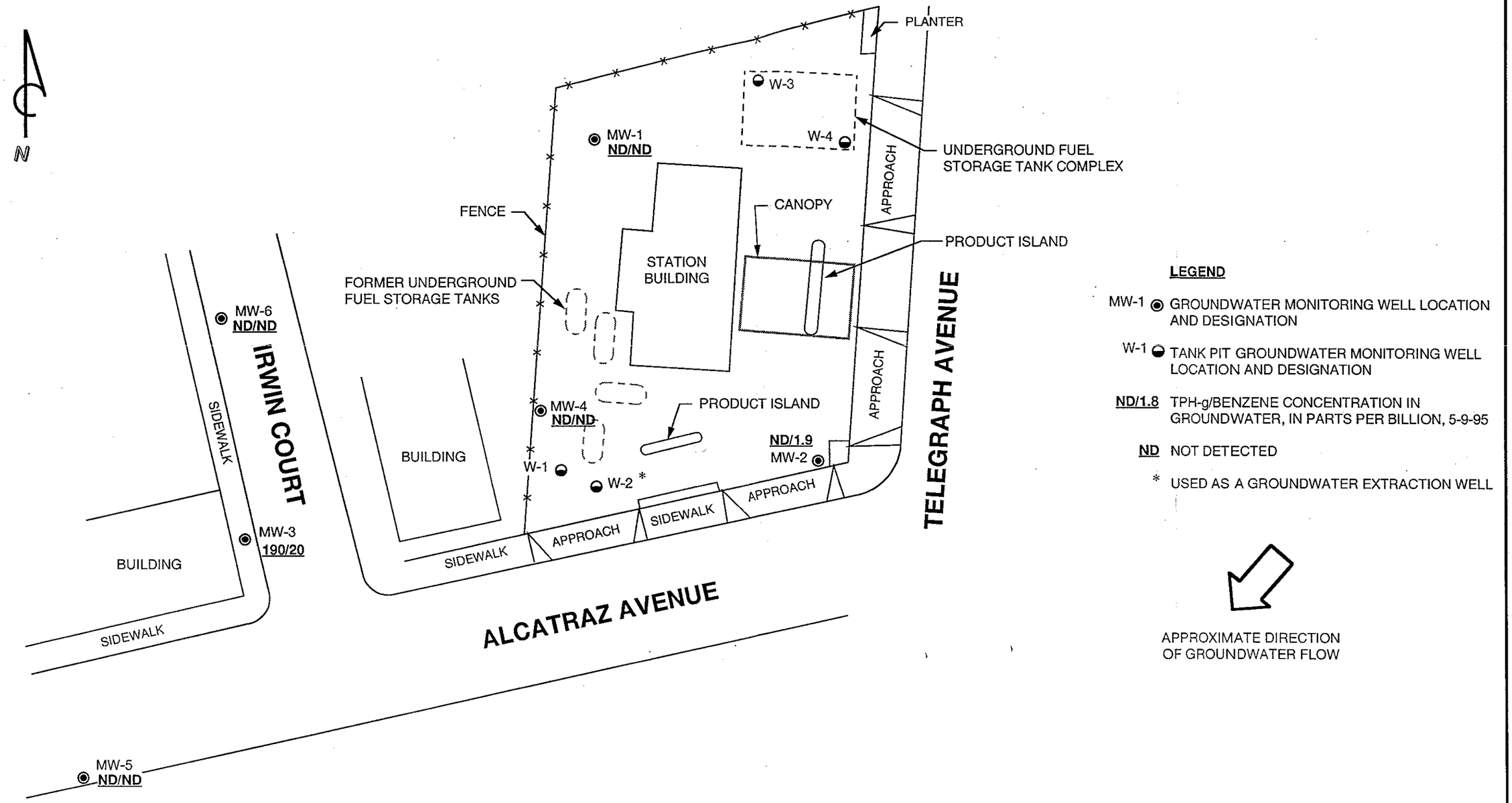
PACIFIC
ENVIRONMENTAL
GROUP, INC.

SCALE
0 30 60 FEET

ARCO SERVICE STATION 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

LIQUID SURFACE ELEVATION CONTOUR MAP

FIGURE:
1
PROJECT:
330-084.2B



LEGEND

MW-1 ◉ GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

W-1 ◒ TANK PIT GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

ND/1.8 TPH-g/BENZENE CONCENTRATION IN GROUNDWATER, IN PARTS PER BILLION, 5-9-95

ND NOT DETECTED

* USED AS A GROUNDWATER EXTRACTION WELL

APPROXIMATE DIRECTION
OF GROUNDWATER FLOW

PACIFIC
ENVIRONMENTAL
GROUP, INC.

SCALE
0 30 60 FEET

ARCO SERVICE STATION 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

TPH-g/BENZENE CONCENTRATION MAP

FIGURE:
2
PROJECT:
330-084.2B

Figure 3
Groundwater Extraction System Mass Removal Trend

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California

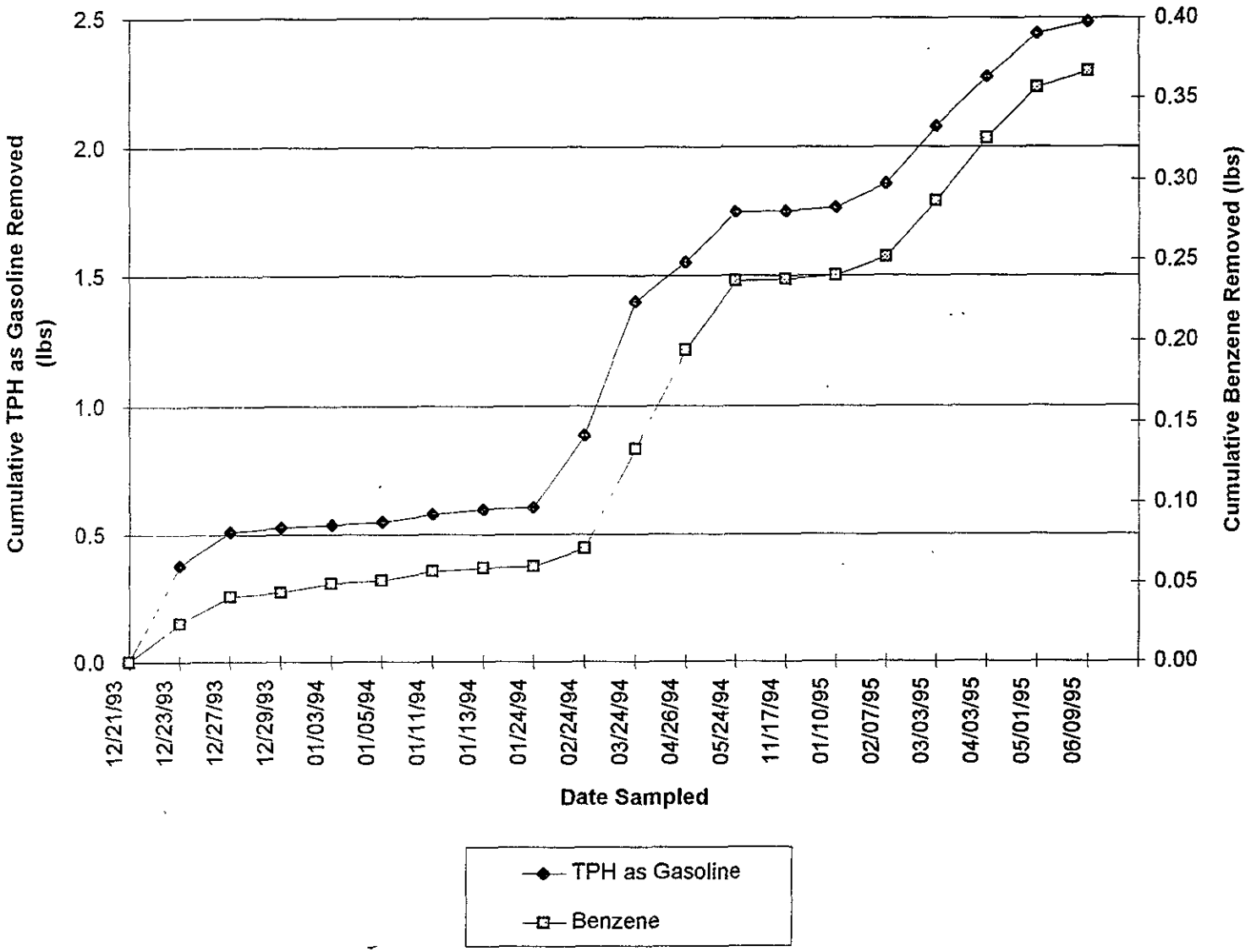
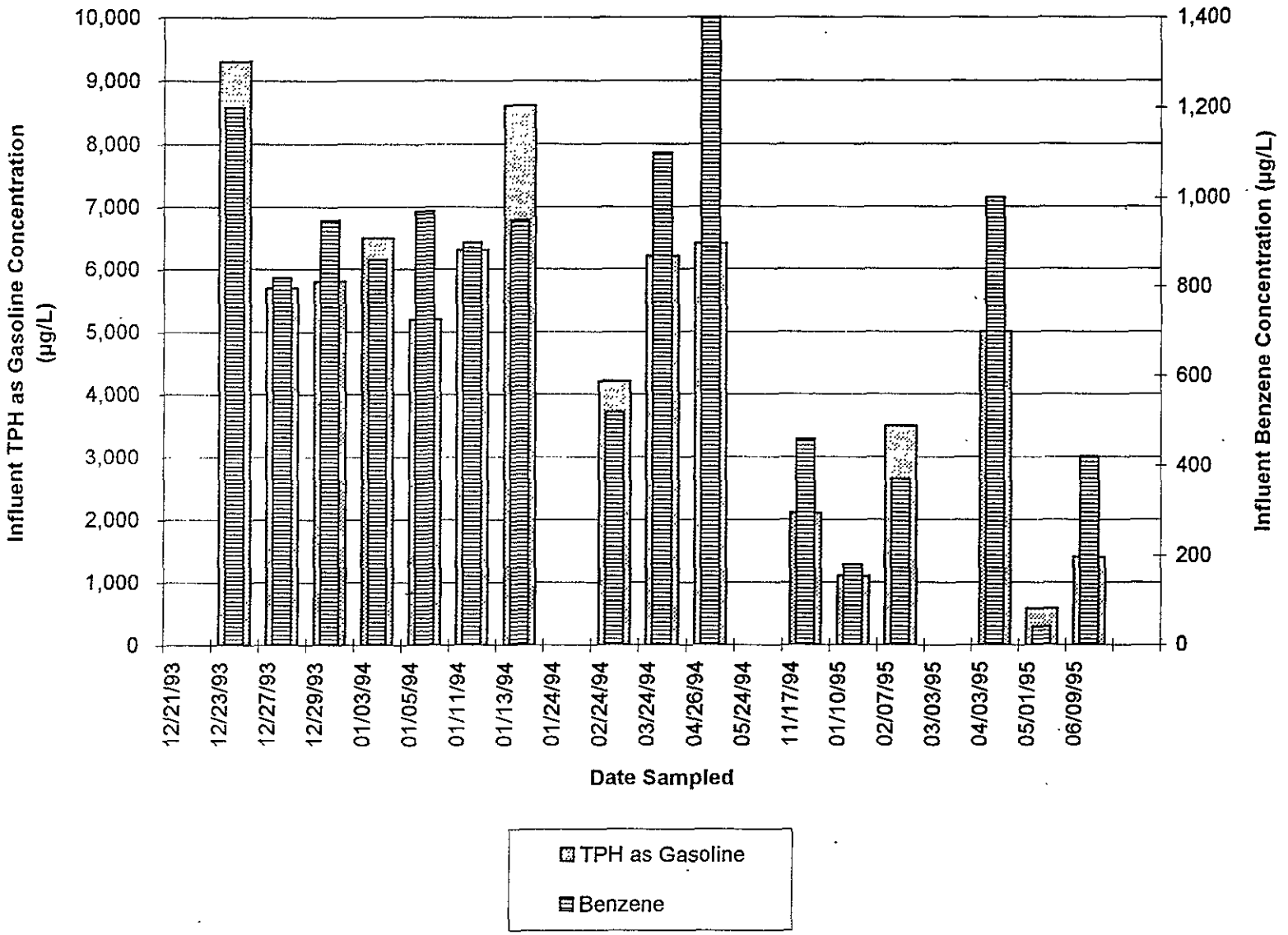


Figure 4
Groundwater Extraction System Hydrocarbon Concentrations

ARCO Service Station 0374
6407 Telegraph Avenue at Alcatraz Avenue
Oakland, California



ATTACHMENT A

CERTIFIED ANALYTICAL REPORTS, CHAIN-OF-CUSTODY DOCUMENTATION, AND FIELD DATA SHEETS

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Project: 330-084.2G/374, 6407 Telegraph

Enclosed are the results from samples received at Sequoia Analytical on May 10, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
950580601	LIQUID, MW-1	5/9/95	TPHGB Purgeable TPH/BTEX
950580602	LIQUID, MW-2	5/9/95	TPHGB Purgeable TPH/BTEX
950580603	LIQUID, MW-3	5/9/95	TPHGB Purgeable TPH/BTEX
950580604	LIQUID, MW-4	5/9/95	TPHGB Purgeable TPH/BTEX
950580605	LIQUID, MW-5	5/9/95	TPHGB Purgeable TPH/BTEX
950580606	LIQUID, MW-6	5/9/95	TPHGB Purgeable TPH/BTEX
950580607	LIQUID, TB-1	5/9/95	TPHGB Purgeable TPH/BTEX

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

Eileen A. Manning
Project Manager

Quality Assurance Department

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: MW-1	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-01	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110

Attention: Maree Doden

Client Proj. ID: 330-084.2G/374, 6407 Telegrph
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9505806-02

Sampled: 05/09/95
Received: 05/10/95

Analyzed: 05/16/95
Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	**0.50**	**1.9**
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Discrete Peak		C6

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	109

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: MW-3	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-03	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	190
Benzene	0.50	20
Toluene	0.50	6.6
Ethyl Benzene	0.50	8.9
Xylenes (Total)	0.50	20
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: MW-4	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-04	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: MW-5	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-05	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: MW-6	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-06	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.2G/374, 6407 Telegrph	Sampled: 05/09/95
2025 Gateway Place, Suite 440	Sample Descript: TB-1	Received: 05/10/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/15/95
Attention: Maree Doden	Lab Number: 9505806-07	Reported: 05/19/95

QC Batch Number: GC051595BTEX06A
Instrument ID: GCHP06

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	93

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Project ID:	330-084.2G/374, 6407 Telegraph
2025 Gateway Place, Suite 440	Matrix:	LIQUID
San Jose, CA 95110		
Attention: Maree Doden	Work Order #:	9505806 01-07 Reported: May 22, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC051595BTEX06A	GC051595BTEX06A	GC051595BTEX06A	GC051595BTEX06A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	G. Garcia	G. Garcia	G. Garcia	G. Garcia
MS/MSD #:	950568225	950568225	950568225	950568225
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/15/95	5/15/95	5/15/95	5/15/95
Analyzed Date:	5/15/95	5/15/95	5/15/95	5/15/95
Instrument I.D.#:	GCHP6	GCHP6	GCHP6	GCHP6
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	7.9	7.8	7.8	23
MS % Recovery:	79	78	78	77
Dup. Result:	9.2	9.6	9.0	27
MSD % Recov.:	92	96	90	90
RPD:	8.8	21	14	16
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG / Arco
REC. BY (PRINT): RT

WORKORDER: 9505804
DATE OF LOG-IN: 5/11/95

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal(s): Present / (Absent)
   Intact / Broken*
2. Custody Seal Nos.: Put in Remarks Section
3. Chain-of-Custody Records: (Present) / Absent*
4. Traffic Reports or Packing List: Present / (Absent)
5. Airbill: Airbill / Sticker
   Present / (Absent)
6. Airbill No.:
7. Sample Tags: (Present) / Absent*
   Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody
8. Sample Condition: (Intact) / Broken* / Leaking*
9. Does information on custody reports, traffic reports and sample tags agree? (Yes) / No*
10. Proper preservatives used: (Yes) / No*
11. Date Rec. at Lab: 5/10/95
12. Temp. Rec. at Lab: 14°C
13. Time Rec. at Lab: 1154

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1	A-C	MW-1	3 VOA's	Liq	5/9/95	
2		-2				
3		-3				
4		-4				
5		-5				
6	↓	-6	↓	↓	↓	
7	A-B	TB-1	2 VOA's	↓	↓	

5/10/95

* if Circled, contact Project manager and attach record of resolution

ARCO Products Company — Chain of Custody

Division of AtlanticRichfieldCompany

330-084.2G **Task Order No.** 1701800 9505806

ARCO Facility no. 374	City (Facility) 6407 Telegraph	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408) 441 7500	Fax no. (Consultant) (408) 441 7539
Consultant name Pacific Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number 07-073

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid HCL	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 ☐ Saml VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐
MW-1	1A-C	3		X		X	X	5/9/95	13:10		X									
MW-2	2								15:10											
MW-3	3								14:40											
MW-4	4								15:35											
MW-5	5								13:35											
MW-6	6								14:00											
TB:1	7AB	2							N/A											

Special detection Limit/reporting: 11

Special QA/QC

Remarks

Lab number

Turnaround time

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

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler: Walter J. Peck	5/10/95	8:30	Received by: Rhonda Barnes		
Relinquished by: Rhonda Barnes	5/10/95	1115	Received by: S. Wright		
Relinquished by: S. Wright	5/10/95		Received by laboratory:	5/10/95	1154

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

APC-3292 (2-91)

FIELD SERVICES / O & M REQUEST

SITE INFORMATION FORM

Project #:330-084.2G

Station #:374

Site Address:6407 Telegraph ave Berkeley, California

County: Alameda

Project Manager: Kelly Brown

Requestor: Chuck Graves

Client: Arco

Prefield contacts: None

☐ **1st time visit**

☐ **1st** ☒ **2nd** ☐ **3rd** ☐ **4th**

☐ **Monthly**

☐ **Semi-Monthly**

☐ **Weekly**

☐ **One time Event**

☐ **Other.**_____

Client P.O.C.: Mike Whelan

Date of Request:5/8/95

Ideal Field Date:5/9/95

Budget Hrs._____

Actual Hrs. 6

Mob de Mob 2.5

Field Tasks: For General Description

Second Quarter Groundwater sampling event: DTW/DTL on all wells (TOC) sample per attached protocol.

Comments, remarks, from Field Staff (include problems encountered

Completed by: C J Rock Date: 5/10/95

Checked by: Chuck Graves

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-084.2G LOCATION: 6407 Telegraph Berkeley DATE: 5/9/95

CLIENT/STATION NO.: Arco #374 FIELD TECHNICIAN: (J) Peck DAY OF WEEK: Tues

PROBE TYPE/ID No.
- ☐ Oil/Water IF/ ____
- ☒ H_2O level indicator ____
- ☐ Other: ____

	Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	TOC Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH): SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons): SPH / H_2O
4"	1	MW-1	11:50	X	X	X	X	X	26.52	8.05 / 8.05	7.82 / 7.82	/	/								/
4"	4	MW-2	12:10	X	X	X	X	X	26.07	7.87 / 7.87	7.57 / 7.57	/	/								/
4"	5	MW-3	12:15	X	X	X	X	X	26.40	6.21 / 6.21	5.96 / 5.96	/	/								/
4"	6	MW-4	12:20	X	X	X	X	X	26.70	9.80 / 9.80	9.00 / 9.00	/	/								/
4"	2	MW-5	12:00	X	X	X	X	X	22.83	8.07 / 8.07	7.65 / 7.65	/	/								/
4"	3	MW-6	12:05	X	X	X	X	X	14.35	5.63 / 5.63	5.21 / 5.21	/	/								/
										/	/										/
										/	/										/
										/	/										/

Comments: ____

WELL SAMPLING REQUEST

SAMPLING PROTOCOL							
Project No.	Station #	Project Name	SEQUENCE	Project Manager Approval	Date/s	Laboratory:	Client Engineer:
330-084.2G	374	6407 Telegraph Berkeley	Q2	Kelly Brown	5/9/95	Sequoia	Mike Whelan

Well Number	Ideal Sampling Order	Sample I.D.	Sampling Frequency	Analyses	TOB TOC	Well Depth	Casing Diameter	Well goes Dry?	Comments
MW-1			QLY	GAS/BTEX	TOC	26.5	4"	NO	
MW-2			QLY	GAS/BTEX	TOC	26	4"	NO	
MW-3			QLY	GAS/BTEX	TOC	27	4"	NO	
MW-4			QLY	GAS/BTEX	TOC	27	4"	NO	
MW-5			QLY	GAS/BTEX	TOC	22	4"	NO	
MW-6			QLY	GAS/BTEX	TOC	14.5	4"	NO	
TB-1			QLY	GAS/BTEX					

ARCO Products Company

Division of AtlanticRichfieldCompany

330-084.2G **Task Order No.** 1701800

Chain of Custody

ARCO Facility no. 374	City (Facility) 6407 Telegraph	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) (408)441 7500	Fax no. (Consultant) (408)441 7539
Consultant name Pacific Environmental Group Inc	Address (Consultant) 2025 Gateway Place Suite 440 San Jose CA 95110		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid HCL	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 ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
mw-1		3		X		X	X	5/9/95	13:10		X											
mw-2		↓		↓		↓	↓	↓	15:10		↓											
mw-3									14:40													
mw-4									15:35													
mw-5									13:35													
mw-6		↓						↓	14:00													
TB-1		2		↓		↓	↓	↓	N/A		↓											

Condition of sample:

Temperature received:

Relinquished by sampler Walter J. Pech	Date 5/10/95 Time 8:30	Received by
Relinquished by	Date Time	Received by
Relinquished by	Date Time	Received by laboratory / Date / Time

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

Method of shipment

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 530.084.26 LOCATION: 6407 Telegraph Ave Berkeley WELL ID #: TB-1

CLIENT/STATION No.: Arco 374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: _____ TOB _____ TOC
Depth to water: _____ TOB _____ TOC
Total depth: _____ TOB _____ TOC
Date: _____ Time (2400): _____

Probe Type and I.D. #
- ☐ Oil/Water interface _____
- ☐ Electronic indicator _____
- ☐ Other; _____

CASING DIAMETER	GAL/ LINEAR FT.
☐ 2	0.17
☐ 3	0.38
☐ 4	0.66
☐ 4.5	0.83
☐ 5	1.02
☐ 6	1.5
☐ 8	2.6

SAMPLE TYPE
- ☐ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☒ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other; _____

TD _____ - DTW _____ = _____ x Gal/Linear Foot _____ = _____ x Number of Casings _____ = Calculated Purge _____

DATE PURGED: _____ START: _____ END (2400 hr): _____ PURGED BY: _____

DATE SAMPLED: _____ START: _____ END (2400 hr): _____ SAMPLED BY: _____

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR

COLOR: Cobalt 0-100, Clear, Cloudy, Yellow, Brown
TURBIDITY: NTU 0-200, Heavy, Moderate, Light, Trace
ODOR: Strong, Moderate, Faint, None

Pumped dry Yes / No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: _____ TOB/TOC

PURGING EQUIPMENT/I.D. #
- ☐ Bailer: _____
- ☐ Airlift Pump: _____
- ☐ Centrifugal Pump: _____
- ☐ Dedicated: _____
- ☐ Other: _____

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: _____
- ☐ Dedicated: _____
- ☐ Other: _____

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
TB-1	5/8/95	N/A	2	40ml	VOA	HCL	Gas/Btex

REMARKS:

SIGNATURE: Walter J. Peck

PACIFIC ENVIRONMENTAL GROUP, INC

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-1

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.05 (TOB) 7.82 (TOC)
Total depth: — TOB 26.52 (TOC)
Date: 5/9/95 Time (2400): 11:50

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 26.52 - DTW 7.82 = 18.70 x Gal/Linear Foot .66 = 12.34 x Number of Casings 3 = Calculated Purge 37.02

DATE PURGED: 5/9/95 START: 12:50 END (2400 hr): 13:05 PURGED BY: W Peck

DATE SAMPLED: 5/9/95 START: 13:05 END (2400 hr): 13:10 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12155	12.50	6.32	1550	68.3	Cloudy	light	None
13:00	25.00	6.48	1660	66.2	Cloudy	light	None
13 05	37.50	6.58	1670	66.0			

Cobalt 0-100: Clear, Cloudy, Yellow, Brown
NTU 0-200: Heavy, Moderate, Light, Trace
Strong, Moderate, Faint, None

Pumped dry Yes (No)

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump: # G-2
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-11
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-1	5/9/95	13:10	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: W Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-2

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: CW Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 7.87 (TOB) 7.57 (TOC)
Total depth: — TOB 26.07 (TOC)
Date: 5/9/95 Time (2400): 12:10

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 26.07 - DTW 7.57 = 18.50 x Gal/Linear Foot .66 = 12.21 x Number of Casings 3 = Calculated Purge 36.63

DATE PURGED: 5/9/95 START: 1450 END (2400 hr): 15:05 PURGED BY: CW Peck

DATE SAMPLED: 5/9/95 START: 15:05 END (2400 hr): 15:10 SAMPLED BY: CW Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
15:55	12.25	7.15	470	67.3	Clear	Light	None
15:00	24.50	7.19	510	67.8	Clear	Light	None
15:05	36.75	7.06	550	68.1	Clear	Light	None

Pumped dry Yes / (No)

Cobalt 0-100, Clear, Cloudy, Yellow, Brown | NTU 0-200, Heavy, Moderate, Light, Trace | Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-3
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-2	5/9/95	15:10	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: Walter J. Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-3

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 6.21 (TOB) 5.96 (TOC)
Total depth: — TOB 26.40 (TOC)
Date: 5/9/95 Time (2400): 12:15

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 26.40 - DTW 5.96 = 20.44 x Gal/Linear Foot .66 = 13.49 x Number of Casings 3 = Calculated Purge 40.4

DATE PURGED: 5/9/95 START: 14:10 END (2400 hr): 14:35 PURGED BY: W Peck

DATE SAMPLED: 5/9/95 START: 14:35 END (2400 hr): 14:40 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14:15	13.50	6.78	590	69.5	Clear	light	None
14:24	27.00	6.82	610	67.5	Clear	light	None
14:35	40.50	7.15	620	67.4	Cloudy	Mod	None

Pumped dry Yes (No)

Cobalt 0-100, Clear, Cloudy, Yellow, Brown | NTU 0-200, Heavy, Moderate, Light, Trace | Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-7
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-3	5/9/95	14:40	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: Walter Peck

PACIFIC ENVIRONMENTAL GROUP, INC

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-4

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 9.80 (TOB) 9.00 (TOC)
Total depth: — TOB 26.70 (TOC)
Date: 5/9/95 Time (2400): 12:20

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other:

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other:

TD 26.70 - DTW 9.00 = 17.70 x Gal/Linear Foot .66 = 11.68 x Number of Casings 3 = Calculated Purge 35.0

DATE PURGED: 5/9/95 START: 15:15 END (2400 hr): 15:30 PURGED BY: W Peck

DATE SAMPLED: 5/9/95 START: 15:30 END (2400 hr): 15:35 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
15:20	11.75	7.12	590	66.1	Cloudy	Mod	None
15:25	23.50	7.04	580	66.0	Cloudy	Light	None
15:30	35.25	6.84	660	65.8	Clear	Light	None

Pumped dry Yes (No)

Color: Cobalt 0-100, Clear, Cloudy, Yellow, Brown
Turbidity: NTU 0-200, Heavy, Moderate, Light, Trace
Odor: Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-6
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-4	5/9/95	15135	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: W Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-5

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 8.07 (TOB) 7.65 (TOC)
Total depth: — TOB 22.83 (TOC)
Date: 5/9/95 Time (2400): 12:00

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER		GAL/ LINEAR FT.
☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 22.83 - DTW 7.65 = 15.18 x Gal/Linear Foot .66 = 10.01 x Number of Casings 3 = Calculated Purge 30.03

DATE PURGED: 5/9/95 START: 13:15 END (2400 hr): 13:32 PURGED BY: W Peck

DATE SAMPLED: 5/9/95 START: 13:32 END (2400 hr): 13:35 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:22	10	7.28	590	67.4	Clear	Light	None
13:27	20	7.10	510	67.5	Clear	Light	None
13:32	30	7.13	520	68.0	Clear	Light	None

Pumped dry Yes (No)

Cobalt 0-100, Clear, Cloudy, Yellow, Brown | NTU 0-200, Heavy, Moderate, Light, Trace | Strong, Moderate, Faint, None

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☒ Centrifugal Pump:
- ☐ Airlift Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: B-2
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-5	5/9/95	13:35	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: Walter J. Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-084.26 LOCATION: 6407 Telegraph Berkeley WELL ID #: MW-6

CLIENT/STATION No.: Arco #374 FIELD TECHNICIAN: W Peck

WELL INFORMATION

Depth to Liquid:	— TOB	— TOC	
Depth to water:	5.63 TOB	5.21 TOC	
Total depth:	— TOB	14.35 TOC	
Date:	5/9/95	Time (2400):	12:05

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator
- ☐ Other;

CASING DIAMETER / GAL/LINEAR FT.

☐	2	0.17
☐	3	0.38
☒	4	0.66
☐	4.5	0.83
☐	5	1.02
☐	6	1.5
☐	8	2.6

SAMPLE TYPE
- ☒ Groundwater
- ☐ Duplicate
- ☐ Extraction well
- ☐ Trip blank
- ☐ Field blank
- ☐ Equipment blank
- ☐ Other;

TD 14.35 - DTW 5.21 = 9.14 x Gal/Linear Foot .66 = 6.03 x Number of Casings 3 = Calculated Purge 18.09

DATE PURGED: 5/9/95 START: 13:40 END (2400 hr): 13:52 PURGED BY: W. Peck

DATE SAMPLED: 5/9/95 START: 13:52 END (2400 hr): 14:00 SAMPLED BY: W Peck

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:44	6	7.20	520	68.7	Clear	light	None
13:47	12	6.96	520	67.2	Clear	Light	None
13:52	18	6.94	530	66.4	Cloudy	Mod	None

Cobalt 0-100, Clear, Cloudy, Yellow, Brown | NTU 0-200, Heavy, Moderate, Light, Trace | Strong, Moderate, Faint, None

Pumped dry Yes / (No)

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: _____ TOB/TOC _____

PURGING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☐ Airlift Pump:
- ☒ Centrifugal Pump:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: G-2
- ☐ Dedicated:
- ☐ Other:

SAMP. CNTRL #	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-6	5/9/95	14:00	3	40ml	VOA	HCl	Gas/BTEX

REMARKS:

SIGNATURE: C Walter J. Peck

PACIFIC ENVIRONMENTAL GROUP, INC.

ATTACHMENT B

FIELD AND LABORATORY PROCEDURES

ATTACHMENT B
FIELD AND LABORATORY PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and checking for the presence of separate-phase hydrocarbons (SPH), using either an electronic indicator and a clear Teflon® bailer or an oil-water interface probe. Wells not containing SPH are then purged of approximately four casing volumes of water (or to dryness) using a centrifugal pump, gas displacement pump, or bailer. Equipment used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored in order to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially recover. Groundwater samples are collected using a Teflon bailer, placed into appropriate EPA-approved containers, labeled, logged onto chain-of-custody documents, and transported on ice to a California State-certified laboratory.

Laboratory Procedures

The groundwater samples were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline, benzene, toluene, ethylbenzene, and xylenes. The analyses were performed according to EPA Methods 8015 (modified), 8020, and 5030 utilizing a purge-and-trap extraction technique. Final detection was by gas chromatography using flame- and photo-ionization detectors. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical report, chain-of-custody documentation, and field data sheets are presented as Attachment A.

ATTACHMENT C

TREATMENT SYSTEM
CERTIFIED ANALYTICAL REPORTS
AND CHAIN-OF-CUSTODY DOCUMENTATION

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Project: 330-084.5B/374, Oakland

Enclosed are the results from samples received at Sequoia Analytical on April 4, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
950426701	LIQUID, SP 105	4/3/95	TPHGB Purgeable TPH/BTEX
950426702	LIQUID, SP 106	4/3/95	TPHGB Purgeable TPH/BTEX
950426703	LIQUID, SP 107	4/3/95	TPHGB Purgeable TPH/BTEX
950426704	LIQUID, SP 108	4/3/95	TPHGB Purgeable TPH/BTEX

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

Eileen A. Manning
Project Manager

Quality Assurance Department

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 04/03/95
2025 Gateway Place, Suite 440	Sample Descript: SP105	Received: 04/04/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/12/95
Attention: Maree Doden	Lab Number: 9504267-01	Reported: 04/17/95

QC Batch Number: GC041195BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	5000
Benzene	20	1000
Toluene	20	41
Ethyl Benzene	20	88
Xylenes (Total)	20	300
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 04/03/95
2025 Gateway Place, Suite 440	Sample Descript: SP106	Received: 04/04/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/10/95
Attention: Maree Doden	Lab Number: 9504267-02	Reported: 04/17/95

QC Batch Number: GC041095BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	90

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 04/03/95
2025 Gateway Place, Suite 440	Sample Descript: SP107	Received: 04/04/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/10/95
Attention: Maree Doden	Lab Number: 9504267-03	Reported: 04/17/95

QC Batch Number: GC041095BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 04/03/95
2025 Gateway Place, Suite 440	Sample Descript: SP108	Received: 04/04/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/10/95
Attention: Maree Doden	Lab Number: 9504267-04	Reported: 04/17/95

QC Batch Number: GC041095BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Client Project ID: 330-084.5B/374, Oakland
Matrix: LIQUID
Work Order #: 9504267 01

Reported: Apr 17, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC041195BTEX21A	GC041195BTEX21A	GC041195BTEX21A	GC041195BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950417703	950417703	950417703	950417703
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/11/95	4/11/95	4/11/95	4/11/95
Analyzed Date:	4/11/95	4/11/95	4/11/95	4/11/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	8.9	8.9	9.3	28
MS % Recovery:	89	89	93	93
Dup. Result:	8.8	8.8	9.0	27
MSD % Recov.:	88	88	90	90
RPD:	1.1	1.1	3.3	3.6
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Client Project ID: 330-084.5B/374, Oakland
Matrix: LIQUID
Work Order #: 9504267 02-04

Reported: Apr 17, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC041095BTEX21A	GC041095BTEX21A	GC041095BTEX21A	GC041095BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950417702	950417702	950417702	950417702
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/10/95	4/10/95	4/10/95	4/10/95
Analyzed Date:	4/10/95	4/10/95	4/10/95	4/10/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	9.9	9.9	29
MS % Recovery:	100	99	93	97
Dup. Result:	9.3	9.1	9.2	27
MSD % Recov.:	88	88	90	90
RPD:	7.3	8.4	7.3	7.1
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Chain of Custody

ARCO Products Company ◆ Division of AtlanticRichfieldCompany — 330-084.5B — **Task Order No.** 0276200

ARCO Facility no. 374	City (Facility) Oakland	Project manager (Consultant) Shaw Garakani	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 4084417500	Fax no. (Consultant) 408 4417539
Consultant name Pacific Env Group	Address (Consultant) 2025 Gateway pl # 440 San Jose		Contract number 07-077

Method of shipment

Special detection Limit/reporting

Special QA/QC

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/SM5030E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
Sp105	1	3		X		X	HCL	4-3-95			X											
Sp106	2	↓		X		X	X	X			X											
Sp107	3			X		X	X	X			X											
Sp108	4	↓		X		X	X	X			X											

Remarks: Please Include Chromatograms on All Info on BTEX Samples

Lab number 9504267

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

Condition of sample: good (NP)

Temperature received: COO

	Date	Time		Date	Time
Relinquished by sampler	4-3-95	700	Received by		
Relinquished by	4/4/95	0940	Received by		4/4/95
Relinquished by	4/4/95		Received by laboratory	4/4/95	1144

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Project: 330-084.5B/374, Oakland

Enclosed are the results from samples received at Sequoia Analytical on May 2, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9505122 -01	LIQUID, Infl	05/01/95	TPHGBW Purgeable TPH/BTEX
9505122 -02	LIQUID, Mid-1	05/01/95	TPHGBW Purgeable TPH/BTEX
9505122 -03	LIQUID, Effl	05/01/95	TPHGBW Purgeable TPH/BTEX

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

Eileen Manning
Project Manager

Quality Assurance Department

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 05/01/95
2025 Gateway Place, Suite 440	Sample Descript: Infl	Received: 05/02/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/05/95
Attention: Maree Doden	Lab Number: 9505122-01	Reported: 05/10/95

QC Batch Number: GC050495BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**580**
Benzene	**0.50**	**40**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**1.2**
Xylenes (Total)	**0.50**	**17**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	85

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 05/01/95
2025 Gateway Place, Suite 440	Sample Descript: Mid-1	Received: 05/02/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/05/95
Attention: Maree Doden	Lab Number: 9505122-02	Reported: 05/10/95

QC Batch Number: GC050595BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/374, Oakland	Sampled: 05/01/95
2025 Gateway Place, Suite 440	Sample Descript: Effl	Received: 05/02/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 05/05/95
Attention: Maree Doden	Lab Number: 9505122-03	Reported: 05/10/95

QC Batch Number: GC050595BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Project ID:	330-084.5B/374, Oakland	
2025 Gateway Place, Suite 440	Matrix:	LIQUID	
San Jose, CA 95110			
Attention: Maree Doden	Work Order #:	9505122 01	Reported: May 10, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC050495BTEX21A	GC050495BTEX21A	GC050495BTEX21A	GC050495BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9504l6114	9504l6114	9504l6114	9504l6114
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/4/95	5/4/95	5/4/95	5/4/95
Analyzed Date:	5/4/95	5/4/95	5/4/95	5/4/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	11	31
MS % Recovery:	100	100	110	103
Dup. Result:	9.9	10	10	30
MSD % Recov.:	99	100	100	100
RPD:	1.0	0.0	9.5	3.3
RPD Limit:	0-50	0-50	0-50	0-50
LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Pacific Environmental Group	Client Project ID:	330-084.5B/374, Oakland	
2025 Gateway Place, Suite 440	Matrix:	LIQUID	
San Jose, CA 95110			
Attention: Maree Doden	Work Order #:	9505122 02-03	Reported: May 10, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC050595BTEX02A	GC050595BTEX02A	GC050595BTEX02A	GC050595BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9504J3003	9504J3003	9504J3003	9504J3003
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	5/5/95	5/5/95	5/5/95	5/5/95
Analyzed Date:	5/5/95	5/5/95	5/5/95	5/5/95
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	9.8	9.7	30
MS % Recovery:	100	98	97	100
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	0.0	2.0	3.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

ARCO Products Company — Chain of Custody

Division of AtlanticRichfieldCompany

Task Order No. 330-084.5 / 1701800

ARCO Facility no. 374	City (Facility) Oakland	Project manager (Consultant) Shaw Ghorbani	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 441 7500 (408)	Fax no. (Consultant) 441 7539
Consultant name Pacific Env Group	Address (Consultant) 2025 Gateway Pl #440 San Jose		Contract number

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

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 Gas	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 ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	9505122
INFL	1	3		X		X	HCL	5-1-95	1210		X										
MID-1	2	3		X		X	X	X	X		X										
EFFL	3	3		X		X	X	X	X		X										

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler	5-2-95	7:00	Received by		
Relinquished by	5-2	1:00	Received by		
Relinquished by			Received by laboratory	5-2	11:45

5/2/95 0746

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

5/2/95 1308

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Project: 330-084.5B/0374, Oakland

Enclosed are the results from samples received at Sequoia Analytical on June 12, 1995. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
950669101	LIQUID, Sp105	6/9/95	TPHGB Purgeable TPH/BTEX
950669102	LIQUID, Sp106	6/9/95	TPHGB Purgeable TPH/BTEX
950669103	LIQUID, Sp107	6/9/95	TPHGB Purgeable TPH/BTEX
950669104	LIQUID, Sp108	6/9/95	TPHGB Purgeable TPH/BTEX

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

Eileen A. Manning
Project Manager

Quality Assurance Department

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/0374,Oakland	Sampled: 06/09/95
2025 Gateway Place, Suite 440	Sample Descript: Sp105	Received: 06/12/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/16/95
Attention: Maree Doden	Lab Number: 9506691-01	Reported: 06/23/95

QC Batch Number: GC061595BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1400
Benzene	5.0	420
Toluene	5.0	7.0
Ethyl Benzene	5.0	10
Xylenes (Total)	5.0	20
Gas & Unidentified HC		<C8

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	75

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Bruce Fletcher jr

Eileen Manning
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/0374,Oakland	Sampled: 06/09/95
2025 Gateway Place, Suite 440	Sample Descript: Sp106	Received: 06/12/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/13/95
Attention: Maree Doden	Lab Number: 9506691-02	Reported: 06/23/95

QC Batch Number: GC061395BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	123

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Bruce Fletcher for

Eileen Manning
Project Manager

Sequoia Analytical

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Pacific Environmental Group	Client Proj. ID: 330-084.5B/0374,Oakland	Sampled: 06/09/95
2025 Gateway Place, Suite 440	Sample Descript: Sp107	Received: 06/12/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/15/95
Attention: Maree Doden	Lab Number: 9506691-03	Reported: 06/23/95

QC Batch Number: GC061495BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Bruce Fletcher for

Eileen Manning
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Proj. ID: 330-084.5B/0374,Oakland	Sampled: 06/09/95
2025 Gateway Place, Suite 440	Sample Descript: Sp108	Received: 06/12/95
San Jose, CA 95110	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 06/14/95
Attention: Maree Doden	Lab Number: 9506691-04	Reported: 06/23/95

QC Batch Number: GC061395BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	79
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
Discrete Peak		C6-C7

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	111

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Project ID:	330-084.5B/0374, Oakland	
2025 Gateway Place, Suite 440	Matrix:	LIQUID	
San Jose, CA 95110			
Attention: Maree Doden	Work Order #:	9506691 01	Reported: Jun 23, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC061595BTEX21A	GC061595BTEX21A	GC061595BTEX21A	GC061595BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950646603	950646603	950646603	950646603
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/15/95	6/15/95	6/15/95	6/15/95
Analyzed Date:	6/15/95	6/15/95	6/15/95	6/15/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	11	11	31
MS % Recovery:	110	110	110	103
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	9.5	9.5	9.5	3.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Bruce Fletcher for
Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

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Pacific Environmental Group
2025 Gateway Place, Suite 440
San Jose, CA 95110
Attention: Maree Doden

Client Project ID: 330-084.5B/0374, Oakland
Matrix: LIQUID
Work Order #: 9506691 02

Reported: Jun 23, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC061395BTEX21A	GC061395BTEX21A	GC061395BTEX21A	GC061395BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950646305	950646305	950646305	950646305
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/13/95	6/13/95	6/13/95	6/13/95
Analyzed Date:	6/13/95	6/13/95	6/13/95	6/13/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.5	10	11	33
MS % Recovery:	95	100	110	110
Dup. Result:	11	12	13	38
MSD % Recov.:	110	120	130	127
RPD:	15	18	17	14
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				
MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Pacific Environmental Group	Client Project ID:	330-084.5B/0374, Oakland
2025 Gateway Place, Suite 440	Matrix:	LIQUID
San Jose, CA 95110		
Attention: Maree Doden	Work Order #:	9506691 03

Reported: Jun 23, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC061495BTEX21A	GC061495BTEX21A	GC061495BTEX21A	GC061495BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	950645902	950645902	950645902	950645902
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/14/95	6/14/95	6/14/95	6/14/95
Analyzed Date:	6/14/95	6/14/95	6/14/95	6/14/95
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.6	10	10	31
MS % Recovery:	96	100	100	103
Dup. Result:	9.5	9.9	10	30
MSD % Recov.:	96	99	100	100
RPD:	1.0	1.0	0.0	3.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:				
Prepared Date:				
Analyzed Date:				
Instrument I.D.#:				
Conc. Spiked:				
LCS Result:				
LCS % Recov.:				

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

ARCO Products Company
Division of AtlanticRichfieldCompany

330-054.5G Task Order No. 170800

Chain of Custody

ARCO Facility no. 0374	City (Facility) OAKLAND	Project manager (Consultant) SHAN GARNAM	Laboratory name SEQUOIA
ARCO engineer MIKE WHELAN	Telephone no. (ARCO)	Telephone no. (Consultant) 408 441 7500	Fax no. (Consultant) 408 441 7539
Consultant name PACIFIC ENV GROUP	Address (Consultant) 2025 GATEWAY PL #440 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 ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
SP105		3		X		X	HCL	6-9-95			X					01	A-C					
SP106		↓		↓		↓	↓	↓			↓					02	↓					
SP107																03						
SP108		↓		↓		↓	↓	↓			↓					04	↓					

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number 9506697

Turnaround time

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

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by sampler	6-12-95	700	Received by		0730
Relinquished by	6/12/95		Received by	6-12	9:45
Relinquished by	6-12	10:45	Received by laboratory	6/12/95	1045

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

ARC-3292 (2-91)

Work Auth # 027620 **FIELD SERVICES / O&M REQUEST** Work Order # 953077

SITE INFORMATION FORM

Identification

Project # 330-084.5B

Station # 0374

Site Address: 1407 TELEGRAPH AVE. @ ALCATRAZ AVE OAKLAND

County: ALAMEDA

Project Manager: SHAWG.

Requestor: ERIC W.

Client: ARCO

Client P.O.C.: MIKE WHELAN

Date of request: 2/6/95

Project Type

- ☐ 1st Time visit
- ☐ Quarterly ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
- ☒ Monthly
- ☐ Semi-Monthly
- ☐ Weekly
- ☐ One time event
- ☐ Other:

Ideal field date(s): MONTHLY

Prefield Contacts/Permits

	Initials	Date
☐ Cal Trans		
☐ County F/S	RH	4/4/95
☐ City		
☐ Private Copy/Dist.	RH	4/6/95
☐ Multi Consultant Scheduling date(s):		

Check Appropriate Category

Budget Hrs. ____

Actual Hrs. 2.5

Mob de Mob 2

Field Tasks: For General Description

SAMPLE

SP105 GAS/BTEX BI MONTHLY

SP106 BI MONTHLY

SP107 BI MONTHLY

SP108 BI MONTHLY

BI MONTHLY IS EVERY OTHER MONTH (FEB, APRIL, JUNE, AUGUST OCT, DEC)

FILL OUT DATA SHEET

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

SP105 (INFL.) → SP106 (MID1) → SP107 (MID2) → SP108 (EFFL)

MONTHLY COMPLETED

Completed by: JV Date: 4-3-95

Checked by: ____

ONMENTAL GROUP, INC.

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Groundwater Extraction System

ARCO Service Station 0374
6407 Telegraph at Alcatraz Avenue
Oakland, California

Name: JV Date/Time: 4-3-95

Treatment System Readings			
System On Upon Arrival?	N/C	Electric Meter (kw-hrs)	02910
Effluent Totalizer (gallons)	00062582 SAME	Effluent Flowrate (gpm)	6
W-2 Totalizer (gallons)	00062582	Bag Filter INFL Pressure (psi)	7
W-2 Flowrate (gpm)	N/A	Bag Filter EFFL Pressure (psi)	7
W-2 Hourmeter (hours)	N/A	MID Pressure (1) Psi	1.3
		MID PRESSURE (2) Psi	0
W-2 Throttle Valve Position	100 % OPEN	EFFL Pressure (psi)	0
Does Sump Pump Work?	YES	DOES TRANSFER PUMP WORK?	YES
Number of Spare Filters On-Site		DOES PRESSURE SWITCH SHUT DOWN SYSTEM?	YES
Enclosure Swept and Bleached?	YES	IRRIGATION SYST. TESTED?	NO
		PLANTS WATERED?	NO
Does PARAFAX Work?	YES	SYSTEM FLOW RATE?	EFFL 6 GPM
Batteries Replaced ?	NO	COMPRESSOR SERVICED?	NO
SURGE TANK CLEANED?	NO	SURG TANK LEVEL SWITCHES TESTED?	YES

Comments

ARCO Products Company
Division of AtlanticRichfieldCompany

330-084.5B Task Order No. 0276200

Chain of Custody

ARCO Facility no. 374	City (Facility) Oakland	Project manager (Consultant) Shaw Garakani	Laboratory name Sequoia
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 4084417500	Fax no. (Consultant) 408 4417539
Consultant name Pacific Env Group	Address (Consultant) 2025 Gateway Pl #440 San Jose		Contract number

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day ☐

Rush 2 Business Days ☐

Expedited 5 Business Days ☐

Standard 10 Busin ays ☒

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 ☐ Semi ☐ VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
p105		3		X		X	HCL	4-3-95			X											
p106		↓		X		X	X	X			X											
p107				X		X	X	X			X											
p108		↓		X		X	X	X			X											

Condition of sample:

Temperature received:

Relinquished by sampler	Date 4-3-95	Time 700	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory / Date / Time

FIELD SERVICES / O&M REQUEST JV **Work Order #** 3647

SITE INFORMATION FORM

Identification

Project #: 330-084.5B

Station #: 374

Site Address: 6170 TELEGRAPH @ ALCATRAZ OAKLAND

County: ALAMEDA

Project Manager: SHAW G.

Requestor: ERIC W.

Client: ARCO

Client P.O.C.: MIKE WHELAN

Date of request: 3/30/95

Project Type

- ☐ 1st Time visit
- ☐ Quarterly
  - ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
- ☐ Monthly
- ☐ Semi-Monthly
- ☐ Weekly
- ☒ One time event
- ☐ Other: ____

Ideal field date(s): DURING MONTHLY

Prefield Contacts/Permits

	Initials	Date
☐ Cal Trans		
☐ County F/S	RY	4/4/95
☐ City		
☐ Private Copy/Dist.	RY	4/6/95
☐ Multi-Consultant Scheduling date(s):		

Check Appropriate Category

Budget Hrs. ____

Actual Hrs. 0

Mob de Mob ____

Field Tasks: For General Description

SAMPLE INFL, MID-1, MID-2, EFFL FOR GAS/BTEX

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

Completed with Monthly Sampling

Completed by: JV Date: 4-3-95

Checked by: ____

PACIFIC ENVIRONMENTAL GROUP, INC.

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Work Order # 953192

FIELD SERVICES / ROUTINE O&M REQUEST

Identification

Project #	330-084.5B
Station #	0374
Site Address:	6407 Telegraph Avenue @ Alcatraz Avenue
County:	Alameda
Project Manager:	Shaw Garakani
Requestor:	Eric Wingfield
Client:	ARCO
Client P.O.C.:	Mike Whelan
Revision Date:	April 25, 1995
Laboratory:	Sequoia Analytical

Request Frequency: Monthly

	Initials	Date
F/S	RJ	5/3/95
Copy/Dist.	RJ	5/4/95

Site Remedial Technologies:

Groundwater Extration (GWE) [X]

Complete attached Data Sheets as prescribed in the following table:

Scheduling Table

Data Sheet Section(s) / Part(s)	To be Completed	Budgeted Hrs	Actual Hrs	Mob de Mob	Completed
GWE(A, B, C, D, F, G)	monthly †		2	1	Yes
GWE(E)	quarterly †				

† = sampling to be performed

Definition of frequencies:

weekly = N/A
semi-monthly = once every other week on weeks 1 & 3
monthly = N/A
quarterly = once every quarter in months 3, 6, 9,12 on week 1
semi-annually = N/A

Field Technician Response:

Completed by: JU Date: 5-1-95
Arrival time: _____ Departure time: _____
Sample this visit?: Yes Engineer contacted? Yes

Date: 5-1-95

Groundwater Extraction & Treatment System
ARCO Service Station 0374
6407 Telegraph Avenue
330-084.5B
April 25, 1995

System Description:

Groundwater Pumps

Well	Type	Size	Control	Set Depth (TOB)
W-2	pneumatic	4"	panel	26'

Carbon Vessels: Three SunAg GAC Transfer Pump: ORCA
Filter: _____

PART A: SYSTEM DATA

System on upon arrival? yes (if no, specify reason in comments)

MEASUREMENT	ON ARRIVAL	ON DEPARTURE
TOTALIZER (gallons)	0006979	0006980
FILTER INLET PRESSURE (psig)	7	(ideal range 8 psig)
CARBON #1 INLET PRESSURE (psig)	4	(ideal range 7 to 8 psig) 4
CARBON #2 INLET PRESSURE (psig)	2	(ideal range 3 to 5 psig) 2
CARBON #3 INLET PRESSURE (psig)	0	(ideal range 1 to 3 psig) 0
DISCHARGE PRESSURE (psig)	0	(ideal range 0 to 1 psig) 0
TRANSFER PUMP FLOWRATE (gpm)	8	(ideal range 4 to 5 gpm)

PART B: COMMENTS

PART C: WELL DATA

WELL	DTW/DTL (TOB)	TOTALIZER (gallons)	FLOWRATE (gpm)	COMMENTS/ ADJUSTMENTS
	112'	N/A	N/A	

PART D: SAMPLING & READINGS I

SAMPLE	ANALYSIS	COMPLETED
INFLUENT	TPH-gasoline, TPH-diesel, BTEX compounds	Yes
EFFLUENT	TPH-gasoline, TPH-diesel, BTEX compounds	Yes
MID 1	TPH-gasoline, TPH-diesel, BTEX compounds,	Yes

PART E: SAMPLING & READINGS II

SAMPLE	ANALYSIS	COMPLETED
MID 2	TPH-gasoline, TPH-diesel, BTEX compounds	

PART F: SYSTEM MAINTENANCE I

NUMBER OF SPARE FILTERS ON SITE?	20	CHANGE FILTERS? (if necessary)	Yes
DRAIN COMPRESSOR	Yes	ADD CHLORINE TO HOLDING TANK	No

PART G: SYSTEM MAINTENANCE II

TEST ALARM SWITCHES	ok	TEST IRRIGATION SYSTEM	No
BACKFLUSH CARBON VESSELS	OK	WATER POTTED PLANTS MANUALLY	Yes
CHANGE COMPRESSOR OIL	Yes	CLEAN SURGE TANK	ok
TEST PARAFAX	ok	TEST SURGE TANK	ok
ELECTRIC METER READING (kw hrs)	02160	W-2 HOUR METER READING	NA

Air Compressor Hours 00204.0

ARCO Products Company Division of AtlanticRichfieldCompany — **Chain of Custody**

Task Order No. 330 084.5R 1701800

ARCO Facility no. 374	City (Facility) OAKLAND	Project manager (Consultant) SHAN GHORBANI	Laboratory name SEQUOIA
ARCO engineer Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 441 7500 (408)	Fax no. (Consultant) 441 7539
Consultant name PACIFIC ENV GROUP	Address (Consultant) 2025 GATE WAY PL #440 SAN JOSE		Contract number

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 ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
INFL		3		X		X	HCL	5-1-95	1210		X											
MID-1		3		X		X	X	X	X		X											
EFFL		3		Y		Y	X	Y	X		X											

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day

Rush 2 Business Days

Expedited 5 Business Days

Standard 10 ess Days

Condition of sample:		Temperature received:	
Relinquished by sampler	Date 5-2-95 Time 7:00	Received by	
Relinquished by	Date Time	Received by	
Relinquished by	Date Time	Received by laboratory	Date Time

FIELD SERVICES / O&M REQUEST JV **Work Order #** 3622

SITE INFORMATION FORM RY

Identification

Project # 330-084.5B

Station # 0374

Site Address: 6407 Telegraph @ Alcatraz Oakland

County: Alameda

Project Manager: Shawg.

Requestor: Eric W.

Client: ARCO

Client P.O.C.: Michael Whelan

Date of request: 5/17/95

Project Type

- ☐ 1st Time visit
- ☐ Quarterly ☐ 1st ☐ 2nd ☐ 3rd ☐ 4th
- ☐ Monthly
- ☐ Semi-Monthly
- ☐ Weekly
- ☒ One time event
- ☐ Other:

	Initials	Date
F/S	RY	6/12/95
Copy/Dist	RY	↓

Ideal field date(s): During Monthly

Prefield Contacts/Permits

- ☐ Cal Trans
- ☐ County
- ☐ City
- ☐ Private
- ☐ Multi-Consultant Scheduling date(s):

Check Appropriate Category

Budget Hrs.

Actual Hrs. ∅ Completed with monthly

Mob de Mob

Field Tasks: For General Description Stop by my desk before going to field

(1) Start irrigation system — Completed

(2) Record filter size for system — Rose Dale 6-18-1P-1-150 CB

(3) (a) Call from field
(b) Trip parafay

(4) If flow ~~[illegible]~~ meter has arrived in mail, then install in field & inside the compound or at the well head (whichever is more appropriate). meter not in

Comments, remarks, etc. from Field Staff (include problems encountered and out-of-scope work)

Task Completed

Completed by: JV Date: 6-9-95

Checked by:

PACIFIC ENVIRONMENTAL GROUP, INC.

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Work Order # 953346

FIELD SERVICES / ROUTINE O&M REQUEST

Request Frequency: Monthly

Identification

Project #	330-084.5B
Station #	0374
Site Address:	6407 Telegraph Avenue @ Alcatraz Avenue
County:	Alameda
Project Manager:	Shaw Garakani
Requestor:	Steve Johnston
Client:	ARCO
Client P.O.C.:	Mike Whelan
Revision Date:	June 1, 1995
Laboratory:	Sequoia Analytical

	Initials	Date
F/S	RY	6/12/95
Copy/Dist.	RY	↓

Site Remedial Technologies:

Groundwater Extration (GWE) [X]

Complete attached Data Sheets as prescribed in the following table:

Scheduling Table

Data Sheet Section(s) / Part(s)	To be Completed	Budgeted Hrs	Actual Hrs	Mob-de Mob	Completed
GWE(A, B, C, D, F)	monthly †		2	2	Yes
GWE(E,G)	quarterly †				Yes

† = sampling to be performed

Definition of frequencies:

weekly = N/A
semi-monthly = once every other week on weeks 1 & 3.
monthly = N/A
quarterly = once every quarter in months 3, 6, 9, 12 on week 1
semi-annually = N/A

Field Technician Response:

Completed by: JV Date: 6-9-95
Arrival time: 0830 1145 Departure time: 1.45
Sample this visit?: Yes Engineer contacted? yes

ARCO Service Station 0374

Date: 6-9-95

Groundwater Extraction & Treatment System
ARCO Service Station 0374
6407 Telegraph Avenue
330-084.5B
May 24, 1995

System Description:

Groundwater Pumps

Well	Type	Size	Control	Set Depth (TOB)
W-2	pneumatic	4"	panel	26'

Carbon Vessels: Three SunAg GAC Transfer Pump: ORCA
Filter: 6-18-1P-1-150-CBNB, PE-25 P85

PART A: SYSTEM DATA

System on upon arrival? NO (if no, specify reason in comments)

MEASUREMENT	ON ARRIVAL	ON DEPARTURE
TOTALIZER (gallons)	00075254	00075359
FILTER INLET PRESSURE (psig)	8	(ideal range 8 psig)
CARBON #1 INLET PRESSURE (psig)	3.5	(ideal range 7 to 8 psig) 3.5
CARBON #2 INLET PRESSURE (psig)	2	(ideal range 3 to 5 psig) 2
CARBON #3 INLET PRESSURE (psig)	0	(ideal range 1 to 3 psig) 0
DISCHARGE PRESSURE (psig)	0	(ideal range 0 to 1 psig) 0
TRANSFER PUMP FLOWRATE (gpm)	7	(ideal range 4 to 5 gpm) 7

PART B: COMMENTS System down on Arrival
Found ~~car~~ Air Compressure off Restarted
Compressor and check out. Compressor
Runs Fine at This Time Compressure Turns
off at 110 psi and comes on at 80 psi
* Carbon Vessel #1 OR 2 HAS A Little Leak
on bottom of Vessel. System was Left Running
as PER S.J.

ARCO Service Station 0374

PART C: WELL DATA

WELL	DTW/DTL (TOB)	TOTALIZER (gallons)	FLOWRATE (gpm)	COMMENTS/ ADJUSTMENTS
W-2	12.10	N/A	N/A	

PART D: SAMPLING & READINGS I

SAMPLE	ANALYSIS	COMPLETED
SP 105 (Influent)	TPH-gasoline/BTEX compounds	Yes
SP 108 (Effluent)	TPH-gasoline/BTEX compounds	Yes
SP 106 (Mid 1)	TPH-gasoline/BTEX compounds,	Yes

PART E: SAMPLING & READINGS II

SAMPLE	ANALYSIS	COMPLETED
SP 107 (Mid 2)	TPH-gasoline, BTEX compounds	Yes

PART F: SYSTEM MAINTENANCE I

NUMBER OF SPARE FILTERS ON SITE?		CHANGE FILTERS? (if necessary)	Yes
DRAIN COMPRESSOR	Yes	ADD CHLORINE TO HOLDING TANK	NO Will Bring CHLORINE Next Visit

PART G: SYSTEM MAINTENANCE II

TEST ALARM SWITCHES	Yes	TEST IRRIGATION SYSTEM	Yes
BACKFLUSH CARBON VESSELS	NO	WATER POTTED PLANTS MANUALLY	Yes
CHANGE COMPRESSOR OIL	oil less (NO) Compressure	CLEAN SURGE TANK	Ok
TEST PARAFAX	Yes	TEST SURGE TANK	Yes
ELECTRIC METER READING (kw hrs)	02452	W-2 HOUR METER READING	N/A
AIR COMPRESSOR HOURS (hrs)	06225.0	W-2 FLOW METER READING (gpm)	N/A

ARCO Products Company Division of AtlanticRichfieldCompany — Task Order No. 330-084.5 70180 — **Chain of Custody**

ARCO Facility no. 0374	City (Facility) OAKLAND	Project manager (Consultant) SHAW GARATANI	Laboratory name SEQUOIA
ARCO engineer MIKE WHELAN	Telephone no. (ARCO)	Telephone no. (Consultant) 408 441 7500	Fax no. (Consultant) 408 441 7539
Consultant name PACIFIC ENV GROUP	Address (Consultant) 2025 GATEWAY PL # 440 SAN JOSE		Contract number

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 ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
SP105		3		X		X	HCL	6-9-95			X											
SP106		↓		↓		↓	↓	↓			↓											
SP107																						
SP108		↓		↓		↓	↓	↓			↓											

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

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

Condition of sample:

Temperature received:

	Date	Time	
Relinquished by sampler	6-12-95	700	Received by
Relinquished by			Received by
Relinquished by			Received by laboratory

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