



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

32100001-10000001

May 5, 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  
January to March 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) at the site referenced above. Included in this report is a performance evaluation of the remedial groundwater system. Groundwater samples were collected on March 17 and 18, 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.

## RESULTS

The results of groundwater monitoring this quarter show an increase in TPH-g and benzene concentrations in Wells MW-5, MW-8, MW-10, and MW-15 through MW-17 over the previous quarter. Well MW-5, which had been dry since June 1990, was sampled this quarter. TPH-g concentrations in these wells ranged between 470 and 11,000 parts per billion (ppb). Benzene was detected only in samples from Wells MW-5, MW-8, MW-10, MW-15, MW-16, and MW-17 at concentrations ranging between 0.74 and 370 ppb. The remaining site wells contained non-detectable levels of TPH-g and BTEX compounds. Separate-phase hydrocarbons were not observed in any site well this quarter. A dissolved gasoline and benzene concentration map is presented as Figure 1. Quarterly groundwater analytical results are presented in Table 1. Certified analytical reports, chain-of-custody documentation, and field data sheets are provided in Attachment B.

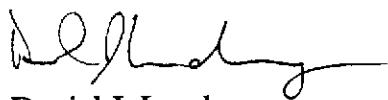
operation, and 0.13 gallon of dissolved TPH-g has been recovered. The treatment system has had no significant down time or mechanical failures during this period.

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 150 feet downgradient of the site.

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

Sincerely,

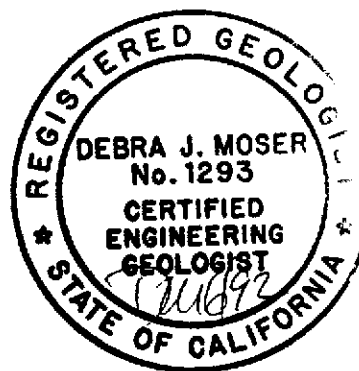
**Pacific Environmental Group, Inc.**



Daniel J. Landry  
Project Engineer



Debra J. Moser  
Senior Geologist  
CEG 1293



- Attachments:
- Table 1 - Quarterly Groundwater Analytical Results
  - Table 2 - Groundwater Elevation Data
  - Table 3 - Estimated Total Dissolved TPH-g Removed
  - Table 4 - Treatment System Analytical Results
  - Figure 1 - Dissolved Gasoline and Benzene Concentration Map
  - Figure 2 - Groundwater Contour Map
  - Figure 3 - Influent 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~~  
~~Mr. Pamela Evans, Alameda County, Environmental Health~~  
Mr. Eddie So, Regional Water Quality Control Board -  
San Francisco Bay Region

Table 1  
**Quarterly Groundwater Analytical Results**  
 Low-Boiling 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	
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**  
 Low-Boiling 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
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
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
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
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

Table 1 (continued)  
**Quarterly Groundwater Analytical Results**  
 Low-Boiling 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)
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
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
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
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
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
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
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
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
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

Table 1 (continued)  
**Quarterly Groundwater Analytical Results**  
 Low-Boiling Hydrocarbons

ARCO Service Station 0608  
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 San Lorenzo, California

Well Number	Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
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
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

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	----- Well Destroyed -----			
	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

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	--
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	
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	
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	



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 (cont.)	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
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
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
	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
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	

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-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
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
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
	01/16/92		12.80	--	18.61
	02/19/92		10.85	--	20.56
	03/18/92		10.41	--	21.00
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
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
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
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

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-20	10/04/91	29.54	12.56	--	16.98
	12/19/91		12.48	--	17.06
	03/18/92		9.49	--	20.05
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
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
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

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

Table 3  
Estimated Total Dissolved TPH-g Removed

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

Influent Sample Date	Volume Reading (gallon)	Net Volume (gallon)	Influent TPH-g (ppb)	Net TPH-g Removed (pound)	Total TPH-g Removed (pound)	Total TPH-g Removed (gallon)	Net Flow Rate (gpm)
09/25/91	0	0	0	0.00	0.00	0.00	0.0
09/26/91	1,144	1,144	38	0.00	0.00	0.00	0.8
10/22/91	12,844	11,700	0	0.00	0.00	0.00	0.3
11/22/91	52,532	39,688	0	0.00	0.00	0.00	0.9
12/19/91	122,540	70,008	0	0.00	0.00	0.00	1.8
01/16/92	283,289	160,749	0	0.00	0.00	0.00	4.0
02/19/92	485,200	201,911	370	0.31	0.31	0.06	4.1
03/17/92	662,847	177,647	160	0.39	0.71	0.13	4.6

ppb = Parts per million  
 TPH-g = Total Petroleum Hydrocarbons, calculated as gasoline  
 Net = During this period only  
 Total = Since beginning of operation  
 gpm = Gallons per minute  
 NA = Not available

Note: Net dissolved TPH-g removed data are approximate

Equations:  
 Net dissolved TPH-g Removed (pounds) =  
 TPH concentration, (ppb) x net volume (gallon) x density of gasoline (pound/gallon)  
 Note: Density of gasoline = 5.63 pounds/gallon  
 (Net dissolved TPH removed is calculated by averaging influent concentrations)

Table 4  
Treatment System Analytical Results

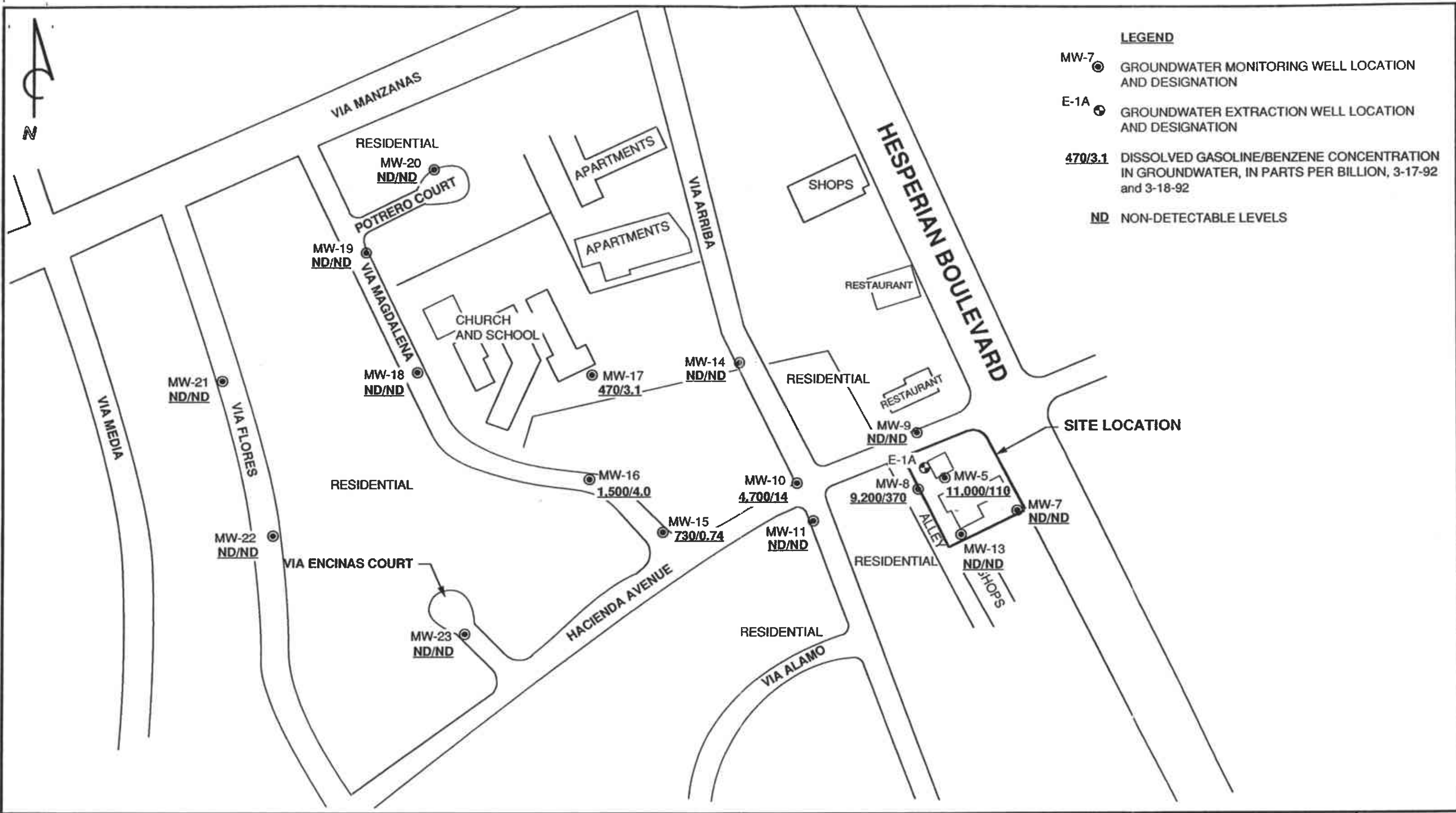
ARCO Service Station 0608  
17601 Hesperian Boulevard  
San Lorenzo, California

Sample Date	Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
<b>INFL (influent to primary carbon)</b>					
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
<b>MID-1 (between carbons)</b>					
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
<b>EFFL (effluent to sewer)</b>					
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
ppb = parts per billion < = Analyte was not present above the stated detection limit.					

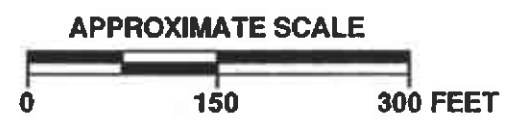
Table 4 (continued)  
**Treatment System Analytical Results**

ARCO Service Station 0608  
 17601 Hesperian Boulevard  
 San Lorenzo, California

Sample Date	Chemical Oxygen Demand (mg/L)	Suspended Solids (mg/L)	pH (units)	Arsenic (mg/L)
<b>Effluent Sample</b>				
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
mg/L = Milligrams per liter NA = Not available or applicable < = Analyte was not present above the stated detection limit.				



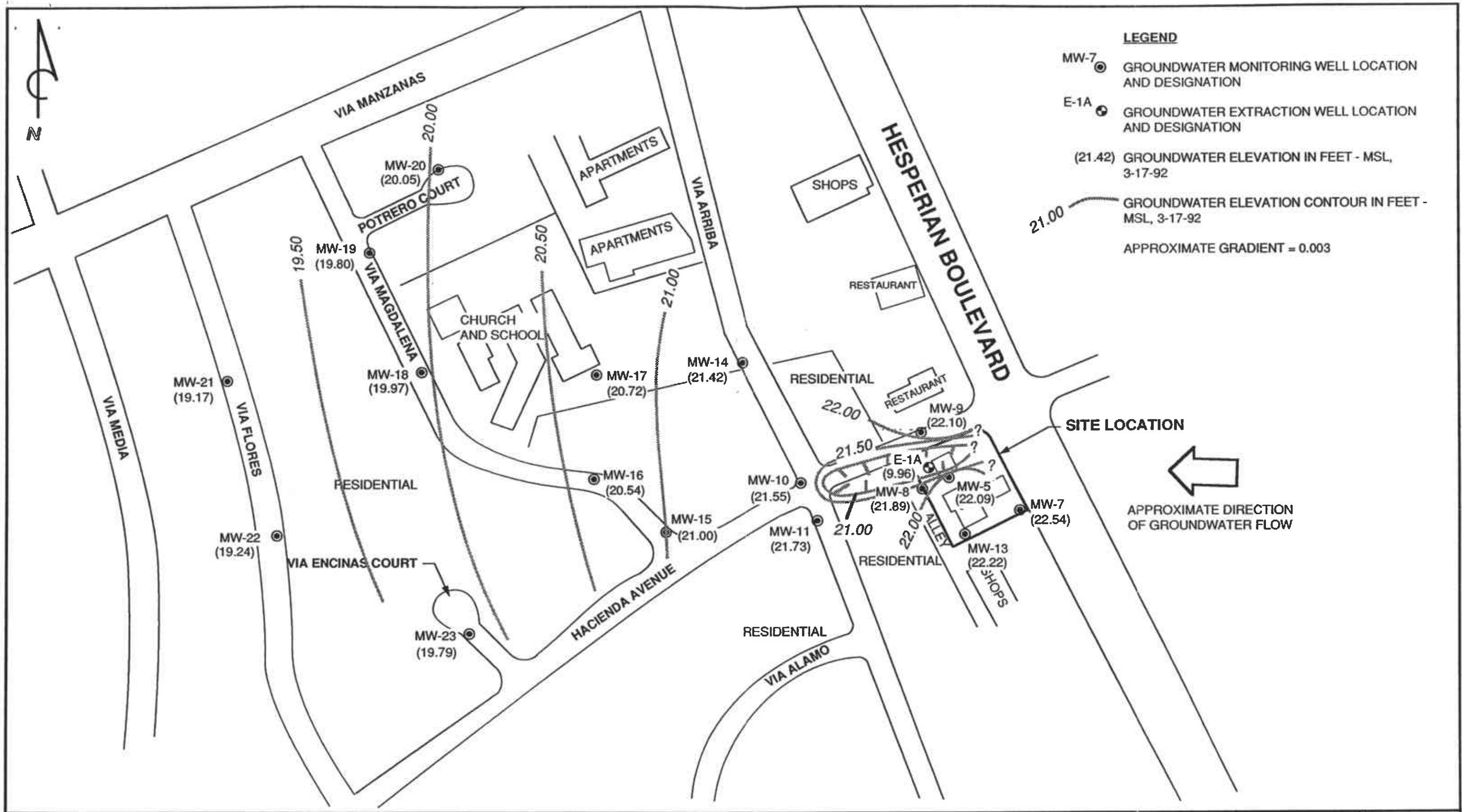
PACIFIC ENVIRONMENTAL GROUP, INC.



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

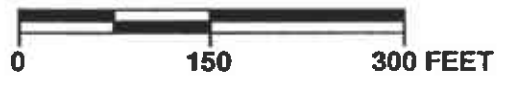
DISSOLVED GASOLINE AND BENZENE CONCENTRATION MAP

FIGURE: 1  
PROJECT: 330-06.05



PACIFIC ENVIRONMENTAL GROUP, INC.

APPROXIMATE SCALE

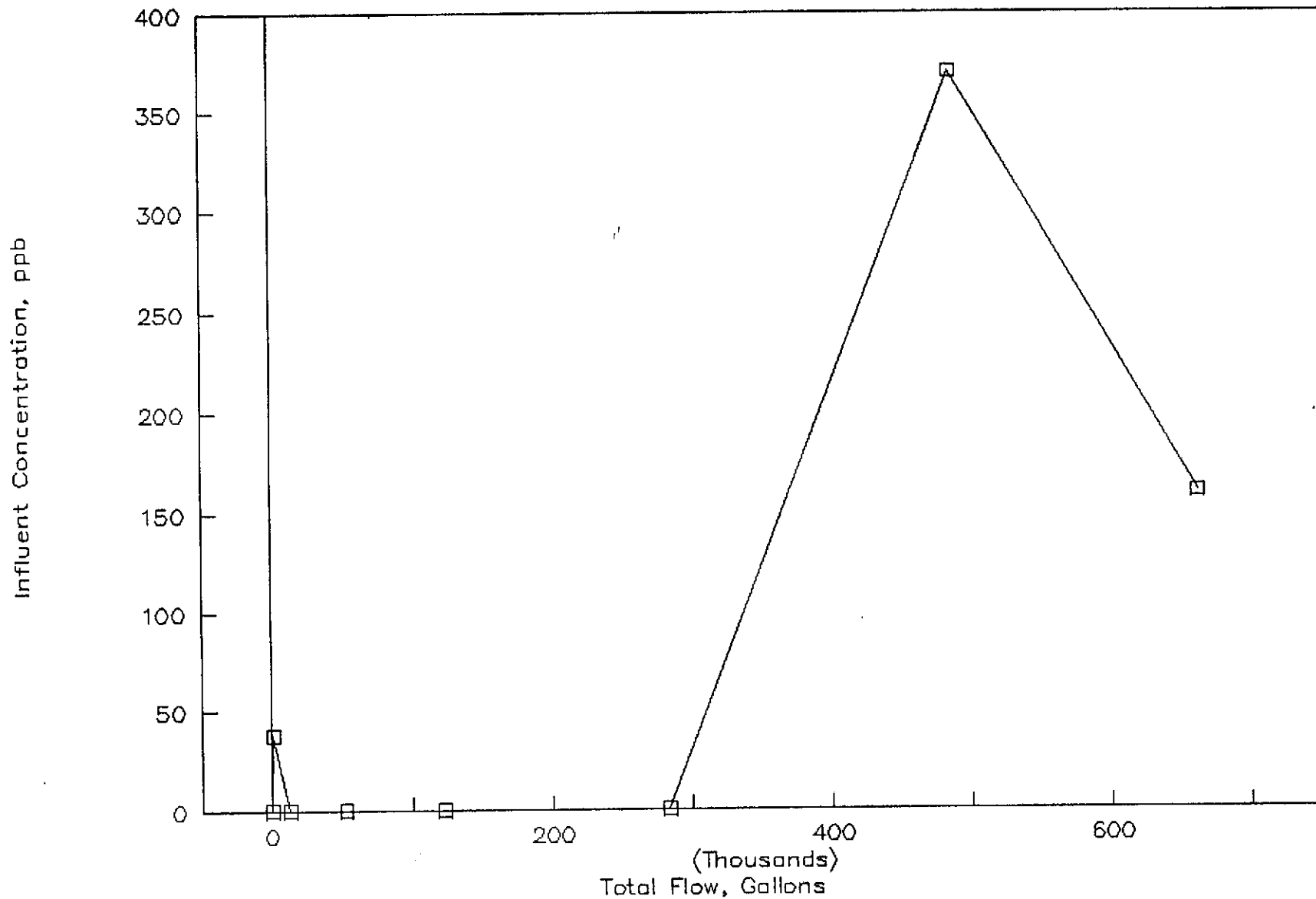


ARCO SERVICE STATION #0608  
17601 Hesperian Boulevard at Hacienda Avenue  
San Lorenzo, California

GROUNDWATER CONTOUR MAP

FIGURE: 2  
PROJECT: 330-06.05





PACIFIC  
ENVIRONMENTAL  
GROUP INC.

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

INFLUENT CONCENTRATION VERSUS TOTAL FLOW

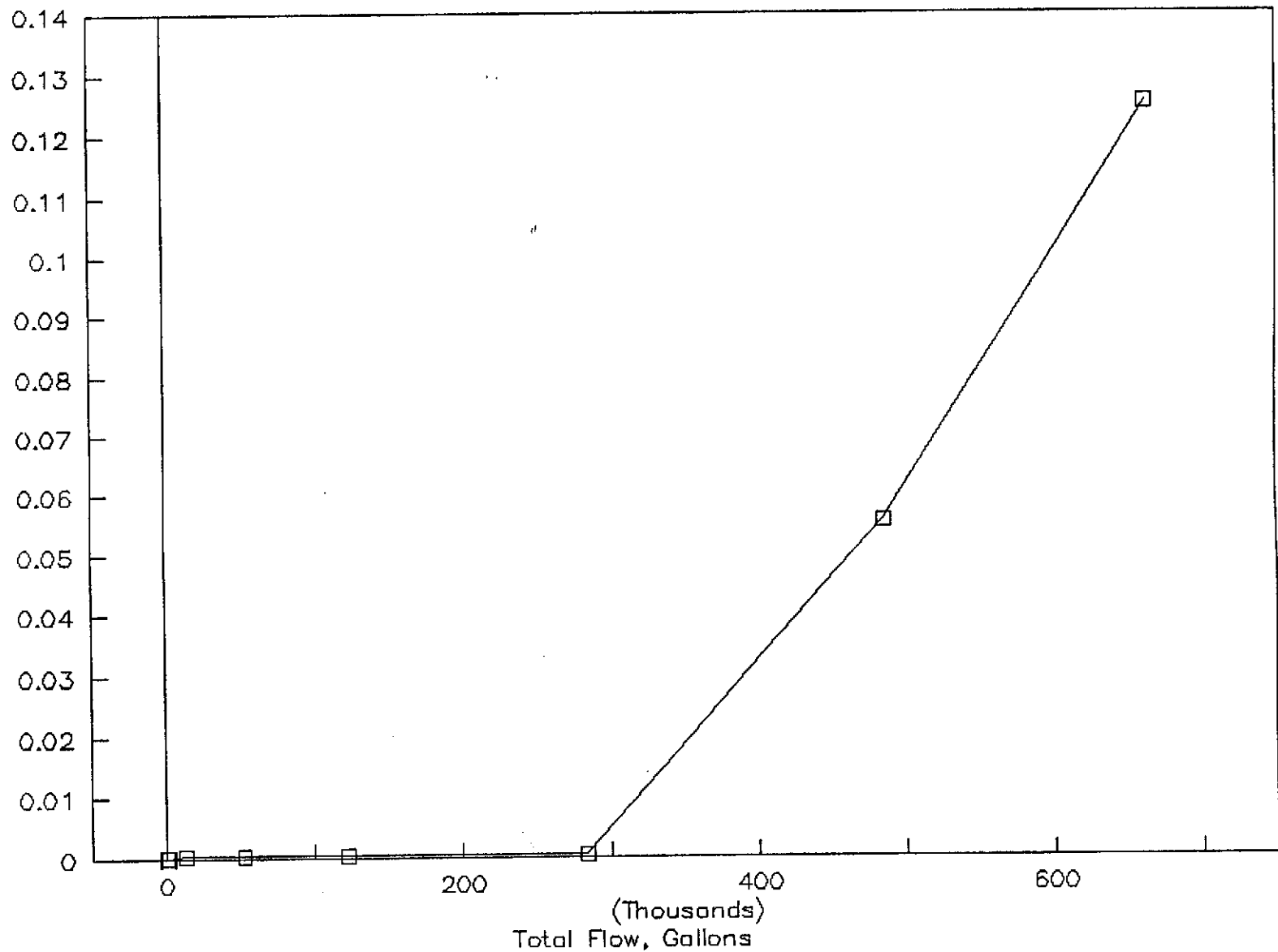
FIGURE:

3

PROJECT:

330-06.05

Dissolved TPH--g Removed, Gallons



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

**ATTACHMENT A**  
**GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES**

## ATTACHMENT A

### GROUNDWATER SAMPLING AND ANALYTICAL PROCEDURES

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#### **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.

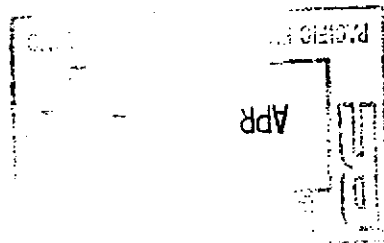
**ATTACHMENT B**

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



# SEQUOIA ANALYTICAL

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

Project: 330-06.05, Arco 0608, San Lorenzo

Enclosed are the results from 18 water samples received at Sequoia Analytical on March 19, 1992. The requested analyses are listed below:

2033439	Water, MW-5	Mar 17-18, 1992	EPA 5030/8015/8020
2033440	Water, MW-7	Mar 17-18, 1992	EPA 5030/8015/8020
2033441	Water, MW-8	Mar 17-18, 1992	EPA 5030/8015/8020
2033442	Water, MW-9	Mar 17-18, 1992	EPA 5030/8015/8020
2033443	Water, MW-10	Mar 18, 1992	EPA 5030/8015/8020
2033444	Water, MW-11	Mar 17-18, 1992	EPA 5030/8015/8020
2033445	Water, MW-13	Mar 17-18, 1992	EPA 5030/8015/8020
2033446	Water, MW-14	Mar 17-18, 1992	EPA 5030/8015/8020
2033447	Water, MW-15	Mar 17-18, 1992	EPA 5030/8015/8020
2033448	Water, MW-16	Mar 17-18, 1992	EPA 5030/8015/8020
2033449	Water, MW-17	Mar 17-18, 1992	EPA 5030/8015/8020
2033450	Water, MW-18	Mar 17-18, 1992	EPA 5030/8015/8020
2033451	Water, MW-19	Mar 17-18, 1992	EPA 5030/8015/8020
2033452	Water, MW-20	Mar 17-18, 1992	EPA 5030/8015/8020
2033453	Water, MW-21	Mar 17-18, 1992	EPA 5030/8015/8020
2033454	Water, MW-22	Mar 17-18, 1992	EPA 5030/8015/8020
2033455	Water, MW-23	Mar 17-18, 1992	EPA 5030/8015/8020
2033456	Water, TB-1	Mar 17-18, 1992	EPA 5030/8015/8020



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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



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Pacific Environmental Group 1601 Civic Center Drive, Suite 202 Santa Clara, CA 95050 Attention: Kelly Brown	Client Project ID: 330-06.05, Arco 0608, San Lorenzo Matrix Descript: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 203-3439	Sampled: Mar 17-18, 1992 Received: Mar 19, 1992 Analyzed: Mar 20-23, 1992 Reported: Mar 31, 1992
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene $\mu\text{g/L}$ (ppb)	Toluene $\mu\text{g/L}$ (ppb)	Ethyl	Xylenes $\mu\text{g/L}$ (ppb)
		Hydrocarbons $\mu\text{g/L}$ (ppb)			Benzene $\mu\text{g/L}$ (ppb)	
203-3439	MW-5	11,000	110	2.0	410	150
203-3440	MW-7	N.D.	N.D.	N.D.	N.D.	N.D.
203-3441	MW-8	9,200	370	3.0	48	4.9
203-3442	MW-9	N.D.	N.D.	N.D.	N.D.	N.D.
203-3444	MW-11	N.D.	N.D.	N.D.	N.D.	N.D.
203-3445	MW-13	N.D.	N.D.	N.D.	N.D.	N.D.
203-3446	MW-14	N.D.	N.D.	N.D.	N.D.	N.D.
203-3447	MW-15	730	0.74	0.98	1.8	0.68

<b>Detection Limits:</b>	<b>30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>
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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

2033439.PPP <1>





# SEQUOIA ANALYTICAL

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Pacific Environmental Group	Client Project ID: 330-06.05, Arco 0608, San Lorenzo	Sampled: Mar 18, 1992
1601 Civic Center Drive, Suite 202	Sample Descript.: Water, MW-10	Received: Mar 19, 1992
Santa Clara, CA 95050	Analysis Method: EPA 5030/ 8015/8020	Analyzed: Mar 23, 1992
Attention: Kelly Brown	Lab Number: 203-3443	Reported: Mar 31, 1992

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

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Low to Medium Boiling Point Hydrocarbons.....	600	4,700
Benzene.....	6.0	14
Toluene.....	6.0	N.D.
Ethyl Benzene.....	6.0	29
Xylenes.....	6.0	10

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

  
Vickie Tague  
Project Manager



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Pacific Environmental Group	Client Project ID: 330-06.05, Arco 0608, San Lorenzo	Sampled: Mar 17-18, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript: Water	Received: Mar 19, 1992
Santa Clara, CA 95050	Analysis Method: EPA 5030/8015/8020	Analyzed: Mar 20-23, 1992
Attention: Kelly Brown	First Sample #: 203-3448	Reported: Mar 31, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons		Toluene µg/L (ppb)	Ethyl	Xylenes µg/L (ppb)
		µg/L (ppb)	Benzene µg/L (ppb)		Benzene µg/L (ppb)	
203-3448	MW-16	1,500	4.0	0.73	2.2	1.3
203-3449	MW-17	470	3.1	N.D.	9.1	8.6
203-3450	MW-18	N.D.	N.D.	N.D.	N.D.	N.D.
203-3451	MW-19	N.D.	N.D.	N.D.	N.D.	N.D.
203-3452	MW-20	N.D.	N.D.	N.D.	N.D.	N.D.
203-3453	MW-21	N.D.	N.D.	N.D.	N.D.	N.D.
203-3454	MW-22	N.D.	N.D.	N.D.	N.D.	N.D.
203-3455	MW-23	N.D.	N.D.	N.D.	N.D.	N.D.
203-3456	TB-1	N.D.	N.D.	N.D.	N.D.	N.D.

<b>Detection Limits:</b>	<b>30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>
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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



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Pacific Environmental Group 1601 Civic Center Drive, Suite 202 Santa Clara, CA 95050 Attention: Kelly Brown	Client Project ID: 330-06.05, Arco 0608, San Lorenzo	QC Sample Group: 2033442, 44-46, 48-51	Reported: Mar 31, 1992
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## 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:	Mar 20, 1992	Mar 20, 1992	Mar 20, 1992	Mar 20, 1992
QC Sample #:	BLK032092	BLK032092	BLK032092	BLK032092
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	11	31
Matrix Spike Duplicate % Recovery:	100	100	110	103
Relative % Difference:	0.0	0.0	9.5	3.3

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

SEQUOIA ANALYTICAL

*Vickie Tague*  
Vickie Tague  
Project Manager

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



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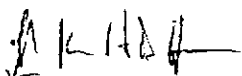
Pacific Environmental Group	Client Project ID: 330-06.05, Arco 0608, San Lorenzo	
1601 Civic Center Drive, Suite 202		
Santa Clara, CA 95050		
Attention: Kelly Brown	QC Sample Group: 2033439, 41, 52-55	Reported: Mar 31, 1992

## 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:	Mar 20, 1992	Mar 20, 1992	Mar 20, 1992	Mar 20, 1992
QC Sample #:	BLK032092	BLK032092	BLK032092	BLK032092
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.
<b>Spike Conc. Added:</b>	10	10	10	30
<b>Conc. Matrix Spike:</b>	9.6	9.7	9.6	29
<b>Matrix Spike % Recovery:</b>	96	97	96	97
<b>Conc. Matrix Spike Dup.:</b>	10	10	10	30
<b>Matrix Spike Duplicate % Recovery:</b>	100	100	100	100
<b>Relative % Difference:</b>	4.1	3	4.1	3.4

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

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

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

Client Project ID: 330-06.05, Arco 0608, San Lorenzo

QC Sample Group: 2033440, 43, 56

Reported: Mar 31, 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:	Mar 23, 1992	Mar 23, 1992	Mar 23, 1992	Mar 23, 1992
QC Sample #:	GBLK032392	GBLK032392	GBLK032392	GBLK032392

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	11	11	32
Matrix Spike % Recovery:	100	110	110	107
Conc. Matrix Spike Dup.:	11	11	11	33
Matrix Spike Duplicate % Recovery:	110	110	110	110
Relative % Difference:	9.5	0.0	0.0	3.1

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

SEQUOIA ANALYTICAL

*A. L. A. D. H.*  
Vickie Tague  
Project Manager

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

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(415) 364-9600 • FAX (415) 364-9233

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

Client Project ID: 330-06.05, Arco 0608, San Lorenzo

QC Sample Group: 203-3447

Reported: Mar 31, 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:	Mar 23, 1992	Mar 23, 1992	Mar 23, 1992	Mar 23, 1992
QC Sample #:	BLK032392	BLK032392	BLK032392	BLK032392
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	9.4	9.4	9.2	28
Matrix Spike % Recovery:	94	94	92	93
Conc. Matrix Spike Dup.:	9.3	9.4	9.2	27
Matrix Spike Duplicate % Recovery:	93	94	92	90
Relative % Difference:	1.1	0.0	0.0	3.6

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

SEQUOIA ANALYTICAL

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

  
Vickie Tague  
Project Manager

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: PEG MASTER LOG NO. / PAGE: X  
 REC. BY (PRINT): mm DATE OF LOG-IN: 3/20/92

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE	DASH	CLIENT	CONTAINER	SAMPLE	DATE	REMARKS:
	#	#	IDENTIFICATION	DESCRIPTION	MATRIX	SAMP.	
1. Custody Seal(s): Present / Absent Intact / Broken*	03349	AC	MWS	V621	W	3/18	
2. Custody Seal Nos.: <u>21</u>	40		7			3/17	
3. Chain-of-Custody Records: Present / Absent*	41		8			↓	
	42		9			↓	
	43		10			3/18	
	44		11			3/17	
	45		13			↓	
4. Traffic Reports or Packing List: Present / Absent*	46		14			↓	
	47		15			3/18	
	48		16			↓	
5. Airbill: Airbill / Sticker Present / Absent*	49		17			↓	
6. Airbill No.: <u>X</u>	50		18			↓	
	51		19			↓	
	52		20			↓	
7. Sample Tags: Present / Absent* Sample Tag Nos.: Listed / Not Listed on Chain-of-Custody	53		21			↓	
	54		22			3/17	
	55		23			↓	
8. Sample Condition: Intact/Broken*/Leaking*	56	A/B	TB!			↓	
9. Does information on custody reports, traffic reports and sample tags agree? Yes / No*							
10. Proper Preservatives Used: Yes / No*							
11. Date Rec. at Lab: <u>3/19/92</u>							
12. Time Rec. at Lab: <u>1230</u>							

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

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) 984 6536	Contract number 87073
Consultant name Pacific Environmental Group		Address (Consultant) 1601 Civic Centre Dr., Santa Clara, CA	

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 802	GAS EPA 8015	TPH Modified 8015 Gas	Oil and Grease 413.1 413.2	TPH EPA 418.1/SM503E	EPA 801/8010	EPA 824/8240	EPA 825/8270	TCLP Metals	Semi Metals VOA VOA	CWM Metals EPA 801/7000	TTLG	STLC	Lead Org. IDHS	Lead EPA 7420/7421	Method of shipment
			Soil	Water	Other	Ice	Acid																		
MW5	3		X			Yes	HCl	3-18-92	10 <sup>15</sup>		X														Courier
MW7								3-17-92	10 <sup>15</sup>																
MW8									11 <sup>48</sup>																
MW9									12 <sup>30</sup>																
MW10								3-18-92	14 <sup>30</sup>																
MW11								3-17-92	13 <sup>15</sup>																
MW13									11 <sup>10</sup>																
MW14									15 <sup>05</sup>																
MW15								3-18-92	12 <sup>40</sup>																
MW16									11 <sup>35</sup>																
MW17									13 <sup>40</sup>																
MW18									10 <sup>00</sup>																
MW19									9 <sup>20</sup>																
MW20									8 <sup>40</sup>																
MW21									8 <sup>00</sup>																
MW22								3-17-92	16 <sup>10</sup>																

Method of shipment: Courier

Special detection Limit/reporting: 2033439, 3440, 3441, 3442, 3443, 3444, 3445, 3446, 3447, 3448, 3449, 3450, 3451, 3452, 3453, 3454

Special QA/QC

Remarks: pg 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: Good	Temperature received: Cool
Relinquished by sampler: [Signature]	Received by: [Signature]
Date/Time: 3/19/92 1150	Date/Time: 3/19/92 1230
Relinquished by: [Signature]	Received by laboratory: [Signature]
Date/Time: 3/19/92 1230	Date/Time: 3/19 1230



ARCO Facility no. *0608* City (Facility) *San Lorenzo* Project manager (Consultant) *Kelly Brown*  
 ARCO engineer *Chuck Carmel* Telephone no. (ARCO) *984-6536* Telephone no. (Consultant) *984-6536* Fax no. (Consultant)   
 Consultant name *Pacific Environmental Group* Address (Consultant) *1601 Civic Centre Dr., Santa Clara, CA*

Laboratory name *Scholar*  
 Contract number *07073*

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 8020	BTEX/TPH GAS EPA 1631/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM501E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals <input type="checkbox"/> VOC <input type="checkbox"/> VOA <input type="checkbox"/>	SAM Metals EPA 601/7000 TTL <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org./DHS <input type="checkbox"/> Lead EPA 74207421 <input type="checkbox"/>	
			Soil	Water	Other	Ice	Acid														
<i>MW23</i>		<i>3</i>		<i>X</i>		<i>Yes</i>	<i>HCl</i>	<i>3-17-92</i>	<i>1540</i>		<i>X</i>										
<i>TB1</i>		<i>2</i>		<i>↓</i>		<i>↓</i>	<i>↓</i>	<i>↓</i>		<i>↓</i>											

Method of shipment  
*Courier*

Special detection Limit/reporting  
*2033455*  
*2033456*

Special QA/QC

Remarks  
*pg 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: *good* Temperature received: *cool*  
 Relinquished by sampler *Richard D. ...* Date *3/19/92* Time *1150* Received by *Patrick Will*  
 Relinquished by *Patrick Will* Date *3/19/92* Time *1230* Received by   
 Relinquished by  Date  Time  Received by laboratory *JM* Date *3/19* Time *1230*



# SEQUOIA ANALYTICAL

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

2192

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

Project: 330-06.12, Arco 608, San Lorenzo

Enclosed are the results from 3 water samples received at Sequoia Analytical on March 18, 1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2033021	Water, Influent	3/17/92	EPA 5030/8015/8020
2033022	Water, Mid-1	3/17/92	EPA 5030/8015/8020
2033023	Water, Effluent	3/17/92	Miscellaneous Inorganics 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

  
V Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group	Client Project ID:	330-06.12, Arco 608, San Lorenzo	Sampled:	Mar 17, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received:	Mar 18, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Mar 18, 1992
Attention: Lance Geselbracht	First Sample #:	203-3021	Reported:	Apr 2, 1992

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

Sample Number	Sample Description	Low/Medium B.P.	Ethyl			
		Hydrocarbons	Benzene	Toluene	Benzene	Xylenes
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
203-3021	Influent	160	18	0.32	0.56	1.6
203-3022	Mid-1	N.D.	N.D.	N.D.	N.D.	N.D.
203-3023	Effluent	N.D.	N.D.	N.D.	N.D.	N.D.

<b>Detection Limits:</b>	<b>30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>
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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: Mar 17, 1992
1601 Civic Center Drive, Suite 202	Sample Descript: Water, Effluent	Received: Mar 18, 1992
Santa Clara, CA 95050		Analyzed: Mar 19, 31, 1992
Attention: Lance Geselbracht	Lab Number: 203-3023	Reported: Apr 2, 1992

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Chemical Oxygen Demand.....	20	N.D.
<b>Total Suspended Solids.....</b>	<b>1.0</b>	<b>8.0</b>
pH, units.....	N.A.	7.3

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  
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Pacific Environmental Group	Client Project ID: 330-06.12, Arco 608, San Lorenzo	Sampled: Mar 17, 1992
1601 Civic Center Drive, Suite 202	Sample Descript: Water, Effluent	Received: Mar 18, 1992
Santa Clara, CA 95050		Analyzed: Mar 25, 1992
Attention: Lance Geselbracht	Lab Number: 203-3023	Reported: Apr 2, 1992

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Arsenic.....	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 Geselbracht

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

QC Sample Group: 2033021-23

Reported: Apr 2, 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:	Mar 18, 1992	Mar 18, 1992	Mar 18, 1992	Mar 18, 1992
QC Sample #:	BLK031892	BLK031892	BLK031892	BLK031892
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

*V. Tague*  
Vickie Tague  
Project Manager

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

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

QC Sample Group: 203-3023

Reported: Apr 2, 1992

## QUALITY CONTROL DATA REPORT

ANALYTE	pH	Total Suspended Solids	Chemical Oxygen Demand
Method:	EPA 9040	EPA 160.2	EPA 410.4
Analyst:	Arteaga/Samra	Arteaga/Samra	N. Zahedi
Reporting Units:	units	mg/L	mg/L
Date Analyzed:	Mar 19, 1992	Mar 23, 1992	Mar 31, 1992
QC Sample #:	203-3096	203-3276	203-4955
Sample Conc.:	8.4	62	N.D.
Spike Conc. Added:	N.A.	N.A.	100
Conc. Matrix Spike:	N.A.	N.A.	97
Matrix Spike % Recovery:	N.A.	N.A.	97
Conc. Matrix Spike Dup.:	8.4	57	120
Matrix Spike Duplicate % Recovery:	N.A.	N.A.	120
Relative % Difference:	0.0	8.3	21

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

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

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

Attention: Lance Geselbracht

QC Sample Group: 203-3023

Reported: Apr 2, 1992

## QUALITY CONTROL DATA REPORT

**ANALYTE** Arsenic

Method: EPA 206.2  
Analyst: F. Contreras  
Reporting Units: mg/L  
Date Analyzed: Mar 25, 1992  
QC Sample #: 203-1006

Sample Conc.: N.D.

Spike Conc.  
Added: 0.10

Conc. Matrix  
Spike: 0.096

Matrix Spike  
% Recovery: 96

Conc. Matrix  
Spike Dup.: 0.098

Matrix Spike  
Duplicate  
% Recovery: 98

Relative  
% Difference: 2.1

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

SEQUOIA ANALYTICAL

*V. K. Tague*  
Vickie Tague  
Project Manager

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

CLIENT NAME:  
REC. BY (PRINT):

P.E.G  
T.C.

MASTER LOG NO. / PAGE:  
DATE OF LOG-IN:

3-18

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s):	Present / <u>Absent</u> Intact / Broken*	<u>2033021</u>	A-C	INFL.	vocs	W	3/17	
2. Custody Seal Nos.:	_____	<u>22</u>	A-C	MID-1	↓	↓	↓	
		<u>23</u>	A-F	EFF				
3. Chain-of-Custody Records:	<u>Present</u> / Absent*	↓	G	↓	metals	↓	↓	
		↓	H		amber			
		↓	I	↓	1/2 L. plain	↓	↓	
4. Traffic Reports or Packing List:	Present / <u>Absent</u>							
5. Airbill:	Airbill / Sticker Present / <u>Absent</u>							
6. Airbill No.:	_____							
7. Sample Tags:	<u>Present</u> / Absent*							
Sample Tag Nos.:	<u>Listed</u> / Not Listed on Chain-of-Custody							
8. Sample Condition:	<u>Intact</u> / Broken*/Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<u>Yes</u> / No*							
10. Proper Preservatives Used:	<u>Yes</u> / No*							
11. Date Rec. at Lab:	<u>3/18</u>							
12. Time Rec. at Lab:	<u>4:06</u>							

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

**ARCO Products Company** Division of AtlanticRichfieldCompany

330-0612 Task Order No.

608-91-5

**Chain of Custody**

ARCO Facility no. **608** City (Facility) **San Lorenzo** Project manager (Consultant) **Lance Geselbracht**  
 ARCO engineer **Charles Carmel** Telephone no. (ARCO) **406-984-6536** Telephone no. (Consultant) **243-3911** Fax no. (Consultant) **243-3911**  
 Consultant name **P.E.G.** Address (Consultant) **1601 Civic Center Dr #202 Santa Clara 95050**

Laboratory name **Sequoia**  
 Contract number **07-073**

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602EPA 8020	BTEX/TPH EPA 1632/8020/8015	TPH Modified 8015 Gas <input type="checkbox"/> Diesel <input type="checkbox"/>	Oil and Grease 413.1 <input type="checkbox"/> 413.2 <input type="checkbox"/>	TPH EPA 418.1/SM503E	<del>TPH</del>	<del>ARSENIC</del>	EPA 625/8270	Semi Metals <input type="checkbox"/> VOA <input type="checkbox"/> VOA <input type="checkbox"/>	CAN Metals EPA 601/7000 TLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org./DHS Lead EPA 7420/7421 <input type="checkbox"/>	PH	COD		
			Soil	Water	Other	Ice	Acid																	
INFL		3		X		X	HCl	3/17/92	16:45	X														
Mid-1		3							16:50															
EFFL		3							16:55															
EFFL		3					H <sub>2</sub> SO <sub>4</sub>																	X
EFFL		1					NP																	X
EFFL		1					HNO <sub>3</sub>									X	X							
EFFL		1					NP																	

Method of shipment **Seq. Tech**

Special detection  
 Limit/reporting

20 3 30 21  
 22  
 23

Special QA/QC

Remarks

Lab number

Turnaround time

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

Condition of sample:

Temperature received:

Relinquished by sampler **Mark Clark** Date **3/18/92** Time **15:30**

Received by **Amy Sam**

Relinquished by **Amy Sam** Date **3/18/92** Time **4:06**

Received by laboratory **Jim** Date **3/18** Time **4:06**

Relinquished by



# SEQUOIA ANALYTICAL

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

FILE  
FEB 28 1992

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

Project: #330-06.12, Arco #608

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

2022794	Water, Influent	2/19/92	EPA 5030/8015/8020
2022795	Water, Mid #1	2/19/92	EPA 5030/8015/8020
2022796	Water, Effluent	2/19/92	COD, TSS, pH, 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	Sampled: Feb 19, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript: Water	Received: Feb 19, 1992
Santa Clara, CA 95050	Analysis Method: EPA 5030/8015/8020	Analyzed: Feb 24, 1992
Attention: Lainie Demian	First Sample #: 202-2794	Reported: Feb 27, 1992

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

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons	Benzene	Toluene	Ethyl Benzene	Xylenes
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
202-2794	Influent	370	14	0.34	14	2.4
202-2795	Mid #1	N.D.	N.D.	N.D.	N.D.	N.D.
202-2796	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	Sampled: Feb 19, 1992
1601 Civic Center Drive, Suite 202	Sample Descript: Water, Effluent	Received: Feb 19, 1992
Santa Clara, CA 95050		Analyzed: 2/20-21/92
Attention: Lainie Demian	Lab Number: 202-2796	Reported: Feb 27, 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.	7.1
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*  
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: Lainie Demian

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

QC Sample Group: 2022794 - 96

Reported: Feb 27, 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:	Feb 24, 1992	Feb 24, 1992	Feb 24, 1992	Feb 24, 1992
QC Sample #:	BLK022492	BLK022492	BLK022492	BLK022492

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	10	11	11	32
Matrix Spike % Recovery:	100	110	110	107
Conc. Matrix Spike Dup.:	10	11	10	31
Matrix Spike Duplicate % Recovery:	100	110	100	103
Relative % Difference:	0.0	0.0	9.5	3.2

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

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

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

QC Sample Group: 202-2796

Reported: Feb 27, 1992

## QUALITY CONTROL DATA REPORT

ANALYTE	Chem. Oxy. Demand	pH	Ttl. Sus. Solids	Arsenic
Method:	EPA 410.4	EPA 9040	EPA 160.2	EPA 206.2
Analyst:	Y.Arteaga	Y.Arteaga	Y.Arteaga	F.Contreras
Reporting Units:	mg/L	N.A.	mg/L	mg/L
Date Analyzed:	Feb 21, 1992	Feb 20, 1992	Feb 20, 1992	Feb 25, 1992
QC Sample #:	202-1759	202-2769	202-2769	202-2486
Sample Conc.:	N.D.	6.8	1.0	N.D.
Spike Conc. Added:	75	N.A.	N.A.	0.10
Conc. Matrix Spike:	90	N.A.	N.A.	0.10
Matrix Spike % Recovery:	120	N.A.	N.A.	100
Conc. Matrix Spike Dup.:	90	6.8	1.0	0.11
Matrix Spike Duplicate % Recovery:	120	N.A.	N.A.	110
Relative % Difference:	0.0	0.0	0.0	9.5

SEQUOIA ANALYTICAL

*W. Tague*  
W Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
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 Facility no. <b>608</b>	City (Facility) <b>San Lorenzo</b>	Project manager (Consultant) <b>Lance Geselbracht</b>	Laboratory name <b>Sequicia</b>
ARCO engineer	Telephone no. (ARCO)	Telephone no. (Consultant) <b>(408) 984-6536</b>	Contract number
Consultant name <b>Pacific Env. Group</b>		Fax no. (Consultant) <b>243-3911</b>	
Address (Consultant) <b>1601 Civic Center Dr #202</b>		<b>Santa Clara CA 95050</b>	

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	STEX 602/EPA 8020	BTEX/TPH EPA 801/8020/8015	TPH Modified 8015 Gas Diesel	Oil and Grease 413.1 413.2	TPH EPA 418.1/SM500E	Arsenic PH	EPA 625/8270	TCUP Metals VOA VOA	Semi Metals EPA 6010/7000 TLCL STLC	Lead Org./DHS Lead EPA 7420/7421	COD	TSS	
			Soil	Water	Other	Ice	Acid															
LNFL	3			X		X	HCl	2/19/92	10:00		X					2022794						
Mid-1	1								10:05							95						
EFFL	1								10:10							96						
EFFL	1						H <sub>2</sub> SO <sub>4</sub>														X	
EFFL	1						AMU <sub>3</sub>							X								
EFFL	1						NP															X
EFFL	1																					

Method of shipment

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number

Turnaround time

Priority Rush 1 Business Day

Rush 2 Business Days

Expedited 5 Business Days

Standard 10 Business Days

Condition of sample:		Temperature received:	
Relinquished by sampler <b>Lance Geselbracht</b>	Date <b>2/19/92</b> Time <b>330</b>	Received by <b>M. Dodson</b>	
Relinquished by <b>M. Dodson</b>	Date <b>2/19</b> Time <b>1810</b>	Received by <b>R. V. ...</b>	
Relinquished by	Date	Received by laboratory	Date





# SEQUOIA ANALYTICAL

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

RECEIVED  
JAN 20 1992  
PACIFIC ENVIRONMENTAL GROUP, INC.

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

Project: 330-06.12, Arco 608, San Lorenzo

Enclosed are the results from 4 water samples received at Sequoia Analytical on January 16, 1992. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
2012191	Water, Influent	1/16/92	EPA 5030/8015/8020
2012192	Water, Midpoint	1/16/92	EPA 5030/8015/8020
2012193	Water, Effluent	1/16/92	EPA 5030/8015/8020
2012194	Water, Effluent	1/16/92	Chemical Oxygen Demand Suspended Solids, pH 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

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:	Jan 16, 1992
1601 Civic Center Drive, Suite 202	Matrix Descript:	Water	Received:	Jan 16, 1992
Santa Clara, CA 95050	Analysis Method:	EPA 5030/8015/8020	Analyzed:	Jan 16, 1992
Attention: Lance Geselbracht	First Sample #:	201-2191	Reported:	Jan 28, 1992

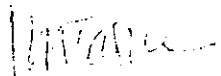
## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons	Benzene	Toluene	Ethyl Benzene	Xylenes
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
201-2191	Influent	N.D.	N.D.	N.D.	N.D.	N.D.
201-2192	Midpoint	N.D.	N.D.	N.D.	N.D.	N.D.
201-2193	Effluent	N.D.	N.D.	N.D.	N.D.	N.D.

<b>Detection Limits:</b>	<b>30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>	<b>0.30</b>
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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

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(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 608, San Lorenzo  
Sample Descript: Water, Effluent  
Lab Number: 201-2194

Sampled: Jan 16, 1992  
Received: Jan 16, 1992  
Analyzed: Jan 17-24, 1992  
Reported: Jan 28, 1992

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Chemical Oxygen Demand.....	20	N.D.
<b>Suspended Solids.....</b>	<b>1.0</b>	<b>4.0</b>
<b>pH.....</b>	<b>N.A.</b>	<b>7.1</b>
Arsenic.....	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

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(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group  
1601 Civic Center Drive, Suite 202  
Santa Clara, CA 95050

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

Attention: Lance Geselbracht

QC Sample Group: 2012191-93

Reported: Jan 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:	Jan 16, 1992	Jan 16, 1992	Jan 16, 1992	Jan 16, 1992
QC Sample #:	GBLK011692	GBLK011692	GBLK011692	GBLK011692

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	10	10	10	30
Conc. Matrix Spike:	8.9	8.8	8.7	26
Matrix Spike % Recovery:	89	88	87	87
Conc. Matrix Spike Dup.:	8.7	8.7	8.6	26
Matrix Spike Duplicate % Recovery:	87	87	86	87
Relative % Difference:	2.3	1.1	1.2	0.0

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

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

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(415) 364-9600 • FAX (415) 364-9233

Pacific Environmental Group  
1601 Civic Center Drive, Suite 202  
Santa Clara, CA 95050

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

Attention: Lance Geselbracht

QC Sample Group: 201-2194

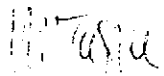
Reported: Jan 28, 1992

## QUALITY CONTROL DATA REPORT

ANALYTE	pH	Suspended Solids	Chemical Oxygen Demand	Arsenic
Method:	EPA 9040	EPA 160.2	EPA 410.4	EPA 206.2
Analyst:	Y. Arteaga	Y. Arteaga	Y. Arteaga	F. Contreras
Reporting Units:	N.A.	mg/L	mg/L	mg/L
Date Analyzed:	Jan 17, 1992	Jan 22, 1992	Jan 22, 1992	Jan 24, 1992
QC Sample #:	201-2232	201-2469	201-2194	201-2691
Sample Conc.:	6.8	65	N.D.	0.015
Spike Conc. Added:	N.A.	N.A.	75	0.10
Conc. Matrix Spike:	N.A.	N.A.	77	0.096
Matrix Spike % Recovery:	N.A.	N.A.	103	81
Conc. Matrix Spike Dup.:	6.8	65	77	0.093
Matrix Spike Duplicate % Recovery:	N.A.	N.A.	103	78
Relative % Difference:	0.0	0.0	0.0	3.2

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

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

CLIENT NAME:  
REC. BY (PRINT):

P. E. G.  
K.M.

MASTER LOG NO. / PAGE:  
DATE OF LOG-IN:

1-16

CIRCLE THE APPROPRIATE RESPONSE

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION (ETC)
1. Custody Seal(s):	Present <input checked="" type="radio"/> Absent	2012191	A-C	Infl.	VOAS	W	1/16	
	Intact / Broken*	92	d	Mid p.				
2. Custody Seal Nos.:		93	d	EFF				
		94	A-C	EFF				
3. Chain-of-Custody Records:	Present <input checked="" type="radio"/> Absent*		D					
			E-F		PL			
4. Traffic Reports or Packing List:	Present <input checked="" type="radio"/> Absent				amber			
5. Airbill:	Airbill / Sticker							
	Present / <input checked="" type="radio"/> Absent							
6. Airbill No.:								
7. Sample Tags:	<input checked="" type="radio"/> Present <input type="radio"/> Absent*							
Sample Tag Nos.:	<input checked="" type="radio"/> Listed <input type="radio"/> Not Listed							
	on Chain-of-Custody							
8. Sample Condition:	<input checked="" type="radio"/> Intact <input type="radio"/> Broken* / <input type="radio"/> Leaking*							
9. Does information on custody reports, traffic reports and sample tags agree?	<input checked="" type="radio"/> Yes <input type="radio"/> No*							
10. Proper Preservatives Used:	<input checked="" type="radio"/> Yes <input type="radio"/> No*							
11. Date Rec. at Lab:	<u>1-16</u>							
12. Time Rec. at Lab:	<u>1545</u>							

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

ARCO Facility no. **608** City (Facility) **San Lorenzo** Project manager (Consultant) **Lance Geselbracht** Laboratory name **Sequoia**  
 ARCO engineer **Brian Frus** Telephone no. (ARCO) **1601 Civic Center Dr. #202, Santa Clara, CA** Telephone no. (Consultant) **(408) 984-6536** Fax no. (Consultant) **243-3911** Contract number **07-073**  
 Consultant name **Pacific Env. Group** Address (Consultant) **1601 Civic Center Dr. #202, Santa Clara, CA**

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 802/EPA 8020	BTEX/TPH Gas EPA 1602/8020/8015	TPH Modified 8015 Gas Diesel	Oil and Grease 413.1 413.2	TPH EPA 418.1/SM503E	EPA 601/8010	TSS PH	TCMP Metals	Semi VOCs	CAN Metals EPA 601/7000 TLC STLC	Lead Org./DHS Lead EPA 7420/7421	Arsenic	COD	
			Soil	Water	Other	Ice	Acid																
INFL		3		X		X	He1	11/16/92	11:12	X													
Mid-1		3							11:14														
EFFL		3							11:16														
EFFL		3					H <sub>2</sub> SO <sub>4</sub>		11:20														
EFFL		1					HNO <sub>3</sub>		11:20												X		
EFFL		1					NP		11:20														
EFFL		1					NP		11:20						X								

Method of shipment  
**Seq. Tech**

Special detection Limit/reporting

Special QA/QC

Remarks

Lab number  
**2012191**

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

Condition of sample: **GOOD** Temperature received: **cool**

Relinquished by sampler **Mark L. Carter** Date **1/16/92** Time **1515** Received by **Ken Follett**

Relinquished by **Ken Follett** Date **1/16/92** Time **1545** Received by **[Signature]**

Relinquished by **[Signature]** Date **1-16** Time **1545** Received by laboratory

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

Name: Mark Ashton Date/Time: 1-16-92 11:30

**Meter Readings**

- |   |               |
|---|---------------|
| 1. Meter reading at effluent totalizer (in gallons) | <u>283289</u> |
| Gallons per minute (gpm)                            | <u>4.1</u>    |
| 2. Hourmeter reading for E-1A                       | <u>9942</u>   |
| 3. Pressure reading at bag filter influent (psi)    | <u>6</u>      |
| 4. Pressure reading at bag filter effluent (psi)    | <u>5</u>      |
| 5. Pressure reading at carbon midpoint 1 (psi)      | <u>4.5</u>    |
| 6. Pressure reading at carbon midpoint 2 (psi)      | <u>1.5</u>    |
| 7. Pressure reading at carbon effluent (psi)        | <u>0</u>      |
| 8. Electric meter reading                           | <u>592</u>    |

**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	<u>58.0</u>	<u>7.30</u>
MID-1	<u>64.1</u>	<u>7.13</u>
EFFL	<u>67.5</u>	<u>7.15</u>

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 Pressure @ well head 24 psi

Changed bag filter

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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	10:31		13.99	
MW-7	10:24		13.33	
MW-8	10:16		13.40	
MW-9	10:14		12.45	
MW-10	10:05		12.55	
MW-11	10:08		13.28	
MW-12	N/A			
MW-13	10:28		15.70	
MW-14	9:57		11.34	
MW-15	9:50		12.80	
MW-16	9:53		13.09	
MW-17	10:01		13.92	
E-1A	10:36		23.68	

used Elect.  
Ind. #8

Probe used: IF Probe MMC-34

- ~~MW-18~~
- ~~MW-19~~
- ~~MW-20~~
- ~~MW-21~~
- ~~MW-22~~
- ~~MW-23~~

Name: MARK Ashton Date/Time: 2/19/92 8:45

**Meter Readings**

- |   |               |
|---|---------------|
| 1. Meter reading at effluent totalizer (in gallons) | 485200        |
| Gallons per minute (gpm)                            | <u>4.5</u>    |
| 2. Hourmeter reading for E-1A                       | <u>1808.6</u> |
| 3. Pressure reading at bag filter influent (psi)    | <u>2</u>      |
| 4. Pressure reading at bag filter effluent (psi)    | <u>2.75</u>   |
| 5. Pressure reading at carbon midpoint 1 (psi)      | <u>4.5</u>    |
| 6. Pressure reading at carbon midpoint 2 (psi)      | <u>1.5</u>    |
| 7. Pressure reading at carbon effluent (psi)        | <u>0</u>      |
| 8. Electric meter reading                           | <u>1049</u>   |

**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	<u>67.6</u>	<u>6.78</u>
MID-1	<u>67.4</u>	<u>6.70</u>
EFFL	<u>67.9</u>	<u>6.37</u>

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

MA  
MA  
MA

Comments 6" of standing water in treatment area,  
removed by opening drain. One inch of  
standing water in E-1A  
Pressure @ E-1A 27 psi Bag Filter Change  
INFL taken @ 10:00  
mid-1 " " 10:05  
EFFL " " 10:10

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	11:46		13.50	
MW-7	11:36		12.16	
MW-8	11:49		11.26	
MW-9	11:30		10.25	
MW-10	11:24		10.50	
MW-11	11:27		11.29	
MW-13	11:39		13.60	
MW-14	11:20		9.32	
MW-15	11:06		10.85	
MW-16	11:10		10.99	
MW-17	11:15		11.65	
E-1A	11:52		18.71 / 17.51	

Probe used: E I # 8

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)<br>Gallons per minute (gpm) | $\begin{array}{r} 662847 \\ \hline 4.0 \end{array}$ |
| 2. Hourmeter reading for E-1A   | $\begin{array}{r} 2461.7 \\ \hline \end{array}$     |
| 3. Pressure reading at bag filter influent (psi)                                | $\begin{array}{r} 6 \\ \hline 4 \end{array}$        |
| 4. Pressure reading at bag filter effluent (psi)                                | $\begin{array}{r} 3.5 \\ \hline \end{array}$        |
| 5. Pressure reading at carbon midpoint 1 (psi)                                  | $\begin{array}{r} 1.5 \\ \hline \end{array}$        |
| 6. Pressure reading at carbon midpoint 2 (psi)                                  | $\begin{array}{r} 0 \\ \hline \end{array}$          |
| 7. Pressure reading at carbon effluent (psi)                                    | $\begin{array}{r} 1432 \\ \hline \end{array}$       |
| 8. Electric meter reading   |   |

**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	<u>70.0</u>	<u>7.59</u>
MID-1	<u>67.6</u>	<u>7.21</u>
EFFL	<u>66.1</u>	<u>7.21</u>

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<sub>2</sub>O  
sampled INFL @ 16:45, mid-1 @ 16:50, EFFL @ 16:55

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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: \_\_\_\_\_

**FIELD REPORT**

**DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY**

PROJECT No.: 330-06-05 LOCATION: 17601 Hesperian DATE: 3-17-92  
S.L.  
 CLIENT/STATION NO. ARCO 0608 FIELD TECHNICIAN: RE DAY OF WEEK: Tue

**PROBE TYPE/ID No.**  
 Oil/Water IF \_\_\_\_\_  
 H<sub>2</sub>O 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	SEPARATE-PHASE HYDROCARBONS (SPH)									
											SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	Fresh	Weathered	Gas	Oil	VISCOSITY			LIQUID REMOVED (gallons)
																	Light	Medium	Heavy	
	MW 5	750						14.0	11.90 →	/										
ND	MW 7	753						18.8	11.86 →	/										
ND	MW 8	802						21.7	10.90 →	/										
ND	MW 9	867						18.8	10.01 →	/										
3300	MW 10	906						23.0	10.12 →	/										
ND	MW 11	819						19.2	10.81 →	/										
ND	MW 13	748						23.3	13.20 →	/										
ND	MW 14	818						23.2	9.04	/										
ND	MW 15	822						23.6	10.41 →	/										

Comments: MW 14: H<sub>2</sub>O level rising quickly

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# FIELD REPORT

## DEPTH TO WATER/SEPARATE-PHASE HYDROCARBON SURVEY

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperia DATE: 3-17-92  
S.L.  
 CLIENT/STATION NO.: ARCO 0608 FIELD TECHNICIAN: RJ DAY OF WEEK: Tue

PROBE TYPE/ID No.  
 Oil/Water IF \_\_\_\_\_  
 H<sub>2</sub>O 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	SEPARATE-PHASE HYDROCARBONS (SPH)																
											SPH Depth (feet) TOB/TOC	SPH Thickness (feet)	Fresh	Weathered	Gas	Oil	VISCOSITY			LIQUID REMOVED (gallons)							
																	Light	Medium	Heavy	SPH	H <sub>2</sub> O						
25	MW16	8 <sup>55</sup>						22.6	10.85	→	/																
316	MW17	9 <sup>02</sup>						23.5	11.71	→	/																
10	MW18	8 <sup>51</sup>						21.7	9.73	→	/																
	MW19	8 <sup>47</sup>						21.5	9.22	→	/																
	MW20	8 <sup>44</sup>						21.9	9.44	→	/																
	MW21	8 <sup>38</sup>						22.0	9.55	→	/																
	MW22	8 <sup>32</sup>						21.7	10.05	→	/																
	MW23	8 <sup>27</sup>						21.9	11.20	→	/																
	E-1A	9 <sup>19</sup>						/	23.10	→	/																

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW5  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 11.90 TOB        TOC         
 Total depth: 14.0 TOB        TOC         
 Date: 3-17-92 Time (2400): 758

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator #3  
 Other:       

CASING

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

GAL/

LINEAR FT.

SAMPLE TYPE

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other:       

TD 14.0 - DTW = 11.90 Gal/Linear x Foot 0.66 = 1.3 Number of x Casings 5 Calculated = Purge 6.9

DATE PURGED: 3-17-92 START: 10<sup>15</sup> END (2400 hr): 10<sup>40</sup> PURGED BY: RI  
 DATE SAMPLED: 3-18-92 START: 10<sup>15</sup> END (2400 hr): 10<sup>25</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>10<sup>29</sup></u>	<u>1.7</u>	<u>6.58</u>	<u>991</u>	<u>61.4</u>	<u>Grey</u>	<u>—</u>	<u>mod.</u>
<u>10<sup>32</sup></u>	<u>3.426</u>	<u>6.67</u>	<u>1021</u>	<u>63.4</u>	<u>"</u>	<u>—</u>	<u>slight</u>
	<u>5.1</u>						
	<u>6.9</u>						

Pumped dry  Yes  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW: 11.92 TOB/TOC 6.64 865 62.3 clear — Mod.

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
<u>MW5</u>	<u>3-18-92</u>	<u>10<sup>15</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: Dry @ 2.5 gal.  
3-17-92: 12.61 @ 10<sup>40</sup> = 1.39 66% recharge  
3-18-92 11.92 @ 10<sup>15</sup> = 2.08 99% recharge

SIGNATURE: RI





WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW7  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC  
 Depth to water: 11.86 TOB        TOC  
 Total depth: 18.8 TOB        TOC  
 Date: 3-17-92 Time (2400): 753

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other:       

CASING DIAMETER

2 \_\_\_\_\_ 0.17  
 3 \_\_\_\_\_ 0.38  
 4 \_\_\_\_\_ 0.66  
 4.5 \_\_\_\_\_ 0.83  
 5 \_\_\_\_\_ 1.02  
 6 \_\_\_\_\_ 1.5  
 8 \_\_\_\_\_ 2.6

GAL/ LINEAR FT.

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

TD 18.8 - DTW = 11.86 Gal/Linear x Foot .38 = 2.6 Number of x Casings 5 Calculated = Purge 13.2

DATE PURGED: 3-17-92 START: 940 END (2400 hr): 10<sup>10</sup> PURGED BY: RI  
 DATE SAMPLED:        START: 10<sup>15</sup> END (2400 hr): 10<sup>25</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>9:52</u>	<u>3.3</u>	<u>7.62</u>	<u>814</u>	<u>63.4</u>	<u>1200</u>	<u>      </u>	<u>      </u>
<u>9<sup>55</sup></u>	<u>6.6</u>	<u>6.98</u>	<u>818</u>	<u>63.0</u>	<u>      </u>	<u>      </u>	<u>      </u>
<u>9<sup>58</sup></u>	<u>9.9</u>	<u>6.86</u>	<u>811</u>	<u>62.6</u>	<u>      </u>	<u>      </u>	<u>      </u>
<u>10<sup>01</sup></u>	<u>13.2</u>	<u>6.82</u>	<u>816</u>	<u>62.7</u>	<u>      </u>	<u>      </u>	<u>      </u>

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
<u>MW7</u>	<u>3-17-92</u>	<u>10<sup>15</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:       

SIGNATURE:       



PACIFIC ENVIRONMENTAL GROUP, INC.

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW8  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:      TOB      TOC       
 Depth to water: 10.90 TOB      TOC       
 Total depth: 21.7 TOB      TOC       
 Date: 3-17-92 Time (2400): 802

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator #3  
 Other:     

CASING DIAMETER

- 2 \_\_\_\_\_ 0.17
- 3 \_\_\_\_\_ 0.38
- 4 \_\_\_\_\_ 0.66
- 4.5 \_\_\_\_\_ 0.83
- 5 \_\_\_\_\_ 1.02
- 6 \_\_\_\_\_ 1.5
- 8 \_\_\_\_\_ 2.6

GAL/ LINEAR FT.

SAMPLE TYPE

- Groundwater
- Duplicate
- Extraction well
- Trip blank
- Field blank
- Equipment blank
- Other:

TD 91.7 - DTW = 10.90 Gal/Linear x Foot .38 = 41 Number of x Casings 5 = Calculated = Purge 20.5

DATE PURGED: 3-17-92 START: 11:5 END (2400 hr): 11:40 PURGED BY: RI  
 DATE SAMPLED:      START: 11:45 END (2400 hr): 11:55 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	EC. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>11:24</u>	<u>5.1</u>	<u>6.52</u>	<u>823</u>	<u>68.5</u>	<u>tan</u>	<u>    </u>	<u>mod.</u>
<u>11:28</u>	<u>10.2</u>	<u>6.52</u>	<u>820</u>	<u>11</u>	<u>Clear</u>	<u>    </u>	<u>    </u>
<u>11:32</u>	<u>15.3</u>	<u>6.49</u>	<u>820</u>	<u>68.0</u>	<u>    </u>	<u>    </u>	<u>    </u>
<u>11:36</u>	<u>20.5</u>	<u>6.49</u>	<u>824</u>	<u>67.5</u>	<u>    </u>	<u>    </u>	<u>    </u>

Pumped dry Yes / No  
 FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW:      TOB/TOC     

PURGING EQUIPMENT/I.D. #  
 Bailer:       Airlift:       
 Centrifugal: #3  Dedicated:       
 Other:     

SAMPLING EQUIPMENT/I.D. #  
 Bailer:       
 Dedicated:       
 Other:     

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW8</u>	<u>3-17-92</u>	<u>11:45</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: sulfur odor

SIGNATURE: RI



WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW9  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid: - TOB - TOC  
 Depth to water: 10.01 TOB - TOC  
 Total depth: 18.8 TOB - TOC  
 Date: 3-17-92 Time (2400): 807

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator #3  
 Other: \_\_\_\_\_

CASING

DIAMETER

2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 4.5 \_\_\_\_\_  
 5 \_\_\_\_\_  
 6 \_\_\_\_\_  
 8 \_\_\_\_\_

GAL/

LINEAR FT.

0.17  
 0.38  
 0.66  
 0.83  
 1.02  
 1.5  
 2.6

SAMPLE TYPE

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other: \_\_\_\_\_

TD 18.8 - DTW = 10.01 Gal/Linear 0.38 x Foot = 3.3 Number of x Casings 5 Calculated = Purge 16.7

DATE PURGED: 3-17-92 START: 12<sup>00</sup> END (2400 hr): 12<sup>27</sup> PURGED BY: RI  
 DATE SAMPLED: ↓ START: 12<sup>30</sup> END (2400 hr): 12<sup>40</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>12<sup>05</sup></u>	<u>4.2</u>	<u>6.64</u>	<u>897</u>	<u>70.1</u>	<u>clean</u>	<u>-</u>	<u>Ø</u>
<u>12<sup>10</sup></u>	<u>8.4</u>	<u>6.65</u>	<u>869</u>	<u>68.8</u>	<u>"</u>	<u>/</u>	<u>Ø</u>
<u>12<sup>14</sup></u>	<u>12.6</u>	<u>6.62</u>	<u>886</u>	<u>70.6</u>	<u>"</u>	<u>/</u>	<u>Ø</u>
<u>12<sup>16</sup></u>	<u>16.7</u>	<u>6.62</u>	<u>895</u>	<u>71.5</u>	<u>"</u>	<u>/</u>	<u>Ø</u>

Pumped dry Yes NO

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

PURGING EQUIPMENT/I.D. #

Bailer: \_\_\_\_\_  
 Centrifugal: #3  
 Other: \_\_\_\_\_  
 Airlift: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_

SAMPLING EQUIPMENT/I.D. #

Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-9</u>	<u>3-17-92</u>	<u>12<sup>30</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



PACIFIC ENVIRONMENTAL GROUP, INC.

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06-05 LOCATION: 17601 Hesperian WELL ID #: MW10  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid: \_\_\_\_\_ TOB \_\_\_\_\_ TOC \_\_\_\_\_  
 Depth to water: 0.10 TOB \_\_\_\_\_ TOC \_\_\_\_\_  
 Total depth: 23.0 TOB \_\_\_\_\_ TOC \_\_\_\_\_  
 Date: 7-15-92 Time (2400): 1445

Probe Type  Oil/Water interface  
 and  Electronic indicator #3  
 I.D. #  Other: \_\_\_\_\_

**CASING DIAMETER**

- 2 \_\_\_\_\_ 0.17
- 3 \_\_\_\_\_ 0.38
- 4 \_\_\_\_\_ 0.66
- 4.5 \_\_\_\_\_ 0.83
- 5 \_\_\_\_\_ 1.02
- 6 \_\_\_\_\_ 1.5
- 8 \_\_\_\_\_ 2.6

**GAL/ LINEAR FT.**

**SAMPLE TYPE**

- Groundwater
- Duplicate
- Extraction well
- Trip blank
- Field blank
- Equipment blank
- Other: \_\_\_\_\_

TD 23.0 - DTW = 10.0 Gal/Linear x Foot 438 = 4.9 Number of x Casings 5 Calculated = Purge 24.5

DATE PURGED: 3-18-92 START: 1400 END (2400 hr): 1425 PURGED BY: RI  
 DATE SAMPLED: 7-15-92 START: 1430 END (2400 hr): 1440 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>1400</u>	<u>6.1</u>	<u>6.55</u>	<u>856</u>	<u>66.5</u>	<u>grey</u>	<u>-</u>	<u>strong</u>
<u>1415</u>	<u>12.2</u>	<u>6.50</u>	<u>858</u>	<u>66.8</u>	<u>clear</u>	<u>-</u>	<u>"</u>
<u>1417</u>	<u>18.3</u>	<u>6.50</u>	<u>855</u>	<u>66.7</u>	<u>"</u>	<u>-</u>	<u>"</u>
<u>1419</u>	<u>24.5</u>	<u>6.50</u>	<u>857</u>	<u>66.6</u>	<u>"</u>	<u>-</u>	<u>"</u>

Pumped dry Yes /  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

PURGING EQUIPMENT/I.D. #  Bailer: \_\_\_\_\_  Airlift: \_\_\_\_\_  
 Centrifugal: #3  Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLING EQUIPMENT/I.D. #  Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW10</u>	<u>3-18-92</u>	<u>1430</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: M1  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid:        TOB        TOC         
 Depth to water: 10.81 TOB        TOC         
 Total depth: 19.2 TOB        TOC         
 Date: 3-17-92 Time (2400): 8:14

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other;       

**CASING DIAMETER**      **GAL/LINEAR FT.**

2 \_\_\_\_\_ 0.17  
 3 \_\_\_\_\_ 0.38  
 4 \_\_\_\_\_ 0.66  
 4.5 \_\_\_\_\_ 0.83  
 5 \_\_\_\_\_ 1.02  
 6 \_\_\_\_\_ 1.5  
 8 \_\_\_\_\_ 2.6

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other;       

TD 19.2 - DTW = 10.81 Gal/Linear x Foot 0.38 = 3.2 Number of x Casings 5 Calculated = Purge 15.7

DATE PURGED: 3-17-92 START: 12<sup>40</sup> END (2400 hr): 13<sup>10</sup> PURGED BY: RI  
 DATE SAMPLED:        START: 13<sup>15</sup> END (2400 hr): 13<sup>30</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>12<sup>54</sup></u>	<u>4</u>	<u>6.58</u>	<u>847</u>	<u>65.7</u>	<u>tan</u>	<u>      </u>	<u>      </u>
<u>12<sup>59</sup></u>	<u>8</u>	<u>6.53</u>	<u>848</u>	<u>66.0</u>	<u>"</u>	<u>      </u>	<u>      </u>
<u>13<sup>10</sup></u>	<u>12</u>	<u>6.54</u>	<u>850</u>	<u>65.7</u>	<u>"</u>	<u>      </u>	<u>      </u>
<u>13<sup>14</sup></u>	<u>16</u>	<u>6.51</u>	<u>852</u>	<u>66.0</u>	<u>clear</u>	<u>      </u>	<u>      </u>

Pumped dry Yes /  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

**PURGING EQUIPMENT/I.D. #**  
 Bailer: \_\_\_\_\_  
 Centrifugal: # 3  
 Other: \_\_\_\_\_

**SAMPLING EQUIPMENT/I.D. #**  
 Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>M1</u>	<u>3-17-92</u>	<u>13<sup>15</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



# FIELD DATA SHEET

## WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06-05 LOCATION: 17601 Hesperian San Lorenzo WELL ID #: MW 13  
 CLIENT/STATION No.: ARCO 6608 FIELD TECHNICIAN: RI

### WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 13.20 TOB        TOC         
 Total depth: 23.3 TOB        TOC         
 Date: 3-17-92 Time (2400): 7:45

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other; \_\_\_\_\_

### CASING DIAMETER

2 \_\_\_\_\_ 0.17  
 3 \_\_\_\_\_ 0.38  
 4 \_\_\_\_\_ 0.66  
 4.5 \_\_\_\_\_ 0.83  
 5 \_\_\_\_\_ 1.02  
 6 \_\_\_\_\_ 1.5  
 8 \_\_\_\_\_ 2.6

### GAL/ LINEAR FT.

**SAMPLE TYPE**  
 Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other; \_\_\_\_\_

TD 23.3 - DTW = 13.20 Gal/Linear x Foot 3.838 = 3.838 Number of x Casings 5 Calculated = Purge 19.2

DATE PURGED: 3-17-92 START: 10<sup>40</sup> END (2400 hr): 11<sup>10</sup> PURGED BY: RI  
 DATE SAMPLED:        START: 11<sup>10</sup> END (2400 hr): 11<sup>20</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>10<sup>45</sup></u>	<u>4.8</u>	<u>6.82</u>	<u>863</u>	<u>67.5</u>	<u>tan</u>	<u>      </u>	<u>Ø</u>
<u>10<sup>49</sup></u>	<u>9.6</u>	<u>6.75</u>	<u>876</u>	<u>68.4</u>	<u>clear</u>	<u>      </u>	<u>Ø</u>
<u>10<sup>54</sup></u>	<u>14.4</u>	<u>6.73</u>	<u>874</u>	<u>68.3</u>	<u>"</u>	<u>      </u>	<u>Ø</u>
<u>10<sup>59</sup></u>	<u>19.2</u>	<u>6.74</u>	<u>885</u>	<u>68.8</u>	<u>"</u>	<u>      </u>	<u>Ø</u>

Pumped dry Yes / No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

**PURGING EQUIPMENT/I.D. #**  
 Bailer: \_\_\_\_\_  
 Centrifugal: #3  
 Other: \_\_\_\_\_

**SAMPLING EQUIPMENT/I.D. #**  
 Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW 13</u>	<u>3-17-92</u>	<u>11<sup>10</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian San Lorenzo WELL ID #: MW 14  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid: - TOB - TOC -  
 Depth to water: 9.04 TOB - TOC -  
 Total depth: 23.2 TOB - TOC -  
 Date: 3-17-92 Time (2400): 8:19

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other;

**CASING DIAMETER GAL/LINEAR FT.**

- 2 \_\_\_\_\_ 0.17
- 3 \_\_\_\_\_ 0.38
- 4 \_\_\_\_\_ 0.66
- 4.5 \_\_\_\_\_ 0.83
- 5 \_\_\_\_\_ 1.02
- 6 \_\_\_\_\_ 1.5
- 8 \_\_\_\_\_ 2.6

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

TD 23.2 - DTW = 9.04 Gal/Linear 38 x Foot = 5.4 Number of 5 x Casings = Calculated = Purge 26.9

DATE PURGED: 3-17-92 START: 14<sup>30</sup> END (2400 hr): 1505 PURGED BY: RI  
 DATE SAMPLED: ↓ START: 15<sup>05</sup> END (2400 hr): 15<sup>20</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>1440</u>	<u>6.7</u>	<u>6.73</u>	<u>789</u>	<u>66.9</u>	<u>tan</u>	<u>-</u>	<u>⊕</u>
<u>1444</u>	<u>13.4</u>	<u>6.73</u>	<u>803</u>	<u>67.4</u>	<u>"</u>	<u>-</u>	<u>⊕</u>
<u>14<sup>51</sup></u>	<u>20.1</u>	<u>6.72</u>	<u>785</u>	<u>66.7</u>	<u>"</u>	<u>-</u>	<u>⊕</u>
<u>14<sup>55</sup></u>	<u>26.9</u>	<u>6.67</u>	<u>811</u>	<u>67.3</u>	<u>clay</u>	<u>-</u>	<u>⊕</u>

Pumped dry Yes / No

**FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:**

DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

**PURGING EQUIPMENT/I.D. #**

- Bailer: \_\_\_\_\_
- Centrifugal: # 3
- Other: \_\_\_\_\_
- Airlift: \_\_\_\_\_
- Dedicated: \_\_\_\_\_

**SAMPLING EQUIPMENT/I.D. #**

- Bailer: \_\_\_\_\_
- Dedicated: \_\_\_\_\_
- Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW14</u>	<u>3-17-92</u>	<u>15<sup>05</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW-15  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RT

**WELL INFORMATION**

Depth to Liquid:        TOB        TOC         
 Depth to water: 10.42 TOB        TOC         
 Total depth: 23.5 TOB        TOC         
 Date: 3-18-92 Time (2400): 12:15

Probe Type  Oil/Water interface         
 and  Electronic indicator #3  
 I.D. #  Other;       

**CASING DIAMETER**

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

**GAL/ LINEAR FT.**

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other;       

TD 23.6 - DTW = 10.42 Gal/Linear x Foot .38 = 5 Number of x Casings 5 Calculated = Purge 25

DATE PURGED: 3-18-92 START: 12:10 END (2400 hr): 12:40 PURGED BY: RT  
 DATE SAMPLED:        START: 12:40 END (2400 hr): 12:50 SAMPLED BY: RT

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>12:19</u>	<u>6.65</u>	<u>6.54</u>	<u>832</u>	<u>65.2</u>	<u>tan</u>	<u>      </u>	<u>mod.</u>
<u>12:21</u>	<u>12.50</u>	<u>6.52</u>	<u>852</u>	<u>66.4</u>	<u>tan</u>	<u>      </u>	<u>      </u>
<u>12:26</u>	<u>18.75</u>	<u>6.50</u>	<u>875</u>	<u>68.5</u>	<u>clear</u>	<u>      </u>	<u>      </u>
<u>12:30</u>	<u>25</u>	<u>6.49</u>	<u>890</u>	<u>69.5</u>	<u>      </u>	<u>      </u>	<u>      </u>

Pumped dry Yes /  No

**FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:**

DTW:        TOB/TOC       

**PURGING EQUIPMENT/I.D. #**

Bailer:         Airlift:         
 Centrifugal: #3  Dedicated:         
 Other:       

**SAMPLING EQUIPMENT/I.D. #**

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-15</u>	<u>3-18-92</u>	<u>12:40</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE: RT





**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW #16  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 10.86 TOB        TOC         
 Total depth: 22.6 TOB        TOC         
 Date: 3-18-92 Time (2400): 8:55 11:00

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator #3  
 Other:       

CASING

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

SAMPLE TYPE

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other:       

TD 22.6 - DTW = 10.86 Gal/Linear x Foot 0.38 = 4.5 Number of x Casings 5 Calculated = Purge 22.3

DATE PURGED: 3-18-92 START: 11:00 END (2400 hr): 11:30 PURGED BY: RI  
 DATE SAMPLED:        START: 11:35 END (2400 hr): 11:40 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>11:14</u>	<u>5.6</u>	<u>6.61</u>	<u>810</u>	<u>65.9</u>	<u>brown</u>	<u>      </u>	<u>9</u>
<u>11:17</u>	<u>11.2</u>	<u>6.60</u>	<u>820</u>	<u>66.2</u>	<u>tan</u>	<u>      </u>	<u>9</u>
<u>11:21</u>	<u>16.8</u>	<u>6.63</u>	<u>853</u>	<u>69.0</u>	<u>clear</u>	<u>      </u>	<u>9</u>
<u>11:25</u>	<u>22.3</u>	<u>6.62</u>	<u>857</u>	<u>68.9</u>	<u>"</u>	<u>      </u>	<u>9</u>

Pumped dry Yes /  No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. #

Bailer:         Airlift:         
 Centrifugal: #3  Dedicated:         
 Other:       

SAMPLING EQUIPMENT/I.D. #

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW #16</u>	<u>3-18-92</u>	<u>11:35</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE: RI



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: Mw 17  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid:        TOB        TOC         
 Depth to water: 11.74 TOB        TOC         
 Total depth: 23.5 TOB        TOC         
 Date: 3-18-92 Time (2400): 13<sup>00</sup>

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other:       

**CASING**

**DIAMETER** **GAL/ LINEAR FT.**

<input type="checkbox"/>	2	_____	0.17
<input checked="" type="checkbox"/>	3	_____	0.38
<input type="checkbox"/>	4	_____	0.66
<input type="checkbox"/>	4.5	_____	0.83
<input type="checkbox"/>	5	_____	1.02
<input type="checkbox"/>	6	_____	1.5
<input type="checkbox"/>	8	_____	2.6

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other:       

TD 23.5 - DTW = 11.74 Gal/Linear x Foot 38 = 4.5 Number of x Casings 5 Calculated = Purge 22.3

DATE PURGED: 3-18-92 START: 13<sup>00</sup> END (2400 hr): 13<sup>40</sup> PURGED BY: RI  
 DATE SAMPLED: ↓ START: 13<sup>40</sup> END (2400 hr): 13<sup>55</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
13 <sup>12</sup>	5.6	6.75	845	69.3	tan	-	Slight
13 <sup>19</sup>	11.2	6.78	865	69.1	"	-	"
13 <sup>24</sup>	16.8	6.75	867	69.1	clear	-	"
13 <sup>29</sup>	22.3	6.75	882	70.5	"	-	"

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

Pumped dry Yes /  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

**PURGING EQUIPMENT/I.D. #**

Bailer:         Airlift:         
 Centrifugal: # 3  Dedicated:         
 Other:       

**SAMPLING EQUIPMENT/I.D. #**

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
Mw 17	3-18-92	13 <sup>40</sup>	3	40ml	G	HCl	Gas/BTEX

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: Well between 11<sup>30</sup>-1pm (church/school)

SIGNATURE: RI



PACIFIC ENVIRONMENTAL GROUP, INC.

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No. : 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW18  
San Lorenzo  
 CLIENT/STATION No. : ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid:        TOB        TOC         
 Depth to water: 9.76 TOB        TOC         
 Total depth: 21.7 TOB        TOC         
 Date: 3-18-92 Time (2400): 9:35

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator # 3  
 Other:       

**CASING**

DIAMETER	GAL/ LINEAR FT.
<input type="checkbox"/> 2	0.17
<input checked="" type="checkbox"/> 3	0.38
<input type="checkbox"/> 4	0.66
<input type="checkbox"/> 4.5	0.83
<input type="checkbox"/> 5	1.02
<input type="checkbox"/> 6	1.5
<input type="checkbox"/> 8	2.6

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other:       

TD 21.7 - DTW = 9.76 Gal/Linear x Foot .38 = 4.5 Number of x Casings 5 = Calculated Purge 22.7

DATE PURGED: 3-18-92 START: 9:30 END (2400 hr): 10:00 PURGED BY: RI  
 DATE SAMPLED:        START: 10 END (2400 hr): 10:20 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>9:40</u>	<u>5.7</u>	<u>6.75</u>	<u>796</u>	<u>63.8</u>	<u>tan</u>	<u>—</u>	<u>✓</u>
<u>9:42</u>	<u>11.4</u>	<u>6.75</u>	<u>813</u>	<u>64.5</u>	<u>tan</u>	<u>—</u>	<u>✓</u>
<u>9:46</u>	<u>17.1</u>	<u>6.76</u>	<u>824</u>	<u>65.4</u>	<u>tan</u>	<u>—</u>	<u>✓</u>
<u>9:50</u>	<u>22.7</u>	<u>6.73</u>	<u>829</u>	<u>66.0</u>	<u>Clear</u>	<u>✓</u>	<u>✓</u>

Pumped dry Yes /  No

**FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:**

DTW:        TOB/TOC       

**PURGING EQUIPMENT/I.D. #**

Bailer:         Airlift:         
 Centrifugal: # 3  Dedicated:         
 Other:       

**SAMPLING EQUIPMENT/I.D. #**

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW18</u>	<u>3-18-92</u>	<u>10:00</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE: RI



PACIFIC ENVIRONMENTAL GROUP, INC.

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW19  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 9.30 TOB        TOC         
 Total depth: 21.5 TOB        TOC         
 Date: 3-18-92 Time (2400): 8:50

Probe Type  Oil/Water interface  
 and  Electronic indicator # 3  
 I.D. #  Other:       

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

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

TD 21.5 - DTW = 9.30 Gal/Linear 38 x Foot = 4.6 Number of 5 x Casings = Calculated = Purge 23.2

DATE PURGED: 3-18-92 START: 8:45 END (2400 hr): 9:20 PURGED BY: RI  
 DATE SAMPLED: ↓ START: 9:20 END (2400 hr): 9:35 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>8:58</u>	<u>5.8</u>	<u>6.82</u>	<u>792</u>	<u>62.3</u>	<u>tan</u>	<u>—</u>	<u>slight</u>
<u>9:00</u>	<u>11.6</u>	<u>6.75</u>	<u>827</u>	<u>65.2</u>	<u>tan</u>	<u>—</u>	<u>slight</u>
<u>9:04</u>	<u>17.4</u>	<u>6.78</u>	<u>840</u>	<u>66.0</u>	<u>clear</u>	<u>—</u>	<u>"</u>
<u>9:09</u>	<u>23.2</u>	<u>6.77</u>	<u>828</u>	<u>66.1</u>	<u>clear</u>	<u>—</u>	<u>"</u>

Pumped dry Yes /  No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. #

Bailer:         Airlift:         
 Centrifugal: #3  Dedicated:         
 Other:       

SAMPLING EQUIPMENT/I.D. #

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW19</u>	<u>3-18-92</u>	<u>9:20</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE:       



PACIFIC ENVIRONMENTAL GROUP, INC.

**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW20  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 9.58 TOB        TOC         
 Total depth: 21.9 TOB        TOC         
 Date: 3-18-92 Time (2400): 8<sup>10</sup>

Probe Type  Oil/Water interface  
 and  Electronic indicator # 3  
 I.D. #  Other:       

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

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

TD 21.9 - DTW = 9.58 Gal/Linear 0.38 x Foot = 4.7 Number of 5 x Casings = Calculated = Purge 23.4

DATE PURGED: 3-18-92 START: 8<sup>00</sup> END (2400 hr): 8<sup>40</sup> PURGED BY: RI  
 DATE SAMPLED:        START: 8<sup>40</sup> END (2400 hr): 9<sup>00</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>8<sup>10</sup></u>	<u>5.9</u>	<u>6.53</u>	<u>804</u>	<u>66.7</u>	<u>tan</u>	<u>      </u>	<u>      </u>
<u>8<sup>13</sup></u>	<u>11.8</u>	<u>6.53</u>	<u>805</u>	<u>67.3</u>	<u>clear</u>	<u>      </u>	<u>      </u>
<u>8<sup>24</sup></u>	<u>17.7</u>	<u>6.84</u>	<u>791</u>	<u>65.2</u>	<u>clear</u>	<u>      </u>	<u>      </u>
<u>8<sup>30</sup></u>	<u>23.4</u>	<u>6.86</u>	<u>794</u>	<u>65.0</u>	<u>      </u>	<u>      </u>	<u>      </u>

Pumped dry Yes /  No

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

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. #

Bailer:         Airlift:         
 Centrifugal: #3  Dedicated:         
 Other:       

SAMPLING EQUIPMENT/I.D. #

Bailer:         
 Dedicated:         
 Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW20</u>	<u>3-18-92</u>	<u>8<sup>40</sup></u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE:       



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW 21  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

**WELL INFORMATION**

Depth to Liquid: - TOB - TOC  
 Depth to water: 9.58 TOB - TOC  
 Total depth: 22.0 TOB - TOC  
 Date: 3-18-92 Time (2400): 7:25

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator H3  
 Other: \_\_\_\_\_

**CASING DIAMETER**

2 \_\_\_\_\_ 0.17  
 3 \_\_\_\_\_ 0.38  
 4 \_\_\_\_\_ 0.66  
 4.5 \_\_\_\_\_ 0.83  
 5 \_\_\_\_\_ 1.02  
 6 \_\_\_\_\_ 1.5  
 8 \_\_\_\_\_ 2.6

**GAL/LINEAR FT.**

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other: \_\_\_\_\_

TD 22.0 - DTW = 9.58 Gal/Linear x Foot 0.38 = 4.7 Number of x Casings 5 = Purge 23.6

DATE PURGED: 3-18-92 START: 7:20 END (2400 hr): 7:55 PURGED BY: RI  
 DATE SAMPLED: ↓ START: 8:00 END (2400 hr): 8:15 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	EC. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>7:32</u>	<u>5.9</u>	<u>6.82</u>	<u>850</u>	<u>65.7</u>	<u>tan</u>	<u>-</u>	<u>Ø</u>
<u>7:37</u>	<u>11.8</u>	<u>6.50</u>	<u>838</u>	<u>65.0</u>	<u>clear</u>	<u>-</u>	<u>Ø</u>
<u>7:42</u>	<u>17.7</u>	<u>6.78</u>	<u>845</u>	<u>65.9</u>	<u>clear</u>	<u>-</u>	<u>Ø</u>
<u>7:47</u>	<u>23.6</u>	<u>6.78</u>	<u>852</u>	<u>66.4</u>	<u>clear</u>	<u>-</u>	<u>Ø</u>

Pumped dry Yes /  No

**FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:**

DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

**PURGING EQUIPMENT/I.D. #**

Bailer: \_\_\_\_\_  
 Centrifugal: H3  
 Other: \_\_\_\_\_  
 Airlift: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_

**SAMPLING EQUIPMENT/I.D. #**

Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW-21</u>	<u>3-18-92</u>	<u>8:00</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



**WATER SAMPLE FIELD DATA SHEET**

PROJECT No.: 330-06-05 LOCATION: 17601 Hesperian WELL ID #: 14W22  
San Lorenzo

CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 10.05 TOB        TOC         
 Total depth: 21.7 TOB        TOC         
 Date: 3-17-92 Time (2400): 832

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator #3  
 Other:       

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

SAMPLE TYPE  
 Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other: \_\_\_\_\_

TD 21.7 - DTW = 10.05 Gal/Linear x Foot .38 = 4.4 Number of x Casings 5 Calculated = Purge 22.1

DATE PURGED: 3-17-92 START: 1535 END (2400 hr): 1610 PURGED BY: RI  
 DATE SAMPLED:        START: 1610 END (2400 hr): 1625 SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
<u>1550</u>	<u>5.5</u>	<u>6.57</u>	<u>813</u>	<u>64.3</u>	<u>tan</u>	<u>      </u>	<u>      </u>
<u>1553</u>	<u>11</u>	<u>6.57</u>	<u>806</u>	<u>64.4</u>	<u>"</u>	<u>      </u>	<u>      </u>
<u>1556</u>	<u>16.5</u>	<u>6.60</u>	<u>808</u>	<u>64.3</u>	<u>Clean</u>	<u>      </u>	<u>      </u>
<u>1559</u>	<u>22.1</u>	<u>6.54</u>	<u>819</u>	<u>65.2</u>	<u>"</u>	<u>      </u>	<u>      </u>

Pumped dry Yes / No

FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:

DTW: \_\_\_\_\_ TOB/TOC \_\_\_\_\_

PURGING EQUIPMENT/I.D. #

Bailer: \_\_\_\_\_  
 Centrifugal: #3  
 Other: \_\_\_\_\_  
 Airlift: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_

SAMPLING EQUIPMENT/I.D. #

Bailer: \_\_\_\_\_  
 Dedicated: \_\_\_\_\_  
 Other: \_\_\_\_\_

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
<u>MW22</u>	<u>3-17-92</u>	<u>1610</u>	<u>3</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: RI



PACIFIC ENVIRONMENTAL GROUP, INC.

WATER SAMPLE FIELD DATA SHEET

PROJECT No.: 330-06.05 LOCATION: 17601 Hesperian WELL ID #: MW 23  
San Lorenzo  
 CLIENT/STATION No.: ARCO 0608 FIELD TECHNICIAN: RI

WELL INFORMATION

Depth to Liquid:        TOB        TOC         
 Depth to water: 11.20 TOB        TOC         
 Total depth: 21.9 TOB        TOC         
 Date: 3-17-92 Time (2400): 8:27

Probe Type and I.D. #  
 Oil/Water interface  
 Electronic indicator 23  
 Other:       

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

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

TD 21.9 - DTW = 11.20 Gal/Linear x Foot 38 = 4.1 Number of x Casings 5 Calculated = Purge 20.3

DATE PURGED: 3-17-92 START: 15<sup>00</sup> END (2400 hr): 15<sup>40</sup> PURGED BY: RI  
 DATE SAMPLED:        START: 15<sup>40</sup> END (2400 hr): 15<sup>50</sup> SAMPLED BY: RI

TIME (2400 hr)	VOLUME (gal.)	pH (units)	E.C. (umhos/cm @ 25°C)	TEMPERATURE (°F)	COLOR	TURBIDITY	ODOR
15 <sup>18</sup>	5.1	6.60	888	65.8	tan	—	Ø
15 <sup>21</sup>	10.2	6.57	890	66.1	clear	—	Ø
15 <sup>24</sup>	15.3	6.59	897	67.1	"	—	Ø
15 <sup>28</sup>	20.3	6.59	899	67.1	"	—	Ø

Pumped dry Yes /  No  
 FIELD MEASUREMENTS AT TIME OF SAMPLE, AFTER RECHARGE:  
 DTW:        TOB/TOC       

PURGING EQUIPMENT/I.D. # SAMPLING EQUIPMENT/I.D. #  
 Bailer:         Airlift:         Bailer:         
 Centrifugal: 23  Dedicated:         Dedicated:         
 Other:         Other:       

SAMPLE I.D.	DATE	TIME (2400)	No. of Cont.	SIZE	CONTAINER	PRESERVE	ANALYTICAL PARAMETER
MW 23	3-17-92	15 <sup>40</sup>	3	40ml	G	HCl	Gas/BTEX

WELL INTEGRITY:  Good  Fair  Poor

REMARKS:         
        
      

SIGNATURE: RI





**WATER SAMPLE FIELD DATA SHEET**

PROJECT No. : 330-06.05 LOCATION: 17601 Hesperian WELL ID #: \_\_\_\_\_  
San Lorenzo

CLIENT/STATION No. : ARCO 0608 FIELD TECHNICIAN: RI

**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**

2 \_\_\_\_\_ 0.17  
 3 \_\_\_\_\_ 0.38  
 4 \_\_\_\_\_ 0.66  
 4.5 \_\_\_\_\_ 0.83  
 5 \_\_\_\_\_ 1.02  
 6 \_\_\_\_\_ 1.5  
 8 \_\_\_\_\_ 2.6

**GAL/ LINEAR FT.**

**SAMPLE TYPE**

Groundwater  
 Duplicate  
 Extraction well  
 Trip blank  
 Field blank  
 Equipment blank  
 Other: \_\_\_\_\_

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

DATE PURGED: \_\_\_\_\_ START: \_\_\_\_\_ END (2400 hr): \_\_\_\_\_ PURGED BY: RI

DATE SAMPLED: \_\_\_\_\_ START: \_\_\_\_\_ END (2400 hr): \_\_\_\_\_ SAMPLED BY: RI

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

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
<u>TB1</u>	<u>3-17-92</u>	<u> </u>	<u>2</u>	<u>40ml</u>	<u>G</u>	<u>HCl</u>	<u>Gas/BTEX</u>

WELL INTEGRITY:  Good  Fair  Poor

REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SIGNATURE: \_\_\_\_\_



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