

PACIFIC
ENVIRONMENTAL
GROUP, INC.

July 25, 1996
Project 330-109.5B

Ms. Sue Jenne
East Bay Municipal Utility District
P.O. Box 24055
Oakland, California 94623-1055

Re: Final Groundwater Monitoring Report - Permit 502-62131
Termination of Account
ARCO Service Station 4931
731 West MacArthur Boulevard
Oakland, California

Dear Ms. Jenne:

On behalf of ARCO Products Company (ARCO) and in response to your letter dated July 2, 1996, Pacific Environmental Group, Inc. (PACIFIC) has prepared this final groundwater monitoring report for the site referenced above. ARCO requested termination of the EBMUD discharge permit on June 14, 1996; a summary of the groundwater extraction (GWE) system operational performance through that date is presented below:

<i>Current Treatment System Status:</i>	<i>Deactivated</i>
<i>Reporting Period:</i>	10/1/95 - 6/14/96
<i>Period Average Flow Rate:</i>	N/A
<i>Period Starting Totalizer Reading:</i>	121,370 gallons
<i>Period Ending Totalizer Reading:</i>	121,370 gallons
<i>Period Volume Discharged:</i>	0 gallons
<i>Volume Discharged To Date:</i>	4,643,816 gallons
<i>Field Data Sheets:</i>	N/A
<i>Certified Analytical Reports:</i>	N/A

The GWE system at this site was deactivated on July 5, 1995 due to low influent hydrocarbon concentrations and mass removal rates. A subsequent visit to the site resulted in

a totalizer reading which was reported to be 171 gallons over the July 5, 1995 reading. Since the GWE system was not operated for any reason after July 5, 1995, the slight discrepancy is assumed to be due to the lapse in time between the totalizer reading and the actual system shutdown on July 5, 1995. A "Do Not Operate" sign has been posted on the GWE system's control panel to insure that the system will not be reactivated while the system remains in place. All wastewater generated at the site as a result of groundwater monitoring since July 5, 1995 to present has been collected into a mobile tank and removed from the site for proper disposal. The above procedure will be followed during all future groundwater monitoring events at the site.

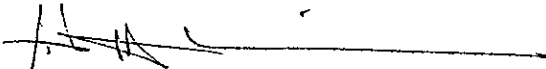
Historical operational and analytical data are presented in Tables 1 through 3. If you have questions or require further information, please do not hesitate to call our office.

Sincerely,

Pacific Environmental Group, Inc.



Suzanne McClurkin-Nelson
Staff Scientist



Shaw Garakani
Project Engineer

Attachments: Table 1 - Groundwater Extraction System Performance Data
Table 2 - Treatment System Metered Volume
Table 3 - Groundwater Extraction System Analytical Data -
Total Petroleum Hydrocarbons (TPPH as Gasoline
and BTEX Compounds)

cc: Mr. Michael Whelan, ARCO Products Company
Ms. Susan Hugo, Alameda County Health Care Services
Mr. Kevin Graves, Regional Water Quality Control Board - S.F. Bay Region

Table 1
Groundwater Extraction System Performance Data

ARCO Service Station 4931
731 West MacArthur Boulevard
Oakland, California

Sample I.D.	Date Sampled	Totalizer Reading (gallons)	Net Volume (gallons)	Average Flow Rate (gpm)	TPPH as Gasoline			Benzene			Primary Carbon Loading (percent)
					Influent Concentration (µg/L)	Net Removed (lbs)	Removed to Date (lbs)	Influent Concentration (µg/L)	Net Removed (lbs)	Removed to Date (lbs)	
INFL	06/28/94 a	4,120,050	N/A	0.9	740	0.000	1.61	38	0.000	0.38	2.0
INFL	07/15/94	4,143,150	23,100	0.9	ND	0.071	1.68	ND	0.004	0.38	2.1
INFL	08/18/94	4,175,310	32,160	0.7	NS	0.099	1.78	NS	0.005	0.39	2.2
INFL	09/30/94	4,243,295 b	67,985	1.1	NS	0.210	1.99	NS	0.011	0.40	2.5
INFL	10/31/94 c	4,311,280	67,985	1.5	ND	0.000	1.99	ND	0.000	0.40	2.5
INFL	11/09/94	4,330,500	19,220	1.5	56	0.004	2.00	ND	0.000	0.40	2.5
INFL	12/16/94	4,352,780	22,280	0.4	NS d	0.005	2.00	NS d	0.000	0.40	2.5
INFL	01/05/95	4,382,610	29,830	1.0	1,000	0.131	2.13	87	0.011	0.41	2.7
INFL	02/07/95	4,430,130 e	47,520	1.0 e	NS d	0.209	2.34	NS d	0.017	0.43	2.9
INFL	03/03/95	4,464,690 e	34,560	1.0 e	NS d	0.152	2.49	NS d	0.013	0.44	3.1
INFL	04/13/95	23 f	59,040	1.0 e	ND	0.246	2.74	ND	0.021	0.46	3.4
INFL	05/01/95	12,138	12,115	0.5	ND	0.000	2.74	ND	0.000	0.46	3.4
INFL	06/09/95	36,412	24,274	0.4	ND	0.000	2.74	ND	0.000	0.46	3.4
INFL	07/05/95 g	121,370 h	84,958	2.3	ND	0.000	2.74	0.59	0.000	0.46	3.4

REPORTING PERIOD: 10/01/95 - 06/14/96 †											
TOTAL POUNDS REMOVED:							2.74			0.46	
TOTAL GALLONS REMOVED:							0.45			0.06	
PERIOD POUNDS REMOVED:							0.00			0.00	
PERIOD GALLONS REMOVED:							0.00			0.00	
TOTAL GALLONS EXTRACTED:					4,543,816						
PERIOD GALLONS EXTRACTED:					N/A						
PERIOD AVERAGE FLOW RATE (gpm):					N/A						
PRIMARY BED CAPACITY REMAINING (%):					96.6						

TPPH = Total purgeable petroleum hydrocarbons	a. Data prior to October 1, 1994 provided by prior consultant.
gpm = Gallons per minute	b. No operational or analytical data available; totalizer reading, flow rate, and sample estimated from prior event July 15, 1994
µg/L = Micrograms per liter	c. Pacific Environmental Group, Inc. became consultant for the site as of October 1, 1994.
lbs = Pounds	d. Sampled quarterly; concentrations assumed from prior sampling event.
N/A = Not available	e. Totalizer broken; volume estimated using 1.0 gpm based on prior sampling event
ND = Not detected	f. Totalizer replaced and re-calibrated on April 13, 1995.
NS = Not sampled	g. System shut down for review, due to low concentrations and removal rates.
† = Termination of the permit was requested on June 14, 1996.	h. Correct final totalizer reading obtained at a later date.

Carbon loading assumes an 8% isotherm.
 Mass removed is an approximation calculated using averaged concentrations.
 Pounds of hydrocarbons removed to date provided by prior consultant
 See certified analytical reports for detection limits

Table 2
Treatment System Metered Volume

ARCO Service Station 4931
731 West MacArthur Boulevard
Oakland, California

Date Sampled	Totalizer Reading (gallons)	Net Volume (gallons)	Cumulative Volume Discharged (gallons)	Average Flow Rate (gpm)	Average Flow Rate (gpd)
11/16/92	a 1,090	0	0	N/A	N/A
11/18/92	22,690	21,600	21,600	8	10,800
11/20/92	44,920	22,230	43,830	8	11,115
12/17/92	92,210	47,290	91,120	1	1,751
01/12/93	564,680	472,470	563,590	13	18,172
02/10/93	838,640	273,960	837,550	7	9,447
02/24/93	947,220	108,580	946,130	5	7,756
03/14/93	1,086,630	139,410	1,085,540	5	7,745
04/01/93	1,129,690	43,060	1,128,600	2	2,392
04/20/93	1,193,300	63,610	1,192,210	2	3,348
04/29/93	1,259,700	66,400	1,258,610	5	7,378
06/11/93	1,614,620	354,920	1,613,530	6	8,254
06/21/93	1,722,260	107,640	1,721,170	7	10,764
06/28/93	1,809,950	87,690	1,808,860	9	12,527
07/15/93	2,013,960	204,010	2,012,870	8	12,001
08/23/93	2,446,870	432,910	2,445,780	8	11,100
09/15/93	2,701,430	254,560	2,700,340	8	11,068
10/21/93	3,057,050	355,620	3,055,960	7	9,878
11/30/93	3,401,420	344,370	3,400,330	6	8,609
01/13/94	3,783,120	381,700	3,782,030	6	8,675
03/13/94	3,975,520	192,400	3,974,430	2	3,261
04/11/94	3,996,660	21,140	3,995,570	1	729
05/18/94	4,062,460	65,800	4,061,370	1	1,778
06/28/94	4,120,050	57,590	4,118,960	1	1,405
07/15/94	4,143,150	23,100	4,142,060	0.9	1,359
08/18/94	4,175,310	32,160	4,174,220	0.7	946
09/30/94	4,243,295 b	67,985	4,242,205	1.1	1,581
10/31/94	c 4,311,280	67,985	4,310,190	1.5	2,193
11/09/94	4,330,500	19,220	4,329,410	1.5	2,136
12/16/94	4,352,780	22,280	4,351,690	0.4	602
01/05/95	4,382,610	29,830	4,381,520	1.0	1,492
02/07/95	4,430,130 d	47,520	4,429,040	1.0 d	1,440
03/03/95	4,464,690 d	34,560	4,463,600	1.0 d	1,440
04/13/95	23 e	59,040	4,522,640	1.0 e	1,440
05/01/95	12,138	12,115	4,534,755	0.5	673
06/09/95	36,412	24,274	4,559,029	0.4	622
07/05/95	f 121,370 g	84,787	4,643,816	2.3	3,261

gpm = Gallons per minute
gpd = Gallons per day
N/A = Not available

a. Data prior to October 1, 1994 provided by prior consultant.
b. Totalizer reading and flow rate estimated from prior event (7/15/94).
c. Pacific Environmental Group, Inc. became consultant for the site 10/1/94.
d. Totalizer broken; volume estimated using 1.0 gpm based on prior event.
e. Totalizer replaced and re-calibrated on 4/13/95.
f. System shut down due to low concentrations and removal rates.
g. Correct final totalizer reading obtained at a later date.

Table 3
Groundwater Extraction System Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline and BTEX Compounds)

ARCO Service Station 4931
 731 West MacArthur Boulevard
 Oakland, California

Sample I.D.	Date Sampled	TPPH as			Ethyl-benzene (µg/L)	Xylenes (µg/L)
		Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)		
INFL	10/31/94	ND	ND	ND	ND	ND
	11/09/94	56	ND	ND	ND	2.7
	01/05/95	1,000	87	9	ND	160
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
	07/05/95	ND	0.59	ND	ND	ND
MID-1	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
MID-2	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
EFFL	10/31/94	ND	ND	ND	ND	ND
	11/09/94	ND	ND	ND	ND	ND
	01/05/95	ND	ND	ND	ND	ND
	04/13/95	ND	ND	ND	ND	ND
	05/01/95	ND	ND	ND	ND	ND
	06/09/95	ND	ND	ND	ND	ND
	07/05/95	ND	ND	ND	ND	ND

TPPH = Total purgeable petroleum hydrocarbons
 µg/L = Micrograms per liter
 ND = Not detected above detection limits
 Pacific Environmental Group, Inc. became consultant to site 10/01/94.
 Prior to June 1995 TPPH results were reported as TPH as gasoline.
 See certified analytical reports for individual detection limits.