



3854

3164 Gold Camp Drive
Suite 200
Rancho Cordova, CA 95670-6021
U.S.A.
916/638-2085
FAX: 916/638-8385

March 22, 2001

MAR 30 2001

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

- Should run MW-1 by 8260 to get more accurate value for MTBE.
- Need to provide summary table for MW-1 since MTBE was requested.
- Need to provide a gradient including both Shell & ARCO sites.

Subject: Quarterly Groundwater Monitoring Report, Fourth Quarter 2000
ARCO Service Station No. 4494
566 Hegenberger Road
Oakland, California
Project No. D000-319

Dear Mr. Supple:

Delta Environmental Consultants, Inc. is submitting the attached report that presents the results of the fourth quarter 2000 groundwater monitoring program at ARCO Products Company Service Station No. 4494, located at 566 Hegenberger Road, 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.
California Registered Civil Engineer No. C057461
Project Manager



3/26/01

TLA (LRP003.319.doc)
Enclosures

cc: Mr. Barney Chan – Alameda County Health Care Services

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 4494 Address: 566 Hegenberger Road, 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.: D000-319
 Primary Agency/Regulatory ID No. Alameda County Health Care Services/STID #3854

WORK PERFORMED THIS QUARTER

1. Performed quarterly groundwater monitoring for fourth quarter 2000.

WORK PROPOSED FOR NEXT QUARTER

1. Prepare and submit quarterly groundwater monitoring report for fourth quarter 2000.
2. Perform quarterly groundwater monitoring and sampling for first quarter 2001.

QUARTERLY MONITORING:

Current Phase of Project	Monitoring
Frequency of Groundwater Sampling:	Quarterly (MW-1, MW-3 to MW-7, RW-1)
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
FP Recovered this Quarter:	None
Cumulative FP Recovered to Date:	0.92 feet (volume not available)
Bulk Soil Removed This Quarter:	None
Bulk Soil Removed to Date:	1,200 cubic yards
Current Remediation Techniques:	None
Approximate Depth to Groundwater:	7.78 ft
Groundwater Gradient:	0.013 ft/ft North Northwest

DISCUSSION:

- Analytical results indicate that MW-1 and MW-7 contain MTBE concentrations of 10,600 and 27.1 micrograms per liter, respectively.



- The site is currently scheduled for quarterly monitoring through 2001.

ATTACHMENTS:

- Table 1 Groundwater Elevation and Analytical Data
- Table 2 Ground 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 (Pacific Environmental Group, Inc.)
- Appendix C Certified Analytical Reports with Chain-of-Custody Documentation
- Appendix D Field Sample Sheets

TABLE 1
GROUNDWATER ANALYTICAL DATA

ARCO Service Station 4494
566 Hegenberger Road at Edes 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)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
MW-1	06/20/00	106.10	7.02	99.08	<10	<10	<10	<20	<1,000	14,000/15,000 ^a
	09/28/00		7.07	99.03	<5.0	<5.0	<5.0	<5.0	<500	13000/18,800 ^a
	12/17/00		6.95	99.15	<0.5	<0.5	<0.5	<0.5	<50	10,600
MW-3	06/20/00	106.29	9.18	97.11	<0.5	<0.5	<0.5	<1.0	<50	27/27 ^a
	09/28/00		9.33	96.96	<0.5	<0.5	<0.5	<1.0	<50	4.3/<2.0 ^a
	12/17/00		9.31	96.98	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-4	06/20/00	107.40	8.49	98.91	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		8.70	98.70	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		8.53	98.87	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-5	06/20/00	105.19	7.65	97.54	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		6.82	98.37	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		6.5	98.69	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-6	06/20/00	105.07	6.24	98.83	<0.5	<0.5	<0.5	<1.0	<50	<10
	09/28/00		6.45	98.62	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		6.26	98.81	<0.5	<0.5	<0.5	<0.5	<50	<2.5
MW-7	06/20/00	105.52	8.65	96.87	<0.5	<0.5	<0.5	<1.0	<50	13/13 ^a
	09/28/00		8.75	96.77	<0.5	<0.5	<0.5	<1.0	<50	136/261 ^a
	12/17/00		8.62	96.90	<0.5	<0.5	<0.5	<0.5	<50	27.1

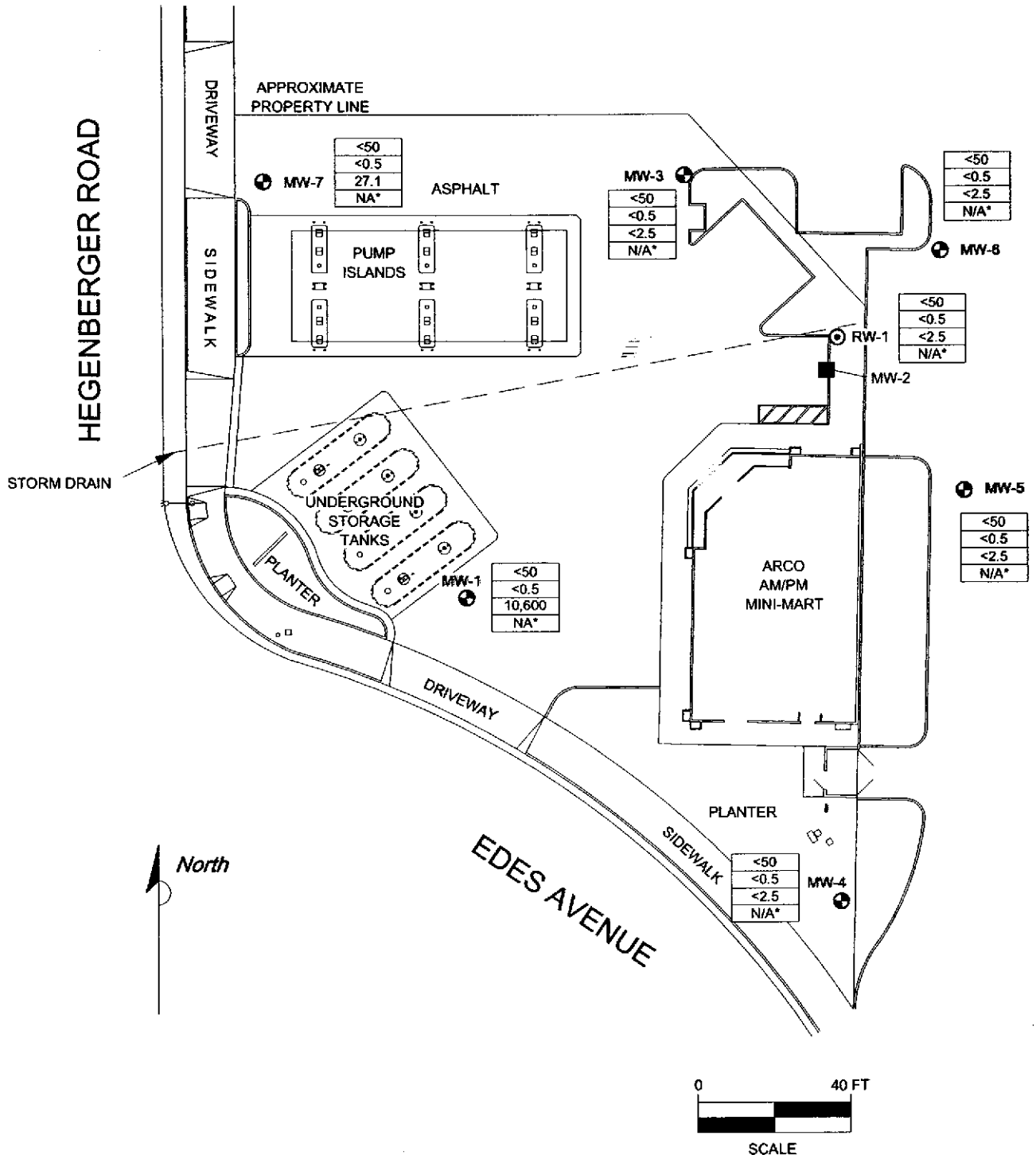
TABLE 2

GROUNDWATER FLOW DIRECTION AND GRADIENT

ARCO Service Station No. 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

<u>Date Measured</u>	<u>Average Flow Direction</u>	<u>Average Hydraulic Gradient</u>
06/20/00	North-Northeast	0.015
09/28/00	North	0.018
12/17/00	North-Northwest	0.013

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



LEGEND:

- ⊕ MW-7 MONITORING WELL LOCATION
- ⊙ RW-1 RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA-APRIL 1993)
- MW-2 DESTROYED MONITORING WELL (DECEMBER 1992)

<50	TPH AS GASOLINE IN MICROGRAMS PER LITER
<0.5	BENZENE IN MICROGRAMS PER LITER
<2.5	MTBE IN MICROGRAMS PER LITER
<2.0*	MTBE CONFIRMED BY EPA METHOD 8260

N/A NOT APPLICABLE

NOTE: SITE MAP ADAPTED FROM RESNA AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 1
GROUND WATER ANALYTICAL SUMMARY
FOURTH QUARTER 2000 (12/17/00)

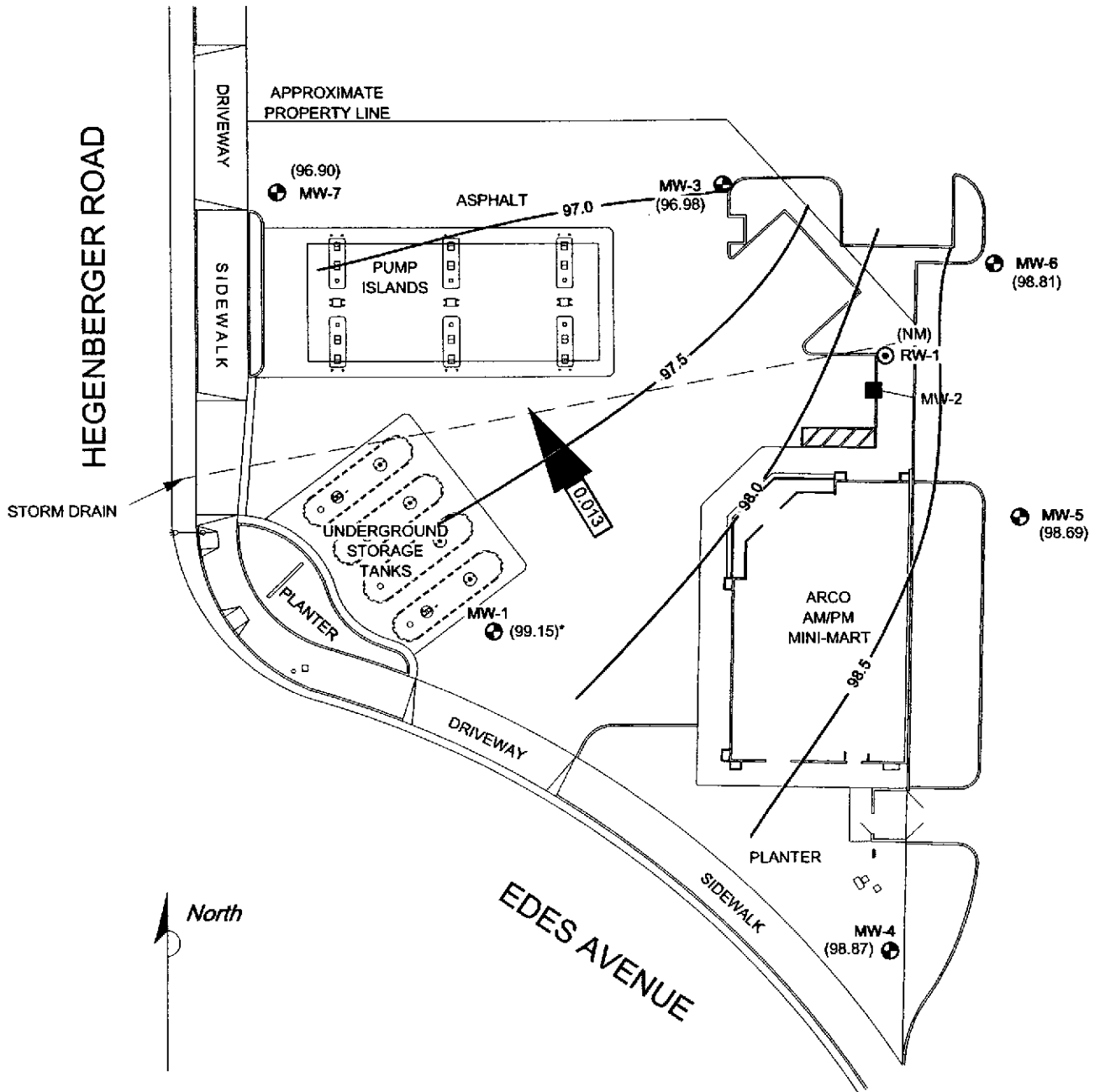
ARCO STATION NO. 4494

566 HEGENBERGER ROAD

OAKLAND, CALIFORNIA

PROJECT NO. D000-319	DRAWN BY TLA 2/15/01
FILE NO. 4494-1	PREPARED BY TLA
REVISION NO. 1	REVIEWED BY





LEGEND:

- ⊕ MW-7 MONITORING WELL LOCATION
- ⊙ RW-1 RECOVERY WELL LOCATION, INSTALLED DURING SLURRY WALL CONSTRUCTION (RESNA-APRIL 1993)
- MW-2 DESTROYED MONITORING WELL (DECEMBER 1992)
- (96.98) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (MSL)
- 98.0 - WATER TABLE CONTOUR IN FEET ABOVE MSL
- GROUND WATER FLOW DIRECTION
- 0.013 APPROXIMATE GROUND WATER FLOW GRADIENT
- MONITORING WELL(S) NOT USED IN CONTOUR MAP CONSTRUCTION

NOTE: SITE MAP ADAPTED FROM RESNA INC. AND TAIT & ASSOCIATES FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

FIGURE 2
GROUND WATER ELEVATION CONTOUR MAP
FOURTH QUARTER 2000 (12/17/00)
ARCO STATION NO. 4494
566 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO. D000-319	DRAWN BY TLA 2/15/01
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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

If the depth to groundwater was above the top of screens of the monitoring wells, then the wells were purged. 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. 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 was collected in storage barrels or tank(s) and transported to an ARCO approved facility for treatment and/or disposal.

APPENDIX B

Historical Data Tables

Pacific Environmental Group, Inc.

Table 2
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-1	06/06/90	105.31	6.65	6.05	0.00	98.66
	08/16/90		7.00	7.00	0.00	98.31
	08/21/90		7.05	7.05	0.00	98.26
	09/07/90		7.24	7.24	0.00	98.07
	11/20/90		7.46	7.46	0.00	97.85
	11/29/90		7.40	7.40	0.00	97.91
	12/19/90		6.99	6.99	0.00	98.32
	01/29/91		7.23	7.23	0.00	98.08
	02/27/91		7.45	7.45	0.00	97.86
	03/07/91		6.96	6.96	0.00	98.35
	03/26/91		6.02	6.02	0.00	99.29
	05/02/91		7.04	7.04	0.00	98.27
	06/27/91		6.71	6.71	0.00	98.60
	07/24/91		6.91	6.91	0.00	98.40
	08/22/91		6.85	6.85	0.00	98.46
	09/30/91		7.04	7.04	0.00	98.27
	10/17/91		7.22	7.22	0.00	98.09
	11/21/91		7.17	7.17	0.00	98.14
	12/18/91		7.46	7.46	0.00	97.85
	01/19/92		7.44	7.44	0.00	97.87
	02/20/92		6.25	6.25	0.00	99.06
	03/20/92		6.40	6.40	0.00	98.91
	04/20/92		6.88	6.88	0.00	98.43
	05/19/92	7.10	7.10	0.00	98.21	
	06/08/92	7.22	7.22	0.00	98.09	
	07/15/92	106.10	7.92	7.92	0.00	97.39
	08/06/92		7.29	7.29	0.00	98.81
	10/29/92		7.34	7.34	0.00	98.76
	11/23/92		8.15	8.15	0.00	97.95
	08/16/93		7.23	7.23	0.00	98.87
	11/17/93		7.51	7.51	0.00	98.59
	02/21/94		6.56	6.56	0.00	99.54
	05/11/94		6.57	6.57	0.00	99.53
	08/12/94		7.12	7.12	0.00	98.98
11/17/94	6.85		6.85	0.00	99.28	
02/22/95	7.35	7.35	0.00	98.75		
05/24/95	7.07	7.07	0.00	99.03		
08/23/95	7.10	7.10	0.00	99.00		
11/17/95	7.72	7.72	0.00	98.38		
MW-2	06/06/90	105.78	9.92*	9.00	0.92	95.86
	08/16/90		NM	NM	0.17	NM
	08/21/90		NM	NM	0.17	NM
	09/07/90		9.34*	9.17	0.17	96.44
	11/20/90		9.20*	9.2	Sheen	96.58
	11/29/90		9.92*	9.92	Sheen	95.86
	12/19/90		8.95	8.95	0/00	96.83
	01/29/91		9.01	9.01	Sheen	96.77
	02/27/91		9.14	9.14	Sheen	96.64
	03/07/91		8.94	8.94	Sheen	96.84
	03/26/91		8.11	8.11	Sheen	97.67
05/02/91	8.72	8.72	0	97.06		

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)	
MW-2	06/27/91		9.20	9.2	Sheen	96.58	
(cont.)	07/24/91		9.25	9.25	0.00	96.53	
	08/22/91		9.20	9.20	0.00	96.58	
	09/30/91		9.31	9.31	Sheen	96.47	
	10/17/91		9.39	9.39	Sheen	96.39	
	11/21/91		9.20	9.2	0	96.58	
	12/18/91		9.23	9.23	Sheen	96.55	
	01/19/92		9.96**	9.96	Skimmer	95.82	
	02/20/92		9.13**	9.13	Skimmer	96.65	
	03/20/92		9.31**	9.31	Skimmer	96.47	
	04/20/92		9.69	9.69	Skimmer	96.09	
	05/19/92		9.92	9.92	Skimmer	95.86	
	06/08/92		9.84	9.84	Skimmer	95.94	
	07/15/92		10.19	10.19	Skimmer	95.59	
	08/06/92	106.57	10.05	10.05	Skimmer	96.52	
	10/29/92		10.00	10.00	Skimmer	96.57	
	11/23/92		9.88	9.87	0.01	96.69	
	12/08/92		-----Well Destroyed-----				
MW-3	08/16/90	105.51	8.87	8.87	0.00	96.64	
	08/21/90		8.85	8.85	0.00	96.66	
	09/07/90		8.98	8.98	0.00	96.53	
	11/20/90		9.10	9.10	0.00	96.41	
	11/29/90		9.05	9.05	0.00	96.46	
	12/19/90		8.67	8.67	0.00	96.84	
	01/29/91		8.96	8.96	0.00	96.55	
	02/27/91		8.71	8.71	0.00	96.80	
	03/07/91		8.49	8.49	0.00	97.02	
	03/26/91		7.65	7.65	0.00	97.86	
	05/02/91		8.62	8.62	0.00	96.89	
	06/27/91		8.94	8.94	0.00	96.57	
	07/24/91		8.96	8.96	0.00	96.55	
	08/22/91		8.92	8.92	0.00	96.59	
	09/30/91		9.04	9.04	0.00	96.47	
	10/17/91		9.12	9.12	0.00	96.39	
	11/21/91		8.92	8.92	0.00	96.59	
	12/18/91		8.97	8.97	0.00	96.54	
	01/19/92		8.69	8.69	0.00	96.82	
	02/20/92		7.78	7.78	0.00	97.73	
	03/20/92		8.15	8.15	0.00	97.36	
	04/20/92		8.57	8.57	0.00	96.94	
	05/19/92		8.76	8.76	0.00	96.75	
	06/08/92		8.74	8.74	0.00	96.77	
	07/15/92		9.12	9.12	0.00	96.39	
	08/06/92	106.29	8.95	8.95	0.00	97.34	
	10/29/92		8.78	8.78	0.00	97.51	
	11/23/92		9.91	9.91	0.00	96.38	
	08/16/93		8.62	8.62	0.00	97.67	
	11/17/93		8.72	8.72	0.00	97.57	
	02/21/94		7.91	7.91	0.00	98.38	
	05/11/94		8.09	8.09	0.00	98.20	

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-3 (cont.)	08/12/94		8.78	8.78	0.00	97.51
	11/17/94		8.45	8.45	0.00	97.84
	02/22/95		8.95	8.95	0.00	97.34
	05/24/95		8.67	8.67	0.00	97.62
	08/23/95		9.17	9.17	0.00	97.12
	11/17/95		9.39	9.39	0.00	96.90
MW-4	08/16/90	106.61	8.16	8.16	0.00	98.45
	08/21/90		8.22	8.22	0.00	98.39
	09/07/90		8.39	8.39	0.00	98.22
	11/20/90		8.57	8.57	0.00	98.04
	11/29/90		8.53	8.53	0.00	98.08
	12/19/90		8.13	8.13	0.00	98.48
	01/29/91		8.66	8.66	0.00	97.95
	02/27/91		8.44	8.44	0.00	98.17
	03/07/91		8.18	8.18	0.00	98.43
	03/26/91		7.56	7.56	0.00	99.05
	05/02/91		8.25	8.25	0.00	98.36
	06/27/91		7.75	7.75	0.00	98.86
	07/24/91		8.12	8.12	0.00	98.49
	08/22/91		7.98	7.98	0.00	98.63
	09/30/91		8.26	8.26	0.00	98.35
	10/17/91		8.42	8.42	0.00	98.19
	11/21/91		8.65	8.65	0.00	97.96
	12/18/91		8.77	8.77	0.00	97.84
	01/19/92		8.42	8.42	0.00	98.19
	02/20/92		7.60	7.60	0.00	99.01
	03/20/92		7.61	7.61	0.00	99.00
	04/20/92		8.15	8.15	0.00	98.46
	05/19/92		8.14	8.14	0.00	98.47
	06/08/92		8.40	8.40	0.00	98.21
	07/15/92		8.72	8.72	0.00	97.89
	08/06/92	107.40	8.52	8.52	0.00	98.88
	10/29/92		8.63	8.63	0.00	98.77
	11/23/92		8.75	8.75	0.00	98.65
	08/16/93		8.69	8.69	0.00	98.71
	11/17/93		9.11	9.11	0.00	98.29
	02/21/94		8.16	8.16	0.00	99.24
	05/11/94		8.29	8.29	0.00	99.11
	08/12/94		8.75	8.75	0.00	98.65
11/17/94		8.40	8.40	0.00	99.00	
02/22/95		8.72	8.72	0.00	98.68	
05/24/95		8.63	8.63	0.00	98.77	
08/23/95		6.50	6.50	0.00	100.90	
11/17/95		9.15	9.15	0.00	98.25	
MW-5	08/06/92	105.19	7.19	7.19	0.00	98.00
	10/29/92		6.99	6.99	0.00	98.20
	11/23/92		6.90	6.90	0.00	98.29
	08/16/93		7.06	7.06	0.00	98.13
	11/17/93		6.91	6.91	0.00	98.28
	02/21/94		5.52	5.52	0.00	99.67
	05/11/94		6.18	6.18	0.00	99.01
	08/12/94		6.81	6.81	0.00	98.38
	11/17/94		5.38	5.38	0.00	99.81
02/22/95		6.25	6.25	0.00	98.94	

Table 2 (continued)
Liquid Surface Elevation Data

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Depth to Liquid (feet, TOC)	SPH Thickness (feet)	Liquid Surface Elevation (feet, MSL)
MW-5 (cont.)	05/24/95		6.30	6.30	0.00	98.89
	08/23/95		6.90	6.90	0.00	98.29
	11/17/95		7.02	7.02	0.00	98.17
MW-6	08/06/92	105.07	7.01	7.01	0.00	98.06
	10/29/92		6.70	6.70	0.00	98.37
	11/23/92		6.75	6.75	0.00	98.32
	08/16/93		6.71	6.71	0.00	98.36
	11/17/93		6.67	6.67	0.00	98.40
	02/21/94		5.31	5.31	0.00	99.76
	05/11/94		5.98	5.98	0.00	99.09
	08/12/94		6.60	6.60	0.00	98.47
	11/17/94		5.09	5.09	0.00	99.98
	02/22/95		5.85	5.85	0.00	99.22
	05/24/95		5.92	5.92	0.00	99.15
	08/23/95		6.50	6.50	0.00	98.57
	11/17/95		6.75	6.75	0.00	98.32
	08/06/92	105.52	8.28	8.28	0.00	97.24
	10/29/92		8.62	8.62	0.00	96.90
	11/23/92		8.21	8.21	0.00	97.31
	08/16/93		8.11	8.11	0.00	97.41
	11/17/93		8.11	8.11	0.00	97.41
	02/21/94		7.34	7.34	0.00	98.18
	05/11/94		7.45	7.45	0.00	98.07
08/12/94		8.13	8.13	0.00	97.39	
11/17/94		7.90	7.90	0.00	97.62	
02/22/95		8.40	8.40	0.00	97.12	
05/24/95		8.29	8.29	0.00	97.23	
08/23/95		8.60	8.60	0.00	96.92	
11/17/95		8.73	8.73	0.00	96.79	
RW-1	08/16/93	NM				Well Dry
	11/17/93					Well Dry
	02/21/94		7.69	7.69	0.00	NM
	05/11/94		7.96	7.96	0.00	NM
	08/12/94		7.58	7.58	0.00	NM
	11/17/94		7.66	7.66	0.00	NM
	02/22/95		8.00	8.00	0.00	NM
	05/24/95		8.10	8.10	0.00	NM
	08/23/95		8.67	8.67	0.00	NM
	11/17/95		9.15	9.15	0.00	NM

MSL = Mean sea level
TOC = Top of casing
* = Separate-phase hydrocarbons present in well.
** = Skimmer installed (12/24/91).
NM = Not measured

Table 3
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)	
MW-1	06/19/90	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5000	
	08/16/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	09/07/90	N/A	N/A	N/A	N/A	N/A	N/A	<5000	
	11/29/90	<50	<0.50	0.7	<0.50	<0.50	N/A	N/A	
	03/07/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	06/27/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	09/30/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	12/18/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A	
	03/20/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	06/08/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	02/22/95	-----Well Sampled Annually-----							
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/23/95	-----Well Sampled Annually-----								
11/17/95	-----Well Sampled Annually-----								
MW-2	06/19/90	-----0.92 foot of Separate-Phase Hydrocarbons-----							
	08/16/90	-----0.17 foot of Separate-Phase Hydrocarbons-----							
	09/07/90	-----Separate-Phase Hydrocarbons-----							
	11/29/90	-----Separate-Phase Hydrocarbons-----							
	03/07/91	-----Separate-Phase Hydrocarbons-----							
	06/27/91	-----Separate-Phase Hydrocarbons-----							
	09/30/91	-----Separate-Phase Hydrocarbons-----							
	12/18/91	-----Separate-Phase Hydrocarbons-----							
	03/20/92	48,000	2,000	580	2,300	7,000	N/A	N/A	
	06/08/92	43,000	2,900	940	240	5,100	N/A	N/A	
	08/06/92	78,000	2,500	6,700	2,900	16,000	N/A	N/A	
	10/29/92	NS	NS	NS	NS	NS	NS	NS	
12/08/92	-----Well Destroyed-----								
MW-3	06/19/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/16/90	N/A	N/A	N/A	N/A	N/A	N/A	<5,000	
	09/07/90	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	11/29/90	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	03/07/91	<50	<30	<30	<30	<30	N/A	N/A	
	06/27/91	<30	<30	<30	<30	<30	N/A	N/A	
	09/30/91	<30	<30	<30	<30	<30	N/A	N/A	
	12/18/91	<30	<30	<30	<30	<30	N/A	N/A	
	03/20/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	06/08/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A	

3300412B4Q95TBLS.XLS!Table3

Recreated from hard copies of tables developed by Pacific Environmental Group, Inc.

February 15, 1996

Table 3 (continued)
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)
MW-3 (cont.)	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/95	-----Well Sampled Annually-----						
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
	11/17/95	-----Well Sampled Annually-----						
MW-4	08/16/90	<20	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	09/07/90	N/A	N/A	N/A	N/A	N/A	N/A	<5,000
	11/29/90	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	03/07/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A
	06/27/91	<50	0.75	1.1	<0.30	1.6	N/A	N/A
	09/30/91	<50	<0.30	<0.30	<0.30	<0.30	N/A	N/A
	12/18/91	<50	0.83	1.2	<0.30	0.58	N/A	N/A
	03/20/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	06/08/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
02/22/95	-----Well Sampled Annually-----							
05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A	
08/23/95	-----Well Sampled Annually-----							
11/17/95	-----Well Sampled Annually-----							
MW-5	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/95	-----Well Sampled Annually-----						
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
11/17/95	-----Well Sampled Annually-----							
MW-6	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/95	-----Well Sampled Annually-----						

3300412B\4Q95TBLS.XLS!Table3

Table 3 (continued)
Groundwater Analytical Data
 Total Petroleum Hydrocarbons
 (TPPH as Gasoline, BTEX Compounds, TEPH as Diesel, and Total Oil and Grease)

ARCO Service Station 4494
 566 Hegenberger Road at Edes Avenue
 Oakland, California

Well Number	Date Sampled	TPPH as Gasoline (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Xylenes (ppb)	TEPH as Diesel (ppb)	Total Oil and Grease (ppm)
MW-6 (cont.)	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
	11/17/95	-----Well Sampled Annually-----						
MW-7	08/06/92	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	10/29/92	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/16/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/93	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	05/11/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	08/12/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	11/17/94	<50	<0.5	<0.5	<0.5	<0.5	N/A	N/A
	02/22/95	-----Well Sampled Annually-----						
	05/24/95	<50	<0.50	<0.50	<0.50	<0.50	N/A	N/A
	08/23/95	-----Well Sampled Annually-----						
11/17/95	-----Well Sampled Annually-----							
RW-1	08/16/93	NS	NS	NS	NS	NS	NS	NS
	11/17/93	NS	NS	NS	NS	NS	NS	NS
	02/22/94	280	2,100	19	40	66	N/A	N/A
	05/11/94	3,300	32	28	87	310	N/A	N/A
	08/12/94	4,600	42	59	190	400	N/A	N/A
	11/17/94	1,400	56	21	28	210	N/A	N/A
	02/22/95	8,100	140	<10	550	560	N/A	N/A
	05/24/95	940	53	0.75	11	1.4	N/A	N/A
	08/23/95	620	2.1	2.3	0.67	0.67	N/A	N/A
	11/17/95	1,100	7.6	21	46	180	N/A	N/A

ppb = Parts per billion
 ppm = Parts per million
 N/A = Not applicable
 NS = Not sampled

Table 4
Groundwater Analytical Data
Total Methyl t-Butyl Ether

ARCO Service Station 4494
566 Hegenberger Road at Edes Avenue
Oakland, California

Well Number	Date Sampled	Methyl t-Butyl Ether (ppb)
MW-1	08/23/95	NS
MW-2	08/23/95	NS
MW-3	08/23/95	NS
MW-4	08/23/95	NS
MW-5	08/23/95	NS
MW-6	08/23/95	NS
MW-7	08/23/95	NS
RW-1	08/23/95	13

ppb = Parts per billion
NS = Not sampled
See certified analytical report for detection limit.

APPENDIX C

Certified Analytical Reports
With
Chain-of-Custody



Sequoia Analytical

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

December 29 , 2000

Steven Meeks
Delta Environmental Consultants(Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670
RE: ARCO 4494, Oakland, CA / S012238

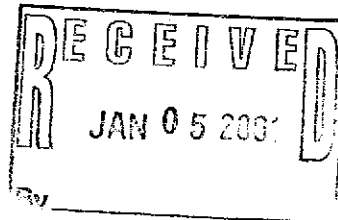
Enclosed are the results of analyses for samples received by the laboratory on 12/19/00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sandra R. Hanson
Client Services Representative

Lito Diaz *For*
Laboratory Director

CA ELAP Certificate Number 1624





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-6	S012238-01	Water	12/17/00 12:10	12/19/00 07:30
MW-3-9	S012238-02	Water	12/17/00 11:00	12/19/00 07:30
MW-4-8	S012238-03	Water	12/17/00 11:10	12/19/00 07:30
MW-5-6	S012238-04	Water	12/17/00 11:30	12/19/00 07:30
MW-6-6	S012238-05	Water	12/17/00 11:45	12/19/00 07:30
MW-7-8	S012238-06	Water	12/17/00 12:50	12/19/00 07:30
RW-1-8	S012238-07	Water	12/17/00 12:05	12/19/00 07:30
TB	S012238-08	Water	12/17/00 08:00	12/19/00 07:30





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT (8020)
Sequoia Analytical - Sacramento

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1-6 (S012238-01) Water Sampled: 12/17/00 12:10 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120295	12/26/00	12/26/00	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		77.3 %	60-140	"	"	"	"	"	
MW-1-6 (S012238-01RE1) Water Sampled: 12/17/00 12:10 Received: 12/19/00 07:30									
Methyl tert-butyl ether	10600	1000	ug/l	400	0120300	12/27/00	12/27/00	DHS LUFT	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		111 %	60-140	"	"	"	"	"	
MW-3-9 (S012238-02) Water Sampled: 12/17/00 11:00 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120295	12/26/00	12/26/00	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		86.2 %	60-140	"	"	"	"	"	
MW-4-8 (S012238-03) Water Sampled: 12/17/00 11:10 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120296	12/26/00	12/26/00	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		89.9 %	60-140	"	"	"	"	"	





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Mecks

Reported:
12/29/00 15:52

**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-5-6 (S012238-04) Water Sampled: 12/17/00 11:30 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120296	12/26/00	12/26/00	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		90.4 %	60-140		"	"	"	"	
MW-6-6 (S012238-05) Water Sampled: 12/17/00 11:45 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120319	12/28/00	12/28/00	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		89.1 %	60-140		"	"	"	"	
MW-7-8 (S012238-06) Water Sampled: 12/17/00 12:50 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120320	12/28/00	12/28/00	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	0.500	"	"	"	"	"	"	
Methyl tert-butyl ether	27.1	2.50	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		92.9 %	60-140		"	"	"	"	





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

**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
RW-1-8 (S012238-07) Water Sampled: 12/17/00 12:05 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120320	12/28/00	12/28/00	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	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		91.5 %	60-140	"	"	"	"	"	
TB (S012238-08) Water Sampled: 12/17/00 08:00 Received: 12/19/00 07:30									
Purgeable Hydrocarbons	ND	50.0	ug/l	1	0120300	12/27/00	12/27/00	DHS LUFT	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	1.04	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>		108 %	60-140	"	"	"	"	"	





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

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 0120295 - EPA 5030B (P/T)										
Blank (0120295-BLK1)										
Prepared & Analyzed: 12/26/00										
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	8.75		"	10.0		87.5	60-140			
LCS (0120295-BS1)										
Prepared & Analyzed: 12/26/00										
Benzene	9.69	0.500	ug/l	10.0		96.9	70-130			
Toluene	9.89	0.500	"	10.0		98.9	70-130			
Ethylbenzene	9.99	0.500	"	10.0		99.9	70-130			
Xylenes (total)	29.9	0.500	"	30.0		99.7	70-130			
Methyl tert-butyl ether	10.8	2.50	"	10.0		108	70-130			
Surrogate: a,a,a-Trifluorotoluene	8.48		"	10.0		84.8	60-140			
Matrix Spike (0120295-MS1)										
Source: S012227-01										
Prepared & Analyzed: 12/26/00										
Benzene	6.03	0.500	ug/l	10.0	ND	60.3	60-140			
Toluene	6.37	0.500	"	10.0	ND	63.7	60-140			
Ethylbenzene	6.68	0.500	"	10.0	ND	66.8	60-140			
Xylenes (total)	18.4	0.500	"	30.0	ND	61.3	60-140			
Methyl tert-butyl ether	2.69	2.50	"	10.0	ND	26.9	60-140			Q-01
Surrogate: a,a,a-Trifluorotoluene	7.26		"	10.0		72.6	60-140			
Matrix Spike Dup (0120295-MSD1)										
Source: S012227-01										
Prepared & Analyzed: 12/26/00										
Benzene	9.97	0.500	ug/l	10.0	ND	99.7	60-140	49.2	25	Q-08
Toluene	10.3	0.500	"	10.0	ND	103	60-140	47.2	25	Q-08
Ethylbenzene	10.0	0.500	"	10.0	ND	100	60-140	39.8	25	Q-08
Xylenes (total)	30.3	0.500	"	30.0	ND	101	60-140	48.9	25	Q-08
Methyl tert-butyl ether	10.3	2.50	"	10.0	ND	103	60-140	117	25	Q-08
Surrogate: a,a,a-Trifluorotoluene	8.78		"	10.0		87.8	60-140			





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

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
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Batch 0120296 - EPA 5030B (P/T)

Blank (0120296-BLK1)

Prepared & Analyzed: 12/26/00

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	9.69		"	10.0		96.9	60-140			

LCS (0120296-BS1)

Prepared & Analyzed: 12/26/00

Benzene	10.2	0.500	ug/l	10.0		102	70-130			
Toluene	10.1	0.500	"	10.0		101	70-130			
Ethylbenzene	10.0	0.500	"	10.0		100	70-130			
Xylenes (total)	30.8	0.500	"	30.0		103	70-130			
Methyl tert-butyl ether	8.85	2.50	"	10.0		88.5	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.44		"	10.0		94.4	60-140			

Matrix Spike (0120296-MS1)

Source: S012324-08

Prepared & Analyzed: 12/26/00

Benzene	10.1	0.500	ug/l	10.0	ND	101	60-140			
Toluene	10.2	0.500	"	10.0	ND	102	60-140			
Ethylbenzene	10.3	0.500	"	10.0	ND	103	60-140			
Xylenes (total)	31.5	0.500	"	30.0	ND	105	60-140			
Methyl tert-butyl ether	8.19	2.50	"	10.0	ND	81.9	60-140			
Surrogate: a,a,a-Trifluorotoluene	8.77		"	10.0		87.7	60-140			

Matrix Spike Dup (0120296-MSD1)

Source: S012324-08

Prepared & Analyzed: 12/26/00

Benzene	10.4	0.500	ug/l	10.0	ND	104	60-140	2.93	25	
Toluene	10.4	0.500	"	10.0	ND	104	60-140	1.94	25	
Ethylbenzene	10.5	0.500	"	10.0	ND	105	60-140	1.92	25	
Xylenes (total)	32.2	0.500	"	30.0	ND	107	60-140	2.20	25	
Methyl tert-butyl ether	9.61	2.50	"	10.0	ND	96.1	60-140	16.0	25	
Surrogate: a,a,a-Trifluorotoluene	8.94		"	10.0		89.4	60-140			





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

**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
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Batch 0120300 - EPA 5030B (P/T)

Blank (0120300-BLK1)

Prepared & Analyzed: 12/27/00

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	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>11.0</i>		<i>"</i>	<i>10.0</i>		<i>110</i>	<i>60-140</i>			

LCS (0120300-BS1)

Prepared & Analyzed: 12/27/00

Benzene	10.5	0.500	ug/l	10.0		105	70-130			
Toluene	10.9	0.500	"	10.0		109	70-130			
Ethylbenzene	11.3	0.500	"	10.0		113	70-130			
Xylenes (total)	29.7	0.500	"	30.0		99.0	70-130			
Methyl tert-butyl ether	11.0	2.50	"	10.0		110	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>11.0</i>		<i>"</i>	<i>10.0</i>		<i>110</i>	<i>60-140</i>			

Matrix Spike (0120300-MS1)

Source: S012243-02

Prepared & Analyzed: 12/27/00

Benzene	10.3	0.500	ug/l	10.0	ND	103	60-140			
Toluene	10.7	0.500	"	10.0	ND	107	60-140			
Ethylbenzene	10.9	0.500	"	10.0	ND	109	60-140			
Xylenes (total)	28.8	0.500	"	30.0	ND	96.0	60-140			
Methyl tert-butyl ether	11.6	2.50	"	10.0	ND	116	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>9.63</i>		<i>"</i>	<i>10.0</i>		<i>96.3</i>	<i>60-140</i>			

Matrix Spike Dup (0120300-MSD1)

Source: S012243-02

Prepared & Analyzed: 12/27/00

Benzene	10.7	0.500	ug/l	10.0	ND	107	60-140	3.81	25	
Toluene	11.0	0.500	"	10.0	ND	110	60-140	2.76	25	
Ethylbenzene	11.3	0.500	"	10.0	ND	113	60-140	3.60	25	
Xylenes (total)	29.6	0.500	"	30.0	ND	98.7	60-140	2.74	25	
Methyl tert-butyl ether	11.9	2.50	"	10.0	ND	119	60-140	2.55	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	<i>11.4</i>		<i>"</i>	<i>10.0</i>		<i>114</i>	<i>60-140</i>			





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

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
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Batch 0120319 - EPA 5030B (P/T)

Blank (0120319-BLK1)

Prepared & Analyzed: 12/28/00

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	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	8.60		"	10.0		86.0	60-140			

LCS (0120319-BS1)

Prepared & Analyzed: 12/28/00

Benzene	10.2	0.500	ug/l	10.0		102	70-130			
Toluene	10.3	0.500	"	10.0		103	70-130			
Ethylbenzene	10.2	0.500	"	10.0		102	70-130			
Xylenes (total)	30.5	0.500	"	30.0		102	70-130			
Methyl tert-butyl ether	10.2	2.50	"	10.0		102	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	8.63		"	10.0		86.3	60-140			

Matrix Spike (0120319-MS1)

Source: S012326-03

Prepared & Analyzed: 12/28/00

Benzene	9.80	0.500	ug/l	10.0	ND	98.0	60-140			
Toluene	9.74	0.500	"	10.0	ND	97.4	60-140			
Ethylbenzene	9.90	0.500	"	10.0	ND	99.0	60-140			
Xylenes (total)	29.7	0.500	"	30.0	ND	99.0	60-140			
Methyl tert-butyl ether	9.36	2.50	"	10.0	ND	93.6	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.13		"	10.0		91.3	60-140			

Matrix Spike Dup (0120319-MSD1)

Source: S012326-03

Prepared & Analyzed: 12/28/00

Benzene	9.97	0.500	ug/l	10.0	ND	99.7	60-140	1.72	25	
Toluene	9.80	0.500	"	10.0	ND	98.0	60-140	0.614	25	
Ethylbenzene	10.1	0.500	"	10.0	ND	101	60-140	2.00	25	
Xylenes (total)	29.9	0.500	"	30.0	ND	99.7	60-140	0.671	25	
Methyl tert-butyl ether	9.60	2.50	"	10.0	ND	96.0	60-140	2.53	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	8.25		"	10.0		82.5	60-140			





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

**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
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Batch 0120320 - EPA 5030B (P/T)

Blank (0120320-BLK1)

Prepared & Analyzed: 12/28/00

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	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.73		"	10.0		97.3	60-140			

LCS (0120320-BS1)

Prepared & Analyzed: 12/28/00

Benzene	10.4	0.500	ug/l	10.0		104	70-130			
Toluene	10.3	0.500	"	10.0		103	70-130			
Ethylbenzene	10.2	0.500	"	10.0		102	70-130			
Xylenes (total)	31.3	0.500	"	30.0		104	70-130			
Methyl tert-butyl ether	8.88	2.50	"	10.0		88.8	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.28		"	10.0		92.8	60-140			

Matrix Spike (0120320-MS1)

Source: S012263-02

Prepared & Analyzed: 12/28/00

Benzene	10.4	0.500	ug/l	10.0	ND	104	60-140			
Toluene	10.5	0.500	"	10.0	ND	105	60-140			
Ethylbenzene	10.5	0.500	"	10.0	ND	105	60-140			
Xylenes (total)	32.3	0.500	"	30.0	ND	108	60-140			
Methyl tert-butyl ether	9.58	2.50	"	10.0	ND	95.8	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.33		"	10.0		93.3	60-140			

Matrix Spike Dup (0120320-MSD1)

Source: S012263-02

Prepared & Analyzed: 12/28/00

Benzene	10.5	0.500	ug/l	10.0	ND	105	60-140	0.957	25	
Toluene	10.6	0.500	"	10.0	ND	106	60-140	0.948	25	
Ethylbenzene	10.6	0.500	"	10.0	ND	106	60-140	0.948	25	
Xylenes (total)	32.7	0.500	"	30.0	ND	109	60-140	1.23	25	
Methyl tert-butyl ether	10.1	2.50	"	10.0	ND	101	60-140	5.28	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.33		"	10.0		93.3	60-140			





Delta Environmental Consultants(Rancho Cordova
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: N/A
Project Manager: Steven Meeks

Reported:
12/29/00 15:52

Notes and Definitions

- Q-01 The spike recovery for this QC sample is outside of established control limits. Review of associated batch QC indicates the recovery for this analyte does not represent an out-of-control condition for the batch.
- Q-08 The maximum RPD is an advisory limit established by SAL. No method specific limits exist.
- 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





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: **556 Hegenberger Road**

Oakland

Arco Project Manager: **Paul Supple**

Site Sampled By: **Doulos**

Arco Site Number: **4494**

Delta Project No.: **D000-319**

Delta Project PM: **Steven W. Meeks**

Date Sampled: **12/17/00**

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	Confirm MTBE by EPA 8260	Dissolved Oxygen (mg/L)	Sample Frequency (A, S, Q)	Sample I.D.	Sample Time
MW-1	10:15	6.95	13.0	22.7	<input type="checkbox"/>	15.73	4 inch	2.0	31.5	31.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.37	Q/3,6,9,12	MW-1	12:10
MW-3	10:19	9.31	7.0	17.7	<input checked="" type="checkbox"/>	8.36	4 inch	2.0	16.7	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.33	Q/3,6,9,12	MW-3	11:00
MW-4	10:23	8.53	7.0	16.3	<input checked="" type="checkbox"/>	7.72	4 inch	2.0	15.4	NP	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.84	Q/3,6,9,12	MW-4	11:10
MW-5	10:27	6.50	8.0	16.6	<input type="checkbox"/>	10.14	2 inch	0.5	5.1	5.1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.77	Q/3,6,9,12	MW-5	11:30
MW-6	10:31	6.26	8.0	17.8	<input type="checkbox"/>	11.55	2 inch	0.5	5.8	5.8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.60	Q/3,6,9,12	MW-6	11:45
MW-7	10:35	8.62	9.0	13.7	<input type="checkbox"/>	5.03	4 inch	2.0	10.1	9.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.92	Q/3,6,9,12	MW-7	12:40
RW-1	10:39	8.29	NM	11.0	<input type="checkbox"/>	2.72	2 inch	0.5	1.4	1.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0.59	Q/3,6,9,12	RW-1	12:05
					<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"/>				
					<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"/>				
					<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: Quarterly: MW-1, MW-3, MW-4, MW-5, MW-6, MW-7, and RW-1

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.



3184 Gold Camp Drive, Suite 200
 Rancho Cordova, California 95670
 Direct: (916) 638-2085
 Fax: (916) 638-8385

Arco Site Address: 556 Hegenberger Road

Oakland

Arco Project Manager: Paul Supple

Site Sampled By: Doulos

Arco Site Number: 4494

Delta Project No.: D000-319

Delta Project PM: Steven W. Meeks

Date Sampled: 12/17/00

Site Contact & Phone Number: _____

Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons	Well ID	Time	Temp °F	pH Units	Sp. Cond.	Gallons
MW-1	10:45	69.4	8.41	3,400	10												
	10:49	68.2	8.39	3,340	20												
	10:56	68.3	8.37	3,360	30												
MW-3	No Purge Required																
MW-4	No Purge Required																
MW-5	11:25	69.2	7.14	4,310	1												
	11:26	68.3	7.10	4,300	3												
	11:28	68.2	7.07	4,250	5												
MW-6	11:35	68.2	7.94	3,730	1												
	11:36	68.1	7.91	3,720	3												
	11:37	68.1	7.88	3,690	5												
MW-7	12:15	69.6	7.36	3,840	3												
	12:18	68.6	7.31	3,710	6												
	12:21	68.1	7.29	3,680	9												
RW-1	11:50	68.4	7.14	3,940	0.5												
	11:51	68.1	7.10	3,880	1												
	11:52	67.9	7.08	3,810	1.5												

Notes: NP = NO PURGE

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