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ENVIRONMENTAL
PROFESSIONAL
NOV 4 2000
PM 4:08

November 3, 2000

Mr. Paul Supple
ARCO Products Company
P.O. Box 6549
Moraga, CA 94570

RO# 76

Subject: *Quarterly Groundwater Monitoring Report, Third Quarter 2000*
ARCO Service Station No. 4931
Oakland, California
Project No. D000-313

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the third quarter 2000 groundwater monitoring program at ARCO Products Company Service Station No. 4931, located at 731 West MacArthur Boulevard, Oakland, California. The monitoring program complies with the Alameda County Health Care Services Agency requirements regarding underground tank investigations.


The interpretations contained in this report represent our professional opinions and are based, in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeological and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions concerning this project, please contact Steven W. Meeks at (916) 536-2613.

Sincerely,

DELTA ENVIRONMENTAL CONSULTANTS, INC.


Trevor L. Atkinson
Project Engineer


Steven W. Meeks, P.E.
Project Manager
California Registered Civil Engineer No. C057461



TLA (Lrp002.313.doc)
Enclosures

cc: Ms. Susan Hugo – Alameda County Health Care Services Agency
Mr. John Kaiser – California Regional Water Quality Control Board, San Francisco Bay Region

Date: November 3, 2000

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 4931 Address: 731 West MacArthur Boulevard, Oakland, CA
ARCO Environmental Engineer/Phone No.: Paul Supple 925-299-8891
Consulting Co./Contact Person Delta Environmental Consultants, Inc.
Steven W. Meeks, P.E.
Consultant Project No.: D000-313
Primary Agency/Regulatory ID No. Alameda County Health Care Services Agency

WORK PERFORMED THIS QUARTER

1. Performed quarterly groundwater monitoring for the third quarter 2000.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare and submit quarterly groundwater monitoring report for third quarter 2000.
2. Perform quarterly groundwater monitoring and sampling for fourth quarter 2000.

QUARTERLY MONITORING:

Current Phase of Project	Monitoring/Remediation
Frequency of Groundwater Sampling:	Annual (2 nd Quarter): A-7, A-13 Semi-Annual (2 nd /4 th Quarter): A-3, A-5, A-11, A-12 Quarterly: A-2, A-4, A-6, A-8, A-9
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter:	N/A
Cumulative FP Recovered to Date:	Unknown
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	Unknown
Current Remediation Techniques:	Intrinsic Bioremediation Enhancement using ORC
Approximate Depth to Groundwater:	9.95 feet
Groundwater Gradient:	0.013 ft toward southwest
Cumulative TPHg/Benzene Removed:	0.45/0.06 gallons

DISCUSSION:

- Bioremediation enhancement is ongoing using oxygen release compound (ORC) in wells A-4, A-8, A-9 and AR-1.
- MTBE was reported in A-3, A-4, A-5, A-8, A-9, A-11 and A-12 at concentrations ranging from 4 (A-11) to 2,000 (A-4 and A-5) micrograms per liter.
- TPHg was reported in A-4, A-5 and A-8 at concentrations ranging from 810 (A-8) to 2,100 (A-4) micrograms per liter.
- A-13 was not sampled since the well appears to have been paved over.

ATTACHMENTS:

- Table 1 Groundwater Elevation and Analytical Data
- Table 2 Groundwater Flow Direction and Gradient
- Figure 1 Groundwater Analytical Summary Map
- Figure 2 Groundwater Elevation Contour Map
- Appendix A Sampling and Analysis Procedures
- Appendix B Historical Data Tables (IT Corporation)
- Appendix C Certified Analytical Reports with Chain-of-Custody Documentation
- Appendix D Remedial System Performance Summary
- Appendix E Field Sample Data

TABLE 1

GROUNDWATER ANALYTICAL DATA

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

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
A-2	06/21/00	55.48	6.85	48.63	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		10.45	45.03	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
A-3	06/21/00	54.66	9.48	45.18	<0.5	<0.5	<0.5	<1.0	<50	46
	09/20/00		10.24	44.42	< 0.5	< 0.5	<0.5	<0.5	<50	89.6
A-4	06/21/00	54.73	9.49	45.24	110	2.1	11	5.9	2,100	2,000
	09/20/00		10.33	44.4	127	<5.0	9.07	7.42	1,540	1,940
A-5	06/21/00	54.17	9.29	44.88	<0.5	<0.5	<0.5	<1.0	980	2,000
	09/20/00		10.23	43.94	NS	NS	NS	NS	NS	NS
A-6	06/21/00	55.17	8.67	46.5	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		9.34	45.83	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
A-7	06/21/00	54.71	8.58	46.13	<0.5	<0.5	<0.5	<1.0	<50	<3.0
	09/20/00		9.19	45.52	NS	NS	NS	NS	NS	NS
A-8	06/21/00	53.77	9.07	44.70	<0.5	<0.5	<0.5	810	810	1,500
	09/20/00		9.72	44.05	2,680	46	439	370	10,800	4,410
A-9	06/21/00	53.04	8.56	44.48	<0.5	<0.5	<0.5	<1.0	<50	5.0
	09/20/00		9.05	43.99	< 0.5	< 0.5	<0.5	<0.5	<50	<2.5
A-10	06/21/00	54.26	10.47	43.79	NS	NS	NS	NS	NS	NS
	09/20/00		10.76	43.50	NS	NS	NS	NS	NS	NS
A-11	06/21/00	53.74	9.54	44.20	<0.5	<0.5	<0.5	<1.0	<50	4.0
	09/20/00		10.62	43.12	NS	NS	NS	NS	NS	NS

TABLE 1

GROUNDWATER ANALYTICAL DATA

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

Well Number	Date Sampled	Top of Riser Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
A-12	06/21/00	52.05	9.28	42.77	<0.5	<0.5	<0.5	<1.0	<50	18
	09/20/00		9.55	42.50	NS	NS	NS	NS	NS	NS
A-13	06/21/00	55.11	NM	NC	NS	NS	NS	NS	NS	NS
	09/20/00		NM	NC	NS	NS	NS	NS	NS	NS

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted

µg/L = Micrograms per liter

NM = Not measured

NC = Not calculated

NS = Not sampled

Note: Please refer to Appendix B for Historical Groundwater Elevation and Analytical Data Tables developed by IT Corporation

TABLE 2

FLOW DIRECTION AND GRADIENT

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

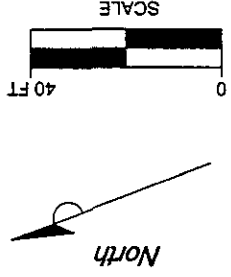
<u>Date Measured</u>	<u>Average Flow Direction</u>	<u>Average Hydraulic Gradient</u>
06/21/00	West-Southwest	0.031
09/20/00	Southwest	0.013

Note: Please refer to Appendix B for Historical Groundwater Elevation and Analytical Data
Tables developed by IT Corporation



PROJECT NO.	D000-313	REVISION NO.	1
DRAWN BY	TLA 11/02/00	FILE NO.	4931-1
		PREPARED BY	TLA
		REVIEWED BY	

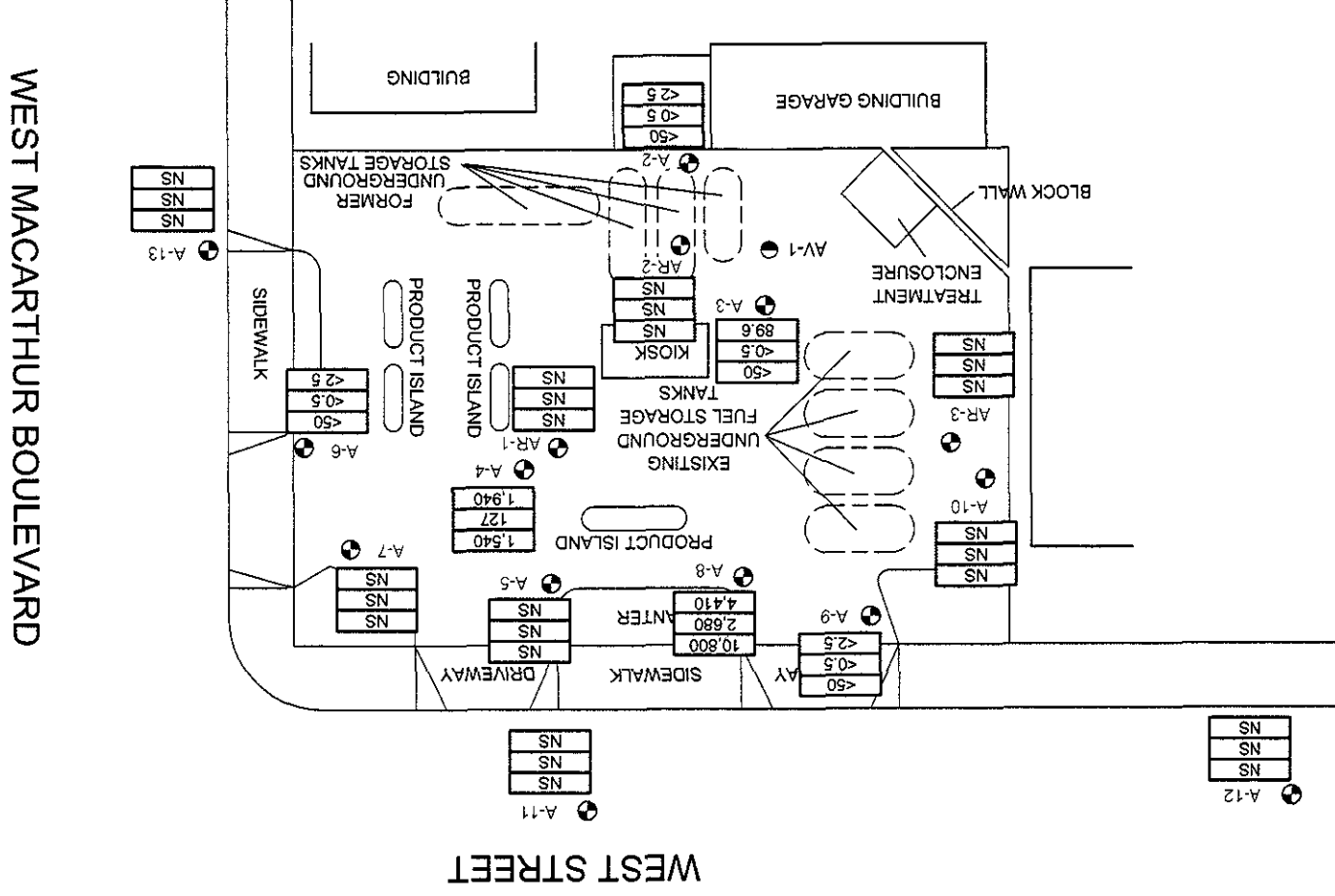
FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
THIRD QUARTER 2000 (9/20/00)
ARCO STATION NO. 4931
731 WEST MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA




LEGEND:

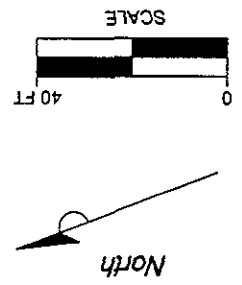
- A-2 MONITORING WELL LOCATION
- AV-1 SOIL VAPOR EXTRACTION WELL LOCATION
- <50 TPH AS GASOLINE IN MICROGRAMS PER LITER
- <0.5 BENZENE IN MICROGRAMS PER LITER
- <2.5 MTBE IN MICROGRAMS PER LITER
- NS NOT SAMPLED

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES.
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



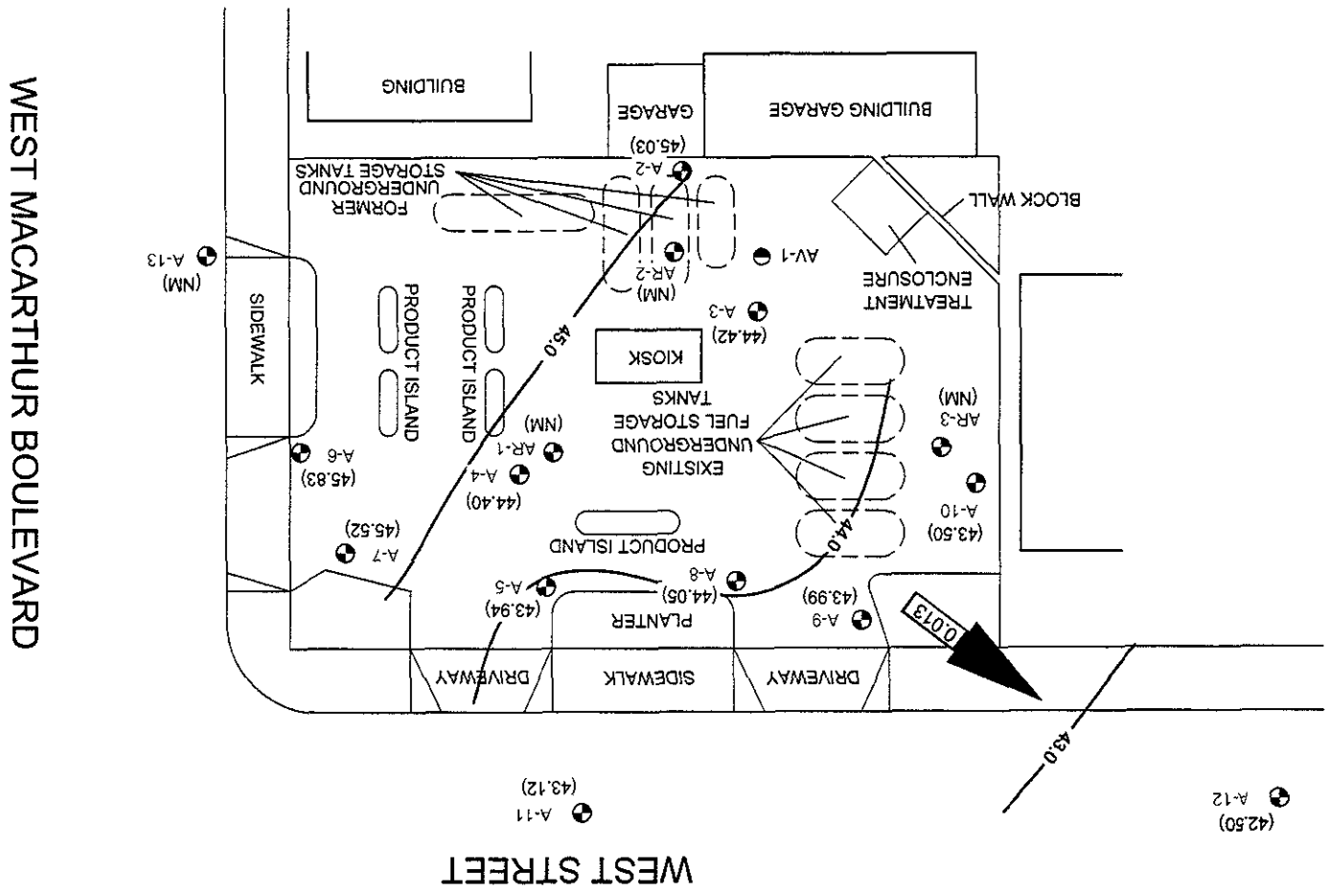
	REVISION NO. 2	REVIEWED BY
	FILE NO. 4931-1	PREPARED BY
PROJECT NO. D000-313	DRAWN BY	TLA 11/03/00

OAKLAND, CALIFORNIA
 731 WEST MACARTHUR BOULEVARD
 ARCO STATION NO. 4931
 THIRD QUARTER 2000 (9/20/00)
GROUND WATER ELEVATION CONTOUR MAP
FIGURE 2



- LEGEND:**
- A-2 MONITORING WELL LOCATION
 - AV-1 SOIL VAPOR EXTRACTION WELL LOCATION
 - (45.03) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
 - 45.0 - WATER TABLE CONTOUR IN FEET ABOVE MSL
 - GROUND WATER FLOW DIRECTION
 - ◀ APPROXIMATE GROUND WATER FLOW GRADIENT

NOTE: SITE MAP ADAPTED FROM IT CORPORATION FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.



APPENDIX A

Sampling and Analysis Procedures

FIELD METHODS AND PROCEDURES

1.0 GROUND WATER AND LIQUID-PHASE HYDROCARBON DEPTH ASSESSMENT

A water/liquid-phase hydrocarbon (LPH) interface probe was used to assess the thickness of LPH, if present, and a water level indicator was used to measure ground water depth in monitoring wells that did not contain LPH. Depth to ground water was measured from the top of each monitoring well casing. The tip of the water level indicator was subjectively analyzed for LPH sheen. All measurements and physical observations were recorded in the field.

2.0 SUBJECTIVE ANALYSIS OF GROUND WATER

Prior to purging, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean, disposable bailer to approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for LPH and the appearance of a LPH sheen.

3.0 MONITORING WELL PURGING AND SAMPLING

Monitoring wells were purged using a centrifugal pump or disposable bailers until pH, temperature, and conductivity of the purge water had stabilized and a minimum of three to four well volumes of water had been removed. Ground water removed from the wells was stored in 55-gallon barrels at the site. The barrels were labeled with corresponding monitoring well numbers and the date of purging. After purging, ground water levels were allowed to stabilize. A ground water sample was then removed from each of the wells using a dedicated disposable bailer. If the well was purged dry, it was allowed to sufficiently recharge and a sample was collected. Samples were collected in air-tight vials, appropriately labeled, and stored on ice from the time of collection through the time of delivery to the laboratory. A chain-of-custody form was completed to document possession of the samples. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses. Purge water will be collected from the storage barrels in a vacuum truck and transported to an appropriate facility for treatment and/or disposal.

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged. Before sampling occurred, a polyvinyl chloride (PVC) bailer, centrifugal pump, low-flow submersible pump, or Teflon bailer was used to purge standing water in the casing and gravel pack from the monitoring well. Monitoring wells were purged according to the protocol previously stated in the first paragraph of this sub-section. In most monitoring wells, the amount of water purged before sampling was greater than or equal to three casing volumes. Some monitoring wells were expected to be evacuated to dryness after removing fewer than three casing volumes. These low-yield monitoring wells were allowed to recharge for up to 24 hours. Samples were obtained as soon as the monitoring wells recharged to a level sufficient for sample collection. If insufficient water recharged after 24 hours, the monitoring well was recorded as dry for the sampling event.

APPENDIX B

Historical Data Tables

IT Corporation

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-2	03/26/96	55.48	5.37	50.11	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	05/22/96	55.48	5.25	50.23	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-2	08/22/96	55.48	10.45	45.03	<50	1.1	1.8	<0.5	1.3	<2.5	NA	NM	
A-2	12/19/96	55.48	5.53	49.95	<50	<0.5	<0.5	<0.5	<0.5	2.7	NA	NM	
A-2	04/01/97	55.48	8.77	46.71	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-2	05/27/97	55.48	9.87	45.61	<50	<0.5	<0.5	<0.5	<0.5	4.6	NA	NM	
A-2	08/12/97	55.48	11.11	44.37	<50	<0.5	<0.5	<0.5	<0.5	5.6	NA	NM	
A-2	11/14/97	55.48	10.63	44.85	<50	0.9	2.8	<0.5	2.4	27	NA	2.6	
A-2	03/18/98	55.48	3.58	51.90	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	NM	
A-2	05/19/98	55.48	4.82	50.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.30	P
A-2	07/29/98	55.48	8.94	46.54	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.2	NP
A-2	10/09/98	55.48	10.82	44.66	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.5	NP
A-2	02/19/99	55.48	4.46	51.02	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	3.0	P
A-2	06/02/99	55.48	5.59	49.89	<50	<0.5	0.6	<0.5	<0.5	<3	NA	5.35	NP
A-2	08/26/99	55.48	10.67	44.81	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.79	NP
A-2	10/26/99	55.48	4.61	50.87	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.14	P
A-2	02/25/00	55.48	3.10	52.38	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	4.21	NP
A-3	03/26/96	54.66	7.20	47.46	Not Sampled: Well Sampled Semiannually								
A-3	05/22/96	54.66	7.70	46.96	<50	1.2	1.9	0.7	1.3	NA	NA	NM	
A-3	08/22/96	54.66	10.88	43.78	Not Sampled: Well Sampled Semiannually								
A-3	12/19/96	54.66	7.70	46.96	5,900	<25	<25	<25	<25	NA	5,300	NM	
A-3	04/01/97	54.66	9.78	44.88	Not Sampled: Well Sampled Semiannually								
A-3	05/27/97	54.66	10.55	44.11	2,300	<20	<20	<20	<20	3,800	NA	NM	
A-3	08/12/97	54.66	11.12	43.54	Not Sampled: Well Sampled Semiannually								
A-3	11/14/97	54.66	8.24	46.42	<1,000	<10	<10	<10	<10	1,500	NA	3.8	
A-3	03/18/98	54.66	5.05	49.61	Not Sampled: Well Sampled Semiannually								
A-3	05/19/98	54.66	9.00	45.66	<250	<2.5	<2.5	<2.5	<2.5	220	NA	4.60	P
A-3	07/29/98	54.66	9.86	44.80	Not Sampled: Well Sampled Semiannually								
A-3	10/09/98	54.66	11.36	43.30	<250	<2.5	<2.5	<2.5	<2.5	260	NA	1.0	NP
A-3	02/19/99	54.66	6.19	48.47	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.5	NP
A-3	06/02/99	54.66	10.82	43.84	120	<1	<1	<1	<1	160	NA	2.78	NP

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
A-3	08/26/99	54.66	10.73	43.93	Not Sampled: Well Sampled Semiannually								0.95	
A-3	10/26/99	54.66	6.58	48.08	<50	<0.5	<0.5	<0.5	<1	32	NA	2.06	NP	
A-3	02/25/00	54.66	5.41	49.25	Not Sampled: Well Sampled Semiannually									
A-4	03/26/96	54.73	7.95	46.78	8,900	1,200	21	200	220	NA	NA	NM		
A-4	05/22/96	54.73	8.35	46.38	5,300	700	<10	170	130	NA	NA	NM		
A-4	08/22/96	54.73	11.03	43.70	3,000	480	<5.0	75	26	150	NA	NM		
A-4	12/19/96	54.73	8.67	46.06	<2,000	<20	<20	<20	<20	NA	15,000	NM		
A-4	04/01/97	54.73	11.95	42.78	8,900	1,700	22	310	260	6,900	NA	NM		
A-4	05/27/97	54.73	10.80	43.93	7,100	960	<20	150	74	7,900	NA	NM		
A-4	08/12/97	54.73	11.38	43.35	4,300	670	12	51	27	2,800	NA	NM		
A-4	11/14/97	54.73	7.74	46.99	<20,000	300	500	<200	<200	27,000	NA	2.2		
A-4	03/18/98	54.73	6.80	47.93	4,700	600	<20	99	94	1,200	NA	1.0		
A-4	05/19/98	54.73	9.06	45.67	<2000	<20	<20	<20	720	2,000	NA	1.28	P	
A-4	07/29/98	54.73	10.05	44.68	8,400	1,300	<20	290	130	1,800	NA	0.7	NP	
A-4	10/09/98	54.73	11.20	43.53	3,500	400	<20	54	<20	1,700	NA	1.0	NP	
A-4	02/19/99	54.73	6.85	47.88	<1,000	<10	<10	<10	12	650	NA	0.1	NP	
A-4	06/02/99	54.73	11.00	43.73	6,100	760	16	260	89	2,300	NA	1.12	NP	
A-4	08/26/99	54.73	10.80	43.93	1,100	68	5	8	4	1,400	NA	1.15	NP	
A-4	10/26/99	54.73	10.11	44.62	1,500	39	2.3	9.0	5	1,700	NA	10.12	NP	
A-4	02/25/00	54.73	5.90	48.83	870	53	1.1	4.6	20	600	NA	1.72	NP	
A-5	03/26/96	54.17	7.93	46.24	Not Sampled: Well Sampled Semiannually									
A-5	05/22/96	54.17	8.20	45.97	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
A-5	08/22/96	54.17	10.70	43.47	Not Sampled: Well Sampled Semiannually									
A-5	12/19/96	54.17	8.39	45.78	9,900	1,100	330	230	700	NA	24	NM		
A-5	04/01/97	54.17	10.83	43.34	Not Sampled: Well Sampled Semiannually									
A-5	05/27/97	54.17	10.65	43.52	100	<0.5	<0.5	<0.5	<0.5	120	NA	NM		
A-5	08/12/97	54.17	11.05	43.12	Not Sampled: Well Sampled Semiannually									
A-5	11/14/97	54.17	10.51	43.66	<50	<0.5	<0.5	<0.5	<0.5	41	NA	4.8		
A-5	03/18/98	54.17	8.10	46.07	Not Sampled: Well Sampled Semiannually									
A-5	05/19/98	54.17	9.31	44.86	590	<5	<5	<5	<5	710	NA	2.48	P	

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-5	07/29/98	54.17	9.89	44.28	Not Sampled: Well Sampled Semiannually								
A-5	10/09/98	54.17	11.02	43.15	690	<5	<5	<5	<5	710	NA	1.0	NP
A-5	02/19/99	54.17	6.82	47.35	<2,000	<20	<20	<20	<20	2,300	NA	0.6	NP
A-5	06/02/99	54.17	10.82	43.35	1,500	<0.5	2.3	<0.5	<0.5	2,400	NA	2.81	NP
A-5	08/26/99	54.17	10.65	43.52	Not Sampled: Well Sampled Semiannually								0.49
A-5	10/26/99	54.17	10.35	43.82	380	<0.5	<0.5	<0.5	<1	440	NA	1.55	NP
A-5	02/25/00	54.17	6.89	47.28	Not Sampled: Well Sampled Semiannually								
A-6	03/26/96	55.17	7.15	48.02	52	2.7	<0.5	1.1	2.0	NA	NA	NM	
A-6	05/22/96	55.17	7.35	47.82	<50	2.4	<0.5	0.88	1.7	NA	NA	NM	
A-6	08/22/96	55.17	10.12	45.05	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	12/19/96	55.17	7.43	47.74	<50	1.7	<0.5	0.78	1.5	<2.5	NA	NM	
A-6	04/01/97	55.17	9.97	45.20	<50	4.7	<0.5	1.9	3.2	<2.5	NA	NM	
A-6	05/27/97	55.17	9.66	45.51	<50	0.69	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	08/12/97	55.17	10.43	44.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	
A-6	11/14/97	55.17	9.76	45.41	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	<1.0	
A-6	03/18/98	55.17	7.00	48.17	<50	6.2	0.5	2.3	2.6	<3	NA	3.0	
A-6	05/19/98	55.17	8.27	46.90	<50	<0.5	<0.5	1.3	4.7	<3	NA	2.16	P
A-6	07/29/98	55.17	8.96	46.21	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.8	NP
A-6	10/09/98	55.17	10.23	44.94	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP
A-6	02/19/99	55.17	5.79	49.38	<50	<0.5	<0.5	<0.5	<0.5	5	NA	0.4	NP
A-6	06/02/99	55.17	9.71	45.46	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.00	NP
A-6	08/26/99	55.17	9.79	45.38	<50	<0.5	<0.5	<0.5	0.7	<3	NA	0.66	NP
A-6	10/26/99	55.17	9.70	45.47	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.66	NP
A-6	02/25/00	55.17	5.68	49.49	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.22	NP
A-7	03/26/96	54.71	6.90	47.81	Not Sampled: Well Sampled Semiannually								
A-7	05/22/96	54.71	8.27	46.44	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-7	08/22/96	54.71	9.80	44.91	Not Sampled: Well Sampled Semiannually								
A-7	12/19/96	54.71	7.19	47.52	Not Sampled: Well Sampled Annually								
A-7	04/01/97	54.71	9.63	45.08	Not Sampled: Well Sampled Annually								
A-7	05/27/97	54.71	9.34	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM	

Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
A-7	08/12/97	54.71	10.10	44.61	Not Sampled: Well Sampled Annually									
A-7	11/14/97	54.71	9.35	45.36	Not Sampled: Well Sampled Annually									
A-7	03/18/98	54.71	6.75	47.96	Not Sampled: Well Sampled Annually									
A-7	05/19/98	54.71	8.85	45.86	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.82	P	
A-7	07/29/98	54.71	8.84	45.87	Not Sampled: Well Sampled Annually									
A-7	10/09/98	54.71	10.05	44.66	Not Sampled: Well Sampled Annually									
A-7	02/19/99	54.71	5.57	49.14	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	4.7	NP	
A-7	06/02/99	54.71	9.56	45.15	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.17	NP	
A-7	08/26/99	54.71	9.66	45.05	Not Sampled: Well Sampled Annually								0.49	
A-7	10/26/99	54.71	9.54	45.17	Not Sampled: Well Sampled Annually								1.26	
A-7	02/25/00	54.71	5.60	49.11	Not Sampled: Well Sampled Annually									
A-8	03/26/96	53.77	7.10	46.67	48,000	2,600	<100	650	1,100	NA	NA		NM	
A-8	05/22/96	53.77	7.20	46.57	14,000	2,800	160	320	190	NA	NA		NM	
A-8	08/22/96	53.77	11.57	42.20	8,000	1,000	76	150	96	4,300	NA		NM	
A-8	12/19/96	53.77	8.04	45.73	12,000	450	110	210	230	<500	NA		NM	
A-8	04/01/97	53.77	9.98	43.79	Not Sampled: Well Sampled Semiannually									
A-8	05/27/97	53.77	11.45	42.32	11,000	1,600	100	220	210	2,300	NA		NM	
A-8	08/12/97	53.77	11.59	42.18	Not Sampled: Well Sampled Semiannually									
A-8	11/14/97	53.77	9.85	43.92	26,000	2,300	<200	400	400	4,100	NA	2.2		
A-8	03/18/98	53.77	7.80	45.97	Not Sampled: Well Sampled Semiannually									
A-8	05/19/98	53.77	8.78	44.99	88,000	4,200	150	640	600	6,700	NA	1.36	P	
A-8	07/29/98	53.77	9.59	44.18	46,000	4,900	160	620	580	13,000	NA	0.5	NP	
A-8	10/09/98	53.77	11.23	42.54	130,000	3,700	110	500	770	7,300	NA	1.0	NP	
A-8	02/19/99	53.77	6.51	47.26	<1,000	39	<10	<10	<10	840	NA	0.2	NP	
A-8	06/02/99	53.77	10.68	43.09	8,500	1,300	32	180	110	6,700	NA	1.31	NP	
A-8	08/26/99	53.77	10.43	43.34	6,200	870	17	64	60	3,700	NA	0.69	NP	
A-8	10/26/99	53.77	10.23	43.54	15,000	2,800	140	370	360	480	NA	0.62	NP	
A-8	02/25/00	53.77	5.93	47.84	2,600	330	6.6	18	26	1,100	NA	1.43	NP	
A-9	03/26/96	53.04	7.05	45.99	<50	<0.5	<0.5	<0.5	<0.5	NA	NA		NM	
A-9	05/22/96	53.04	7.20	45.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA		NM	

Table 1
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ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH				Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)	
					Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)						
A-9	08/22/96	53.04	9.68	43.36	<50	<0.5	<0.5	<0.5	<0.5	8.5	NA	NM		
A-9	12/19/96	53.04	7.43	45.61	<50	<0.5	<0.5	<0.5	<0.5	2.6	NA	NM		
A-9	04/01/97	53.04	9.95	43.09	Not Sampled: Well Sampled Semiannually									
A-9	05/27/97	53.04	9.56	43.48	<50	2.3	<0.5	<0.5	<0.5	45	NA	NM		
A-9	08/12/97	53.04	10.15	42.89	Not Sampled: Well Sampled Semiannually									
A-9	11/14/97	53.04	8.64	44.40	<200	<2.0	<2.0	<2.0	<2.0	190	NA	9.6		
A-9	03/18/98	53.04	6.45	46.59	Not Sampled: Well Sampled Semiannually									
A-9	05/19/98	53.04	8.35	44.69	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.27	P	
A-9	07/29/98	53.04	8.74	44.30	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.99	NP	
A-9	10/09/98	53.04	10.05	42.99	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.0	NP	
A-9	02/19/99	53.04	6.91	46.13	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP	
A-9	06/02/99	53.04	9.72	43.32	<50	<0.5	<0.5	<0.5	<0.5	16	NA	2.32	NP	
A-9	08/26/99	53.04	9.48	43.56	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	0.71	NP	
A-9	10/26/99	53.04	9.17	43.87	1,500	6.2	0.7	78	11	91	NA	2.15	NP	
A-9	02/25/00	53.04	5.84	47.20	<50	<0.5	<0.5	<0.5	<1	<3	NA	1.55	NP	
A-10	03/26/96	54.26	8.28	45.98	Not Sampled: Well Removed from Sampling Program									
A-10	05/22/96	54.26	8.60	45.66	Not Sampled: Well Removed from Sampling Program									
A-10	08/22/96	54.26	10.98	43.28	Not Sampled: Well Removed from Sampling Program									
A-10	12/19/96	54.26	8.80	45.46	Not Sampled: Well Removed from Sampling Program									
A-10	04/01/97	54.26	11.15	43.11	Not Sampled: Well Removed from Sampling Program									
A-10	05/27/97	54.26	10.90	43.36	Not Sampled: Well Removed from Sampling Program									
A-10	08/12/97	54.26	11.30	42.96	Not Sampled: Well Removed from Sampling Program									
A-10	11/14/97	54.26	10.80	43.46	Not Sampled: Well Removed from Sampling Program									
A-10	03/18/98	----- Well Removed from Survey Program -----												
A-11	03/26/96	53.74	8.10	45.64	Not Sampled: Well Sampled Semiannually									
A-11	05/22/96	53.74	8.25	45.49	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM		
A-11	08/22/96	53.74	10.58	43.16	Not Sampled: Well Sampled Semiannually									
A-11	12/19/96	53.74	8.37	45.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NA	NM		
A-11	04/01/97	53.74	10.95	42.79	Not Sampled: Well Sampled Semiannually									
A-11	05/27/97	53.74	10.60	43.14	<50	<0.5	<0.5	<0.5	<0.5	3.1	NA	NM		

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Total Purgeable Petroleum Hydrocarbons
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ARCO Service Station 4931
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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH				Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
					Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)					
A-11	08/12/97	53.74	11.07	42.67	Not Sampled: Well Sampled Semiannually								
A-11	11/14/97	53.74	10.58	43.16	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.6	
A-11	03/18/98	53.74	8.14	45.60	Not Sampled: Well Sampled Semiannually								
A-11	05/19/98	53.74	9.40	44.34	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.13	P
A-11	07/29/98	53.74	10.32	43.42	Not Sampled: Well Sampled Semiannually								
A-11	10/09/98	53.74	10.91	42.83	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	2.0	NP
A-11	02/19/99	53.74	6.77	46.97	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	1.8	NP
A-11	06/02/99	53.74	10.95	42.79	<50	<0.5	<0.5	<0.5	<0.5	6	NA	1.38	NP
A-11	08/26/99	53.74	11.05	42.69	Not Sampled: Well Sampled Semiannually							0.49	
A-11	10/26/99	53.74	10.81	42.93	<50	<0.5	<0.5	<0.5	<1	4	NA	1.27	NP
A-11	02/25/00	53.74	6.70	47.04	Not Sampled: Well Sampled Semiannually								
A-12	03/26/96	52.05	7.83	44.22	Not Sampled: Well Sampled Semiannually								
A-12	05/22/96	52.05	7.80	44.25	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
A-12	08/22/96	52.05	9.97	42.08	Not Sampled: Well Sampled Semiannually								
A-12	12/19/96	52.05	8.18	43.87	85	<0.5	<0.5	<0.5	<0.5	170	NA	NM	
A-12	04/01/97	52.05	10.30	41.75	Not Sampled: Well Sampled Semiannually								
A-12	05/27/97	52.05	10.05	42.00	50	12	<0.5	<0.5	<0.5	96	NA	NM	
A-12	08/12/97	52.05	10.46	41.59	Not Sampled: Well Sampled Semiannually								
A-12	11/14/97	52.05	9.70	42.35	<50	<0.5	<0.5	<0.5	<0.5	75	NA	7.0	
A-12	03/18/98	52.05	8.15	43.90	Not Sampled: Well Sampled Semiannually								
A-12	05/19/98	52.05	9.15	42.90	<50	<0.5	<0.5	<0.5	<0.5	29	NA	1.47	P
A-12	07/29/98	52.05	9.38	42.67	Not Sampled: Well Sampled Semiannually								
A-12	10/09/98	52.05	10.21	41.84	<50	<0.5	<0.5	<0.5	<0.5	7	NA	2.0	NP
A-12	02/19/99	52.05	6.96	45.09	<50	<0.5	<0.5	<0.5	<0.5	<3	NA	5.2	NP
A-12	06/02/99	52.05	10.25	41.80	<50	<0.5	<0.5	<0.5	<0.5	7	NA	1.38	NP
A-12	08/26/99	52.05	9.91	42.14	Not Sampled: Well Sampled Semiannually							0.51	
A-12	10/26/99	52.05	9.73	42.32	<50	<0.5	<0.5	<0.5	<1	12	NA	1.09	NP
A-12	02/25/00	52.05	6.97	45.08	Not Sampled: Well Sampled Semiannually								
A-13	03/26/96	55.11			----- Well Inaccessible -----								
A-13	05/22/96	55.11			----- Well Inaccessible -----								

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
A-13	08/22/96	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	12/19/96	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	04/01/97	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	05/27/97	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	08/12/97	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	11/14/97	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	03/18/98	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	05/19/98	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	07/29/98	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	10/09/98	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	02/19/99	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	06/02/99	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	08/26/99	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	10/26/99	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
A-13	02/25/00	55.11		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
AR-1	03/26/96	54.72	8.13	46.59	6,200	110	64	38	520	NA	NA	NM	
AR-1	05/22/96	54.72	8.57	46.15	NS	NS	NS	NS	NS	NS	NS	NM	
AR-1	08/22/96	54.72	10.97	43.75	5,600	100	28	29	310	960	NA	NM	
AR-1	12/19/96	54.72	8.93	45.79	Not Sampled: Well Removed from Sampling Program								
AR-1	04/01/97	54.72	11.78	42.94	Not Sampled: Well Removed from Sampling Program								
AR-1	05/27/97	54.72	10.76	43.96	Not Sampled: Well Removed from Sampling Program								
AR-1	08/12/97	54.72	11.40	43.32	Not Sampled: Well Removed from Sampling Program								
AR-1	11/14/97	54.72	10.80	43.92	Not Sampled: Well Removed from Sampling Program								
AR-1	03/18/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	05/19/98	54.72	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-1	07/29/98	54.72	10.17	44.55	Not Sampled: Well Removed from Sampling Program								
AR-1	10/09/98	54.72	11.25	43.47	Not Sampled: Well Removed from Sampling Program								
AR-1	02/19/99	54.72	7.02	47.70	Not Sampled: Well Removed from Sampling Program								
AR-1	06/02/99	54.72	11.00	43.72	Not Sampled: Well Removed from Sampling Program								
AR-1	08/26/99	54.72	10.96	43.76	Not Sampled: Well Removed from Sampling Program								0.39
AR-1	10/26/99	54.72	10.68	44.04	Not Sampled: Well Removed from Sampling Program								1.39

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Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)	MTBE 8021B* (ppb)	MTBE 8260 (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
AR-1	02/25/00	54.72	7.15	47.57	Not Sampled: Well Removed from Sampling Program								
AR-2	03/26/96	54.77	4.93	49.84	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
AR-2	05/22/96	54.77	5.65	49.12	NS	NS	NS	NS	NS	NS	NS	NM	
AR-2	08/22/96	54.77	7.27	47.50	<50	<0.5	<0.5	<0.5	<0.5	200	NA	NM	
AR-2	12/19/96	54.77	7.78	46.99	Not Sampled: Well Removed from Sampling Program								
AR-2	04/01/97	54.77	6.80	47.97	Not Sampled: Well Removed from Sampling Program								
AR-2	05/27/97	54.77	6.32	48.45	Not Sampled: Well Removed from Sampling Program								
AR-2	08/12/97	54.77	7.43	47.34	Not Sampled: Well Removed from Sampling Program								
AR-2	11/14/97	54.77	8.95	45.82	Not Sampled: Well Removed from Sampling Program								
AR-2	03/18/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-2	05/19/98	54.77	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-2	07/29/98	54.77	4.47	50.30	Not Sampled: Well Removed from Sampling Program								
AR-2	10/09/98	54.77	6.90	47.87	Not Sampled: Well Removed from Sampling Program								
AR-2	02/19/99	54.77	3.80	50.97	Not Sampled: Well Removed from Sampling Program								
AR-2	06/02/99	54.77	4.61	50.16	Not Sampled: Well Removed from Sampling Program								
AR-2	08/26/99	54.77	5.22	49.55	Not Sampled: Well Removed from Sampling Program								
AR-2	10/26/99	54.77	3.20	51.57	Not Sampled: Well Removed from Sampling Program								
AR-2	02/25/00	54.77	2.33	52.44	Not Sampled: Well Removed from Sampling Program								
AR-3	03/26/96	54.19	7.95	46.24	<50	<0.5	<0.5	<0.5	<0.5	NA	NA	NM	
AR-3	05/22/96	54.19	8.30	45.89	NS	NS	NS	NS	NS	NS	NS	NM	
AR-3	08/22/96	54.19	10.84	43.35	Not Sampled: Well Removed from Sampling Program								
AR-3	12/19/96	54.19	8.56	45.63	Not Sampled: Well Removed from Sampling Program								
AR-3	04/01/97	54.19	11.24	42.95	Not Sampled: Well Removed from Sampling Program								
AR-3	05/27/97	54.19	10.67	43.52	Not Sampled: Well Removed from Sampling Program								
AR-3	08/12/97	54.19	11.10	43.09	Not Sampled: Well Removed from Sampling Program								
AR-3	11/14/97	54.19	10.60	43.59	Not Sampled: Well Removed from Sampling Program								
AR-3	03/18/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-3	05/19/98	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program								
AR-3	07/29/98	54.19	9.95	44.24	Not Sampled: Well Removed from Sampling Program								
AR-3	10/09/98	54.19	11.20	42.99	Not Sampled: Well Removed from Sampling Program								

**Table 1
Groundwater Elevation and Analytical Data
Total Purgeable Petroleum Hydrocarbons
(TPPH as Gasoline, BTEX Compounds, and MTBE)**

**ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California**

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOB)	Groundwater Elevation (feet, MSL)	TPH					Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
					Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl- benzene (ppb)	Total Xylenes (ppb)		
AR-3	02/19/99	54.19	6.98	47.21	Not Sampled: Well Removed from Sampling Program						
AR-3	06/02/99	54.19	10.80	43.39	Not Sampled: Well Removed from Sampling Program						
AR-3	08/26/99	54.19	10.69	43.50	Not Sampled: Well Removed from Sampling Program						
AR-3	10/26/99	54.19	NM	NM	Not Sampled: Well Removed from Sampling Program						
AR-3	02/25/00	54.19	7.21	46.98	Not Sampled: Well Removed from Sampling Program						

TPH = Total petroleum hydrocarbons by modified EPA method 8015
 BTEX = Benzene, toluene, ethylbenzene, total xylenes by EPA method 8021B. (EPA method 8020 prior to 10/26/99).
 MTBE = Methyl tert-butyl ether
 * = EPA method 8020 prior to 10/26/99
 MSL = Mean sea level
 TOB = Top of box
 ppb = Parts per billion
 ppm = Parts per million
 < = Less than laboratory detection limit stated to the right
 NA = Not analyzed
 NM = Not measured
 NS = Not sampled

**Table 2
Groundwater Flow Direction and Gradient**

**ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California**

Date Measured	Average Flow Direction	Average Hydraulic Gradient
03/26/96	Southwest	0.03
05/22/96	Southwest	0.04
08/22/96	Southwest	0.02
12/19/96	Southwest	0.03
04/01/97	Southwest	0.03
05/27/97	Southwest	0.04
08/12/97	Southwest	0.02
11/14/97	Southwest	0.02
03/18/98	West	0.03
05/19/98	West-Southwest	0.02
07/29/98	West-Southwest	0.02
10/09/98	Southwest	0.007
02/19/99	Southwest	0.04
06/02/99	West	0.04
08/26/99	West-Southwest	0.02
10/26/99	West-Northwest	0.13
02/25/00	West-Southwest	0.05

APPENDIX C

Certified Analytical Reports
And
Chain-of-Custody Documentation



October 9, 2000

Steven Meeks
Delta Environmental Consultants - Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA N/A

RE: ARCO 4931, Oakland, CA/S009290

Dear Steven Meeks

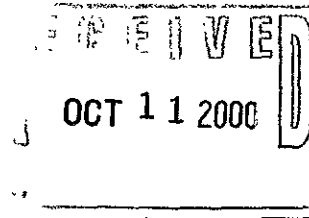
Enclosed are the results of analyses for sample(s) received by the laboratory on September 20, 2000. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R. Hanson
Client Services Representative

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624





Delta Environmental Consultants - Rancho Cordova	Project: ARCO 4931, Oakland, CA	Sampled: 9/20/00
3164 Gold Camp Drive Ste. 200	Project Number: N/A	Received: 9/20/00
Rancho Cordova, CA N/A	Project Manager: Steven Meeks	Reported: 10/9/00

ANALYTICAL REPORT FOR S009290

Sample Description	Laboratory Sample Number	Sample Matrix	Date Sampled
A-2	S009290-01	Water	9/20/00
A-3	S009290-02	Water	9/20/00
A-4	S009290-03	Water	9/20/00
A-6	S009290-04	Water	9/20/00
A-8	S009290-05	Water	9/20/00
A-9	S009290-06	Water	9/20/00





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
				<u>S009290-01</u>			<u>Water</u>	
A-2 Purgeable Hydrocarbons	0100021	10/3/00	10/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		85.6	%	
				<u>S009290-02</u>			<u>Water</u>	
A-3 Purgeable Hydrocarbons	0100021	10/3/00	10/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	89.6	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		86.8	%	
				<u>S009290-03</u>			<u>Water</u>	
A-4 Purgeable Hydrocarbons	0100021	10/3/00	10/3/00		500	1540	ug/l	1,D
Benzene	"	"	"		5.00	127	"	D
Toluene	"	"	"		5.00	ND	"	D
Ethylbenzene	"	"	"		5.00	9.07	"	D
Xylenes (total)	"	"	"		5.00	7.42	"	D
Methyl tert-butyl ether	"	"	"		25.0	1940	"	D
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		70.9	%	
				<u>S009290-04</u>			<u>Water</u>	
A-6 Purgeable Hydrocarbons	0100021	10/3/00	10/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		90.0	%	
				<u>S009290-05</u>			<u>Water</u>	
A-8 Purgeable Hydrocarbons	0100040	10/4/00	10/4/00		2500	10800	ug/l	1,D
Benzene	"	"	"		25.0	2680	"	D
Toluene	"	"	"		25.0	46.0	"	D
Ethylbenzene	"	"	"		25.0	439	"	D
Xylenes (total)	"	"	"		25.0	370	"	D





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento**

Analyte	Batch Number	Date Prepared	Date Analyzed	Surrogate Limits	Reporting Limit	Result	Units	Notes*
A-8 (continued)				<u>S009290-05</u>			<u>Water</u>	
Methyl tert-butyl ether	0100040	10/4/00	10/4/00		125	4410	ug/l	D
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		123	%	
A-9				<u>S009290-06</u>			<u>Water</u>	
Purgeable Hydrocarbons	0100022	10/3/00	10/3/00		50.0	ND	ug/l	
Benzene	"	"	"		0.500	ND	"	
Toluene	"	"	"		0.500	ND	"	
Ethylbenzene	"	"	"		0.500	ND	"	
Xylenes (total)	"	"	"		0.500	ND	"	
Methyl tert-butyl ether	"	"	"		2.50	ND	"	
Surrogate: a,a,a-Trifluorotoluene	"	"	"	60.0-140		87.6	%	





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
 Sequoia Analytical - Sacramento

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Batch: 0100021			Date Prepared: 10/3/00			Extraction Method: EPA 5030B (MeOH)				
Blank			0100021-BLK1							
Purgeable Hydrocarbons	10/3/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.50				
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.98	"	60.0-140	99.8			
LCS			0100021-BS1							
Benzene	10/3/00	10.0		9.84	ug/l	70.0-130	98.4			
Toluene	"	10.0		9.91	"	70.0-130	99.1			
Ethylbenzene	"	10.0		10.0	"	70.0-130	100			
Xylenes (total)	"	30.0		29.9	"	70.0-130	99.7			
Methyl tert-butyl ether	"	10.0		8.92	"	70.0-130	89.2			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.63	"	60.0-140	96.3			
Matrix Spike			0100021-MS1		S009269-01					
Benzene	10/3/00	10.0	ND	10.1	ug/l	60.0-140	101			
Toluene	"	10.0	ND	10.3	"	60.0-140	103			
Ethylbenzene	"	10.0	ND	10.3	"	60.0-140	103			
Xylenes (total)	"	30.0	ND	31.0	"	60.0-140	103			
Methyl tert-butyl ether	"	10.0	ND	9.68	"	60.0-140	96.8			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.19	"	60.0-140	91.9			
Matrix Spike Dup			0100021-MSD1		S009269-01					
Benzene	10/3/00	10.0	ND	10.4	ug/l	60.0-140	104	25.0	2.93	
Toluene	"	10.0	ND	10.0	"	60.0-140	100	25.0	2.96	
Ethylbenzene	"	10.0	ND	10.1	"	60.0-140	101	25.0	1.96	
Xylenes (total)	"	30.0	ND	30.5	"	60.0-140	102	25.0	0.976	
Methyl tert-butyl ether	"	10.0	ND	10.1	"	60.0-140	101	25.0	4.25	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.0	"	60.0-140	100			
Batch: 0100022			Date Prepared: 10/3/00			Extraction Method: EPA 5030B (MeOH)				
Blank			0100022-BLK1							
Purgeable Hydrocarbons	10/3/00			ND	ug/l	50.0				
Benzene	"			ND	"	0.500				
Toluene	"			ND	"	0.500				
Ethylbenzene	"			ND	"	0.500				
Xylenes (total)	"			ND	"	0.500				
Methyl tert-butyl ether	"			ND	"	2.50				





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - Sacramento

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
Blank (continued)		0100022-BLK1								
<i>Surrogate: a,a,a-Trifluorotoluene</i>	10/3/00	10.0		9.43	ug/l	60.0-140	94.3			
LCS		0100022-BS1								
Benzene	10/3/00	10.0		8.97	ug/l	70.0-130	89.7			
Toluene	"	10.0		9.65	"	70.0-130	96.5			
Ethylbenzene	"	10.0		9.41	"	70.0-130	94.1			
Xylenes (total)	"	30.0		26.8	"	70.0-130	89.3			
Methyl tert-butyl ether	"	10.0		10.9	"	70.0-130	109			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		9.72	"	60.0-140	97.2			
Matrix Spike		0100022-MS1	S009290-06							
Benzene	10/3/00	10.0	ND	7.77	ug/l	60.0-140	77.7			
Toluene	"	10.0	ND	9.46	"	60.0-140	94.6			
Ethylbenzene	"	10.0	ND	9.19	"	60.0-140	91.9			
Xylenes (total)	"	30.0	ND	25.9	"	60.0-140	86.3			
Methyl tert-butyl ether	"	10.0	ND	10.6	"	60.0-140	106			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		10.2	"	60.0-140	102			
Matrix Spike Dup		0100022-MSD1	S009290-06							
Benzene	10/3/00	10.0	ND	8.07	ug/l	60.0-140	80.7	25.0	3.79	
Toluene	"	10.0	ND	8.98	"	60.0-140	89.8	25.0	5.21	
Ethylbenzene	"	10.0	ND	9.37	"	60.0-140	93.7	25.0	1.94	
Xylenes (total)	"	30.0	ND	26.3	"	60.0-140	87.7	25.0	1.61	
Methyl tert-butyl ether	"	10.0	ND	11.5	"	60.0-140	115	25.0	8.14	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		10.3	"	60.0-140	103			
Batch: 0100040		Date Prepared: 10/4/00		Extraction Method: EPA 5030B (MeOH)						
Blank		0100040-BLK1								
Purgeable Hydrocarbons	10/4/00			ND	ug/l		50.0			
Benzene	"			ND	"		0.500			
Toluene	"			ND	"		0.500			
Ethylbenzene	"			ND	"		0.500			
Xylenes (total)	"			ND	"		0.500			
Methyl tert-butyl ether	"			ND	"		2.50			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	"	10.0		10.4	"	60.0-140	104			
LCS		0100040-BS1								
Benzene	10/4/00	10.0		9.92	ug/l	70.0-130	99.2			
Toluene	"	10.0		9.75	"	70.0-130	97.5			
Ethylbenzene	"	10.0		9.72	"	70.0-130	97.2			
Xylenes (total)	"	30.0		28.9	"	70.0-130	96.3			





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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**Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT/Quality Control
Sequoia Analytical - Sacramento**

Analyte	Date Analyzed	Spike Level	Sample Result	QC Result	Units	Reporting Limit Recov. Limits	Recov. %	RPD Limit	RPD %	Notes*
LCS (continued)		0100040-BS1								
Methyl tert-butyl ether	10/4/00	10.0		10.3	ug/l	70.0-130	103			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.6	"	60.0-140	106			
Matrix Spike		0100040-MS1	S010045-01							
Benzene	10/4/00	10.0	ND	9.54	ug/l	60.0-140	95.4			
Toluene	"	10.0	ND	9.91	"	60.0-140	99.1			
Ethylbenzene	"	10.0	ND	9.88	"	60.0-140	98.8			
Xylenes (total)	"	30.0	ND	29.9	"	60.0-140	99.7			
Methyl tert-butyl ether	"	10.0	ND	8.85	"	60.0-140	88.5			
Surrogate: a,a,a-Trifluorotoluene	"	10.0		9.76	"	60.0-140	97.6			
Matrix Spike Dup		0100040-MSD1	S010045-01							
Benzene	10/4/00	10.0	ND	9.56	ug/l	60.0-140	95.6	25.0	0.209	
Toluene	"	10.0	ND	9.84	"	60.0-140	98.4	25.0	0.709	
Ethylbenzene	"	10.0	ND	9.79	"	60.0-140	97.9	25.0	0.915	
Xylenes (total)	"	30.0	ND	29.5	"	60.0-140	98.3	25.0	1.41	
Methyl tert-butyl ether	"	10.0	ND	9.10	"	60.0-140	91.0	25.0	2.79	
Surrogate: a,a,a-Trifluorotoluene	"	10.0		10.0	"	60.0-140	100			





Delta Environmental Consultants - Rancho Cordova 3164 Gold Camp Drive Ste. 200 Rancho Cordova, CA N/A	Project: ARCO 4931, Oakland, CA Project Number: N/A Project Manager: Steven Meeks	Sampled: 9/20/00 Received: 9/20/00 Reported: 10/9/00
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Notes and Definitions

#	Note
D	Data reported from a dilution.
1	Chromatogram Pattern: Weathered Gasoline C6-C12
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
Recov.	Recovery
RPD	Relative Percent Difference



ARCO Facility no. Arco 4931	City (Facility) Oakland	Project manager (Consultant) Steven Meeks	Laboratory name Seymour Catalina
ARCO engineer Paul Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 916 638-2085	Contract number
Consultant name Delta Environmental	Address (Consultant) 3164 Bold Camp Pr. Suite 200 Rancho Cordova, Ca 95670		

Sample I.D.	Lab no	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH 5/ EPA 1602/8020/8015	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	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals <input type="checkbox"/> Semi VOAC <input type="checkbox"/> VOAC <input type="checkbox"/>	CAN METALS EN 6010/7000 TLC <input type="checkbox"/> STLC <input type="checkbox"/>	Lead Org./DHS <input type="checkbox"/> Lead EPA 7420/7421 <input type="checkbox"/>	Method of shipment	
			Soil	Water	Other	Ice	Acid															
A-2		4						9-20-00	1051	X												Special detection Limit/reporting 8009290-0
A-3									1113	X												
A-4									1245	X												
A-6									1225	X												Special QA/QC
A-8									1200	X												
A-9									1143	X												
																						Remarks
																						Lab number
																						Turnaround time

Condition of sample:	Temperature received:	Priority Rush 1 Business Day <input type="checkbox"/>
Relinquished by sampler <i>[Signature]</i>	Date 9-20-00	Rush 2 Business Days <input type="checkbox"/>
Relinquished by	Time 1546	Expedited 5 Business Days <input type="checkbox"/>
Relinquished by	Received by <i>Monica Greggen</i>	Standard 10 Business Days <input checked="" type="checkbox"/>
	Date	
	Time	
	Received by	
	Date	
	Time	

APPENDIX D

Remedial System Performance Summary

ARCO STATION NO. 4931
731 West MacArthur Boulevard
Oakland, California

REMEDIAL SYSTEM PERFORMANCE SUMMARY

GWE System

Groundwater extraction (GWE) was conducted intermittently between November 10, 1992 and July 5, 1995. The TWE system was comprised of electric GWE pumps in monitoring wells A-9, AR-1, AR-2, AR-3 and in three 1,500-pound granular activated carbon vessels arranged in series. The GWE system was permitted by East Bay Municipal Utility District Permit Account Number 502-62131. Based on Alameda County Health Care Services Agency authorization that GWE at the site was no longer required, the permit was relinquished during the second quarter 1996. Overall, 4.6 million gallons of groundwater were extracted and less than 0.06 gallon of benzene removed. Refer to the IT Corporation *Second Quarter 1997 Groundwater Monitoring Report* for historical GWE system performance and analytical data.

Intrinsic Bioremediation Evaluation

At the request of ARCO, intrinsic bioremediation indicator parameters (bioparameters) were monitored during the fourth quarter 1996 groundwater monitoring event. Groundwater samples from monitoring wells A-4, A-8 and A-12 were analyzed for biological oxygen demand (BOD), carbon dioxide (CO₂), chemical oxygen demand (DOD), methane, nitrate, sulfate, dissolved oxygen (DO) and ferrous iron. Monitoring wells A-4 and A-8 are located within the plume. Monitoring well A-12 is located outside the plume. Based on analysis of the collected data, intrinsic bioremediation was occurring at the site. Refer to the IT Corporation *First Quarter 1997 Groundwater Monitoring Report* for details.

Oxygen release compound (ORC) is currently being used in monitoring wells A-4, A-9 and AR-1 to enhance biodegradation of dissolved oxygen. ORC was scheduled for replacement during the third quarter 2000.

APPENDIX E
Field Sample Data



3164 Gold Camp Drive, Suite 200
 Rancho Cordova, California 95670
 Direct: (916) 638-2085
 Fax: (916) 638-8385

Arco Site Address: **731 West MacArthur Blvd**
Oakland, California

Arco Site Number: **Arco 4931**
 Delta Project No.: **D000-313**
 Delta Project PM: **Steve Meeks**
 Date Sampled: **09/20/00**

Site Contact & Phone Number: _____

Arco Project Manager: **Paul Supple**
 Site Sampled By: **Stratus**

Water Level Data						Purge Volume Calculations					Sampling Analytes				Sample Record			
Well ID	Time	Depth to Water (feet)	Top of Screen Interval (feet)	Total Depth of Well (feet)	Check if Purge Not Required	Casing Water Column (A)	Well Diameter (inches)	Multiplier Value (B)	Three Casing Volumes (gallons)	Actual Water Purged (gallons)	BTEX (8020) VOA	TPH-g (8015M) VOA	MTBE (8020) VOA	Other	Dissolved Oxygen (mg/L)	Sample Frequency (A, S, Q)	Sample I.D.	Sample Time
A-2	NM	10.45	5.0	19.0	<input checked="" type="checkbox"/>	8.55	4 inch	2.0	17.1	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.70	Q/5,8,11	A-2	10:51
A-3	NM	10.24	5.0	19.3	<input checked="" type="checkbox"/>	9.06	4 inch	2.0	18.1	NP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5.30	S/5,11	A-3	11:13
A-4	NM	10.33	5.0	19.6	<input type="checkbox"/>	9.27	4 inch	2.0	18.5	20	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.90	Q/5,8,11	A-4	12:45
A-5	NM	10.23	3.0	24.0	<input type="checkbox"/>	13.77	3 inch	1.1	15.1	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	S/5,11		
A-6	NM	9.34	2.0	25.0	<input checked="" type="checkbox"/>	15.66	3 inch	1.1	17.2	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4.60	Q/5,8,11	A-6	12:25
A-7	NM	9.19	3.0	22.6	<input type="checkbox"/>	13.41	3 inch	1.1	14.8	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	A/5		
A-8	NM	9.72	2.0	20.0	<input checked="" type="checkbox"/>	10.28	3 inch	1.1	11.3	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.20	Q/5,8,11	A-8	12:00
A-9	NM	9.05	5.0	38.0	<input type="checkbox"/>	28.95	6 inch	4.4	127.4	44	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	5.20	Q/5,8,11	A-9	11:43
A-10	NM	10.76	NM	NM	<input type="checkbox"/>	N/A	NM	NM	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	NS		
A-11	NM	10.62	5.0	28.0	<input type="checkbox"/>	17.38	3 inch	1.1	19.1	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	S/5,11		
A-12	NM	9.55	5.0	30.0	<input type="checkbox"/>	20.45	3 inch	1.1	22.5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	S/5,11		
A-13	NM	NM	10.0	29.5	<input type="checkbox"/>	N/A	3 inch	1.1	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	A/5		
AR-1	NM	NM	10.0	31.5	<input type="checkbox"/>	N/A	6 inch	4.4	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	NS		
AR-2	NM	NM	10.0	27.5	<input type="checkbox"/>	N/A	6 inch	4.4	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	NS		
AR-3	NM	NM	10.0	27.0	<input type="checkbox"/>	N/A	6 inch	4.4	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NM	NS		
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
					<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				

(A)-Casing Water Column: Depth to Bottom - Depth to Water (B)-Multiplier Values: (2" Well: 0.5) (4" Well: 2.0) (6" Well: 4.4)

Sampling Sequence: Annual: A-7, A-13; Semi-Annual: A-3, A-5, A-11, A-12; Quarterly: A-6, A-8, A-9, A-2, A-4,

Sampling Notes: List depth of Sample on C.O.C. [i.e. MW-1(30)]. Make Sure to Note on C.O.C. "Provide Lowest Reporting Limit Available." Original Copies of Field Sampling Sheets are Located in Project File
 If the water level is below the top of the screen, take a grab sample and check box for NO PURGE (NP). If the water level is above the screen, purge as normal.



3164 Gold Camp Drive, Suite 200
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 Direct: (916) 638-2085
 Fax: (916) 638-8385

Arco Site Address: **731 West MacArthur Blvd**
Oakland, California

Arco Site Number: **Arco 4931**
 Delta Project No.: **D000-313**

Arco Project Manager: **Paul Supple**

Delta Project PM: **Steve Meeks**

Site Sampled By: **Stratus**

Date Sampled: **09/20/00**

Site Contact & Phone Number: _____

Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °C	pH Units	Sp. Cond.	Gallons						
A-2	10:51	26.3	6.30	158	NP	A-9	11:32	22.3	6.97	156	10	AR-3											
								11:34	21.5	6.49	158		15										
								11:36	21.4	6.37	163		30										
								11:40	21.3	6.26	142		44										
A-3	11:13	25.1	6.20	177	NP	A-10																	
A-4	12:30	23.9	6.20	328	5	A-11																	
	12:36	24.2	6.33	330	15																		
	12:40	24.5	6.44	328	20																		
	12:45	23.5	6.63	315																			
A-5						A-12																	
A-6	12:25	26.4	7.24	168	NP	A-13																	
A-7						AR-1																	
A-8	12:00	26.5	6.19	253	NP	AR-2																	

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File