PE

UST LEAK SITE UPDATE	Date of Last Review/Update September 30, 1991	Current Date January 2, 1992

SITE IDENTIFICATION

Name ARCO Products Company #608 Case No. _____

Address 17601 (Street Number) Hesperian Boulevard at Hacienda (Street)

San Lorenzo (City) 94580 (ZIP Code)

County Alameda Substance Gasoline

Local Agency Alameda Co. - Environmental Health Department

Regional Board S.F. Bay Region

LEAD STAFF PERSON PAM EVANS

CASE TYPE

_____ Undetermined _____ Soil Only __X__ Groundwater _____ Drinking Water

STATUS (Date indicates when case moved into status)

___	No Action Taken	Date _____
X	Leak Being Confirmed	Date 11/85
X	Preliminary Site Assessment Workplan Submitted	Date 10/04/89
X	Preliminary Site Assessment Underway	Date 1985
X	Pollution Characterization	Date In Progress
X	Remediation Plan	Date 1988
X	Remedial Action Underway	Date 1988
___	Post Remedial Action Monitoring	Date _____
___	Case Referred to Regional Board	Date _____
___	Case Referred to Department of Health Services	Date _____
___	Case Closed	Date _____

REMEDIAL ACTIONS Groundwater remediation is in progress.

COMMENTS:

Last Quarter Activities: Researched property owner names and addresses for investigation of undocumented wells in site area. Prepared and submitted a progress letter on August 15, 1991 documenting the results of the June 1991 groundwater investigation. Initiated encroachment for additional off-site groundwater monitoring wells. Construction of groundwater treatment system. Performed quarterly monitoring and reporting.

Current Quarter Activities: Sampled private wells in site area. Installed and reported on additional off-site well installation. Performed quarterly monitoring and reporting. Startup of groundwater remediation system.

Next Quarter Activities: Perform quarterly reporting. Monitor groundwater remediation system.

Reports documenting the site's history are listed on page 2.

Table 1
Site Document Reports for
ARCO Products Company Station 608

Report	Date	Consultant
Site Assessment	11/85	Emcon Associates
Site Assessment	03/88	Applied Geosystems
Work Plan (Includes 1988 tank removal and 1989 soil gas survey results)	10/4/89	Pacific Environmental Group, Inc.
Aquifer Test	04/13/90	Pacific Environmental Group, Inc.
Soil and Groundwater Assessment	01/02/91	Pacific Environmental Group, Inc.
Work Plan	02/13/91	Pacific Environmental Group, Inc.
Site Status Letter	06/12/91	Pacific Environmental Group, Inc.
Progress Letter	08/15/91	Pacific Environmental Group, Inc.
Site Assessment Report	12/16/91	Pacific Environmental Group, Inc.
Quarterly groundwater monitoring has been conducted since March 1989.		

PACIFIC
ENVIRONMENTAL
GROUP, INC.

September 14, 1992
Project 330-06.05

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

Re: Quarterly Monitoring Results and
Remedial Performance Evaluation
April to June Quarter 1992
ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Dear Mr. Whelan:

This report presents the results of groundwater monitoring performed by Pacific Environmental Group, Inc. (PACIFIC), on behalf of ARCO Products Company (ARCO), at the above referenced site. Groundwater samples were collected on June 15, 16 and 17, 1992 and analyzed for total petroleum hydrocarbons calculated as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). Groundwater monitoring procedures are documented in Attachment A. Also included in this report is a performance evaluation of the groundwater remedial system.

RESULTS

The results of groundwater monitoring this quarter are consistent with historical data. TPH-g and benzene concentrations in Wells MW-8, MW-10, MW-15, MW-16, and MW-17 ranged between 80 and 4,800 parts per billion (ppb) and ranged between none detected and 460 ppb, respectively. All other site wells (Wells MW-7, MW-9, MW-11, MW-13, MW-14, and MW-18 through MW-23) remained at non-detectable levels of TPH-g and benzene. Well MW-5 was dry this quarter. Separate-phase hydrocarbons were not observed in any site well this quarter. Quarterly groundwater analytical results are presented in Table 1. A dissolved gasoline and benzene concentration map is presented as Figure 1. Certified analytical reports, chain-of-custody documentation, and field data sheets are provided in Attachment B.

2025 Gateway Place, Suite 440, San Jose, California 95110 (408) 441-7500 FAX (408) 441-7539
620 Contra Costa Blvd., Suite 209, Pleasant Hill, California 94523 (510) 825-0855 FAX (510) 825-0882

Depth to water data indicates that groundwater levels have declined in site wells an average of 1.83 feet since the previous monitoring event. Groundwater flow was to the west with an approximate gradient of 0.003. As discussed below, a groundwater depression has developed as a result of pumping Extraction Well E-1A. Groundwater elevation data is presented in Table 2. A groundwater contour map based on the June 1992 data is presented as Figure 2.

REMEDIAL PERFORMANCE EVALUATION

Groundwater Treatment System

The data presented in this section covers the period from March 17 to June 19, 1992. The system began continuous operation on October 15, 1991. The treatment system uses two granular activated carbon vessels to treat the influent groundwater stream before it is discharged into the sanitary sewer. A sanitary sewer discharge permit was obtained from the Oro Loma Sanitary District on April 4, 1991. The updated permit is effective through April 4, 1993. The carbon vessels are arranged in series with valving to permit bed order rotation. This allows for the primary vessel to become the secondary vessel after the carbon has been renewed. Sample ports are located at the treatment system influent, effluent, the mid-point between the carbon vessels, and at each individual well head.

In order to evaluate treatment system performance, PACIFIC monitored water levels, instantaneous and average flow rates, and sampled the influent, effluent, and mid-point of the treatment system for TPH-g and BTEX compounds, on a monthly basis. The effluent sample is also analyzed for arsenic, as requested by the Oro Loma Sanitary District.

The dissolved TPH-g removed to date was calculated based on influent concentrations and total flow through the system. This data is presented in Table 3. Influent concentrations of TPH-g have ranged from non-detectable (less than 30 ppb) to 200 ppb, while effluent concentrations have been non-detectable. A plot of influent TPH-g concentration versus total flow is presented as Figure 3, and a plot of dissolved TPH-g removed versus total flow is presented as Figure 4. Analytical results for the treatment system are summarized in Table 4 and the certified analytical results, chain-of-custody documentation, field data sheets for the monthly sampling dates are included in Attachment B.

The treatment system employs one groundwater extraction well, Well E-1A. The average pumping rate for the treatment system during the period was 4.2 gallons per minute (gpm). A total of 567,113 gallons of groundwater was extracted during this period of operation (Table 5), and 0.09 gallons of dissolved TPH-g was recovered. A total of 1,229,960 gallons of groundwater has been extracted since the beginning of operation, and 0.21 gallons of dissolved TPH-g has been

recovered. Calculations indicate the primary carbon unit is 2 percent loaded and breakthrough is not expected during the next 12 months. The treatment system has had no significant down time or mechanical failures during this period.

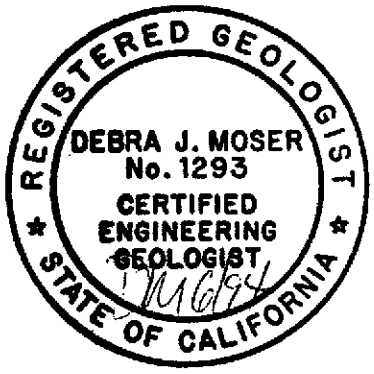
Groundwater elevation data indicates the groundwater extraction system has achieved hydraulic control of the on-site dissolved hydrocarbon plume and the zone of capture appears to extend approximately 120 feet downgradient of the extraction well.

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

Sincerely,

Pacific Environmental Group, Inc.

Daniel J. Landry
Project Engineer



Debra J. Moser
Senior Geologist
CEG 1293

Attachments:
- Table 1 - Quarterly Groundwater Analytical Results - Total Petroleum Hydrocarbons
- Table 2 - Groundwater Elevation Data
- Table 3 - Estimated Total Dissolved TPH-g Removed by the Groundwater Extraction System
- Table 4 - Treatment System Analytical Results
- Table 5 - Treatment System Metered Volume
- Figure 1 - Gasoline and Benzene Concentration Map
- Figure 2 - Groundwater Contour Map
- Figure 3 - Influent TPH-g Concentration versus Total Flow
- Figure 4 - Dissolved TPH-g Removed versus Total Flow
- Attachment A - Groundwater Sampling and Analytical Procedures
- Attachment B - Certified Analytical Reports, Chain-of-Custody Documentation, and Field Data Sheets

cc: Mr. Chris Winsor, ARCO Products Company
Ms. Juliett Shin, Alameda County, Environmental Health
Mr. Eddy So, Regional Water Quality Control Board - San Francisco Bay Region

Table 1
Quarterly Groundwater Analytical Results
Total Petroleum Hydrocarbons

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-1	01/11/88	300	20	10	50	80
	06/14/88	Well Destroyed				
MW-2	07/05/85	32,000	1,000	690	NA*	1,500*
	01/11/88	3,300	804	115	168	166
	06/14/88	Well Destroyed				
MW-3	01/11/88	1,800	20	20	80	60
	03/07/89	150,000	4,600	5,200	5,600	13,000
	06/21/89	63,000	2,700	5,800	3,300	12,000
	12/12/89	Not Sampled--Insufficient Water Volume				
	03/29/90	1,100,000**	13,000	60,000	17,000	91,000
	06/22/90	Not Sampled--Insufficient Water Volume				
	07/18/90	Well Destroyed				
MW-4	01/11/88	62,000	2,700	7,900	850	5,200
	09/12/88	Not Sampled--Separate-Phase Hydrocarbon				
	03/07/89	84,000	2,400	3,400	2,500	7,600
	06/21/89	31,000	400	800	200	1,500
	12/12/89	Not Sampled--Well Dry				
	03/29/90	Not Sampled-0.01 foot Separate-Phase Hydrocarbon				
	06/22/90	Not Sampled--Well Dry				
	07/18/90	Well Destroyed				
MW-5	01/11/88	31,000	4,000	2,700	3,800	5,500
	03/07/89	1,300	340	ND	140	50
	06/21/89	1,100	200	ND	130	40
	12/12/89	Not Sampled--Well Dry				
	03/29/90	Not Sampled--Insufficient Water Volume				
	06/22/90	Not Sampled--Insufficient Water Volume				
	09/19/90	Not Sampled--Well Dry				
	12/27/90	Not Sampled--Well Dry				
	03/21/91	Not Sampled--Well Dry				
	06/26/91	Not Sampled--Well Dry				
	09/24/91	Not Sampled--Well Dry				
	12/19/91	Not Sampled--Well Dry				
	03/18/92	11,000	110	2.0	410	150
	06/15/92	Not Sampled--Well Dry				
MW-6 (E-1)	06/21/89	1,700	170	170	85	290
	12/12/89	500	26	7	8	18
	03/29/90	130	14	9	4	11
	06/22/90	150	15	5	4	13
	07/18/90	Well Destroyed				

Table 1 (continued)
Quarterly Groundwater Analytical Results
Total Petroleum Hydrocarbons

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-7	04/13/90	<50	<0.3	<0.3	<0.3	<0.3
	06/22/90	<50	0.5	1	0.6	3
	09/19/90	<50	<0.3	<0.3	<0.3	<0.3
	12/27/90	69	<0.3	0.3	0.4	2
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/17/92	<30	<0.30	<0.30	<0.30	<0.30
MW-8	04/13/90	4,900	350	16	450	33
	06/22/90	3,700	370	12	330	28
	09/19/90	140	4	3	3	3
	12/27/90	1,200	7	0.3	53	<0.3
	03/21/91	540	8.8	<6.0	21	9.6
	06/26/91	2,100	290	<6.0	56	<6.0
	09/24/91	260	51	0.34	7.9	<0.30
	12/19/91	5,300	300	<3.0	21	4.8
	03/17/92	9,200	370	3.0	48	4.9
	06/17/92	3,300	460	2.7	63	6.9
MW-9	04/13/90	<50	<0.3	<0.3	<0.3	2
	06/22/90	12,000	200	3	250	180
	09/19/90	<50	<0.3	<0.3	<0.3	0.6
	12/27/90	<50	<0.3	<0.3	<0.3	<0.3
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
MW-10	04/13/90	10,000	150	4	280	200
	06/22/90	9,700	28	<0.3	131	210
	09/19/90	1,800	<0.3	4	0.8	10
	12/27/90	5,700	7	3	95	61
	03/21/91	6,900	22	<15	92	33
	06/26/91	9,300	51	<0.30	59	34
	09/24/91	360	8.6	5.2	14	6.2
	12/19/91	3,300	9.2	8.4	11	17
	03/18/92	4,700	14	<6.0	29	10
	06/16/92	4,800	0.46	0.34	7.4	3.8

Table 1 (continued)
Quarterly Groundwater Analytical Results
Total Petroleum Hydrocarbons

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-11	04/13/90	<50	<0.3	<0.3	<0.3	<0.3
	06/22/90	63	0.4	0.9	0.7	3
	09/19/90	<50	<0.3	<0.3	<0.3	<0.3
	12/27/90	<50	<0.3	<0.3	<0.3	<0.3
	03/21/91	<30	<0.30	<0.30	<0.30	<0.30
	06/26/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
E-1A (MW-12)	09/19/90	<50	7	0.9	1	2
	12/27/90	<50	3	0.5	1	1
	03/21/91	<30	4.2	<0.30	1.1	0.89
	06/26/91	41	6.3	<0.30	1.2	0.59
		---------- Converted to Extraction Well 8/91 ----------				
MW-13	07/03/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/17/92	<30	<0.30	<0.30	<0.30	<0.30
MW-14	07/03/91	<30	<0.30	<0.30	<0.30	<0.30
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/16/92	<30	<0.30	<0.30	<0.30	<0.30
MW-15	07/03/91	570	1.8	1.0	1.0	2.2
	09/24/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	360	<0.60	<0.60	0.64	<0.60
	03/18/92	730	0.74	0.98	1.8	0.68
	06/16/92	310	0.54	0.34	0.96	2.5
MW-16	07/03/91	2,700	31	6.9	4.6	3.1
	09/24/91	430	1.8	1.3	1.9	1.5
	12/19/91	75	<0.30	<0.30	<0.30	<0.30
	03/18/92	1,500	4.0	0.73	2.2	1.3
	06/16/92	80	<0.30	<0.30	<0.30	<0.30
MW-17	07/03/91	1,200	12	1.9	28	40
	09/24/91	150	2.7	0.50	3.9	0.59
	12/19/91	370	2.6	<0.30	7.2	6.5
	03/18/92	470	3.1	<0.30	9.1	8.6
	06/16/92	310	1.7	0.56	12	9.6

Table 1 (continued)
Quarterly Groundwater Analytical Results
Total Petroleum Hydrocarbons

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
MW-18	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
MW-19	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
MW-20	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
MW-21	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/18/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
MW-22	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30
MW-23	10/04/91	<30	<0.30	<0.30	<0.30	<0.30
	12/19/91	<30	<0.30	<0.30	<0.30	<0.30
	03/17/92	<30	<0.30	<0.30	<0.30	<0.30
	06/15/92	<30	<0.30	<0.30	<0.30	<0.30

ppb = Parts per billion
NA = Not available
< = Denotes laboratory detection limits. See attached analytical reports.
* = Ethylbenzene and xylenes given as a combined value.
** = Well contained slight product sheen.

MW-1 and MW-2 destroyed prior to March 7, 1989 sampling event.
MW-3, MW-4, and MW-6 (E-1) destroyed June 18, 1990.

Table 2
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-1	01/11/88	NA	NA	--	NA
	06/14/88	---------- Well Destroyed ----------			
MW-2	07/05/85	NA	NA	--	NA
	01/11/88				
	06/14/88	---------- Well Destroyed ----------			
MW-3	01/11/88	33.27	NA	--	NA
	03/07/89		11.96	--	21.31
	06/21/89		12.85	--	20.42
	12/12/89		13.46	--	19.81
	03/29/90		13.21	--	20.06
	05/08/90		13.23	--	20.04
	06/22/90		NA	--	NA
	07/18/90	---------- Well Destroyed ----------			
MW-4	01/11/88	32.43	NA	--	NA
	09/12/88		NA	--	NA
	03/07/89		10.76	--	21.67
	06/21/89		11.96	--	20.47
	12/12/89		NA	--	NA
	03/29/90		11.72	0.01	20.71
	05/08/90		12.19	--	20.24
	06/22/90		NA	--	NA
	07/18/90	---------- Well Destroyed ----------			
MW-5	01/11/88	33.99	NA	--	NA
	03/07/89		12.74	--	21.25
	06/21/89		13.26	--	20.73
	12/12/89		NA	--	NA
	03/29/90		13.30	--	20.69
	05/08/90		NA	--	NA
	06/22/90		13.52	--	20.47
	09/19/90		13.99	--	20.00
	12/27/90		NA	--	NA
	03/21/91		13.00	--	20.99
	06/26/91		13.25	--	20.74
	07/03/91		13.33	--	20.66
	09/24/91		Dry	--	NA
	10/04/91		Dry	--	NA
	12/19/91		Dry	--	NA
	01/16/92		Dry	--	NA
	02/19/92		13.5	--	20.49
	03/17/92		11.90	--	22.09
	04/15/92		12.18	--	21.81
	05/14/92		12.78	--	21.21
	06/15/92	---------- Well Dry ----------			

Table 2 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-6 (E-1)	06/21/89	32.95	12.48	--	20.47
	12/12/89		13.16	--	13.16
	03/29/90		12.39	--	12.39
	05/08/90		12.93	--	12.93
	06/22/90		12.94	--	12.94
	07/18/90	---------- Well Destroyed ----------			
MW-7	04/13/90	34.40	NA	--	NA
	05/08/90		13.98	--	20.42
	06/22/90		13.91	--	20.49
	09/19/90		15.09	--	19.31
	12/27/90		14.67	--	19.73
	03/21/91		12.88	--	21.52
	06/26/91		13.85	--	20.55
	07/03/91		13.95	--	20.45
	09/24/91		15.54	--	18.86
	10/04/91		15.60	--	18.80
	12/19/91		15.70	--	18.70
	01/16/92		13.33	--	21.83
	02/19/92		12.16	--	NA
	03/17/92		11.86	--	22.54
	04/15/92		12.30	--	21.69
	05/14/92		13.04	--	20.95
	06/15/92		13.78	--	20.21
MW-8	04/13/90	32.79	NA	--	NA
	05/08/90		12.77	--	20.02
	06/22/90		12.73	--	20.06
	09/19/90		13.95	--	18.84
	12/27/90		13.56	--	19.23
	03/21/91		11.78	--	21.01
	06/26/91		12.66	--	20.13
	07/03/91		12.75	--	20.04
	09/24/91		13.97	--	18.82
	10/04/91		14.01	--	18.78
	12/19/91		13.35	--	19.44
	01/16/92		13.40	--	19.39
	02/19/92		11.26	--	21.53
	03/17/92		10.90	--	21.89
	04/15/92		11.35	--	21.44
	05/14/92		12.06	--	20.73
	06/15/92		12.83	--	19.96

Table 2 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-9	04/13/90	32.11	NA	--	NA
	05/08/90		12.02	--	20.09
	06/22/90		11.93	--	20.18
	09/19/90		13.18	--	18.93
	12/27/90		12.77	--	19.34
	03/21/91		10.94	--	21.17
	06/26/91		11.92	--	20.19
	07/03/91		12.02	--	20.09
	09/24/91		13.27	--	18.84
	10/04/91		13.29	--	18.82
	12/19/91		13.42	--	18.69
	01/16/92		12.45	--	19.66
	02/19/92		10.25	--	21.86
	03/17/92		10.01	--	22.10
	04/15/92		10.49	--	21.62
	05/14/92		11.19	--	20.92
	06/15/92		11.86	--	20.25
MW-10	04/13/90	31.67	NA	--	NA
	05/08/90		12.16	--	19.51
	06/22/90		12.10	--	19.57
	09/19/90		13.41	--	18.26
	12/27/90		13.67	--	18.00
	03/21/91		11.11	--	20.56
	06/26/91		12.00	--	19.67
	07/03/91		12.16	--	19.51
	09/24/91		13.40	--	18.27
	10/04/91		13.50	--	18.17
	12/19/91		13.57	--	18.10
	01/16/92		12.55	--	19.12
	02/19/92		10.50	--	21.17
	03/18/92		10.12	--	21.55
	04/15/92		10.59	--	21.08
	05/14/92		11.30	--	20.37
	06/15/92		11.93	--	19.74
MW-11	04/13/90	32.54	NA	--	NA
	05/08/90		12.84	--	19.70
	06/22/90		12.82	--	19.72
	09/19/90		14.09	--	18.45
	12/27/90		13.66	--	18.88
	03/21/91		11.85	--	20.69
	06/26/91		12.69	--	19.85
	07/03/91		12.81	--	19.73
	09/24/91		14.03	--	18.51
	10/04/91		14.18	--	18.36

Table 2 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-11 (cont.)	12/19/91		14.29	--	18.25
	01/16/92		13.28	--	19.26
	02/19/92		11.29	--	21.25
	03/17/92		10.81	--	21.73
	04/15/92		11.23	--	21.31
	05/14/92		11.96	--	20.58
	06/15/92		12.64	--	19.90
E-1A (MW-12)	09/19/90	33.06	14.31	--	18.75
	12/27/90		13.97	--	19.09
	03/21/91		12.11	--	20.95
	06/26/91		12.90	--	20.16
	07/03/91		13.00	--	20.06
	09/24/91		22.47	--	10.59
	01/16/92		23.68	--	9.38
	02/19/92		18.71	--	14.35
	03/17/92		23.10	--	9.96
	04/15/92		20.54	--	12.52
	05/14/92		23.09	--	9.97
	06/15/92		23.72	--	9.34
MW-13	07/03/91	35.42	15.19	--	20.23
	09/24/91		16.45	--	18.97
	12/19/91		16.66	--	18.76
	01/16/92		15.70	--	19.72
	02/19/92		13.60	--	21.82
	03/17/92		13.20	--	22.22
	04/15/92		13.64	--	21.78
	05/14/92		14.34	--	21.08
	06/15/92		15.13	--	20.29
MW-14	07/03/91	30.46	11.05	--	19.41
	09/24/91		12.30	--	18.16
	10/04/91		12.38	--	18.08
	12/19/91		12.39	--	18.07
	01/16/92		11.34	--	19.12
	02/19/92		9.32	--	21.14
	03/17/92		9.04	--	21.42
	06/15/92		10.83	--	19.63
MW-15	07/03/91	31.41	12.43	--	18.89
	09/24/91		13.69	--	17.72
	10/04/91		13.80	--	17.61
	12/19/91		13.78	--	17.63

Table 2 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-15 (cont.)	01/16/92		12.80	--	18.61
	02/19/92		10.85	--	20.56
	03/18/92		10.41	--	21.00
	06/15/92		12.19	--	19.22
MW-16	07/03/91	31.39	12.92	--	18.47
	09/24/91		14.10	--	17.29
	10/04/91		14.20	--	17.19
	12/19/91		14.14	--	17.25
	01/16/92		13.09	--	18.30
	02/19/92		10.99	--	20.40
	03/18/92		10.85	--	20.54
	06/15/92		12.64	--	18.75
MW-17	07/03/91	32.43	13.75	--	18.68
	09/24/91		14.98	--	17.45
	10/04/91		15.20	--	17.23
	12/19/91		15.02	--	17.41
	01/16/92		13.92	--	18.51
	02/19/92		11.65	--	20.78
	03/18/92		11.71	--	20.72
	06/15/92		13.50	--	18.93
MW-18	10/04/91	29.70	13.00	--	16.59
	12/19/91		12.91	--	16.71
	03/18/92		9.73	--	19.97
	06/15/92		11.50	--	18.20
MW-19	10/04/91	29.02	12.43	--	16.59
	12/19/91		12.31	--	16.71
	03/18/92		9.22	--	19.80
	06/15/92		10.94	--	18.08
MW-20	10/04/91	29.54	12.56	--	16.98
	12/19/91		12.48	--	17.06
	03/18/92		9.49	--	20.05
	06/15/92		11.11	--	18.43
MW-21	10/04/91	28.72	12.88	--	15.84
	12/19/91		12.68	--	16.04
	03/18/92		9.55	--	19.17
	06/15/92		11.30	--	17.42
MW-22	10/04/91	29.29	13.37	--	15.92
	12/19/91		13.19	--	16.10
	03/17/92		10.05	--	19.24
	06/15/92		11.84	--	17.45

Table 2 (continued)
Groundwater Elevation Data

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Well Number	Sample Date	TOB Elevation (feet, MSL)	Depth to Liquid (feet)	Separate-Phase Hydrocarbon Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-23	10/04/91	30.99	14.50	--	16.49
	12/19/91		14.38	--	16.61
	03/17/92		11.20	--	19.79
	06/15/92		12.94	--	18.05

TOB = Top of box
MSL = Mean sea level
Well elevations are measured from set mark at top of vault box.

Table 3
Estimated Total Dissolved TPH-g Removed
by the Groundwater Extraction System

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Sample ID	Sample Date	Volume Reading (gallon)	Net Volume (gallon)	Sample Concentration TPH-g (ug/L)	Net Dissolved TPH-g Removed (pound)	Dissolved TPH-g Removed To Date (pound)	Dissolved TPH-g Removed To Date (gallon)	Primary Carbon Loading (%)
INFL	09/25/91	0	0	ND	0.00	0.00	0.00	0
INFL	09/26/91	1,144	1,144	38	0.00	0.00	0.00	0
INFL	10/22/91	12,844	11,700	ND	0.00	0.00	0.00	0
INFL	11/22/91	52,532	39,688	ND	0.00	0.00	0.00	0
INFL	12/19/91	122,540	70,008	ND	0.00	0.00	0.00	0
INFL	01/16/92	283,289	160,749	ND	0.00	0.00	0.00	0
INFL	02/19/92	485,200	201,911	370	0.31	0.31	0.06	0
INFL	03/17/92	662,847	177,647	160	0.39	0.71	0.13	1
INFL	04/15/92	851,100	188,253	200	0.28	0.99	0.18	1
INFL	05/14/92	1,030,086	178,986	45	0.18	1.17	0.21	1
INFL	06/19/92	1,229,960	199,874	ND	0.04	1.21	0.21	2
TOTAL POUNDS OF TPH-g REMOVED:						1.21		
TOTAL GALLONS OF TPH-g REMOVED:							0.21	

ug/L = Parts per billion
TPH-g = Total petroleum hydrocarbons, calculated as gasoline
NA = Not available or not applicable
1. Net dissolved TPH removed data are approximate.
2. Density of Gasoline = 5.63 pounds per gallon.
3. The system uses three 1000 pound carbons. The percent carbon loading calculation assumes a loading isotherm of 8 percent by weight.

Equations:
Net Dissolved TPH Removed [pounds] =
TPH concentration, [ug/L] x net volume (gallon) x density of gasoline [pound/gallon]
(Net dissolved TPH removed is calculated by averaging influent concentrations)

Table 4
Treatment System Analytical Results

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
INFL (influent to primary carbon)					
09/26/91	38	4.8	0.60	1.6	1.1
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
11/22/91	<30	0.52	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	370	14	0.34	14	2.4
03/17/92	160	18	0.32	0.56	1.6
04/15/92	200	11	<0.30	7.3	0.77
05/14/92	45	1.4	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30
MID-1 (between carbons)					
09/26/91	<30	<0.30	<0.30	<0.30	<0.30
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	<30	<0.30	<0.30	<0.30	<0.30
03/17/92	<30	<0.30	<0.30	<0.30	<0.30
04/15/92	<30	<0.30	<0.30	<0.30	<0.30
05/14/92	<30	<0.30	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30
EFFL (effluent to sewer)					
09/26/91	<30	<0.30	<0.30	<0.30	<0.30
10/22/91	<30	<0.30	<0.30	<0.30	<0.30
11/22/91	<30	<0.30	<0.30	<0.30	<0.30
12/19/91	<30	<0.30	<0.30	<0.30	<0.30
01/16/91	<30	<0.30	<0.30	<0.30	<0.30
02/19/92	<30	<0.30	<0.30	<0.30	<0.30
03/17/92	<30	<0.30	<0.30	<0.30	<0.30
04/15/92	<30	<0.30	<0.30	<0.30	<0.30
05/14/92	<30	<0.30	<0.30	<0.30	<0.30
06/19/92	<30	<0.30	<0.30	<0.30	<0.30

ppb = parts per billion
< = Analyte was not detected above the stated detection limit.

Table 4 (continued)
Treatment System Analytical Results

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Sample Date	Chemical Oxygen Demand (mg/L)	Suspended Solids (mg/L)	pH (units)	Arsenic (mg/L)
Effluent Sample				
09/26/91	NA	NA	8.8	0.29
09/30/91	NA	NA	NA	0.39
10/07/91	NA	NA	NA	0.18
11/22/91	39	2.0	7.4	0.0063
12/19/91	16	<1.0	NA	NA
01/16/92	<20	4.0	7.1	<0.0050
02/19/92	<20	1.0	7.1	<0.0050
03/17/92	<20	8.0	7.3	<0.0050
04/15/92	<20	1.0	7.0	<0.0050
05/14/92	<20	1.0	7.2	<0.0050
06/19/92	<20	4.0	6.7	<0.0050

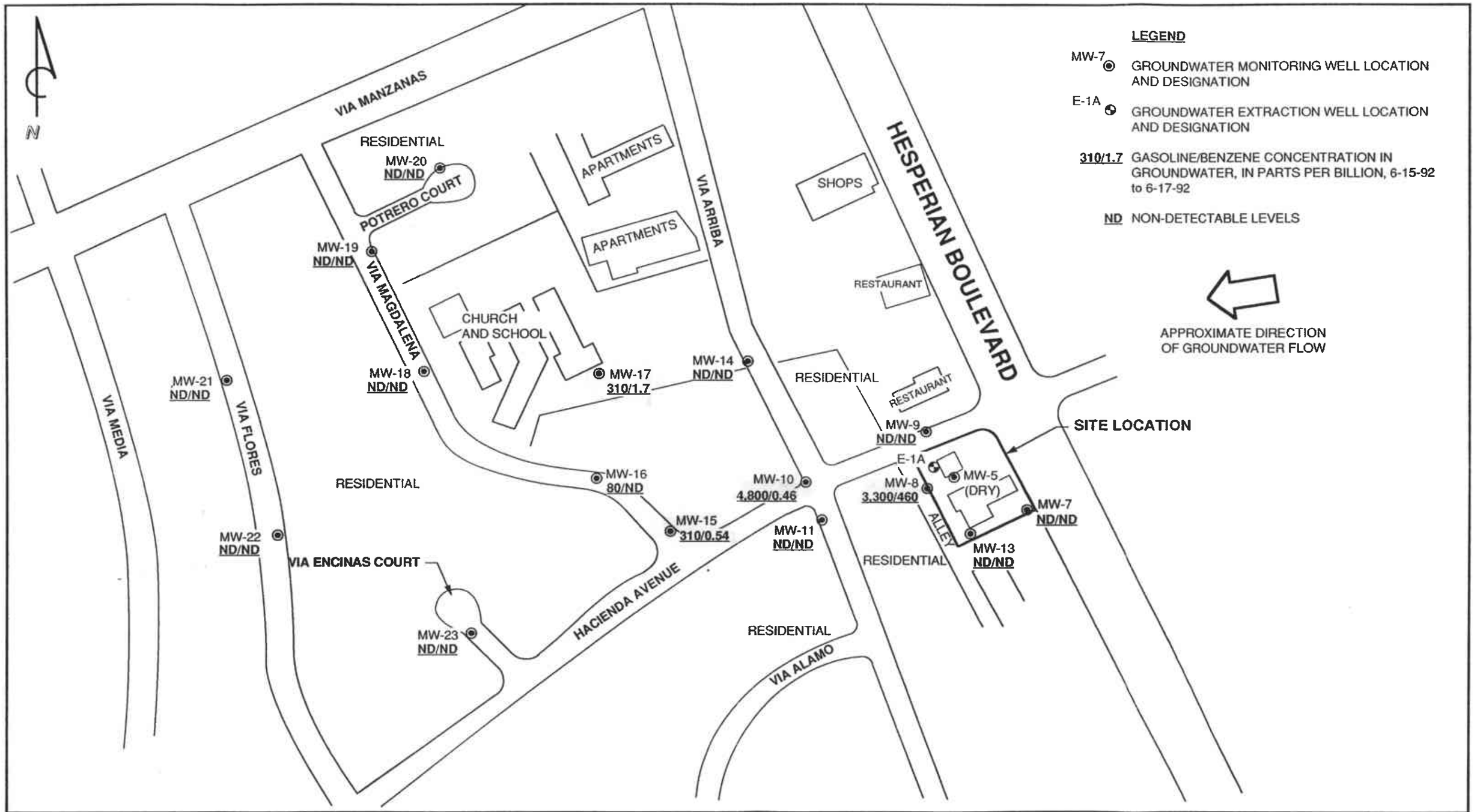
mg/L = Milligrams per liter
NA = Not available or applicable
< = Analyte was not detected above the stated detection limit.

Table 5
Treatment System Metered Volume

ARCO Service Station 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

Meter Reading Date	Meter Reading (gallons)	Volume Since Previous Reading (gallons)	Volume Since Start-up (gallons)	Approximate Flow Rate (gpm)
09/25/91	0	0	0	NA*
09/26/91	1,144	1,144	1,144	0.8
10/15/91	5,146	4,002	5,146	0.1
10/22/91	12,844	7,698	12,844	0.9
11/22/91	52,532	39,688	52,532	0.6
12/11/91	78,842	26,310	78,842	1.0
12/19/91	122,540	43,698	122,540	3.8
01/16/92	283,289	160,749	283,289	4.0
02/19/92	485,200	201,911	485,200	4.1
03/17/92	662,847	177,647	662,847	4.7
04/15/92	851,100	188,253	851,100	4.5
05/14/92	1,030,086	178,986	1,030,086	4.3
06/19/92	1,229,960	199,874	1,229,960	3.9

gpm = Gallons per minute
* = Start-up



PACIFIC ENVIRONMENTAL GROUP, INC.

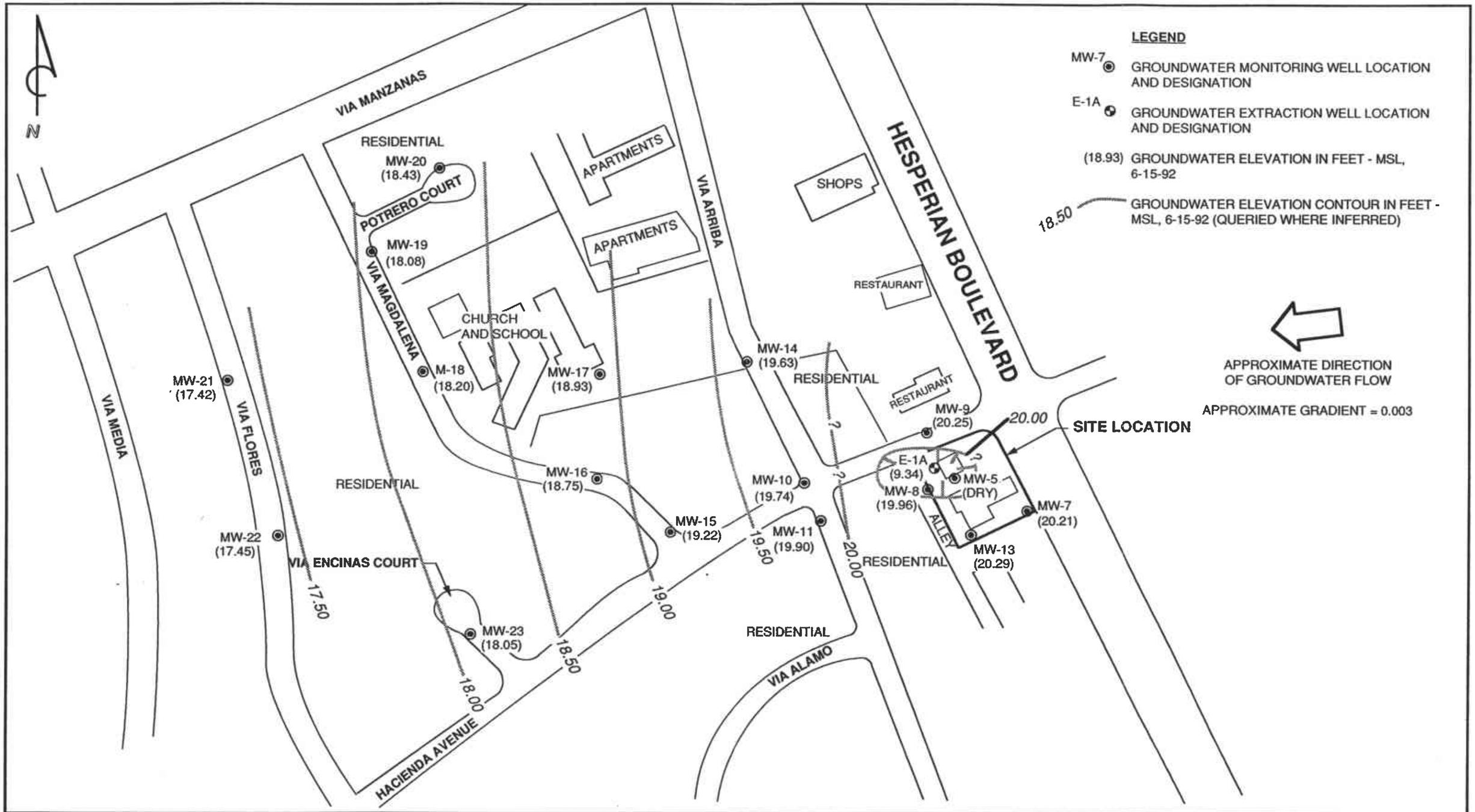
APPROXIMATE SCALE
0 150 300 FEET

ARCO SERVICE STATION #0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

GASOLINE AND BENZENE CONCENTRATION MAP

FIGURE: 1
PROJECT: 330-06.05

SEP 11 1992



PACIFIC ENVIRONMENTAL GROUP, INC.

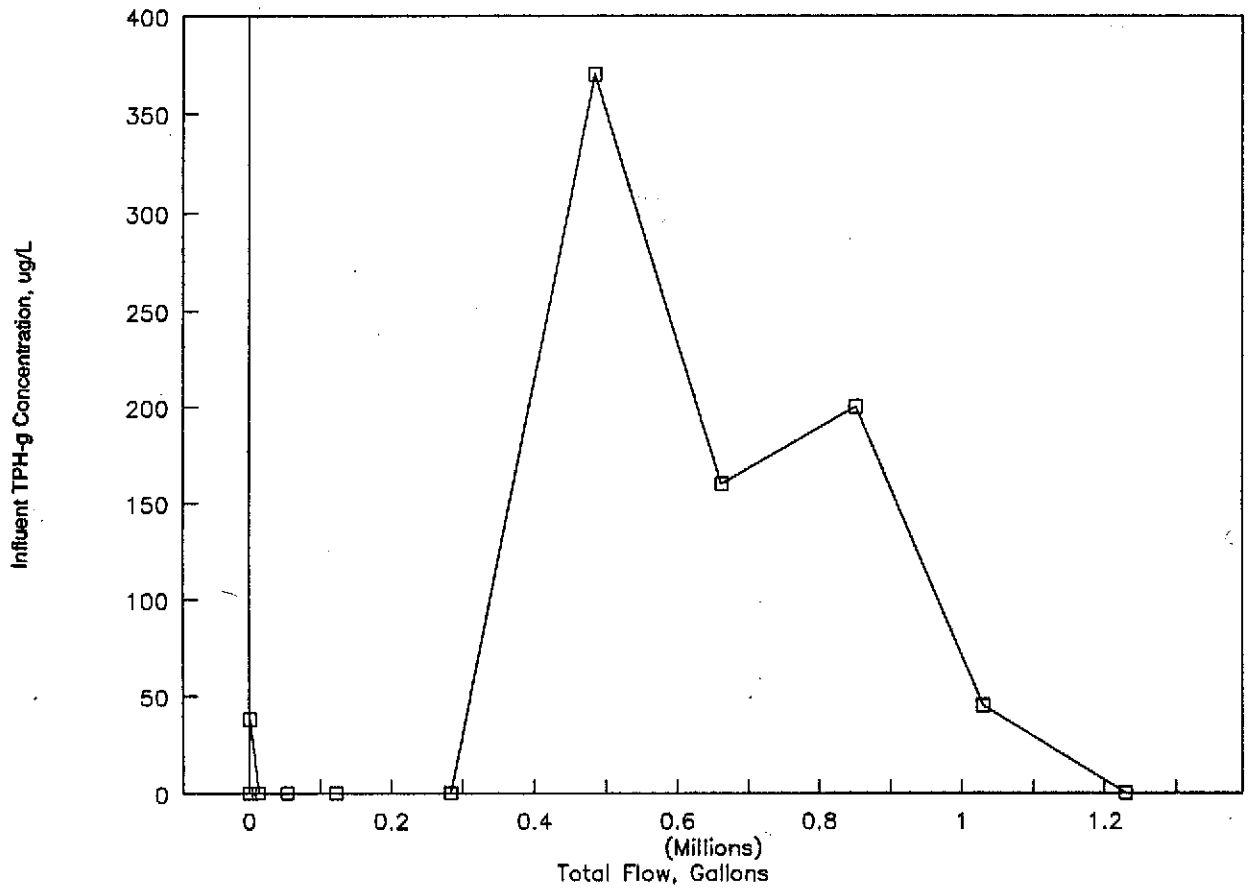
APPROXIMATE SCALE
0 150 300 FEET

ARCO SERVICE STATION #0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

GROUNDWATER CONTOUR MAP

FIGURE: 2
PROJECT: 330-06.05

09/15/92

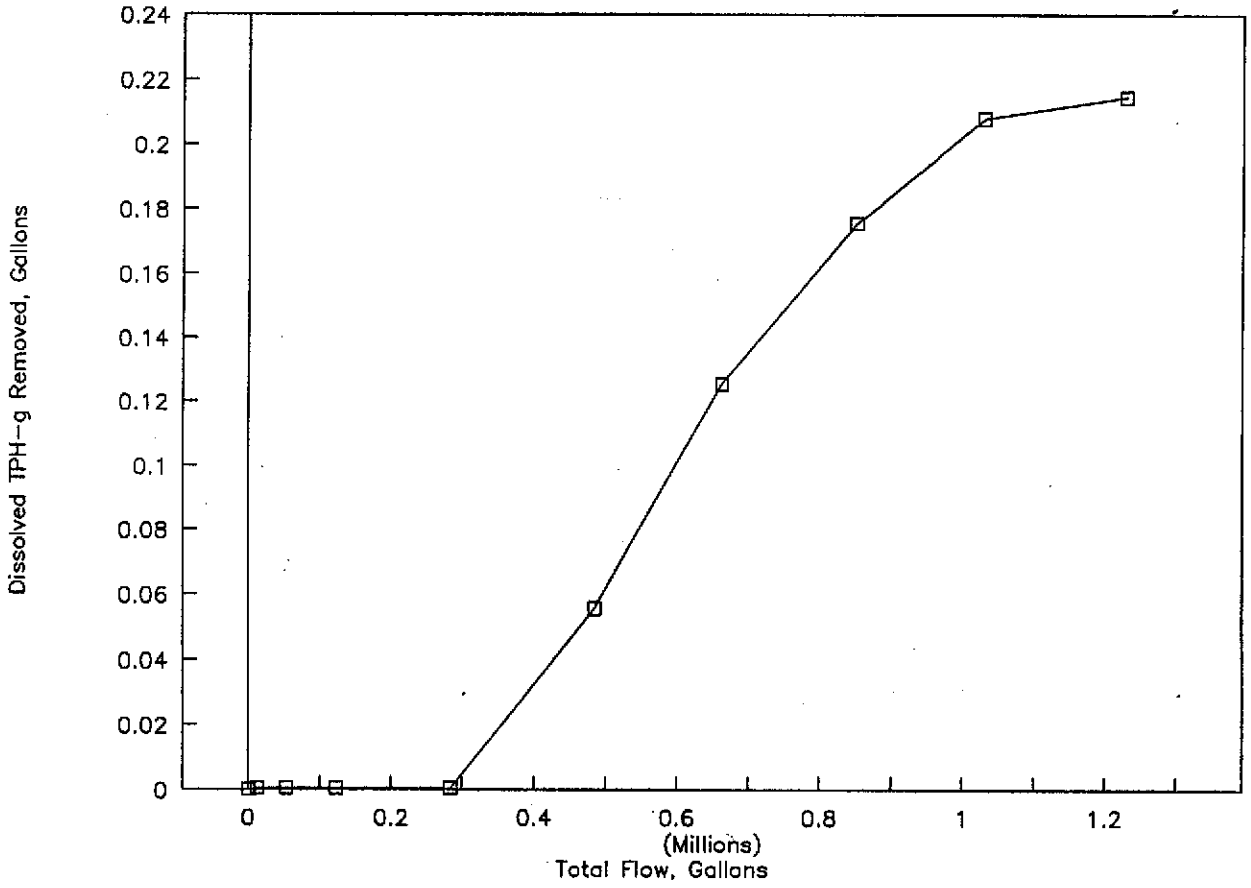


PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

INFLUENT TPH-g CONCENTRATION VERSUS TOTAL FLOW

FIGURE: 3
PROJECT: 330-06.05



PACIFIC ENVIRONMENTAL GROUP, INC.

ARCO SERVICE STATION 0608
17601 Hesperian Boulevard at Hacienda Avenue
San Lorenzo, California

DISSOLVED TPH-g REMOVED VERSUS TOTAL FLOW

FIGURE: 4

PROJECT: 330-06.05

REORDER NO. AS4082

ATTACHMENT A

GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES

ATTACHMENT A
GROUNDWATER SAMPLING AND ANALYTICAL 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 (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 Analysis

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

ATTACHMENT B

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

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Kelly Brown

Client Project ID: 608-92-5/Arco #0608
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 206-0790

Sampled: 6/15 - 6/17/92
Received: Jun 18, 1992
Analyzed: Jun 19, 1992
Reported: Jun 29, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
206-0790	TB - 1	N.D.	N.D.	N.D.	N.D.	N.D.
206-0791	MW - 7	N.D.	N.D.	N.D.	N.D.	N.D.
206-0793	MW - 9	N.D.	N.D.	N.D.	N.D.	N.D.
206-0795	MW - 11	N.D.	N.D.	N.D.	N.D.	N.D.
206-0796	MW - 13	N.D.	N.D.	N.D.	N.D.	N.D.
206-0797	MW - 14	N.D.	N.D.	N.D.	N.D.	N.D.
206-0798	MW - 15	310	0.54	0.34	0.96	2.5
206-0799	MW - 16	80	N.D.	N.D.	N.D.	N.D.
206-0800	MW - 17	310	1.7	0.56	12	9.6
206-0801	MW - 18	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	608-92-5/Arco #0608	Sampled: 6/15 - 6/17/92
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received: Jun 18, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed: Jun 19, 1992
Attention: Kelly Brown	First Sample #:	206-0802	Reported: Jun 29, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
206-0802	MW - 19	N.D.	N.D.	N.D.	N.D.	N.D.
206-0803	MW - 20	N.D.	N.D.	N.D.	N.D.	N.D.
206-0804	MW - 21	N.D.	N.D.	N.D.	N.D.	N.D.
206-0805	MW - 22	N.D.	N.D.	N.D.	N.D.	N.D.
206-0806	MW - 23	N.D.	N.D.	N.D.	N.D.	N.D.
206-0807	EI - 1A	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	608-92-5/Arco #0608	Sampled: 6/15 - 6/17/92
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received: Jun 18, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed: Jun 19, 1992
Attention: Kelly Brown	First Sample #:	206-0792	Reported: Jun 29, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
206-0792	MW - 8	3,300	460	2.7	63	6.9
Detection Limits:		**120**	**1.2**	**1.2**	**1.2**	**1.2**

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

SEQUOIA ANALYTICAL

Karen C. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group	Client Project ID:	608-92-5/Arco #0608	Sampled:	6/15 - 6/17/92
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received:	Jun 18, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jun 19, 1992
Attention: Kelly Brown	First Sample #:	206-0794	Reported:	Jun 29, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
206-0794	MW - 10	4,800	0.46	0.34	7.4	3.8
Detection Limits:		300	3.0	3.0	3.0	3.0

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

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Kelly Brown

Client Project ID: 608-92-5/Arco #0608

QC Sample Group: 2060790-807

Reported: Jun 29, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	J.F.	J.F.	J.F.	J.F.
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 19, 1992	Jun 19, 1992	Jun 19, 1992	Jun 19, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	20	20	20	64
Matrix Spike % Recovery:	100	100	100	107
Conc. Matrix Spike Dup.:	21	21	21	68
Matrix Spike Duplicate % Recovery:	105	105	105	113
Relative % Difference:	4.9	4.9	4.9	5.5

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{(\text{Conc. of M.S. + Conc. of M.S.D.}) / 2} \times 100$

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Kelly Brown

Client Project ID: 608-92-5/Arco #0608

QC Sample Group: 2060790-807

Reported: Jun 29, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020
Analyst:	A.T.	A.T.	A.T.	A.T.
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 24, 1992	Jun 24, 1992	Jun 24, 1992	Jun 24, 1992
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60
Conc. Matrix Spike:	20	20	20	63
Matrix Spike % Recovery:	100	100	100	105
Conc. Matrix Spike Dup.:	19	19	19	62
Matrix Spike Duplicate % Recovery:	95	95	95	103
Relative % Difference:	5.1	5.1	5.1	1.6

SEQUOIA ANALYTICAL

Karen L. Enstrom
Project Manager

% Recovery: $\frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$

Relative % Difference: $\frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{\text{(Conc. of M.S. + Conc. of M.S.D.) / 2}} \times 100$

ARCO Products Company [redacted] 330-[illegible]15 [redacted] Task [redacted] r N[redacted] 600-7[illegible] [redacted] **Chain of Custody** [redacted]

ARCO Facility no. 0608	City (Facility) San Lorenzo		Project manager (Consultant) Kelly Brown.		Laboratory name Sequoia
ARCO engineer Chuck Carmel	Telephone no. (ARCO) —		Telephone no. (Consultant) 510-825-0855	Fax no. (Consultant) 510-825-0882	Contract number
Consultant name Pacific Environmental Group	Address (Consultant) 620 Contra Costa Blvd. #209 Pleasant Hill 94523				

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 Gas EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
TB-1		2		X		Yes	HCl	6-15-92	—		X				2	0	6	0	7	9	0	AB
MW-7		3						6-17-92	8:15										7	9	1	AC
MW-8								6-17-92	10:25										7	9	2	AC
MW-9								6-16-92	15:30										7	9	3	AC
MW-10								6-16-92	14:55										7	9	4	AC
MW-11								6-16-92	11:45										7	9	5	AC
MW-13								6-17-92	9:00										7	9	6	AC
MW-14								6-16-92	12:35										7	9	7	AC
MW-15								6-16-92	9:00										7	9	8	AC
MW-16								6-16-92	10:15										7	9	9	AC
MW-17								6-16-92	8:30										8	0	0	AC
MW-18								6-15-92	14:10										8	0	1	AC
MW-19								6-15-92	13:45										8	0	2	AC
MW-20								6-15-92	12:30										8	0	3	AC
MW-21								6-15-92	10:30										8	0	4	AC

Method of shipment

Special detection Limit/reporting

Special QA/QC
Trip Blank from Sequoia Lab 6-8-92 11:00am.

Remarks
Page 1 of 2

Lab number

Condition of sample:		Temperature received:		
Relinquished by sampler [signature]	Date 6-18-92 Time 14:15	Received by [signature] Van Slambrook		
Relinquished by	Date Time	Received by		
Relinquished by	Date Time	Received by laboratory	Date	Time

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

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

[redacted] on of [redacted]ichfield[redacted]any [redacted]0-[redacted]15 [redacted] Task Order No. [redacted]08-[redacted]-5 [redacted] Ch[redacted]of [redacted]ody[redacted]

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown	Laboratory name Sequoia
ARCO engineer Chuck Carme	Telephone no. (ARCO) —	Telephone no. (Consultant) 510-825-0855 / Fax no. (Consultant) 510-825-0892	Contract number
Consultant name Pacific Environmental Group	Address (Consultant) 620 Contra Costa Blvd. #209 Pleasant Hill 94523		

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 GAS EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-22		3		X		X	HCl	6-15-92	9:50		X				2	0	6	0	8	0	5	AC
MW-23		↓		↓		↓	↓	↓	9:25		↓								8	0	6	AC
E1-1A		↓		↓		↓	↓	↓	8:00		↓								8	0	7	AC

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks Page 2 of 2

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:

Relinquished by sampler [signature]	Date 6-15-92	Time 14:15	Received by [signature]
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory / Date / Time

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Gelelbracht

Project: #330-06.12, Arco, 608, San Lorenzo

Enclosed are the results from 3 water samples received at Sequoia Analytical on April 15,1992. The requested analyses are listed below:

2042393	Water, Influent	4/15/92	EPA 5030/8015/8020
2042394	Water, Mid - 1	4/15/92	EPA 5030/8015/8020
2042395	Water, Effluent	4/15/92	COD, pH,TSS,As EPA 5030/8015/8020

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

Very truly yours,

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	#330-06.12, Arco, 608, San Lorenzo	Sampled:	Apr 15, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received:	Apr 15, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Apr 15, 1992
Attention: Lance Gelelbracht	First Sample #:	204-2393	Reported:	Apr 23, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
204-2393	Influent	200	11	N.D.	7.3	0.77
204-2394	Mid - 1	N.D.	N.D.	N.D.	N.D.	N.D.
204-2395	Effluent	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	#330-06.12, Arco, 608, San Lorenzo	Sampled:	Apr 15, 1992
1601 Civic Center Drive, Suite 202	Sample Descript:	Water, Effluent	Received:	Apr 15, 1992
Santa Clara, CA 95050			Analyzed:	4/15-20/92
Attention: Lance Gelelbracht	Lab Number:	204-2395	Reported:	Apr 23, 1992

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Chemical Oxygen Demand, mg/L	20	N.D.
pH	N.A.	7.0
Total Suspended Solids, mg/L	1.0	1.0
Arsenic, mg/L	0.0050	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Gelelbracht

Client Project ID: #330-06.12, Arco, 608, San Lorenzo

QC Sample Group: 2042393 - 95

Reported: Apr 23, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	L.Laikhtman	L.Laikhtman	L.Laikhtman	L.Laikhtman
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Apr 15, 1992	Apr 15, 1992	Apr 15, 1992	Apr 15, 1992
QC Sample #:	BLK041592	BLK041592	BLK041592	BLK041592
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	8.5	8.6	8.6	26
Matrix Spike % Recovery:	85	86	86	87
Conc. Matrix Spike Dup.:	8.7	8.8	8.9	27
Matrix Spike Duplicate % Recovery:	87	88	89	90
Relative % Difference:	2.3	2.3	3.4	3.8

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

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Gelelbracht

Client Project ID: #330-06.12, Arco, 608, San Lorenzo

QC Sample Group: 204-2395

Reported: Apr 23, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Ttl. Suspended Solids	pH	Chem. Oxy. Demand	Arsenic
Method:	EPA 160.2	EPA 9040	EPA 410.4	EPA 206.2
Analyst:	N.Zahedi	L.Laikhtman	Y.Arteaga	F. Contreras
Reporting Units:	mg/L	N.A.	mg/L	mg/L
Date Analyzed:	Apr 16, 1992	Apr 15, 1992	Apr 20, 1992	Apr 16, 1992
QC Sample #:	204-2395	204-2395	204-2395	204-1425
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	N.A.	N.A.	75	0.020
Conc. Matrix Spike:	N.A.	N.A.	79	0.020
Matrix Spike % Recovery:	N.A.	N.A.	105	100
Conc. Matrix Spike Dup.:	1.0	7.0	79	0.021
Matrix Spike Duplicate % Recovery:	N.A.	N.A.	105	105
Relative % Difference:	0.0	0.0	0.0	4.9

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

SEQUOIA ANALYTICAL

Vickie Tague
Project Manager

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

SEQUOIA ANALYTICAL MPLE RECEIPT LOG

CLIENT NAME: PEG   MASTER LOG NO. / PAGE:

REC. BY (PRINT): MM   DATE OF LOG-IN: 4/15

CIRCLE THE APPROPRIATE RESPONSE

1. Custody Seal(s): Present / Absent (circled); Intact / Broken*
2. Custody Seal Nos.: x
3. Chain-of-Custody Records: Present (circled) / Absent*
4. Traffic Reports or Packing List: Present / Absent (circled)
5. Airbill: Airbill / Sticker; Present / Absent (circled)
6. Airbill No.: x
7. Sample Tags: Present (circled) / Absent*; Sample Tag Nos.: Listed (circled) / Not Listed on Chain-of-Custody
8. Sample Condition: Intact (circled)/Broken*/Leaking*
9. Does information on custody reports, traffic reports and sample tags agree? Yes (circled) / No*
10. Proper Preservatives Used: Yes (circled) / No*
11. Date Rec. at Lab: 4/15
12. Time Rec. at Lab: 205pm

LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
2012393	A-C	influent	3 voas	w	4/15	
↓ 94	↓	midpt	↓	↓	↓	
2012395	A-F	effluent	6 voas	↓	↓	
↓	G	↓	125 ml poly	↓	↓	
↓	H	↓	1/2 l poly	↓	↓	
↓	I	↓	1 l poly	↓	↓	

* If Circled, contact Project Manager and attach record of resolution

Form SC001

ARCO Products Company
Division of AtlanticRichfieldCompany

330-06.12 Task Order No. 608-91-5

Chain of Custody

ARCO Facility no. 608	City (Facility) San Lorenzo	Project manager (Consultant) Lance Geselbracht	Laboratory name Sequoia
ARCO engineer Charles Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 408 984-6536	Fax no. (Consultant) 243-3911
Consultant name PEG		Address (Consultant) 1601 Civic Center #202 Santa Clara	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 8010/8020~~ TSS	~~EPA 624/8240~~ Arsenic	EPA 625/8270	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	pH	COD
✓	Infl		3		X		X	HCL	4-15-92	0940		X						204	23	93			
✓	MID-1		3							0945		X								94			
✓	Effl		3					↓		0950		X						204	23	95			
✓	Effl		3					H_2SO_4		1000													X
✓	Effl		1					HNO_3		0955							X						
✓	Effl		1					NP		0955												X	
✓	Effl		1		↓		↓	NP	↓	0955						X			↓				

Condition of sample: Good

Temperature received: cool

	Date	Time	Received by
Relinquished by sampler	4-15-92	1304	
Relinquished by	4-15-92	2015	
Relinquished by	Date	Time	Received by laboratory: [illegible] Date: 4/15 Time: 2:05 pm

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 ☒

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Geselbracht

Project: #330-06.12, Arco 0608, San Lorenzo

Enclosed are the results from 3 water samples received at Sequoia Analytical on May 14,1992. The requested analyses are listed below:

2052332	Water, Influent	5/14/92	EPA 5030/8015/8020
2052333	Water, Mid - 1	5/14/92	EPA 5030/8015/8020
2052334	Water, Effluent	5/14/92	COD, TSS, pH, Arsenic EPA 5030/8015/8020

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

Very truly yours,

SEQUOIA ANALYTICAL

Christine Middleton

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	#330-06.12, Arco 0608, San Lorenzo	Sampled: May 14, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received: May 14, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed: 5/18-19/92
Attention: Lance Geselbracht	First Sample #:	205-2332	Reported: May 28, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
205-2332	Influent	45	1.4	N.D.	N.D.	N.D.
205-2333	Mid - 1	N.D.	N.D.	N.D.	N.D.	N.D.
205-2334	Effluent	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

SEQUOIA ANALYTICAL

Christine Middleton

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	#330-06.12, Arco 0608, San Lorenzo	Sampled:	May 14, 1992
1601 Civic Center Drive, Suite 202	Sample Descript:	Water, Effluent	Received:	May 14, 1992
Santa Clara, CA 95050			Analyzed:	5/15, 21/92
Attention: Lance Geselbracht	Lab Number:	205-2334	Reported:	May 28, 1992

LABORATORY ANALYSIS

Analyte	Detection Limit	Sample Results
Chemical Oxygen Demand, mg/L	20	N.D.
Total Suspended Solids, mg/L	1.0	1.0
pH	N.A.	7.2
Arsenic, mg/L	0.0050	N.D.

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

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Geselbracht

Client Project ID: #330-06.12, Arco 0608, San Lorenzo

QC Sample Group: 205-2332

Reported: May 28, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M.Nipp	M.Nipp	M.Nipp	M.Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 19, 1992	May 19, 1992	May 19, 1992	May 19, 1992
QC Sample #:	GBLK051992	GBLK051992	GBLK051992	GBLK051992
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	11	11	11	32
Matrix Spike % Recovery:	110	110	110	107
Conc. Matrix Spike Dup.:	11	11	11	32
Matrix Spike Duplicate % Recovery:	110	110	110	107
Relative % Difference:	0.0	0.0	0.0	0.0

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

SEQUOIA ANALYTICAL

Christine Middleton

Nokowhat D. Herrera
Project Manager

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Geselbracht

Client Project ID: #330-06.12, Arco 0608, San Lorenzo

QC Sample Group: 2052333 - 34

Reported: May 28, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J.Villar	J.Villar	J.Villar	J.Villar
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	May 18, 1992	May 18, 1992	May 18, 1992	May 18, 1992
QC Sample #:	BLK051892	BLK051892	BLK051892	BLK051892
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	10	10	30
Matrix Spike % Recovery:	100	100	100	100
Conc. Matrix Spike Dup.:	10	10	10	30
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	0.0	0.0	0.0	0.0

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

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Lance Geselbracht

Client Project ID: #330-06.12, Arco 0608, San Lorenzo

QC Sample Group: 205-2334

Reported: May 28, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Chem. Oxy. Demand	Ttl. Suspended Solids	pH	Arsenic
Method:	EPA 410.4	EPA 160.2	EPA 9040	EPA 206.2
Analyst:	Y.Arteaga	Y.Arteaga	Y.Arteaga	F.Contreras
Reporting Units:	mg/L	mg/L	N.A.	mg/L
Date Analyzed:	May 15, 1992	May 15, 1992	May 15, 1992	May 21, 1992
QC Sample #:	205-2334	205-2334	205-2334	205-2749
Sample Conc.:	N.D.	1.0	7.2	N.D.
Spike Conc. Added:	75	N.A.	N.A.	0.050
Conc. Matrix Spike:	77	N.A.	N.A.	0.050
Matrix Spike % Recovery:	103	N.A.	N.A.	100
Conc. Matrix Spike Dup.:	84	1.0	7.2	0.047
Matrix Spike Duplicate % Recovery:	112	N.A.	N.A.	94
Relative % Difference:	8.7	0.0	0.0	6.2

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

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

$$\%\ \text{Recovery:} = \frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} = \frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$$

ARCO Products Company — Chain of Custody

Division of AtlanticRichfieldCompany

330-06.12 Task Order No. 608-91-5 COPY

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Lance Geselbracht	Laboratory name Segwora
ARCO engineer Chuck Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 408-984-6536	Fax no. (Consultant)	Contract number 607-073
Consultant name Pacific Environ. Group Inc.	Address (Consultant) 1601 Civic Centre Dr., Santa Clara		Method of shipment Courier

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Water	Other	Preservation: Ice	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	Arsenic	Chemical O2 Demand	TCLP Metals / Semi VOA / VOA	CAM Metals EPA 6010/7000 TTLC / STLC	Lead Org./DHS / Lead EPA 7420/7421	T.S.S.	pH
INFL		3		X		Yes	HCl	5-14-92	1310		X				20	15	27	37				
MID-1		3		↓		↓	↓		1315		↓							33				
EFF1		3		↓		↓	↓		1320		↓				20	5	23	34 (A-C)				
EFFL		2		↓		↓	Ø		1320								↓				X	
EFFL		2		↓		↓	Ø		1320													X
EFFL		1		↓		↓	HNO_3		1320							X						
EFFL		3		↓		↓	H_2SO_4	↓	1320								X	↓ (D-F)				

Condition of sample: GOOD

Temperature received: COOL

	Date	Time		Date	Time
Relinquished by sampler: Rich Ignatowicz	5-14-92	4:20 pm	Received by: Amy McDonald	5-14-92	4:20pm
Relinquished by: Amy McDonald	5-14-92	5:00	Received by:		
Relinquished by:			Received by laboratory:	5-14	5:00

Special detection Limit/reporting

Special QA/QC

Remarks: Rich Ignatowicz — — — — pH analysis

Lab number

Turnaround time

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

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Project: 330-06.12/ARCO 0608, San Lorenzo

Enclosed are the results from 3 water samples received at Sequoia Analytical on June 19,1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2063624	Water, INFL	6/19/92	EPA 5030/8015/8020
2063625	Water, MID-1	6/19/92	EPA 5030/8015/8020
2063626	Water, EFFL	6/19/92	EPA 5030/8015/8020 Total Suspended Solids pH Chemical Oxygen Demand Arsenic

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

Christine L. Middleton

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	330-06.12/ARCO 0608, San Lorenzo	Sampled:	Jun 19, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received:	Jun 19, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	6/22, 23/92
Attention: Dan Landry	First Sample #:	206-3624	Reported:	Jul 1, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
206-3624	INFL	N.D.	N.D.	N.D.	N.D.	N.D.
206-3625	MID-1	N.D.	N.D.	N.D.	N.D.	N.D.
206-3626	EFFL	N.D.	N.D.	N.D.	N.D.	N.D.
Detection Limits:		**30**	**0.30**	**0.30**	**0.30**	**0.30**

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

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group	Client Project ID:	330-06.12/ARCO 0608, San Lorenzo	Sampled:	Jun 19, 1992
1601 Civic Center Drive, Suite 202	Sample Descript:	Water, EFFL	Received:	Jun 19, 1992
Santa Clara, CA 95050			Analyzed:	6/20-29/92
Attention: Dan Landry	Lab Number:	206-3626	Reported:	Jul 1, 1992

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L		Sample Results mg/L
Total Suspended Solids	1.0		4.0
pH, Units	N/A		6.7
Chemical Oxygen Demand	20		N.D.
Arsenic	0.0050		N.D.

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

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-06.12/ARCO 0608, San Lorenzo

QC Sample Group: 206-3624

Reported: Jul 1, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 23, 1992	Jun 23, 1992	Jun 23, 1992	Jun 23, 1992
QC Sample #:	GBLK062392 MS/MSD	GBLK062392 MS/MSD	GBLK062392 MS/MSD	GBLK062392 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	11	11	11	33
Matrix Spike % Recovery:	110	110	110	110
Conc. Matrix Spike Dup.:	10	10	10	30
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	9.5	9.5	9.5	9.5

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

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

$$\%\ \text{Recovery:} = \frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} = \frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$$

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-06.12/ARCO 0608, San Lorenzo

QC Sample Group: 206-3625

Reported: Jul 1, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 22, 1992	Jun 22, 1992	Jun 22, 1992	Jun 22, 1992
QC Sample #:	GBLK062292	GBLK062292	GBLK062292	GBLK062292
	MS/MSD	MS/MSD	MS/MSD	MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	9.9	9.9	30
Matrix Spike % Recovery:	100	99	99	100
Conc. Matrix Spike Dup.:	10	10	10	30
Matrix Spike Duplicate % Recovery:	100	100	100	100
Relative % Difference:	0.0	1.0	1.0	0.0

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

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-06.12/ARCO 0608, San Lorenzo

QC Sample Group: 206-3626

Reported: Jul 1, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Jun 23, 1992	Jun 23, 1992	Jun 23, 1992	Jun 23, 1992
QC Sample #:	GBLK062392 MS/MSD	GBLK062392 MS/MSD	GBLK062392 MS/MSD	GBLK062392 MS/MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	10	10	32
Matrix Spike % Recovery:	100	100	100	107
Conc. Matrix Spike Dup.:	9.8	9.9	9.9	30
Matrix Spike Duplicate % Recovery:	98	99	99	100
Relative % Difference:	2.0	1.0	1.0	6.5

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

SEQUOIA ANALYTICAL

Christine L. Middleton
Project Manager

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

SEQUOIA ANALYTICAL

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

Pacific Environmental Group
1601 Civic Center Drive, Suite 202
Santa Clara, CA 95050
Attention: Dan Landry

Client Project ID: 330-06.12/ARCO 0608, San Lorenzo

QC Sample Group: 206-3626

Reported: Jul 1, 1992

QUALITY CONTROL DATA REPORT

ANALYTE	Chemical Oxygen Demand	Total Suspended Solids	pH	Arsenic
Method:	EPA 410.4	EPA 160.2	EPA 9040	EPA 206.2
Analyst:	Y. Arteaga	Y. Arteaga	T. Grespan	K. Anderson
Reporting Units:	mg/L	mg/L	N.A.	mg/L
Date Analyzed:	Jun 23, 1992	Jun 24, 1992	Jun 20, 1992	Jun 29, 1992
QC Sample #:	206-3626	206-3626	206-3626	206-0903
Sample Conc.:	N.D.	4.0	6.7	N.D.
Spike Conc. Added:	75	N.A.	N.A.	0.10
Conc. Matrix Spike:	67	N.A.	N.A.	0.10
Matrix Spike % Recovery:	89	N.A.	N.A.	100
Conc. Matrix Spike Dup.:	64	4.0	6.7	0.091
Matrix Spike Duplicate % Recovery:	85	N.A.	N.A.	91
Relative % Difference:	3.9	0.0	0.0	9.4

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

:QUOIA ANALYTICAL

Christine L. Middleton
Project Manager

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

ARCO Products Company ◆ Division of AtlanticRichfieldCompany — 330 Oak 12 — **Task Order No.** 6608-91-5 — **Chain of Custody**

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Dan Landry	Laboratory name Sequoia
ARCO engineer Chuck Carmel	Telephone no. (ARCO)	Telephone no. (Consultant) 484 6526	Fax no. (Consultant) 463 3911	Contract number 07-073
Consultant name PACIFIC ENV. GROUP	Address (Consultant) 1601 CIVIC CENTER DR. #202 95051		Method of shipment

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Water	Other	Preservation: Ice	Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH Gas EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	Arsenic EPA 6010/7060	EPA 624/8240	PH	TCLP Metals ☐ Semi VOA ☐ VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	TSS	COD
EFFL		3		X		Y	HCl	6/19/92			X		206		36	24							
MID-1		3		↓		↓	↓	↓			X				↓	25							
EFFL		3									X					26							
EFFL		2					NP															X	
EFFL		1					NP											X					
EFFL		1					HNO_3									X							
EFFL		3		↓		↓	H_2SO_4	↓															X

Special detection Limit/reporting

Special QA/QC

Remarks — Mark Gubitz

Lab number

Turnaround time

- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Expedited 5 Business Days ☐
- Standard 10 Busi[ness] Days ☐

Condition of sample: Good		Temperature received: cool	
Relinquished by sampler	Date 6/19/92	Time 1528	Received by Mark V. Elly	6-19-92 3:28
Relinquished by Mark V. Elly 6-19	Date 6-19-92	Time 1620	Received by	
Relinquished by	Date	Time	Received by laboratory	Date 6-19	Time 1620

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

ARPC-3292 (2-91)

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG
REC. BY (PRINT): PH
MASTER LOG NO. / PAGE:
DATE OF LOG-IN: 6/19

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s): Present / (Absent) Intact / Broken*	205624	A-I	INFL	VOAs	W	6-19	
2. Custody Seal Nos.: —	25	↓	MID	↓	↓	↓	
3. Chain-of-Custody Records: (Present) / Absent*	26	A-C	EFF	(3) VOAs			
4. Traffic Reports or Packing List: Present / (Absent)		DE		(2) SM. AMBERS			
5. Airbill: Airbill / Sticker Present / (Absent)		F		1L AMBER			
6. Airbill No.: —		G		1L PLASTIC			
7. Sample Tags: (Present) / Absent* Sample Tag Nos.: (Listed) / Not Listed on Chain-of-Custody		H-J		(3) VOAs			
8. Sample Condition: (Intact)/Broken*/Leaking*							
9. Does information on (Yes) / No* custody reports, traffic reports and sample tags agree?							
10. Proper Preservatives Used: (Yes) / No*							
11. Date Rec. at Lab: 6-19							
12. Time Rec. at Lab: 1620							

* If Circled, contact Project Manager and attach record of resolution

Groundwater Extraction System
San Lorenzo ARCO 0608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12

Name: Mark Ashton Date/Time: 3/17/92

Meter Readings

1. Meter reading at effluent totalizer (in gallons) 662847
   Gallons per minute (gpm) 4.0
2. Hourmeter reading for E-1A 2461.7
3. Pressure reading at bag filter influent (psi) 6
4. Pressure reading at bag filter effluent (psi) 4
5. Pressure reading at carbon midpoint 1 (psi) 3.5
6. Pressure reading at carbon midpoint 2 (psi) 1.5
7. Pressure reading at carbon effluent (psi) Ø
8. Electric meter reading 1432

Other Measurements

9. Sewer level (Overflowing?) NO
10. Sample groundwater at ports INFL, MID-1, and EFFL.
    (Use 40 ml. VOA bottles and analyze for gas/BTEX at INFL, MID-1, and EFFL.
    Sample the EFFL and analyze for Arsenic, COD, TSS, and pH.)

PORT	TEMP	pH
INFL	70.0	7.59
MID-1	67.6	7.21
EFFL	66.1	7.21

11. Check all fittings and piping for leaks. (Initials) mA
12. Check control panel for discrepancies. (Initials) mA
13. Take DTW/DTL from all on-site wells. (Initials) mA

Comments Installed Valve for purge H_2O
Sampled INFL @ 16:45, Mid-1 @ 16:50, EFEL @ 16:55

Distribute a copy of this form to the project supervisor and file original in project file 330-06.12.

DTW/DTL
San Lorenzo ARCO 0608
17601 Hesperian Boulevard
San Lorenzo, California
Project 330-06.12

Well	Date/Time	DTL	DTW	FP
MW-5	7:58		11.90	
MW-7	7:53		11.86	
MW-8	8:02		10.90	
MW-9	8:07		10.01	
MW-10	9:06		10.12	
MW-11	8:14		10.81	
MW-13	7:48		13.20	
MW-14	8:18		9.04	
MW-15	8:22		10.41	
MW-16	8:55		10.85	
MW-17	9:02		11.71	
E-1A	9:19		23.10	

Probe used: _____

SITE INFORMATION FORM

Identification

Project # 330-06.12

ation # ARCO 0608

Site Address: 17601 Hesperian Blvd, San Lorenzo

County: Alameda

Project Manager: LG/Deb M.

Requestor: Brian F.

Client: ARCO

Client P.O.C.: Charles Carmel

Date of request: 4/14/92

Project Type

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

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

- ☐ Cal Trans
- ☐ County
- ☐ City
- ☐ Private
- ☐ Multi-Consultant Scheduling

Date(s):

Site Safety Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-down
☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing
☒ Report required for: Oro Loma Sanitary Dist. ☐ Data summary required for:

① Sample INFL Gas/BTEX
MID-1 Gas/BTEX
EFFL Gas/BTEX/COD/TSS/Arsenic/pH ✓

② DTW in on-site wells MW-5, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, E-1A ✓

③ Change bag filter

④ Check flow from E-1A, DTW should be ~23'. ✓

⑤ Check auto dialer ✓

(Please attach Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: 6

Actual hours; On-Site: 2.5 Mob-de-Mob: 2

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

TOOK DTW on requested wells
measured Drawdown on E-1A
installed batteries and Call number and moved auto dialer
TOOK requested samples

Completed by: TW Date: 4-15-92

PACIFIC ENVIRONMENTAL GROUP, INC.

Checked by: PITS Update:

Groundwater Extraction System
San Lorenzo ARCO 0608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12

Name: TIM R WRIGHT Date/Time: 4-15-92 @ 0935

Meter Readings

1. Meter reading at effluent totalizer (in gallons) 008511
   Gallons per minute (gpm) @ 3.8 gpm
2. Hourmeter reading for E-1A 03150.3
3. Pressure reading at bag filter influent (psi) <2
4. Pressure reading at bag filter effluent (psi) 2
5. Pressure reading at carbon midpoint 1 (psi) 3
6. Pressure reading at carbon midpoint 2 (psi) <2
7. Pressure reading at carbon effluent (psi) <2
8. Electric meter reading 01840

Other Measurements

9. Sewer level (Overflowing?) no
10. Sample groundwater at ports INFL, MID-1, and EFFL. (Use 40 ml. VOA bottles and analyze for gas/BTEX at INFL, MID-1, and EFFL. Sample the EFFL and analyze for Arsenic, COD, TSS, and pH.)

PORT	TEMP	pH
INFL	64.5	6.60
MID-1	66.5	6.38
EFFL	66.4	6.41

11. Check all fittings and piping for leaks. (Initials) TRW
12. Check control panel for discrepancies. (Initials) TRW
13. Take DTW/DTL from all on-site wells. (Initials) TRW

Comments mounted Auto Dialer, installed batteries, and wired in contacts.
TOOK DTW on requested wells.
sampled system.

Distribute a copy of this form to the project supervisor and file original in project file 330-06.12.

FIELD PORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06-12 LOCATION: 17601 Hesperian San Lorenzo DATE: 4-15-92

CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: TPW DAY OF WEEK: Wednesday

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH): SPH Depth (feet)	SPH Thickness (feet)	COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons): SPH / H_2O
5	MW-5	0903							12.18	12.18										
6	MW-7	0906							12.30	12.30										
4	MW-8	0859							11.35	11.35										
1	MW-9	0847							10.49	10.49										
2	MW-10	0851							10.59	10.59										
3	MW-11	0855							11.23	11.23										
7	MW-13	0909							13.64	13.64										
8	E-1A	0918							20.54	19.28 TOC										

Comments:

PROBE TYPE/ID No.

- ☐ Oil/Water IF
- ☒ H_2O level Indicator #2
- ☐ Other:

SITE INFORMATION FORM

Identification

Project # 330-06.12

Station # ARCO 0608

Site Address: 17601 Hesperian Blvd, San Lorenzo

County: Alameda

Project Manager: LG/Deb M.

Requestor: Brian F.

Client: ARCO

Client P.O.C.: Charles Carmel

Date of request: 4/14/92

Project Type

☐ 1st Time visit

☐ Quarterly

☐ 1st ☐ 2nd ☐ 3rd ☐ 4th

☒ Monthly

☐ Semi-Monthly

☐ Weekly

☐ One time event

☐ Other:

Ideal field date(s): 15th ± 3 days

Prefield Contacts/Permits

☐ Cal Trans

☐ County

☐ City

☐ Private

☐ Multi-Consultant Scheduling

Date(s):

Site Safety

Concerns

Field Tasks

☒ System Sampling ☐ System Start-up ☐ System Repair ☐ System Modification ☐ System Resample ☐ System Shut-do

☐ Tank Pull ☐ Soil Sampling ☐ Subcontractor Observation ☐ SPH Bailing

☒ Report required for: Oro Loma Sanitary Dist. ☐ Data summary required for:

✓ ① Sample INFL Gas/BTEX (3)
MID-1 Gas/BTEX (3)
EFFL Gas/BTEX/COD/TSS/Arsenic/pH
(3) (3) (Quad Amber) (Actual HNO3) (100ml)

✓ ② DTW in on-site wells MW-5, MW-7, MW-8, MW-9, MW-10, MW-11, MW-13, E-1A

③ Change bag filter

✓ ④ Confirm operation of autodialer

✓ ⑤ Post ER sign.

✓ ⑥ Change program in panel

✓ ⑦ Check for dial out when system tripped

(Please attach: Site Map, Process and Instrumentation Diagram, Site Safety Plan, Well logs, Other information as appropriate)

Budgeted hours: 6

Actual hours; On-Site: 3.5 Mob-de-Mob: 2.5

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

– completed as requested – except no bag change – only 6 psi

– no problems.

– (samples/change sheet)

Completed by: RI Date: 5-14-92

Checked by: PITS Update:

PACIFIC ENVIRONMENTAL GROUP, INC.

Groundwater Extraction System
San Lorenzo ARCO 0608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12

Name: Rick Ignatowicz Date/Time: 5-14-92 1300

Meter Readings

1. Meter reading at effluent totalizer (in gallons) 010300.86
   Gallons per minute (gpm) .90 → .94 / 1 min 4 GPM
2. Hourmeter reading for E-1A 03549.1
3. Pressure reading at bag filter influent (psi) 6
4. Pressure reading at bag filter effluent (psi) 4.5
5. Pressure reading at carbon midpoint 1 (psi) 4.5
6. Pressure reading at carbon midpoint 2 (psi) <2
7. Pressure reading at carbon effluent (psi) <2
8. Electric meter reading 02250

Other Measurements

9. Sewer level (Overflowing?) NO
10. Sample groundwater at ports INFL, MID-1, and EFFL.
    (Use 40 ml. VOA bottles and analyze for gas/BTEX at INFL, MID-1, and EFFL. Sample the EFFL and analyze for Arsenic, COD, TSS, and pH.)

PORT	TEMP	pH
INFL	66.3	6.94
MID-1	68.2	6.97
EFFL	68.0	6.87

11. Check all fittings and piping for leaks. (Initials) RI
12. Check control panel for discrepancies. (Initials) RI
13. Take DTW/DTL from all on-site wells. (Initials) RI

Comments psi @ well head E-1A : 26 psi → 5 psi

Distribute a copy of this form to the project supervisor and file original in project file 330-06.12.

330-06.02 5-14-92 Thur.

17601 Hesperian Blvd

San Lorenzo ~H_2O level indicator #3

Date	Well ID	Time	DTW(TOC)	DTL
5-14-92	MW-5	1247	12.78	—
	MW-7	1241	13.04	—
	MW-8	1249	12.06	—
	MW-9	1237	11.19	—
	MW-10	1233	11.30	—
	MW-11	1230	11.96	—
	MW-13	1249	14.34	—
↓	E-1A	1222	21.94 TOC + 1.15 TOB	—

Tech: Rick Ignatowicz

Groundwater Extraction System
San Lorenzo ARCO 0608
17601 Hesperian Boulevard
San Lorenzo, California
330-06.12

Name: Mark Gilbreth Date/Time: 6/19/92

Meter Readings

1. Meter reading at effluent totalizer (in gallons) 31229960
   Gallons per minute (gpm) Dfa
2. Hourmeter reading for E-1A 047121
3. Pressure reading at bag filter influent (psi) 9
4. Pressure reading at bag filter effluent (psi) 7
5. Pressure reading at carbon midpoint 1 (psi) 4.75
6. Pressure reading at carbon midpoint 2 (psi) 1
7. Pressure reading at carbon effluent (psi) 0
8. Electric meter reading 02739

PSI @ WELL = 13

Other Measurements

9. Sewer level (Overflowing?) O.K.
10. Sample groundwater at ports INFL, MID-1, and EFFL.
    (Use 40 ml. VOA bottles and analyze for gas/BTEX at INFL, MID-1, and EFFL.
    Sample the EFFL and analyze for Arsenic, COD, TSS, and pH.)

PORT	TEMP	pH
INFL	71.0	6.85
MID-1	72.0	6.90
EFFL	72.0	6.91

11. Check all fittings and piping for leaks. (Initials) MG
12. Check control panel for discrepancies. (Initials) MG
13. Take DTW/DTL from all on-site wells. (Initials) n/a

Comments: CHANGED BAG FILTER; ADJUSTED PRESSURE SWITCH TO 22 PSI; DTW READING WERE TAKEN ON 6/16

Distribute a copy of this form to the project supervisor and file original in project file 330-06.12.

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 33-06-0558 (15) LOCATION: Hesperian DATE: 6-15-92

CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

PROBE TYPE/ID No.
- ☐ Oil/Water IF _____
- ☒ H_2O level Indicator H.O
- ☐ Other: _____

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	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
18	MW-5	8:20						14	13.63	13.63	well	Dry								
10	MW-7	7:42							13.78	13.78										
12	MW-8	7:47							12.83	12.83										
9	MW-9	7:37							11.86	11.86										
13	MW-10	7:50							11.93	11.93										
8	MW-11	7:33							12.64	12.64										
11	MW-13	7:45							15.13	15.13										
7	MW-14	7:29							10.83	10.83										
14	MW-15	7:54							12.19	12.19										

Comments: _____

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06-0515 (15) LOCATION: Hesperian DATE: 6-15-92

CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☒ H_2O level indicator 410
- ☐ Other:

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	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
15	MW-16	7:58							12.64	12.64										
16	MW-17	8:10							13.50	13.50										
6	MW-18	7:22							11.50	11.50										
5	MW-19	7:18							10.94	10.94										
4	MW-20	7:13							11.11	11.11										
3	MW-21	7:08							11.30	11.30										
2	MW-22	7:04							11.84	11.84										
1	MW-23	6:58							12.94	12.94										
19	EI-A	8:25							23.72	23.72										

Comments:

FIELD REPORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06-~~05~~ 15 SP LOCATION: Hesperian DATE: 6-15-92

CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: SP DAY OF WEEK: Monday

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

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	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
17	@HURLH SCHOOL WELL	8:08	✓	✓	-	-	-	—	13.19	13.19	—	—				✓				/
																				/
																				/
																				/
																				/
																				/
																				/
																				/
																				/

Comments:

FIELD DATA SHEET

[illegible]ER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: TB-1

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

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: _____

		Gal/Linear		Number of		Calculated
_____	- DTW = _____	x Foot	_____ =	_____	x Casings _____	= 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: Colorless, Clear, Cloudy, Yellow, Brown, 0-100
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: _____
- ☐ Centrifugal: _____
- ☐ Dedicated: _____
- ☐ Other: _____

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

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
TB-1	6-15-12	—	2	40	VOA	HCl	Gas/BTEX

[illegible]NTEGRITY: ☐ Good ☐ Fair ☐ Poor _____

MARKS: _____

[illegible]ATURE: _____

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: E-1A

CLIENT/STATION No.: 0608 Arco FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: ___ TOB ___ TOC
Depth to water: 23.72 TOB — TOC
Total depth: — TOB — TOC
Date: 6-15-92 Time (2400): 823

Probe Type and I.D. #
- ☐ Oil/Water interface ___
- ☒ Electronic indicator ±0
- ☐ 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: ___

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

DATE PURGED: — START: — END (2400 hr): — PURGED BY: ___

DATE SAMPLED: 6-15-92 START: 8:00 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/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: ___
- Centrifugal: ___
- ☒ Dedicated: ___
- ☐ Other: ___

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

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
E-1A	6-15-92	8:00	3	40	VOA	HCl	8015 BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor ___

REMARKS: ___

PACIFIC

FIELD DATA SHEET

TER SAMPLE FIELD DATA SHEET

JECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-5

LIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
pth to water: 13.63 TOB — TOC
l depth: 14 TOB ____ TOC
Date: 6-18-97 Time (2400): 8:20

e 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: ________

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

DATE PURGED: 6-–97 START: — END (2400 hr): — PURGED BY: ____

DATE SAMPLED: 6-–97 START: — END (2400 hr): — SAMPLED BY: ____

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

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

LD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: ____ TOB/TOC ____

RGING EQUIPMENT/I.D. #
- ☐ Bailer: ________ ☐ Airlift: ________
- ☐ Centrifugal: ________ ☐ Dedicated: ________
- ☐ Other: ________

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

PLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
~~MW-5~~	~~6-–97~~		~~3~~	~~40~~	~~VOA~~	~~HCl~~	~~Gas/BTEX~~ SP
	NOT	SAMPLED					

NTEGRITY: ☒ Good ☐ Fair ☐ Poor ________

ARKS: ________

ATURE: [illegible]

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-7

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: ____ TOB ____ TOC
Depth to water: 13.78 TOB ____ TOC
Total depth: 18.95 TOB ____ TOC
Date: 6-15-92 Time (2400): 7:42

Probe Type and I.D. #
- ☐ Oil/Water interface ____
- ☒ Electronic indicator #0
- ☐ 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: ____

D 18.95 - DTW = 13.78 x Gal/Linear Foot 0.38 = 1.964 x Number of Casings 5 = Calculated Purge 9.82

DATE PURGED: 6-17-92 START: 7:41 END (2400 hr): 7:52 PURGED BY: SP

DATE SAMPLED: 6-17-92 START: 8:15 END (2400 hr): ____ SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
7:45	3.5	6.78	1011	71.0	cloudy	light	no
7:49	7	6.80	985	71.6	"	"	"
7:52	10	6.83	976	72.1	"	"	"

Color: 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: 17-2
- ☐ Airlift: ____
- ☐ Centrifugal: ____
- ☐ Dedicated: ____
- ☐ Other: ____

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-2
- ☐ Dedicated: ____
- ☐ Other: ____

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-7	6/17/92	8:15	3	40	VOA	HCl	Gas/BTEX

LAB INTEGRITY: ☒ Good ☐ Fair ☐ Poor ____

REMARKS: ____

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-8

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: ——— TOB ——— TOC
Depth to water: 12.83 TOB ~ TOC
Total depth: 21.7 TOB ~ TOC
Date: 6-15-92 Time (2400): 7:47

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

21.7 - DTW = 12.83 Gal/Linear x Foot 0.38 = 3.370 Number of x Casings 5 Calculated = Purge 16.85

DATE PURGED: 6-17-92 START: 10:04 END (2400 hr): 10:10 PURGED BY: SP

DATE SAMPLED: 6-17-92 START: 10:25 END (2400 hr): ← SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:05	6	6.75	968	69.7	Grey	Light	Strong
10:06	11.5	6.73	979	69.1	"	"	"
10:10	17	6.73	987	69.0	"	"	"

Color 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: ———
- ☐ Centrifugal: ———
- ☐ Dedicated: ———
- ☐ Other: ———

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-4
- ☐ Dedicated: ———
- ☐ Other: ———

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-8	6-17-92	10:25	3	40	VOA	HCl	Gas / BTEX

LOCK INTEGRITY: ☒ Good ☐ Fair ☐ Poor ———

REMARKS: ———

SIGNATURE

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

GROUNDWATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-9

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.86 TOB — TOC
Total depth: 18.8 TOB — TOC
Date: 6-15-92 Time (2400): 7:37

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:

18.8 - DTW = 11.86 x Gal/Linear Foot 0.38 = 2.637 x Number of Casings 5 = Calculated Purge 13.18

DATE PURGED: 6-16-92 START: 15:05 END (2400 hr): 15:19 PURGED BY: SP
DATE SAMPLED: 6-16-92 START: 15:30 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (° F)	COLOR	TURBIDITY	ODOR
15:09	4.5	6.84	979	69.3			
15:14	9	6.79	971	70.2			
15:19	13.5	6.78	968	70.3			

Pumped dry Yes / (No)

Color: 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: 17-1 ☐ Airlift: ____
☐ Centrifugal: ____ ☐ Dedicated: ____
☐ Other: ____

SAMPLING EQUIPMENT/I.D. #
☒ Bailer: 17-1
☐ Dedicated: ____
☐ Other: ____

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-9	6-16-92	15:30	3	40	VOA	HCl	Gas / BTEX

LAB INTEGRITY: ☒ Good ☐ Fair ☐ Poor ____

REMARKS: ____

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

[redacted] SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-10

CLIENT/STATION No.: ARCO 0607 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.93 TOB — TOC
Total depth: 23' TOB — TOC
Date: 6-16-92 Time (2400): 7:50

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:

23.0 - DTW = 11.93 x Gal/Linear Foot 0.38 = 4.206 x Number of Casings 5 = Calculated Purge 21.03

DATE PURGED: 6-16-92 START: 14:38 END (2400 hr): 14:43 PURGED BY: SP

DATE SAMPLED: 6-16-92 START: 14:55 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
14:40	9	6.52	1049	70.5	clear	trace	strong
14:42	14	6.75	1039	68.2	"	"	"
14:43	21	6.75	1030	68.6	"	"	"

Color: 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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-6
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-10	6-16-92	14:55	3	40	VOA	HCl	Gas/BTEX

INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-11

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.64 TOB — TOC
Total depth: 19.2 TOB — TOC
Date: 6-15-92 Time (2400): 7:33

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:

19.2 - DTW = 12.64 x Gal/Linear Foot 0.38 = 2.492 Number of x Casings 5 = Calculated Purge 12.46

DATE PURGED: 6-16-92 START: 11:16 END (2400 hr): 11:30 PURGED BY: SP

DATE SAMPLED: 6-16-92 START: 11:45 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
11:21	9.5	6.91	997	65.2	cloudy	trace	NO
11:26	8.5	6.85	952	66.1	"	"	"
11:30	12.5	6.83	955	66.3	"	"	"

COLOR: Colors 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: 17-4
- ☐ Airlift:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-4
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-11	6-16-92	11:45	3	40	VOA	HCl	G-15/BTEX

WELL INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

ER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-13

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 15.13 TOB — TOC
Total depth: 23.35 TOB — TOC
Date: 6-15-92 Time (2400): 7:45

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☑ Electronic indicator #0
- ☐ 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:

D 23.35 - DTW = 15.13 (Gal/Linear) x Foot 0.38 = 3.12 x Number of Casings 5 = Calculated Purge 15.61

DATE PURGED: 6-17-92 START: 8:40 END (2400 hr): 8:55 PURGED BY: SP

DATE SAMPLED: 6-17-92 START: 9:00 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
:45	5.5	6.83	996	70.6	cloudy	Mod	NO
:50	10.5	6.79	988	70.9	"	"	"
:55	15.5	6.76	981	70.8	"	"	"

Color: Clear, Cloudy, Yellow, Brown
Turbidity: 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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

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

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-13	6-17-92	9:00	3	40	VOA	HCl	TPHG/BTEX

INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

[redacted] SAMPLE FIELD DATA SHEET [redacted]

[redacted]ECT No.: 330-06-15 LOCATION: San Lorenzo WELL ID #: MW-14

[redacted]IENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

[redacted]epth to Liquid: — TOB — TOC
[redacted]th to water: 10.83 TOB — TOC
[redacted] depth: 23.1 TOB — TOC
[redacted]ate: 6-15-92 Time (2400): 7:29

[redacted] Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ 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;

23.1 - DTW = 10.83 (Gal/Linear) x Foot 0.38 = 4.662 (Number of) x Casings 5 = Calculated Purge 23.31

DATE PURGED: 6/16/92 START: 12:20 END (2400 hr): 12:28 PURGED BY: SP

DATE SAMPLED: 6-16-92 START: 12:35 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:22	8	7.11	949	69.4	Clear	trace	NO
12:25	16	7.05	953	70.6	"	"	"
12:28	24	7.02	930	70.9	"	"	"

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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-5
- ☐ Dedicated:
- ☐ Other:

[redacted]LE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
W-14	6-16-92	12:35	3	40	VOA	HCl	Gas/BTEX

[redacted]L INTEGRITY: ☒ Good ☐ Fair ☐ Poor

[redacted]ARKS:

[redacted]ATURE

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

R SAMPLE FIELD DATA SHEET

ECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-15

IENT/STATION No.: 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

epth to Liquid: — TOB — TOC

th to water: 12.19 TOB — TOC

depth: 23.6 TOB — TOC

ate: 6-15-92 Time (2400): 7:54

Type and I.D. #: ☐ Oil/Water interface ☑ Electronic indicator 40 ☐ 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:

23.6 - DTW = 12.19 x Gal/Linear Foot 0.38 = 4.335 x Number of Casings 5 = Calculated Purge 21.67

ATE PURGED: 6-16-92 START: 8:38 END (2400 hr): 8:44 PURGED BY: SP

ATE SAMPLED: 6-16-92 START: 9:00 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
:41	7.5	6.81	1015	65.4	Cloudy	Light	Moderate
:42	15	6.76	1021	65.9	↓	↓	↓
:44	22	6.78	1025	66.2	↓	↓	↓

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

LD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

TW: ______ TOB/TOC

GING EQUIPMENT/I.D. #
- ☐ Bailer:
- ☐ Centrifugal:
- ☐ Other:
- ☐ Airlift:
- ☐ Dedicated:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-2
- ☐ Dedicated:
- ☐ Other:

LE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
W-15	6-16-92	9:00	3	40	VOA	HCl	Gas / BTEX

TEGRITY: ☒ Good ☐ Fair ☐ Poor

ARKS:

ATURE: [illegible signature]

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-16

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.64 TOB — TOC
Total depth: 23.6 TOB — TOC
Date: 6-16-92 Time (2400): 7:58

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

CASING DIAMETER / GAL/LINEAR FT.

	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:

23.6 - DTW = 12.64 x Foot 0.38 = 4.164 Gal/Linear x Casings 5 = Number of Calculated Purge 20.82

DATE PURGED: 6-16-92 START: 9:54 END (2400 hr): 9:57 PURGED BY: SP

DATE SAMPLED: 6-16-92 START: 10:15 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:56	7	6.73	994	67.0	clear	trace	Moderate
9:57	10	6.77	982	66.5	↓	↓	↓

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						
13:00	(TOB)/TOC	6.79	981	66.2	clear	trace	Moderate

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

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-3
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-16	6-16-92	10:15	3	40	VOA	HCl	602 / BTEX

LOT INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

ATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06-15 LOCATION: San Lorenzo WELL ID #: MW-17

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 13.50 TOB — TOC
Total depth: 23.5 TOB — TOC
Date: 6-15-92 Time (2400): 8:10

Probe Type and I.D. #: ☐ Oil/Water interface ☑ Electronic indicator AE 0 ☐ 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:

23.50 - DTW = 13.50 x Gal/Linear Foot 0.38 = 3.80 x Number of Casings 5 = Calculated Purge 19.

DATE PURGED: 6-16-92 START: 8:13 END (2400 hr): 8:19 PURGED BY: SP

DATE SAMPLED: 6-16-92 START: 8:30 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
8:15	6.5	6.89	903	62.8	Cloudy	Light	Moderate
8:17	13	6.87	913	63.2	↓	↓	↓
8:19	19	6.86	910	63.4	↓	↓	↓

Color: 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:
☐ Centrifugal: ☐ Dedicated:
☐ Other:

SAMPLING EQUIPMENT/I.D. #

☐ Bailer: 17-1
☐ Dedicated:
☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-17	6-16-92	8:30	3	40	VOA	HCl	Gas/BTEX

WELL INTEGRITY: ☑ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

AFTER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-1S

CLIENT/STATION No.: Arco 0606 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.50 TOB = TOC
Total depth: 21.8 TOB = TOC
Date: 6-15-92 Time (2400): 7:22

Purge Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ 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:

21.8 - DTW = 11.50 Gal/Linear x Foot 0.38 = 3.914 Number of x Casings 5 Calculated = Purge 19.57

DATE PURGED: 6-15-92 START: 1:50 END (2400 hr): 1:57 PURGED BY: SP

DATE SAMPLED: 6-15-92 START: 14:10 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:53	7	6.88	989	66.1	cloudy	trace	NO
13:55	13.5	6.86	990	66.2	"	"	"
13:57	20	6.85	985	66.2	"	"	"

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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☐ Bailer: 17-6
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-1S	6-15-92	14:10	3	40	VOA	HCl	Gas/BTEX

LAB INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-19

CLIENT/STATION No.: Arco 06608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 10.94 TOB — TOC
Total depth: 21.4 TOB — TOC
Date: 6-15-92 Time (2400): 7:15

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ 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:

21.4 - DTW = 10.94 x Gal/Linear Foot 0.38 = 3.974 x Number of Casings 5 = Calculated Purge 19.87

DATE PURGED: 6-15-92 START: 13:31 END (2400 hr): 13:40 PURGED BY: SP

DATE SAMPLED: 6-15-92 START: 13:45 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13:34	7	6.89	982	65.9	Cloudy	trace	NO
13:37	13.5	6.90	977	66.0	clear	↓	↓
13:40	20	6.92	975	66.3	clear	↓	↓

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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-5
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-19	6-15-92	13:45	3	40	VOA	HCl	Gas/BTEX

LOCK INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

~~ER SAMPLE FIELD DATA SHEET~~

PROJECT No.: 330-06-15 LOCATION: San Lorenzo WELL ID #: MW-20

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.11 TOB — TOC
Total depth: 21.9 TOB — TOC
Date: 21.9 (6-15-97) Time (2400): 7:13

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ Other:

CASING DIAMETER / GAL/LINEAR FT.

	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:

21.9 - DTW = 11.11 x Gal/Linear Foot 0.38 = 4.10 x Number of Casings 5 = Calculated Purge 20.5

DATE PURGED: 6-15-97 START: 12:08 END (2400 hr): 12:16 PURGED BY: SP

DATE SAMPLED: 6-15-97 START: 12:30 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
12:10	7	7.10	958	63.5	cloudy	light	NO
12:13	14	7.05	960	64.3	clear	trace	↓
12:16	21	6.97	958	64.5	↓	↓	↓

Color: 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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-4
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-20	6-15-97	12:30	3	40	VOA	HCl	Gas/BTEX

INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE: Scott Hall

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: 21

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.30 TOB — TOC
Total depth: 21.9 TOB — TOC
Date: 6-15-92 Time (2400): 7:08

Probe Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ 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:

21.9 - DTW = 11.30 x Gal/Linear Foot 0.38 = 4.028 x Number of Casings 5 = Calculated Purge 20.14

DATE PURGED: 6-15-92 START: 10:10 END (2400 hr): 10:17 PURGED BY: SP

DATE SAMPLED: 6-15-92 START: 10:30 END (2400 hr): SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
10:13	7	6.82	10.12	67.0	tan	Moderate	NO
10:15	14	6.85	1008	66.7	cloudy	light		
10:17	20.5	6.82	.1009	67.2	↓	↓	↓

Color: 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:
- ☒ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-3
- ☒ Dedicated: SP
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-21	6-15-92	10:30	3	40	VOA	HCl	Gas/BTEX

INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

[redacted] SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-22

CLIENT/STATION No.: 0608 Arco FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 11.84 TOB — TOC
Total depth: 21.8 TOB — TOC
Date: 6-15-92 Time (2400): 7:04

Probe Type and I.D. #: ☐ Oil/Water interface ☒ Electronic indicator #7 ☐ 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:

21.8 - DTW = 11.84 x Gal/Linear Foot 0.38 = 3.784 x Number of Casings 5 = Calculated Purge 18.92

DATE PURGED: 6-15-92 START: 9:36 END (2400 hr): 9:45 PURGED BY: SP

DATE SAMPLED: 6-15-92 START: 9:50 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:40	6.5	6.81	1001	65.2	Clear	Trace	NO
9:43	13	6.78	977	64.8	"	"	"
9:45	19	6.76	976	64.7	"	"	"

Color: 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:
☐ Centrifugal: ☐ Dedicated:
☐ Other:

SAMPLING EQUIPMENT/I.D. #

☒ Bailer: 17-2
☐ Dedicated:
☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-22	6-15-92	9:50	3	40	VOA	HCl	Gas/BTEX

INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

FIELD DATA SHEET

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.15 LOCATION: San Lorenzo WELL ID #: MW-23

CLIENT/STATION No.: Arco 0608 FIELD TECHNICIAN: SP

WELL INFORMATION

Depth to Liquid: — TOB — TOC
Depth to water: 12.94 TOB — TOC
Total depth: 21.95 TOB — TOC
Date: 6-15-92 Time (2400): 6:59

Type and I.D. #
- ☐ Oil/Water interface
- ☒ Electronic indicator #0
- ☐ 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:

21.95 - DTW = 12.94 x Foot (Gal/Linear) 0.38 = 3.47 x Number of Casings 5 = Calculated Purge 17.11

DATE PURGED: 6-15-92 START: 9:08 END (2400 hr): 9:17 PURGED BY: SP

DATE SAMPLED: 6-15-92 START: 9:25 END (2400 hr): — SAMPLED BY: SP

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
9:11	6	6.92	1074	65.7	cloudy	Light	NO
9:14	12	6.79	1073	67.2	clear	trace	↓
9:17	17.5	6.77	1068	67.5	clear	trace	↓

Color: 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:
- ☐ Centrifugal:
- ☐ Dedicated:
- ☐ Other:

SAMPLING EQUIPMENT/I.D. #
- ☒ Bailer: 17-1
- ☐ Dedicated:
- ☐ Other:

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW-23	6-15-92	9:25	3	40	VOA	HCl	Gas/BTEX

LAB INTEGRITY: ☒ Good ☐ Fair ☐ Poor

REMARKS:

SIGNATURE:

PACIFIC ENVIRONMENTAL

ARCO Products Company
Division of AtlanticRichfieldCompany

330-06.15 **Task Order No.** 608-92-5

Chain of Custody

ARCO Facility no.	608
City (Facility)	San Lorenzo
Project manager (Consultant)	Kelly Brown
ARCO engineer	Chuck Carme
Telephone no. (ARCO)	
Telephone no. (Consultant)	510-825-0855
Fax no. (Consultant)	510-825-0892
Consultant name	Pacific Environmental Group
Address (Consultant)	620 Contra Costa Blvd Ste 9 Pleasant Hill [illegible]
Laboratory name	[illegible]
Contract number	
Method of shipment	
Special detection Limit/reporting	
Special QA/QC	
Remarks	Page 2 of 2
Lab 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 GAS EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-22		3		X		X	HCl	6-15-92	9:50		X											
MW-23		↓		↓		↓	↓	↓	9:25		↓											
E1-1A		↓		↓		↓	↓	↓	8:00		↓											

Condition of sample:

Temperature received:

Relinquished by sampler	Date	Time	Received by
[signature]	6-18-92	14:15	[signature] Van [illegible]
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory / Date / Time

Turnaround time

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

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

ARCO Products Company Division of AtlanticRichfieldCompany — 330-06.15 Task Order No. 608-92-5 — **Chain of Custody**

ARCO Facility no. 0608	City (Facility) San Lorenzo	Project manager (Consultant) Kelly Brown.	Laboratory name Sequoia
ARCO engineer Chuck Carmel	Telephone no. (ARCO) —	Telephone no. (Consultant) 510-825-0855	Fax no. (Consultant) 510-825-0882	Contract number
Consultant name Pacific Environmental Group	Address (Consultant) 620 Contra Costa Blvd. #209 Pleasant Hill 94523		Method of shipment

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 Gas EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
TB-1		2		X		Yes	HCl	6-15-92	-		X											
MW-7		3						6-17-92	8:15													
MW-8								6-17-92	10:25													
MW-9								6-16-92	15:30													
MW-10								6-16-92	14:55													
MW-11								6-16-92	11:45													
MW-13								6-17-92	9:00													
MW-14								6-16-92	12:35													
MW-15								6-16-92	9:00													
MW-16								6-16-92	10:15													
MW-17								6-16-92	9:30													
MW-18								6-15-92	14:10													
MW-19								6-15-92	13:45													
MW-20								6-15-92	12:30													
MW-21		↓		↓		↓	↓	6-15-92	10:30		↓											

Special detection Limit/reporting

Special QA/QC

Remarks Page 1 of 2

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:
Relinquished by sampler	Date 6-18-92 Time 14:15	Received by Kim Van Slambrouck
Relinquished by	Date Time	Received by
Relinquished by	Date Time	Received by laboratory Date Time

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

[redacted]DEP[redacted]TO W[redacted]ER/S[redacted]RATE [redacted]HASE [redacted]DRO[redacted]ARBON SURVE[redacted]

PROJECT No.: 330-06.02 LOCATION: 17601 Hesperian DATE: 5-14-92

CLIENT/STATION NO.: ARCO FIELD TECHNICIAN: RI DAY OF WEEK: Thurs.

PROBE TYPE/ID No.
- ☐ Oil/Water IF
- ☑ H_2O level Indicator 3
- ☐ Other:

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	Fresh	Weathered	Gas	Oil	Lite	Medium	Heavy	Liquid Removed (gallons) SPH / H_2O
											Separate-Phase Hydrocarbons (SPH)		Color				Viscosity			
	MW-5	12:47						–	12.78	→	Ø	–								
	MW-7	12:41						–	13.04	→	Ø	–								
	MW-8	12:49						–	12.06	→	Ø	–								
	MW-9	12:37						–	11.19	→	Ø	–								
	MW10	12:33						–	11.30	→	Ø	–								
	MW-11	12:30						–	11.96	→	Ø	–								
	MW-13	12:44						–	14.34	→	Ø	–								
	E-1A	12:22						–	21.94 TOC +1.15 TOB	→	Ø	–								

Comments:

FIELD PORT

DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06-12 LOCATION: 17601 Hesperian San Lorenzo DATE: 4-15-92

CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: TRW DAY OF WEEK: Wednesday

Dtw Order	Well ID	Time	Surface Seal	Lid Secure	Gasket	Lock	Expanding Cap	Total Depth (feet)	First Depth to Water (feet) TOB/TOC	Second Depth to Water (feet) TOB/TOC	SEPARATE-PHASE HYDROCARBONS (SPH) SPH Depth (feet)	SPH Thickness (feet)	COLOR: Fresh	Weathered	Gas	Oil	VISCOSITY: Lite	Medium	Heavy	LIQUID REMOVED (gallons) SPH / H_2O
5	MW-5	0903							12.18	12.18										
6	MW-7	0906							12.30	12.30										
4	MW-8	0859							11.35	11.35										
1	MW-9	0847							10.49	10.49										
2	MW-10	0851							10.59	10.59										
3	MW-11	0855							11.23	11.23										
7	MW-13	0909							13.64	13.64										
8	E-1A	0918							20.54	19.28 TOC										

Comments:

PROBE TYPE/ID No.

- ☐ Oil/Water IF
- ☒ H_2O level indicator #2
- ☐ Other: