Delta
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June 28, 2001

R078

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

Subject: *Quarterly Groundwater Monitoring Report, First Quarter 2001*
ARCO Service Station No. 374
6407 Telegraph Avenue
Oakland, California
Delta Project No. D000-302

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the first quarter 2001 groundwater monitoring program at ARCO Products Company Service Station No. 374, located at 6407 Telegraph Avenue, Oakland, California. The monitoring program complies with the California Regional Water Quality Control Board 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.

for

Trevor L. Atkinson
Project Engineer

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

REGISTERED PROFESSIONAL ENGINEER
STEVEN WHITTEN MEEKS
C 057461
Exp. 12/31/01
CIVIL
STATE OF CALIFORNIA

6/29/01

TLA (LRP004.302.doc)
Enclosures

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

Date: June 28, 2001

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 374 Address:	6407 Telegraph Avenue, 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.:	D000-302
Primary Agency/Regulatory ID No.	California Regional Water Quality Control Board San Francisco Bay Region

WORK PERFORMED THIS QUARTER

1. Performed quarterly groundwater monitoring for the first quarter 2001.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare and submit quarterly groundwater monitoring report for the first quarter 2001.
2. Perform quarterly groundwater monitoring and sampling for the second quarter 2001.

QUARTERLY MONITORING:

Current Phase of Project	Monitoring
Frequency of Groundwater Sampling:	Annual (2nd Quarter): MW-1, MW-2, MW-6 Semi-annual (2nd/4th Quarter): MW-3, MW-4 Quarterly: MW-5
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On–Site:	No
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	None
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	None
Current Remediation Techniques:	Intrinsic Bioremediation
Approximate Depth to Groundwater:	6.34 feet
Groundwater Gradient:	0.034 ft/ft toward southwest

DISCUSSION:

- Benzene and TPH as gasoline were not detected at or above the laboratory reporting limits in the collected samples.
- MTBE was detected 2,710 µg/L in collected samples from monitoring well MW-1.

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 Groundwater Elevation Analytical Data Table
  Groundwater Flow Direction and Gradient Table
  Intrinsic Bioremediation Evaluation and Enhancement Data
- Appendix C Certified Analytical Reports with Chain–of–Custody Documentation
- Appendix D Field Data Sheet

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station 374
6407 Telegraph Avenue
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)
MW-1	6/20/00	158.91	6.86	152.05	NS	NS	NS	NS	NS	NS
	9/28/00		7.50	151.41	NS	NS	NS	NS	NS	NS
	12/17/00		7.49	151.42	NS	NS	NS	NS	NS	NS
	3/23/01		5.90	153.01	<0.5	<0.5	<0.5	<0.5	<50	2,710
MW-2	6/20/00	157.92	7.67	150.25	NS	NS	NS	NS	NS	NS
	9/28/00		8.51	149.41	NS	NS	NS	NS	NS	NS
	12/17/00		8.14	149.78	NS	NS	NS	NS	NS	NS
	3/23/01		7.21	150.71	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-3	6/20/00	153.64	6.42	147.22	<0.5	<0.5	<0.5	<1.0	<50	<10
	9/28/00		7.31	146.33	NS	NS	NS	NS	NS	NS
	12/17/00		6.45	147.19	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	3/23/01		6.01	147.63	NS	NS	NS	NS	NS	NS
MW-4	6/20/00	156.53	7.50	149.03	5,100	440	1,000	1,700	20,000	<250
	9/28/00		8.20	148.33	NS	NS	NS	NS	NS	NS
	12/17/00		8.11	148.42	1240	<20	27.2	249	4,320	<100
	3/23/01		6.69	149.84	NS	NS	NS	NS	NS	NS
MW-5	6/20/00	151.33	7.84	143.49	<0.5	<0.5	<0.5	<1.0	<50	<10
	9/28/00		8.37	142.96	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/17/00		8.36	142.97	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
	3/23/01		7.55	143.78	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5

TABLE 1

GROUNDWATER ANALYTICAL DATA

ARCO Service Station 374
6407 Telegraph Avenue
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)
MW-6	6/20/00	153.84	4.79	149.05	NS	NS	NS	NS	NS	NS
	9/28/00		5.39	148.45	NS	NS	NS	NS	NS	NS
	12/17/00		4.71	149.13	NS	NS	NS	NS	NS	NS
	3/23/01		4.69	149.15	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5

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

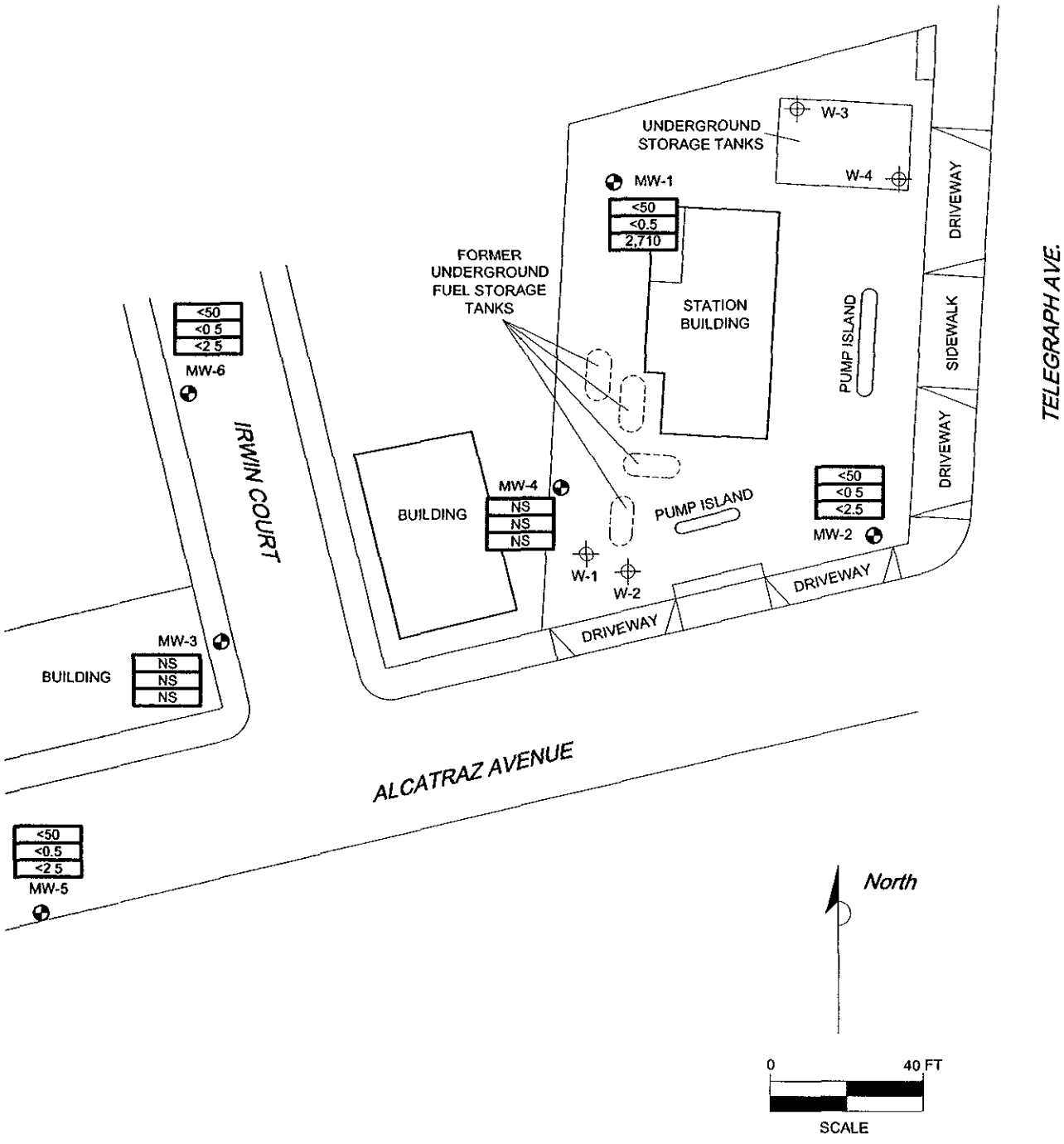
TABLE 2

GROUNDWATER FLOW DIRECTION AND GRADIENT

ARCO Service Station No. 374
6407 Telegraph Avenue
Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	Southwest	0.035
09/28/00	Southwest	0.034
12/17/00	Southwest	0.032
03/23/01	Southwest	0.034

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



LEGEND:

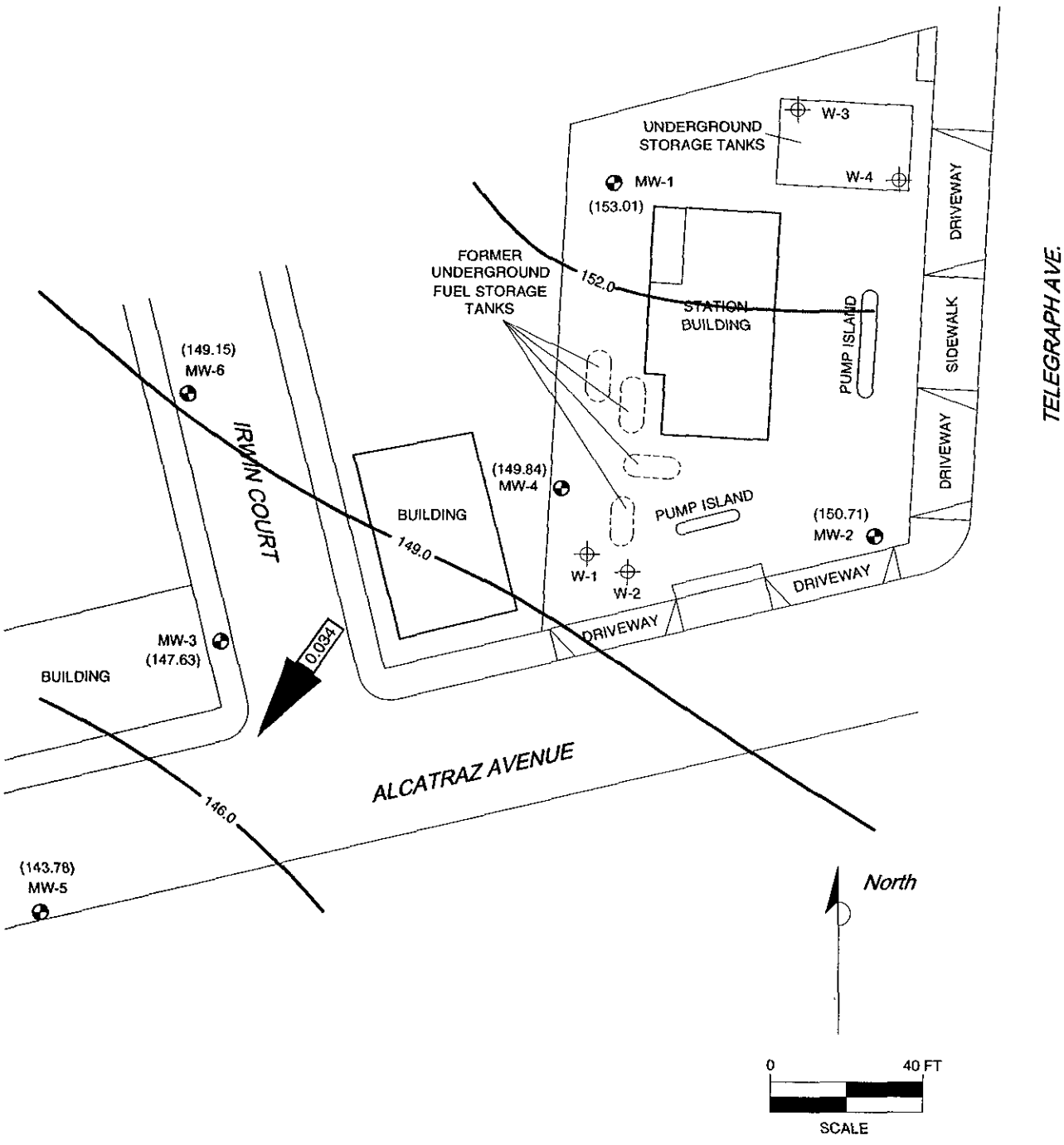
MW-1	MONITORING WELL LOCATION
W-1	TANK PIT MONITORING WELL LOCATION
<50 <0.5 <2.5	TPH AS GASOLINE IN MICROGRAMS PER LITER BENZENE IN MICROGRAMS PER LITER MTBE IN MICROGRAMS PER LITER
NS	NOT SAMPLED

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

FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
FIRST QUARTER 2001 (3/23/01)
ARCO STATION NO. 374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO D000-302	DRAWN BY TLA 5/9/01
FILE NO. 374-1	PREPARED BY TLA
REVISION NO	REVIEWED BY

Delta Environmental Consultants, Inc.



LEGEND:

MW-1	MONITORING WELL LOCATION
W-1	TANK PIT MONITORING WELL LOCATION
(153.01)	GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
— 152.0 —	WATER TABLE CONTOUR IN FEET ABOVE MSL
	GROUND WATER FLOW DIRECTION
0.034	APPROXIMATE GROUND WATER FLOW GRADIENT

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

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
FIRST QUARTER 2001 (3/23/01)
ARCO STATION NO. 374
6407 TELEGRAPH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. D000-302	DRAWN BY TLA 5/9/01
FILE NO. 374-1	PREPARED BY TLA
REVISION NO 1	REVIEWED BY

Delta Environmental Consultants, Inc.

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

IT Corporation
Historical Groundwater Elevation and Analytical Data Table
Groundwater Flow Direction and Gradient Table
Intrinsic Bioremediation Evaluation and Enhancement Data

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-1	01/31/96	158.91	6.34	152.57	Not Sampled: Well Sampled Annually							
MW-1	04/10/96	158.91	5.82	153.09	Not Sampled: Well Sampled Annually							
MW-1	07/16/96	158.91	7.23	151.68	<50	<0.5	<0.5	<0.5	<0.5	340	NM	
MW-1	10/14/96	158.91	8.34	150.57	Not Sampled: Well Sampled Annually							
MW-1	03/27/97	158.91	6.37	152.54	Not Sampled: Well Sampled Annually							
MW-1	05/27/97	158.91	7.30	151.61	Not Sampled: Well Sampled Annually							
MW-1	08/12/97	158.91	8.22	150.69	<50	<0.5	<0.5	<0.5	<0.5	620	NM	
MW-1	11/17/97	158.91	7.98	150.93	Not Sampled: Well Sampled Annually							
MW-1	03/16/98	158.91	4.94	153.97	Not Sampled: Well Sampled Annually							
MW-1	05/12/98	158.91	5.28	153.63	Not Sampled: Well Sampled Annually							
MW-1	07/27/98	158.91	6.84	152.07	<500	<5	<5	<5	<5	580	0.6	P
MW-1	10/15/98	158.91	7.32	151.59	Not Sampled: Well Sampled Annually							
MW-1	02/18/99	158.91	6.28	152.63	Not Sampled: Well Sampled Annually							
MW-1	05/24/99	158.91	6.45	152.46	<50	<0.5	<0.5	<0.5	<0.5	1,300	2.0	NP
MW-1	08/27/99	158.91	7.86	151.05	<50	<0.5	<0.5	<0.5	<0.5	1,500	1.65	NP
MW-1	10/26/99	158.91	8.43	150.48	Not Sampled: Well Sampled Annually						2.16	
MW-1	02/03/00	158.91	7.28	151.63	<50	<0.5	<0.5	<0.5	<1	4,000	1.0	NP
MW-2	01/31/96	157.92	6.51	151.41	Not Sampled: Well Sampled Annually							
MW-2	04/10/96	157.92	6.94	150.98	Not Sampled: Well Sampled Annually							
MW-2	07/16/96	157.92	7.73	150.19	<50	1.2	<0.5	<0.5	<0.5	33	NM	
MW-2	10/14/96	157.92	8.35	149.57	Not Sampled: Well Sampled Annually							
MW-2	03/27/97	157.92	7.40	150.52	Not Sampled: Well Sampled Annually							
MW-2	05/27/97	157.92	7.82	150.10	Not Sampled: Well Sampled Annually							
MW-2	08/12/97	157.92	8.29	149.63	<50	<0.5	<0.5	<0.5	<0.5	23	NM	
MW-2	11/17/97	157.92	8.05	149.87	Not Sampled: Well Sampled Annually							
MW-2	03/16/98	157.92	6.45	151.47	Not Sampled: Well Sampled Annually							

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-2	05/12/98	157.92	6.93	150.99	Not Sampled: Well Sampled Annually							
MW-2	07/27/98	157.92	7.39	150.53	<50	<0.5	<0.5	<0.5	<0.5	<3	0.85	NP
MW-2	10/15/98	157.92	7.67	150.25	Not Sampled: Well Sampled Annually							
MW-2	02/18/99	157.92	6.63	151.29	Not Sampled: Well Sampled Annually							
MW-2	05/24/99	157.92	7.43	150.49	<50	6.3	<0.5	0.7	<0.5	29	3.0	P
MW-2	08/27/99	157.92	8.22	149.70	<50	<0.5	<0.5	<0.5	<0.5	<3	0.95	NP
MW-2	10/26/99	157.92	8.46	149.46	Not Sampled: Well Sampled Annually						1.71	
MW-2	02/03/00	157.92	7.75	150.17	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP
MW-3 *	01/31/96	153.64	7.02	146.62	140	20	0.87	11	14	NA	NM	
MW-3 *	04/10/96	153.64	7.82	145.82	84	2.4	<0.5	1.9	1.1	NA	NM	
MW-3 *	07/16/96	153.64	6.80	146.84	<50	2.2	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	10/14/96	153.64	7.67	145.97	<50	1.2	<0.5	<0.5	0.81	2.9	NM	
MW-3 *	03/27/97	153.64	7.62	146.02	<50	0.94	<0.5	0.9	0.63	<2.5	NM	
MW-3 *	05/27/97	153.64	6.72	146.92	Not Sampled: Well Sampled Semiannually							
MW-3 *	08/12/97	153.64	8.20	145.44	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-3 *	11/17/97	153.64	7.64	146.00	Not Sampled: Well Sampled Semiannually						12.0	
MW-3 *	03/18/98	153.64	5.14	148.50	<50	<0.5	<0.5	<0.5	<0.5	<3	4.0	P
MW-3 *	05/12/98	153.64	5.53	148.11	Not Sampled: Well Sampled Semiannually							
MW-3 *	07/27/98	153.64	7.63	146.01	74	<0.5	<0.5	<0.5	<0.5	<3	1.7	NP
MW-3 *	10/15/98	153.64	7.46	146.18	Not Sampled: Well Sampled Semiannually							
MW-3 *	02/18/99	153.64	5.85	147.79	Not Sampled							
MW-3 *	05/24/99	153.64	7.00	146.64	<50	<0.5	<0.5	<0.5	<0.5	4	6.0	NP
MW-3 *	08/27/99	153.64	7.16	146.48	<50	<0.5	<0.5	<0.5	<0.5	<3	16.57	NP
MW-3 *	10/26/99	153.64	7.79	145.85	<50	<0.5	<0.5	<0.5	<1	<3	14.86	NP
MW-3 *	02/03/00	153.64	7.11	146.53	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP

Table 1
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(TPPH as Gasoline, BTEX Compounds, and MTBE)

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number		Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-4		01/31/96	156.53	5.64	150.89	230	23	2.2	3.7	32	NA	NM	
MW-4		04/10/96	156.53	6.66	149.87	7,300	1,600	350	350	830	NA	NM	
MW-4		07/16/96	156.53	7.73	148.80	5,600	1,100	160	240	520	150	NM	
MW-4		10/14/96	156.53	8.55	147.98	4,500	860	72	160	340	<62	NM	
MW-4		03/27/97	156.53	7.15	149.38	25,000	5,200	760	850	2,600	<250	NM	
MW-4		05/27/97	156.53	7.75	148.78	Not Sampled: Well Sampled Semiannually							
MW-4		08/12/97	156.53	8.46	148.07	4,800	950	40	140	210	170	NM	
MW-4		11/17/97	156.53	8.24	148.29	Not Sampled: Well Sampled Semiannually							
MW-4		03/16/98	156.53	5.32	151.21	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P
MW-4		05/12/98	156.53	6.38	150.15	Not Sampled: Well Sampled Semiannually							
MW-4		07/27/98	156.53	7.36	149.17	21,000	6,100	390	810	1,600	<300	0.5	NP
MW-4	*	10/15/98	156.53	8.30	148.23	Not Sampled: Well Sampled Semiannually							
MW-4	*	02/18/99	156.53	4.39	152.14	Not Sampled							
MW-4	*	05/24/99	156.53	7.45	149.08	18,000	5,600	350	410	1,300	<300	1.0	NP
MW-4	*	08/27/99	156.53	8.07	148.46	12,000	3,200	170	490	810	65	1.32	NP
MW-4	*	10/26/99	156.53	8.72	147.81	12,000	3,100	130	450	680	12	1.39	NP
MW-4	*	02/03/00	156.53	7.41	149.12	9,300	2,800	96	330	400	73	1.0	NP
MW-5		01/31/96	151.33	8.64	142.69	<50	<0.5	<0.5	<0.5	<0.5	NA	NM	
MW-5		04/10/96	151.33	N/A	--	<50	<0.5	<0.5	<0.5	<0.5	NA	NM	
MW-5		07/16/96	151.33	8.15	143.18	<50	0.79	1.3	<0.5	<0.5	<2.5	NM	
MW-5		10/14/96	151.33	7.92	143.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5		03/27/97	151.33	7.75	143.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5		05/27/97	151.33	8.16	143.17	<50	<0.5	<0.5	<0.5	<0.5	<2.5	NM	
MW-5		08/12/97	151.33	---------- Well Inaccessible ----------									
MW-5		11/17/97	151.33	8.75	142.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5	4.0	NP
MW-5		03/16/98	151.33	6.90	144.43	<50	<0.5	<0.5	<0.5	<0.5	<3	1.5	P

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)
MW-5	05/12/98	151.33	7.24	144.09	<50	<0.5	<0.5	<0.5	<0.5	<3	2.2	P
MW-5	07/27/98	151.33	7.91	143.42	<50	<0.5	<0.5	<0.5	<0.5	<3	1.3	P
MW-5	10/15/98	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	0.6	<3	3.0	P
MW-5	02/18/99	151.33	7.25	144.08	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	P
MW-5	05/24/99	151.33	7.52	143.81	<50	<0.5	<0.5	<0.5	<0.5	<3	2.0	NP
MW-5	08/27/99	151.33	8.31	143.02	<50	<0.5	<0.5	<0.5	<0.5	<3	2.28	P
MW-5	10/26/99	151.33	8.61	142.72	<50	<0.5	<0.5	<0.5	<1	<3	1.99	P
MW-5	02/03/00	151.33	10.09	141.24	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP
MW-6	01/31/96	153.84	5.15	148.69	Not Sampled: Well Sampled Annually							
MW-6	04/10/96	153.84	4.58	149.26	Not Sampled: Well Sampled Annually							
MW-6	07/16/96	153.84	4.96	148.88	<50	<0.5	<0.5	<0.5	<0.5	150	NM	
MW-6	10/14/96	153.84	6.15	147.69	Not Sampled: Well Sampled Annually							
MW-6	03/27/97	153.84	4.40	149.44	Not Sampled: Well Sampled Annually							
MW-6	05/27/97	153.84	4.90	148.94	Not Sampled: Well Sampled Annually							
MW-6	08/12/97	153.84	5.43	148.41	<50	<0.5	<0.5	<0.5	<0.5	39	NM	
MW-6	11/17/97	153.84	5.87	147.97	Not Sampled: Well Sampled Annually							
MW-6	03/16/98	153.84	4.52	149.32	Not Sampled: Well Sampled Annually							
MW-6	05/12/98	153.84	4.42	149.42	Not Sampled: Well Sampled Annually							
MW-6	07/27/98	153.84	4.75	149.09	<50	<0.5	<0.5	<0.5	<0.5	18	0.9	P
MW-6	10/15/98	153.84	5.75	148.09	Not Sampled: Well Sampled Annually							
MW-6	02/18/99	153.84	3.93	149.91	Not Sampled: Well Sampled Annually							
MW-6	05/24/99	153.84	4.32	149.52	<50	<0.5	<0.5	<0.5	<0.5	6	2.0	NP
MW-6	08/27/99	153.84	5.72	148.12	<50	<0.5	<0.5	<0.5	<0.5	8	1.02	NP
MW-6	10/26/99	153.84	5.94	147.90	Not Sampled: Well Sampled Annually						2.51	
MW-6	02/03/00	153.84	5.44	148.40	<50	<0.5	<0.5	<0.5	<1	<3	1.0	NP

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

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Well Number	Date Gauged/ Sampled	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)	MTBE (ppb)	Dissolved Oxygen (ppm)	Purged/ Not Purged (P/NP)

MSL	= Mean sea level.
TOC	= Top of casing.
TPPH	= Total purgeable 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 by EPA method 8021B. (EPA method 8020 prior to 10/26/99).
ppb	= Parts per billion.
ppm	= Parts per million.
<	= Less than laboratory detection limit stated to the right.
NA	= Not analyzed.
NM	= Not measured.
N/A	= Not available.
*	= ORCs installed in well MW-3 beginning 11/14/95 and in well MW-4 beginning 09/29/98. Please refer to Appendix D for details.

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
01-31-96	Southwest	0.04
04-10-96	Southwest	0.04
07-16-96	Southwest	0.03
10-14-96	Southwest	0.03
03-27-97	Southwest	0.04
05-27-97	Southwest	0.03
08-12-97	Southwest	0.04
11-17-97	Southwest	0.03
03-16-98	Southwest	0.03
05-12-98	Southwest	0.04
07-27-98	Southwest	0.04
10-15-98	Southwest	0.02
02-18-99	Southwest	0.05
05-24-99	Southwest	0.03
08-27-99	Southwest	0.03
10-26-99	Southwest	0.03
02-03-00	**Southwest**	**0.047**

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

			Field Analyses					Laboratory Analyses									
Well	Date Sampled		Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)
MW-3	11/14/95	**	65.5*	6.76*	508*	7.17	N/A	NS	NS	NS	NS	NS	6.6	<1.0	NS	140	46
MW-3	06/06/96	**	66.2	7.38	700	12.28	N/A	NS	NS	NS	NS	NS	NS	NS	NS	84†	5.4†
MW-3	07/16/96		67.8	7.08	1,010	8.73	0.0	280	1.8	270	44	<0.020	<1.0	NS	78	<50	2.2
MW-3	01/21/97	**	59	N/A	N/A	11.15	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	08/12/97	**	74.4	6.65	600	6.7	1.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	11/17/97		N/A	N/A	N/A	12.0	0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-3	03/16/98		68.5	7.75	806	4.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	05/12/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	07/27/98		68.1	6.81	904	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	74	ND
MW-3	09/29/98	**	ORC installed														
MW-3	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	05/24/99		66.2	7.24	799	6.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	07/26/99	**	ORC installed														
MW-3	08/27/99		69.0	7.97	782	16.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	10/26/99		66.5	5.93	794	14.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-3	02/03/00		62.0	7.42	7,877	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-4	07/16/96		69.5	6.72	1,370	3.20	4.20	420	NS	470	NS	0.11	<1.0	NS	18	5,600	2,020
MW-4	03/16/98		66.2	6.89	1,411	1.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-4	05/12/98		NM	NM	NM	NM	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	07/27/98		70.5	6.34	1,434	0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21,000	8,900
MW-4	09/29/98	**	ORC installed														
MW-4	10/15/98		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	02/18/99		NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-4	05/24/99		67.6	6.72	1,509	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18,000	7,660
MW-4	07/26/99	**	ORC installed														

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

		Field Analyses					Laboratory Analyses									
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)
MW-4	08/27/99	70.5	7.09	1,469	1.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,670
MW-4	10/26/99	66.8	7.05	1,565	1.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12,000	4,360
MW-4	02/03/00	64.1	7.27	1,506	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9,300	3,626
MW-5	07/16/96	70.4	6.85	690	6.80	0.0	170	NS	180	NS	<0.020	<1.0	NS	35	<50	1.1
MW-5	03/16/98	69.5	7.19	584	1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/12/98	65.9	7.04	619	2.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	07/27/98	73.6	7.39	569	1.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/15/98	65.8	6.88	626	3.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	0.6
MW-5	02/18/99	63.4	6.98	616	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	05/24/99	66.7	6.70	591	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	08/27/99	72.6	7.10	624	2.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	10/26/99	70.4	5.95	601	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-5	02/03/00	62.1	7.31	6,072	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	06/06/96	N/A	N/A	N/A	3.47	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	03/16/98	N/A	N/A	N/A	N/A	N/A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/12/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	07/27/98	70.3	6.67	638	0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/15/98	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/18/99	NM	NM	NM	NM	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	05/24/99	65.5	6.62	713	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	08/27/99	73.0	7.12	589	1.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND
MW-6	10/26/99	NM	NM	NM	2.51	NM	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-6	02/03/00	61.7	7.32	5,091	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND	ND

Table D-1
Intrinsic Bioremediation Evaluation and Enhancement Data

ARCO Service Station 0374
6407 Telegraph Avenue, Oakland, California

		Field Analyses					Laboratory Analyses									
Well	Date Sampled	Groundwater Temperature (deg F)	pH (units)	Conductivity (µmhos)	D.O. (mg/L)	Ferrous Iron (mg/L)	Total Alkalinity (mg CaCO3/L)	B.O.D. (mg/L)	Carbon Dioxide (mg/L)	C.O.D. (mg/L)	Methane (%)	Nitrate as Nitrate (mg/L)	Nitrite as Nitrite (mg/L)	Sulfate (mg/L)	TPH as Gasoline (µg/L)	Total BTEX (µg/L)

D.O.	= Dissolved oxygen	µg/L	= Micrograms per liter
B.O.D	= Biochemical oxygen demand	NM	= not measured
C.O.D	= Chemical oxygen demand	NS	= Not sampled
TPPH	= Total purgeable petroleum hydrocarbons	ND	= Not detected
BTEX	= Benzene, toluene, ethylbenzene, and xylenes	N/A	= Not available
deg F	= Degrees Fahrenheit	*	Field measurements collected on November 2, 1995.
µmhos	= Micromhos	**	ORC installed
mg/L	= Milligrams per liter	†	From April 10, 1996 groundwater monitoring event

APPPENDIX C

Certified Analytical Reports
And
Chain-of-Custody Documentation

Sequoia Analytical

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March 30 , 2001

Steven Meeks
Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 374, Oakland, CA / S103477

Enclosed are the results of analyses for samples received by the laboratory on 03/27/01. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R Hansen for

Ron Chew
Client Services Representative

For

Lito Diaz
Laboratory Director

CA ELAP Certificate Number 1624

Sequoia Analytical

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-5	S103477-01	Water	03/23/01 12:04	03/27/01 07:45
MW-2-7	S103477-02	Water	03/23/01 11:42	03/27/01 07:45
MW-5-7	S103477-03	Water	03/23/01 11:15	03/27/01 07:45
MW-6-4	S103477-04	Water	03/23/01 11:35	03/27/01 07:45
TB	S103477-05	Water	03/23/01 06:00	03/27/01 07:45

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1-5 (S103477-01) Water Sampled: 03/23/01 12:04 Received: 03/27/01 07:45									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1030402	03/29/01	03/29/01	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*102 %*	*60-140*		"	"	"	"	
MW-1-5 (S103477-01RE1) Water Sampled: 03/23/01 12:04 Received: 03/27/01 07:45									
Methyl tert-butyl ether	**2710**	500	ug/l	200	1030400	03/29/01	03/29/01	DHS LUFT	
MW-2-7 (S103477-02) Water Sampled: 03/23/01 11:42 Received: 03/27/01 07:45									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1030400	03/29/01	03/29/01	DHS LUFT	
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		*98.1 %*	*60-140*		"	"	"	"	
MW-5-7 (S103477-03) Water Sampled: 03/23/01 11:15 Received: 03/27/01 07:45									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1030400	03/29/01	03/29/01	DHS LUFT	
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		*100 %*	*60-140*		"	"	"	"	

Sequoia Analytical

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-6-4 (S103477-04) Water Sampled: 03/23/01 11:35 Received: 03/27/01 07:45									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1030402	03/29/01	03/29/01	DHS LUFT	
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		*99.2 %*	*60-140*		"	"	"	"	
TB (S103477-05) Water Sampled: 03/23/01 06:00 Received: 03/27/01 07:45									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	1030402	03/29/01	03/29/01	DHS LUFT	
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		*101 %*	*60-140*		"	"	"	"	

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1030400 - EPA 5030B (P/T)										
Blank (1030400-BLK1)				Prepared & Analyzed: 03/29/01						
Purgeable Hydrocarbons	ND	50.0	ug/l							
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	*10.2*		"	*10.0*		*102*	*60-140*			
LCS (1030400-BS1)				Prepared & Analyzed: 03/29/01						
Benzene	10.1	0.500	ug/l	10.0		101	70-130			
Toluene	10.2	0.500	"	10.0		102	70-130			
Ethylbenzene	10.2	0.500	"	10.0		102	70-130			
Xylenes (total)	30.4	0.500	"	30.0		101	70-130			
Methyl tert-butyl ether	9.74	2.50	"	10.0		97.4	70-130			
Surrogate: a,a,a-Trifluorotoluene	*9.67*		"	*10.0*		*96.7*	*60-140*			
Matrix Spike (1030400-MS1)		**Source: S103476-06**		Prepared & Analyzed: 03/29/01						
Benzene	9.87	0.500	ug/l	10.0	ND	98.7	60-140			
Toluene	9.25	0.500	"	10.0	ND	92.5	60-140			
Ethylbenzene	9.49	0.500	"	10.0	ND	94.9	60-140			
Xylenes (total)	20.0	0.500	"	30.0	ND	66.7	60-140			
Methyl tert-butyl ether	9.75	2.50	"	10.0	ND	97.5	60-140			
Surrogate: a,a,a-Trifluorotoluene	*9.18*		"	*10.0*		*91.8*	*60-140*			
Matrix Spike Dup (1030400-MSD1)		**Source: S103476-06**		Prepared & Analyzed: 03/29/01						
Benzene	10.3	0.500	ug/l	10.0	ND	103	60-140	4.26	25	
Toluene	9.30	0.500	"	10.0	ND	93.0	60-140	0.539	25	
Ethylbenzene	9.64	0.500	"	10.0	ND	96.4	60-140	1.57	25	
Xylenes (total)	20.1	0.500	"	30.0	ND	67.0	60-140	0.499	25	
Methyl tert-butyl ether	11.1	2.50	"	10.0	ND	111	60-140	12.9	25	
Surrogate: a,a,a-Trifluorotoluene	*9.61*		"	*10.0*		*96.1*	*60-140*			

Sequoia Analytical

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

Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	**Reported:**
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1030402 - EPA 5030B (P/T)										
Blank (1030402-BLK1)				Prepared & Analyzed: 03/29/01						
Purgeable Hydrocarbons	ND	50.0	ug/l							
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	*10.3*		"	*10.0*		*103*	*60-140*			
LCS (1030402-BS1)				Prepared & Analyzed: 03/29/01						
Benzene	10.5	0.500	ug/l	10.0		105	70-130			
Toluene	10.5	0.500	"	10.0		105	70-130			
Ethylbenzene	10.5	0.500	"	10.0		105	70-130			
Xylenes (total)	32.3	0.500	"	30.0		108	70-130			
Methyl tert-butyl ether	9.73	2.50	"	10.0		97.3	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.5*		"	*10.0*		*105*	*60-140*			
Matrix Spike (1030402-MS1)	**Source: S103477-04**			Prepared & Analyzed: 03/29/01						
Benzene	7.86	0.500	ug/l	10.0	ND	78.6	60-140			
Toluene	3.55	0.500	"	10.0	ND	35.5	60-140			Q-02
Ethylbenzene	4.83	0.500	"	10.0	ND	48.3	60-140			Q-02
Xylenes (total)	12.3	0.500	"	30.0	ND	41.0	60-140			Q-02
Methyl tert-butyl ether	7.53	2.50	"	10.0	ND	75.3	60-140			
Surrogate: a,a,a-Trifluorotoluene	*2.88*		"	*10.0*		*28.8*	*60-140*			*Q-02*
Matrix Spike Dup (1030402-MSD1)	**Source: S103477-04**			Prepared & Analyzed: 03/29/01						
Benzene	10.5	0.500	ug/l	10.0	ND	105	60-140	28.8	25	Q-07
Toluene	10.5	0.500	"	10.0	ND	105	60-140	98.9	25	Q-07
Ethylbenzene	10.5	0.500	"	10.0	ND	105	60-140	74.0	25	Q-07
Xylenes (total)	32.5	0.500	"	30.0	ND	108	60-140	90.2	25	Q-07
Methyl tert-butyl ether	11.4	2.50	"	10.0	ND	114	60-140	40.9	25	Q-07
Surrogate: a,a,a-Trifluorotoluene	*9.92*		"	*10.0*		*99.2*	*60-140*			

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Delta Environmental Consultants(Rancho Cordova	Project: ARCO 374, Oakland, CA	
3164 Gold Camp Drive Ste. 200	Project Number: N/A	Reported:
Rancho Cordova CA, 95670	Project Manager: Steven Meeks	03/30/01 14:46

Notes and Definitions

Q-02	The RPD and/or spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
Q-07	The RPD value for this QC sample is above the established control limit. Review of associated QC indicates the high RPD does not represent an out-of-control condition for the batch.
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
RPD	Relative Percent Difference

ARCO Products Company Division of AtlanticRichfieldCompany

Task Order No. 2598900

Chain of Custody

ARCO Facility no. ~~[illegible]~~ 374	City (Facility) ~~[illegible]~~ Oakland	Project manager (Consultant) Steve Meeks	Laboratory name Sequoia
ARCO engineer Paul Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 638 2085 / Fax no. (Consultant) 638 8385	Contract number
Consultant name Delta	Address (Consultant) Rancho Cordova		

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH MTBE EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐		
MW-15		~~2~~		X		X	X	3-23-01	1204		X				S103477				-01			
MW-27		|		|		|	|	|	1142		|								-02			
MW-57		|		|		|	|	|	1115		|								-03			
MW-64		✓		|		|	|	|	1135		|								-04			
TB		2		✓		✓	✓	✓	600		✓								-05			

Method of shipment

Special detection Limit/reporting

Special QA/QC /

Remarks

Lab number

Condition of sample:

Temperature received: 5°C

Relinquished by	Date	Time	Received by	Date	Time
Relinquished by sampler: [signature]	3-27-01	0645	Received by: [signature]		
Relinquished by: [signature]	3-27-01	0745	Received by: Monica Gezen	3/27/01	745
Relinquished by:	Date	Time	Received by laboratory	Date	Time

Turnaround time

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

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

APC-3292 (2-91)

APPENDIX D

Field Data Sheets

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

Site Contact & Phone Number: ______

Arco Site Address: **6407 Telegraph Avenue, Oakland, California**
Arco Project Manager: **Paul Supple**
Site Sampled By: **Doulos Environmental**

Arco Site Number: **374**
Delta Project No.: **D000-302**
Delta Project PM: **Steven W. Meeks**
Date Sampled: **03/23/01**

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 Freqency (A, S, Q)	Sample I.D.	Sample Time
MW-1	10:40	**5.90**	**7.0**	**26.3**	☐	20.41	**4 inch**	**2.0**	40.8	40.8	☐	☐	☐	☐	1.83	A/2	**MW-1**	12:04
MW-2	10:44	**7.21**	**7.0**	**25.9**	☑	18.67	**4 inch**	**2.0**	37.3	NP	☐	☐	☐	☐	1.09	A/2	**MW-2**	11:42
MW-3	10:47	**6.01**	**7.0**	**26.5**	☐	20.44	**4 inch**	**2.0**	40.9	N/A	☐	☐	☐	☐	NM	S/5,11		
MW-4	10:05	**6.69**	**7.0**	**26.6**	☐	19.87	**4 inch**	**2.0**	39.7	N/A	☐	☐	☐	☐	NM	S/5,11		
MW-5	10:53	**7.55**	**10.0**	**22.7**	☐	15.13	**4 inch**	**2.0**	30.3	30.9	☐	☐	☐	☐	1.17	Q/2,5,8,11	**MW-5**	11:15
MW-6	10:58	**4.69**	**5.0**	**14.5**	☐	9.81	**4 inch**	**2.0**	19.6	20	☐	☐	☐	☐	2.33	A/2	**MW-6**	11:35
Note: Purge Wells if ORC is present					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
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					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				
					☐						☐	☐	☐	☐				

(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:** MW-1, MW-2, MW-3; **Semi-Annual:** MW-3, MW-4; **Quarterly:** MW-5

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.

Delta Environmental Consultants, Inc.
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Arco Site Address: **6407 Telegraph Avenue, Oakland, California**
Arco Site Number: **374**
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Arco Project Manager: **Paul Supple**
Delta Project PM: **Steven W. Meeks**
Site Contact & Phone Number: _____
Site Sampled By: **Doulos Environmental**
Date Sampled: **03/23/01**

Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-1	11:47	70.3	7.44	922	15												
	11:50	68.2	7.36	916	30												
	11:56	67.8	7.31	914	40												
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-2	**No Purge**																
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-3	**Not Sampled**																
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-4	**Not Sampled**																
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-5	11:02	65.2	7.45	984	10												
	11:06	64.4	7.19	952	20												
	11:10	64.4	7.18	925	30												
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons
MW-6	11:20	68.2	7.84	1,044	10												
	11:25	67.3	7.72	1,002	15												
	11:29	67.1	7.70	1,002	20												
Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Cond.	Gallons

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File