

URS

Rec'd Nov 1 2002

R0204

October 21, 2002

BC
Ms. Eva Chu
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Quarterly Groundwater Monitoring Report
Second Quarter 2002**
ARCO Service Station No. 4494
566 Hegenberger Road,
Oakland, California
URS Project # 38465997

Dear Ms. Chu:

On behalf of ARCO (affiliated to Group Environmental Management Company), URS Corporation (URS) is pleased to submit the Quarterly Groundwater Monitoring Report. This report presents the results of the second quarter 2002 groundwater monitoring program at ARCO Service Station No. 4494 located at 566 Hegenberger Road Oakland, California. The monitoring program complies with the ACHCSA requirements regarding Underground Storage Tank (UST) investigations.

Please call us at 510-893-3600 if you have questions.

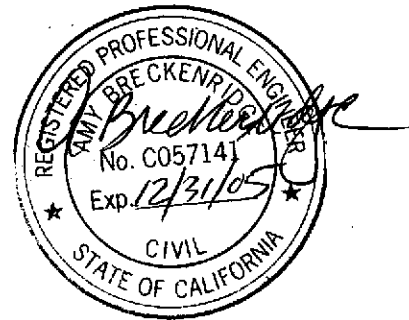
Sincerely,

URS CORPORATION

Scott Robinson

Scott Robinson
Project Manager

Amy Breckenridge
Portfolio Manager



Attachment: Quarterly Groundwater Monitoring Report, Second Quarter 2002

cc: Mr. Paul Supple, ARCO, PO Box 6549, Moraga, CA 94570

URS Corporation
500 12th Street, Suite 200
Oakland, CA 94607-4014
Tel: 510.893.3600
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Quarterly Groundwater Monitoring Report

Second Quarter 2002

**ARCO Service Station No. 4494
566 Hegenberger Road
Oakland, California
URS Project # 38465951**

Prepared For:

Mr. Paul Supple
ARCO

October 21, 2002

Prepared By:

URS Corporation.
500 12th Street, Suite 200
Oakland, CA 94607-4014

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ATTACHMENT A

GROUNDWATER SAMPLING PROCEDURES

**BLAINE TECH SERVICES, INC.
METHODS AND PROCEDURES
FOR THE ROUTINE MONITORING OF
GROUNDWATER WELLS AT BP/ARCO SITES**

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling -water - 746684) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

SAMPLING PROCEDURES OVERVIEW

SAFETY

All groundwater monitoring assignments performed for BP/ARCO comply with BP/ARCO's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians hold valid BP/ARCO Safety Passport and 40-hour 29CFR 1910.120 OSHA SARA HAZWOPER training certificates in addition to receiving medical clearance and on-the-job training prior to commencing any work on any BP/ARCO site.

INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic water level indicators that are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of Immiscibles or sheen and when free product is suspected, it is confirmed using an electronic interface probe (e.g. MMC). No samples are collected from a well containing over two-hundredths of a foot (0.02') of product.

PURGED WELLS - EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum

purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well. Small volumes of purgewater are often removed by hand bailing with a disposable bailer.

PURGED WELLS - PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 pH.

These groundwater parameters are collected using a Myron-L Ultrameter 6P. During the evacuation process, water is collected and placed into the cup of the meter for parameter collection. The meter is calibrated daily or as needed according to manufacturers specifications.

PURGED WELLS - DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewater and does not immediately recharge. Wells that dewater will be sampled once they have recharged to 80% of their original static water level or when we are prepared to leave the site, whichever occurs first.

NO PURGE WELLS

Wells that qualify are sampled without purging. A set of water quality parameters and a Dissolved Oxygen measurement are collected. The well is sampled with a disposable bailer.

PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and

hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to a BP/ARCO approved disposal facility.

DISSOLVED OXYGEN READINGS

A pre-sample Dissolved Oxygen reading is collected at all sampled wells. The measurement is collected using an electronic meter (YSI Model 51, 58, 95 or equivalent). Water is drawn from the well, placed in a clean cup with the meter probe and the measurement collected.

The probe is decontaminated between wells. The meter is calibrated between wells as per the instructions in the operating manual.

SAMPLE COLLECTION

All samples are collected using disposable bailers. The bailer is gently lowered into the well to minimize agitation or aeration of the water. Bailers and their associated cord are used once and then discarded.

SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

TRIP BLANKS

Upon request, a Trip Blank is carried to each site and is kept inside the cooler for the duration of the sampling event. It is turned over to the laboratory for analysis with the samples from that site.

SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the analytical laboratory that will perform the intended analytical procedures. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

DOCUMENTATION CONVENTIONS

Each and every sample container has a label affixed to it. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time at which the sample was collected and the initials of the person collecting the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

DECONTAMINATION

All equipment is brought to the site in serviceable condition and is cleaned thoroughly before initial use and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer that is then operated with high quality deionized water that is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, sounder etc.) that cannot be washed using the hot high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

EXAMPLE: The water level indicator is cleaned between wells using the non-phosphate soap and deionized water solution followed by deionized water rinses. The water level indicator is then washed with the steam cleaner between sites or as necessitated by use in a particularly contaminated well.

OXYIDATON REDUCTION POTENTIAL READINGS

ORP readings, as requested, are obtained with a Myron-L Ultrameter 6P. The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual. In use the probe is placed in a cup of freshly obtained monitoring well water and allowed to stabilize.

ATTACHMENT B

HISTORICAL DATA TABLES
(Source: 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				
	11/17/93					
	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		

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)	Ethylbenzene (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.

ATTACHMENT D
FIELD DATA SHEETS



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

Arco Site Address: **556 Hegenberger Road**

Arco Site Number: **4494**

Oakland

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

Arco Project Manager: **Paul Supple**

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

Site Contact & Phone Number: _____

Site Sampled By: **Douglas**

Date Sampled: **4-17-09**

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	19:00	5.89	13.0	22.7	<input type="checkbox"/>		4 inch	2.0		32.2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.51	Q/3,6,9,12	MW-1	19:35
MW-3	19:03	8.44	7.0	17.7	<input checked="" type="checkbox"/>		4 inch	2.0		—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3.01	Q/3,6,9,12	MW-3	19:43
MW-4	19:12	7.79	7.0	16.3	<input checked="" type="checkbox"/>		4 inch	2.0		—	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4.85	Q/3,6,9,12	MW-4	20:20
MW-5	19:10	5.37	8.0	16.6	<input type="checkbox"/>		2 inch	0.5		5.6	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5.46	Q/3,6,9,12	MW-5	20:15
MW-6	19:08	4.96	8.0	17.8	<input type="checkbox"/>		2 inch	0.5		6.4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.27	Q/3,6,9,12	MW-6	20:00
MW-7	19:16	7.43	9.0	13.7	<input type="checkbox"/>		4 inch	2.0		12.5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2.04	Q/3,6,9,12	MW-7	21:00
RW-1	19:14	7.13	NM	11.0	<input type="checkbox"/>		2 inch	0.5		1.9	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	20.1	Q/3,6,9,12	RW-1	20:35
					<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.



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

Arco Site Address: 556 Hegenberger Road

Arco Site Number: 4494

Oakland

Delta Project No.: D000-319

Arco Project Manager: Paul Supple

Delta Project PM: Steven W. Meeks

Site Contact & Phone Number: _____

Site Sampled By: Doulos

Date Sampled: 4-17-02

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
MW-1	19:20	16.2	621	3999	10												
	17:22	18.3	883	2945	20												
	19:24	20.0	720	3999	30												
MW-3																	
MW-4																	
MW-5	20:06	17.6	713	3999	1												
	20:07	18.0	709	3999	3												
	20:07	18.0	688	3986	5.0												
MW-6	19:50	18.2	680	3250	2												
	19:51	18.5	674	2952	4												
	19:52	18.3	676	2950	6.4												
MW-7	20:48	15.8	687	3999	4												
	20:49	16.8	696	3999	8												
	20:50	17.4	697	3999	12												
RW-1	20:30	15.0	699	3999	0.6												
	20:31	16.0	695	3999	1.0												
	20:32	16.0	696	3999	2.0												

Notes: NP = NO PURGE

Original Copies of Field Sampling Sheets are Located in Project File

ATTACHMENT C
CERTIFIED ANALYTICAL REPORTS
AND
CHAIN-OF-CUSTODY



3 May, 2002

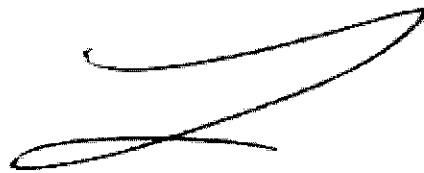
Steven Meeks
Delta Environmental Consultants (Rancho Cordova)
3184 Gold Camp Drive Ste. 200
Rancho Cordova, CA 95670

RE: ARCO 4494, Oakland, CA
Sequoia Report: S204364

Enclosed are the results of analyses for samples received by the laboratory on 04/19/02 15:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

F
(



Lito Diaz
Laboratory Director

CA ELAP Certificate #1624



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

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
05/03/02 14:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	S204364-01	Water	04/17/02 19:35	04/19/02 15:20
MW-3	S204364-02	Water	04/17/02 19:43	04/19/02 15:20
MW-4	S204364-03	Water	04/17/02 20:20	04/19/02 15:20
MW-5	S204364-04	Water	04/17/02 20:15	04/19/02 15:20
MW-6	S204364-05	Water	04/17/02 20:00	04/19/02 15:20
MW-7	S204364-06	Water	04/17/02 21:00	04/19/02 15:20
RW-1	S204364-07	Water	04/17/02 20:35	04/19/02 15:20
TB	S204364-08	Water	04/17/02 06:00	04/19/02 15:20

Sequoia Analytical - Sacramento

Ron Chew, Client Services Representative

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
05/03/02 14:24

**Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (S204364-01) Water Sampled: 04/17/02 19:35 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	5000	ug/l	100	2050008	05/01/02	05/01/02	DHS LUFT	
Benzene	ND	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Ethylbenzene	ND	50	"	"	"	"	"	"	
Xylenes (total)	ND	50	"	"	"	"	"	"	
Methyl tert-butyl ether	4500	250	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		92.3 %	60-140		"	"	"	"	
MW-3 (S204364-02) Water Sampled: 04/17/02 19:43 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		108 %	60-140		"	"	"	"	
MW-4 (S204364-03) Water Sampled: 04/17/02 20:20 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	5.6	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		104 %	60-140		"	"	"	"	



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

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
05/03/02 14:24

**Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (S204364-04) Water Sampled: 04/17/02 20:15 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	8.5	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		<i>105 %</i>	<i>60-140</i>		"	"	"	"	
MW-6 (S204364-05) Water Sampled: 04/17/02 20:00 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	7.0	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		<i>103 %</i>	<i>60-140</i>		"	"	"	"	
MW-7 (S204364-06) Water Sampled: 04/17/02 21:00 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	67	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		<i>107 %</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: 4494, Oakland, CA Project Manager: Steven Meeks	Reported: 05/03/02 14:24
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**Total Purgeable Hydrocarbon, BTEX and MTBE by DHS LUFT
Sequoia Analytical - Sacramento**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
RW-1 (S204364-07) Water Sampled: 04/17/02 20:35 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	ND	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		98.9 %	60-140		"	"	"	"	
TB (S204364-08) Water Sampled: 04/17/02 06:00 Received: 04/19/02 15:20									
Purgeable Hydrocarbons	ND	50	ug/l	1	2050001	04/30/02	04/30/02	DHS LUFT	
Benzene	ND	0.50	"	"	"	"	"	"	
Toluene	1.6	0.50	"	"	"	"	"	"	C-07
Ethylbenzene	ND	0.50	"	"	"	"	"	"	
Xylenes (total)	0.72	0.50	"	"	"	"	"	"	C-07
Methyl tert-butyl ether	ND	2.5	"	"	"	"	"	"	
<i>Surrogate: a,a,a-Trifluorotoluene</i>		98.6 %	60-140		"	"	"	"	



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

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
05/03/02 14:24

**Total Purgeable Hydrocarbon, 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 2050001 - EPA 5030B (P/T)

Blank (2050001-BLK1)

Prepared & Analyzed: 04/30/02

Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							
<i>Surrogate: a,a,a-Trifluorotoluene</i>	10.2		"	10.0		102	60-140			

LCS (2050001-BS1)

Prepared & Analyzed: 04/30/02

Benzene	10.7	0.50	ug/l	10.0		107	70-130			
Toluene	10.6	0.50	"	10.0		106	70-130			
Ethylbenzene	10.4	0.50	"	10.0		104	70-130			
Xylenes (total)	31.9	0.50	"	30.0		106	70-130			
Methyl tert-butyl ether	11.7	2.5	"	10.0		117	70-130			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	10.8		"	10.0		108	60-140			

Matrix Spike (2050001-MS1)

Source: S204364-07

Prepared & Analyzed: 04/30/02

Benzene	10.8	0.50	ug/l	10.0	ND	108	60-140			
Toluene	10.0	0.50	"	10.0	ND	100	60-140			
Ethylbenzene	9.93	0.50	"	10.0	ND	99.3	60-140			
Xylenes (total)	30.3	0.50	"	30.0	ND	101	60-140			
Methyl tert-butyl ether	12.0	2.5	"	10.0	ND	110	60-140			
<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.77		"	10.0		97.7	60-140			

Matrix Spike Dup (2050001-MSD1)

Source: S204364-07

Prepared & Analyzed: 04/30/02

Benzene	11.8	0.50	ug/l	10.0	ND	118	60-140	8.85	25	
Toluene	11.0	0.50	"	10.0	ND	110	60-140	9.52	25	
Ethylbenzene	10.9	0.50	"	10.0	ND	109	60-140	9.31	25	
Xylenes (total)	33.4	0.50	"	30.0	ND	111	60-140	9.73	25	
Methyl tert-butyl ether	12.7	2.5	"	10.0	ND	117	60-140	5.67	25	
<i>Surrogate: a,a,a-Trifluorotoluene</i>	10.1		"	10.0		101	60-140			



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

Project: ARCO 4494, Oakland, CA
 Project Number: 4494, Oakland, CA
 Project Manager: Steven Meeks

Reported:
 05/03/02 14:24

Total Purgeable Hydrocarbon, 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 2050008 - EPA 5030B (P/T)

Blank (2050008-BLK1)

Prepared & Analyzed: 05/01/02

Purgeable Hydrocarbons	ND	50	ug/l							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Methyl tert-butyl ether	ND	2.5	"							

<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.93		"	10.0		99.3	60-140			
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LCS (2050008-BS1)

Prepared & Analyzed: 05/01/02

Benzene	10.6	0.50	ug/l	10.0		106	70-130			
Toluene	10.5	0.50	"	10.0		105	70-130			
Ethylbenzene	10.3	0.50	"	10.0		103	70-130			
Xylenes (total)	31.7	0.50	"	30.0		106	70-130			
Methyl tert-butyl ether	11.5	2.5	"	10.0		115	70-130			

<i>Surrogate: a,a,a-Trifluorotoluene</i>	10.6		"	10.0		106	60-140			
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LCS Dup (2050008-BSD1)

Prepared & Analyzed: 05/01/02

Benzene	9.93	0.50	ug/l	10.0		99.3	70-130	6.53	25	
Toluene	9.82	0.50	"	10.0		98.2	70-130	6.69	25	
Ethylbenzene	9.66	0.50	"	10.0		96.6	70-130	6.41	25	
Xylenes (total)	29.5	0.50	"	30.0		98.3	70-130	7.19	25	
Methyl tert-butyl ether	10.1	2.5	"	10.0		101	70-130	13.0	25	

<i>Surrogate: a,a,a-Trifluorotoluene</i>	9.24		"	10.0		92.4	60-140			
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Delta Environmental Consultants (Rancho Cordova)
3164 Gold Camp Drive Ste. 200
Rancho Cordova CA, 95670

Project: ARCO 4494, Oakland, CA
Project Number: 4494, Oakland, CA
Project Manager: Steven Meeks

Reported:
05/03/02 14:24

Notes and Definitions

C-07 The reported compound(s) have been confirmed by a second (dissimilar) column or detector.

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



Work Authorization No. 2623706

Chain of Custody

ARCO Facility No. 4494	City (Facility) OAKland	Project Manager (Consultant) Steven Meeks	Laboratory name Sequoia
ARCO engineer Paul Supple	Telephone no. (ARCO)	Telephone no. (Consultant) 638 2085	Contract number
Company name (Consultant) Delta ENV	Address (Consultant)		
		Fax no. (Consultant) 638 8385	

Sample I.D.	Lab no.	Container no.	Matrix			Preservation		Sampling date	Sampling time	BTEX EPA 802/801	BTEX/TPH/TSS EPA 802/802/803	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 413.1/5 Method	BTEX + MTBE EPA 8260	BTEX + Standard Organics EPA 8260	TCMP Nitrates <input type="checkbox"/> VOAC <input type="checkbox"/> VOAC	DAM Metals EPA 8210/7000 TLCO STCO	Lead Dis/OHS <input type="checkbox"/> Lead EPA 7240/7252 <input type="checkbox"/>	Method of shipment	Special detection limit/reporting	
			Soil	Water	Other	Ice	Acid															
MW-1		4		X		X	X	4-19-02	19:35		X											
MW-3									19:43													
MW-4									20:20													
MW-5									20:15													
MW-6									20:00													
MW-7									21:00													
RW-1									20:35													
TB									6:00													

Condition of sample:	Temperature received:
Relinquished by sampler Date 4-19-02 Time	Received by Mamca Grogan 4/19/02 1500
Relinquished by	Received by
Relinquished by	Received by laboratory Date Time

Special QA/QC

Remarks

Type of Work
 Dispenser Work
 Line Job
 Routine Sampling
 Site Acquisitions
 Site Assessment
 UST Removal
 UST Replacement
 Other

Lab number

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

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: Delta Env
 REC. BY (PRINT) manca
 WORKORDER: S20-1364

DATE Received at Lab: 4/19/00
 TIME Received at Lab: 1520
 LOG IN DATE: 4/20/00

(Drinking water) for regulatory purposes: YES/NO YES NO
 (Wastewater) for regulatory purposes: YES/NO YES NO

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	#	CLIENT ID	DESCRIPTION	SAMPLE MATRIX	DATE SAMPLED	CONDITION (ETC.)
1. Custody Seal(s)	Present <input checked="" type="radio"/> Absent Intact / Broken*	S201364	01	mw-1	WQA	W	4/17/00	
2. Chain-of-Custody	<input checked="" type="radio"/> Present / Absent*		02	-3				
3. Traffic Reports or Packing List:	Present <input checked="" type="radio"/> Absent		03	-4				
4. Airbill:	Airbill / Sticker Present <input checked="" type="radio"/> Absent		04	-5				
5. Airbill #:			05	-6				
6. Sample Labels:	<input checked="" type="radio"/> Present / Absent		06	-7				
7. Sample IDs:	<input checked="" type="radio"/> Listed / Not Listed on Chain-of-Custody		07	RW-1				
8. Sample Condition:	<input checked="" type="radio"/> Intact / Broken* / Leaking*		08	IB				
9. Does information on custody reports, traffic reports and sample labels agree?	<input checked="" type="radio"/> Yes / No*							
10. Sample received within hold time:	<input checked="" type="radio"/> Yes / No*							
11. Proper Preservatives used:	<input checked="" type="radio"/> Yes / No*							
12. Temp Rec. at Lab: (Acceptance range for samples requiring thermal pres.: 4±2°C)	<input type="checkbox"/> Yes / No*							

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

ATTACHMENT E

**COPY OF EDCC REPORT,
EDF AND GEOWELL SUBMITTAL CONFIRMATION NUMBER PAGE**

Error Summary Log

09/13/02

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Sacramento, CA
Project Name:	ARCO 4494, Oakland, CA
Work Order Number:	S204364
Global ID:	T0600100104
Lab Report Number:	S204364050320021423

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotcl	Run	Sub
S20436405032002 MW-1 1423		S20436401	W	CS	SW8021B	SW5030B	04/17/02	05/01/02	05/01/02	2050008	1	
S20436405032002 MW-3 1423		S20436402	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 MW-4 1423		S20436403	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 MW-5 1423		S20436404	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 MW-6 1423		S20436405	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 MW-7 1423		S20436406	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 RW-1 1423		S20436407	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
S20436405032002 TB 1423		S20436408	W	CS	SW8021B	SW5030B	04/17/02	04/30/02	04/30/02	2050001	1	
		2050001BS1	WQ	BS1	SW8021B	SW5030B	//	04/30/02	04/30/02	2050001	1	
		2050001BLK1	WQ	LB1	SW8021B	SW5030B	//	04/30/02	04/30/02	2050001	1	
		2050001MS1	W	MS1	SW8021B	SW5030B	//	04/30/02	04/30/02	2050001	1	
		2050001MSD1	W	SD1	SW8021B	SW5030B	//	04/30/02	04/30/02	2050001	1	
		2050008BSD1	WQ	BD1	SW8021B	SW5030B	//	05/01/02	05/01/02	2050008	1	
		2050008BS1	WQ	BS1	SW8021B	SW5030B	//	05/01/02	05/01/02	2050008	1	
		2050008BLK1	WQ	LB1	SW8021B	SW5030B	//	05/01/02	05/01/02	2050008	1	

EDFSAMP: Error Summary Log

09/13/02

Error type	Logcode	Projname	Npdlwo	Sampid	Matrix
There are no errors in this data file					

EDFTEST: Error Summary Log

09/13/02

Error type	Labsampid	Qccode	Anmcode	Exmcode	Anadate	Run number
There are no errors in this data file					//	0

EDFRES: Error Summary Log

09/13/02

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	2050001MS1	MS1	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	2050001MS1	MS1	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	2050001MS1	MS1	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	2050001MSD1	SD1	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	2050001MSD1	SD1	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	2050001MSD1	SD1	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436401	CS	W	SW8021B	PR	05/01/02	1	AAATFBZME
Warning: extra parameter	S20436401	CS	W	SW8021B	PR	05/01/02	1	MTBE
Warning: extra parameter	S20436401	CS	W	SW8021B	PR	05/01/02	1	PHCG
Warning: extra parameter	S20436401	CS	W	SW8021B	PR	05/01/02	1	XYLENES
Warning: extra parameter	S20436402	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436402	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436402	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436402	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436403	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436403	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436403	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436403	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436404	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436404	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436404	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436404	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436405	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436405	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436405	CS	W	SW8021B	PR	04/30/02	1	PHCG

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	S20436405	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436406	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436406	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436406	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436406	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436407	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436407	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436407	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436407	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	S20436408	CS	W	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	S20436408	CS	W	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	S20436408	CS	W	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	S20436408	CS	W	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	2050001BLK1	LB1	WQ	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	2050001BLK1	LB1	WQ	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	2050001BLK1	LB1	WQ	SW8021B	PR	04/30/02	1	PHCG
Warning: extra parameter	2050001BLK1	LB1	WQ	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	2050001BS1	BS1	WQ	SW8021B	PR	04/30/02	1	AAATFBZME
Warning: extra parameter	2050001BS1	BS1	WQ	SW8021B	PR	04/30/02	1	MTBE
Warning: extra parameter	2050001BS1	BS1	WQ	SW8021B	PR	04/30/02	1	XYLENES
Warning: extra parameter	2050008BLK1	LB1	WQ	SW8021B	PR	05/01/02	1	AAATFBZME
Warning: extra parameter	2050008BLK1	LB1	WQ	SW8021B	PR	05/01/02	1	MTBE
Warning: extra parameter	2050008BLK1	LB1	WQ	SW8021B	PR	05/01/02	1	PHCG
Warning: extra parameter	2050008BLK1	LB1	WQ	SW8021B	PR	05/01/02	1	XYLENES
Warning: extra parameter	2050008BS1	BS1	WQ	SW8021B	PR	05/01/02	1	AAATFBZME
Warning: extra parameter	2050008BS1	BS1	WQ	SW8021B	PR	05/01/02	1	MTBE
Warning: extra parameter	2050008BS1	BS1	WQ	SW8021B	PR	05/01/02	1	XYLENES
Warning: extra parameter	2050008BSD1	BD1	WQ	SW8021B	PR	05/01/02	1	AAATFBZME
Warning: extra parameter	2050008BSD1	BD1	WQ	SW8021B	PR	05/01/02	1	MTBE

EDFQC: Error Summary Log

09/13/02

Error type	Labiocfl	Anmcode	Parlabel	Qccode	Labqid
There are no errors in this data files					

EDFCL: Error Summary Log

09/13/02

Error type	Cirevdate	Anmcode	Exmcode	Parlabel	Cicode
There are no errors in this data file	//				

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Facility Global ID: T0600100104

Facility Name: ARCO

Submittal Title: EDCC Report for # 4494

Submittal Type: GW Monitoring Report

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UPLOADING A GEO_WELL FILE

**Processing is complete. No errors were found!
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Submittal Title: Geo Well Report for #4494

Submittal Date/Time: 10/22/2002 4:24:39 PM

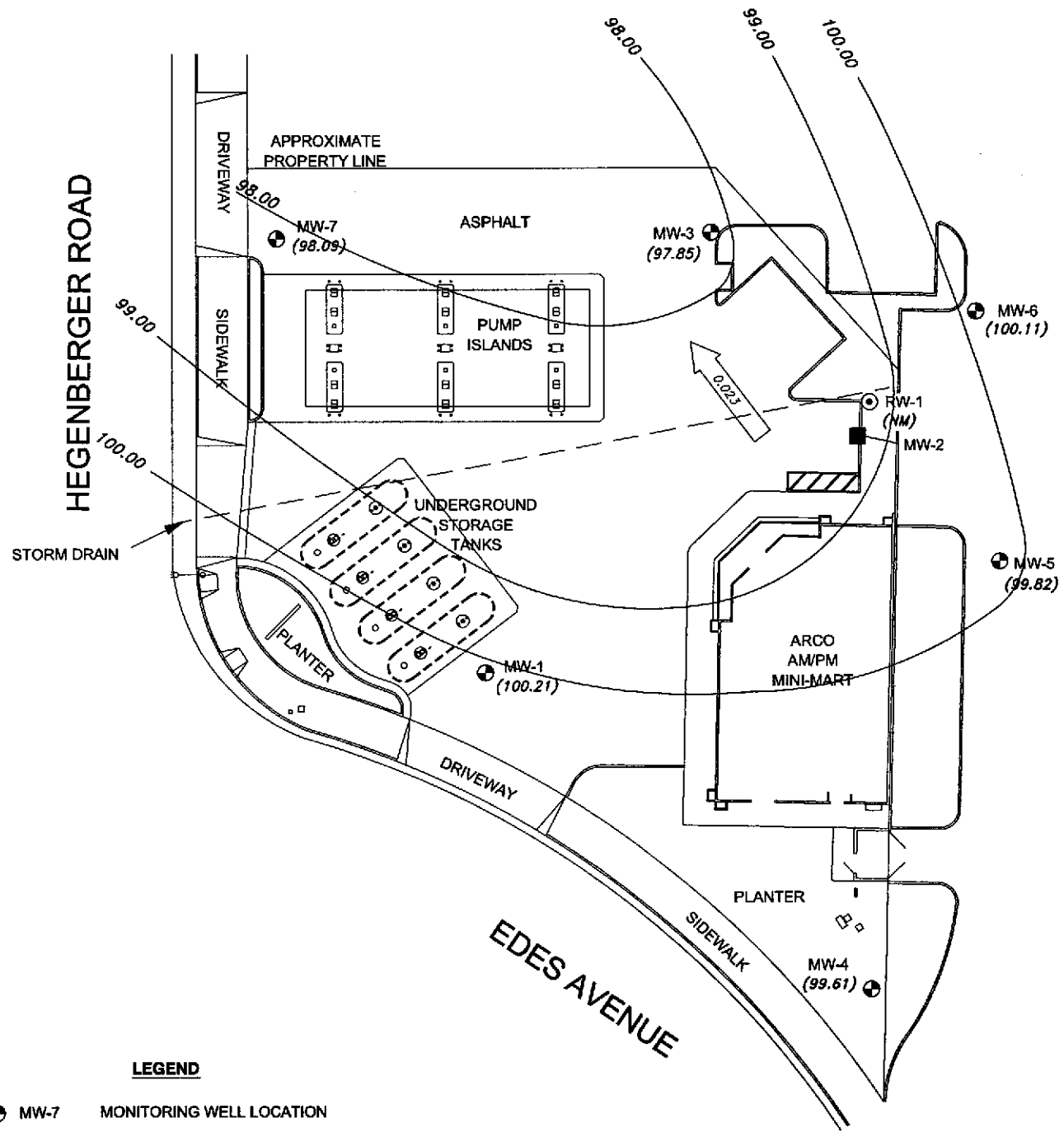
Confirmation Number: 9429463028

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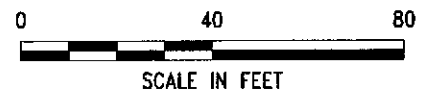
CONTACT SITE [ADMINISTRATOR](#)

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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)
- (7.84) GROUNDWATER ELEVATION (FEET ABOVE MSL)
- * DATA NOT USED FOR CONTOURING
- 98.00 — GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MSL)
- ← 0.023 APPROXIMATE GROUNDWATER FLOW DIRECTION AND GRADIENT



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



Project No. 38465951
Arco Service Station 4494
566 Hegenberger Road
Oakland, California

GROUNDWATER ELEVATION CONTOUR MAP
Second Quarter 2002 (April 17, 2002)

FIGURE
2

Date: October 22, 2002

ARCO QUARTERLY GROUNDWATER MONITORING REPORT

Station No.: 4494 Address: 566 Hegenberger Road, Oakland, CA
ARCO Engineer/Phone No.: Paul Supple/ (925) 299-8891
Consulting Co./Contact Person URS Corporation/ Scott Robinson
Consultant Project No.: 38465951
Primary Agency/Regulatory ID No. Alameda County Health Care Services/STID #3854

WORK PERFORMED THIS QUARTER (Second - 2002)

1. Performed quarterly groundwater monitoring for second quarter 2002.
2. Prepared and submitted quarterly groundwater monitoring report for the first quarter 2002.

WORK PROPOSED FOR NEXT QUARTER (Third - 2002)

1. Prepare and submit quarterly groundwater monitoring report for second quarter 2002.
2. Perform quarterly groundwater monitoring and sampling for third quarter 2002.

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:	350 cubic yards
Bulk Soil Removed to Date:	1,550 cubic yards
Current Remediation Techniques:	None
Approximate Depth to Groundwater:	6.71 feet
Groundwater Gradient:	0.023 feet/foot northwest

DISCUSSION:

- MTBE was detected in wells MW-4, MW-6, MW-5, MW-7, and MW-1 at concentrations of 5.6 micrograms per liter ($\mu\text{g/L}$), $7\mu\text{g/L}$, $8.5\mu\text{g/L}$, $67\mu\text{g/L}$, and $4,500\mu\text{g/L}$ respectively.
- The site is currently scheduled for quarterly monitoring through 2002.

ATTACHMENTS:

- Disclaimer Statement : Groundwater Monitoring Report
- Table 1 Summary of Groundwater Elevation and Analytical Data
- Table 2 Ground Flow Direction and Gradient
- Figure 1 Groundwater Analytical Summary Map
- Figure 2 Groundwater Elevation Contour Map
- Attachment A Groundwater Sampling Procedures
- Attachment B Historical Data Tables (Pacific Environmental Group, Inc.)
- Attachment C Certified Analytical Reports and Chain-of-Custody
- Attachment D Field Data Sheets
- Attachment E EDCC Report, EDF and Geowell Submittal Confirmation Number
Page

**DISCLAIMER STATEMENT - GROUNDWATER MONITORING REPORT
GROUP ENVIRONMENTAL MANAGEMENT COMPANY SITES**

This report is based on data, site conditions and other information that is generally applicable as of the date of the report, and the conclusions and recommendations herein are therefore applicable only to that time frame.

Background information including but not limited to previous field measurements, analytical results, site plans and other data have been furnished to URS by Group Environmental Management Company, their previous consultants, and/or third parties, which URS has used in preparing this report. URS has relied on this information as furnished, and is neither responsible for nor has confirmed the accuracy of this information.

Analytical data provided by the Group Environmental Management Company approved laboratory has been reviewed and verified by the laboratory. URS has not performed an independent review of the data and is neither responsible for nor has confirmed the accuracy of this data. Field measurements have been supplied by a groundwater sampling subcontractor. URS has not performed an independent review of the field sampling data and is neither responsible for nor has confirmed the accuracy of this data.

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND 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)	Ethyl-benzene (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
	03/28/01		6.88	99.22	<5.0	<5.0	<5.0	<5.0	<500	16,900
	06/21/01		7.18	98.92	<10	<10	<10	<10	<1,000	3,400
	09/23/01		7.11	98.99	<10	<10	<10	<10	<1,000	2200/1800 ^a
	12/31/01		6.91	99.19	<50	<50	<50	<50	<5,000	14,000
	03/14/02		6.85	99.25	<50	<50	<50	<50	<5,000	6,200
	04/17/02		5.89	100.21	<50	<50	<50	<50	<5,000	4,500
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
	03/28/01		9.23	97.06	<0.5	<0.5	<0.5	<0.5	<50	7.42
	06/21/01		9.58	96.71	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		9.76	96.53	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		8.78	97.51	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		9.25	97.04	< 0.5	< 0.5	< 0.5	< 0.5	<50	4
	04/17/02		8.44	97.85	< 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
	03/28/01		8.59	98.81	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		8.79	98.61	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		8.67	98.73	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		8.03	99.37	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		8.48	98.92	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
	04/17/02		7.79	99.61	< 0.5	< 0.5	< 0.5	< 0.5	<50	5.6

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND 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)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
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		6.50	98.69	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		6.34	98.85	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		7.88	97.31	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		6.98	98.21	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/31/01		5.01	100.18	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		5.93	99.26	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
	04/17/02		5.37	99.82	< 0.5	< 0.5	< 0.5	< 0.5	<50	8.5
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
	03/28/01		6.10	98.97	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		7.68	97.39	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	09/23/01		6.72	98.35	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	12/23/01		4.68	100.39	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/14/02		5.55	99.52	< 0.5	< 0.5	< 0.5	< 0.5	<50	<2.5
	04/17/02		4.96	100.11	< 0.5	< 0.5	< 0.5	< 0.5	<50	7
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
	03/28/01		8.66	96.86	<0.5	<0.5	<0.5	<0.5	<50	51.5
	06/21/01		8.84	96.68	<0.5	<0.5	<0.5	<0.5	<50	53
	09/23/01		8.75	96.77	<0.5	<0.5	<0.5	<0.5	<50	35/21 ^a
	12/23/01		7.79	97.73	<0.5	<0.5	<0.5	<0.5	<50	440
	03/14/02		8.30	97.22	< 0.5	< 0.5	< 0.5	< 0.5	<50	18
	04/17/02		7.43	98.09	< 0.5	< 0.5	< 0.5	< 0.5	<50	67

TABLE 1

SUMMARY OF GROUNDWATER ELEVATION AND 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)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH as Gasoline (µg/L)	MTBE (µg/L)
RW-1	06/20/00	NE	8.21	NC	<0.5	1.1	<0.5	<1.0	<50	<10
	09/28/00		8.28	NC	<0.5	<0.5	<0.5	<1.0	<50	<2.5
	12/17/00		8.29	NC	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	03/28/01		8.16	NC	<0.5	<0.5	<0.5	<0.5	<50	<2.5
	06/21/01		9.37	NC	5.1	<0.5	1.1	3.2	160	<2.5
	09/23/01		8.75	NC	<0.5	<0.5	<0.5	<0.5	57	<2.5
	12/31/01		6.80	NC	3.1	<0.5	6.4	4.7	520	<2.5
	03/14/02		7.86	NC	3.7	<0.5	0.7	2.8	240	<2.5
	04/17/02		7.13	NC	<0.5	1.6	<0.5	0.72	<50	<2.5

* Analyzed by EPA Method 8260

TPH = Total Petroleum Hydrocarbons

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

µg/L = Micrograms per liter

NC = Not calculated

NE = Not surveyed/No elevation

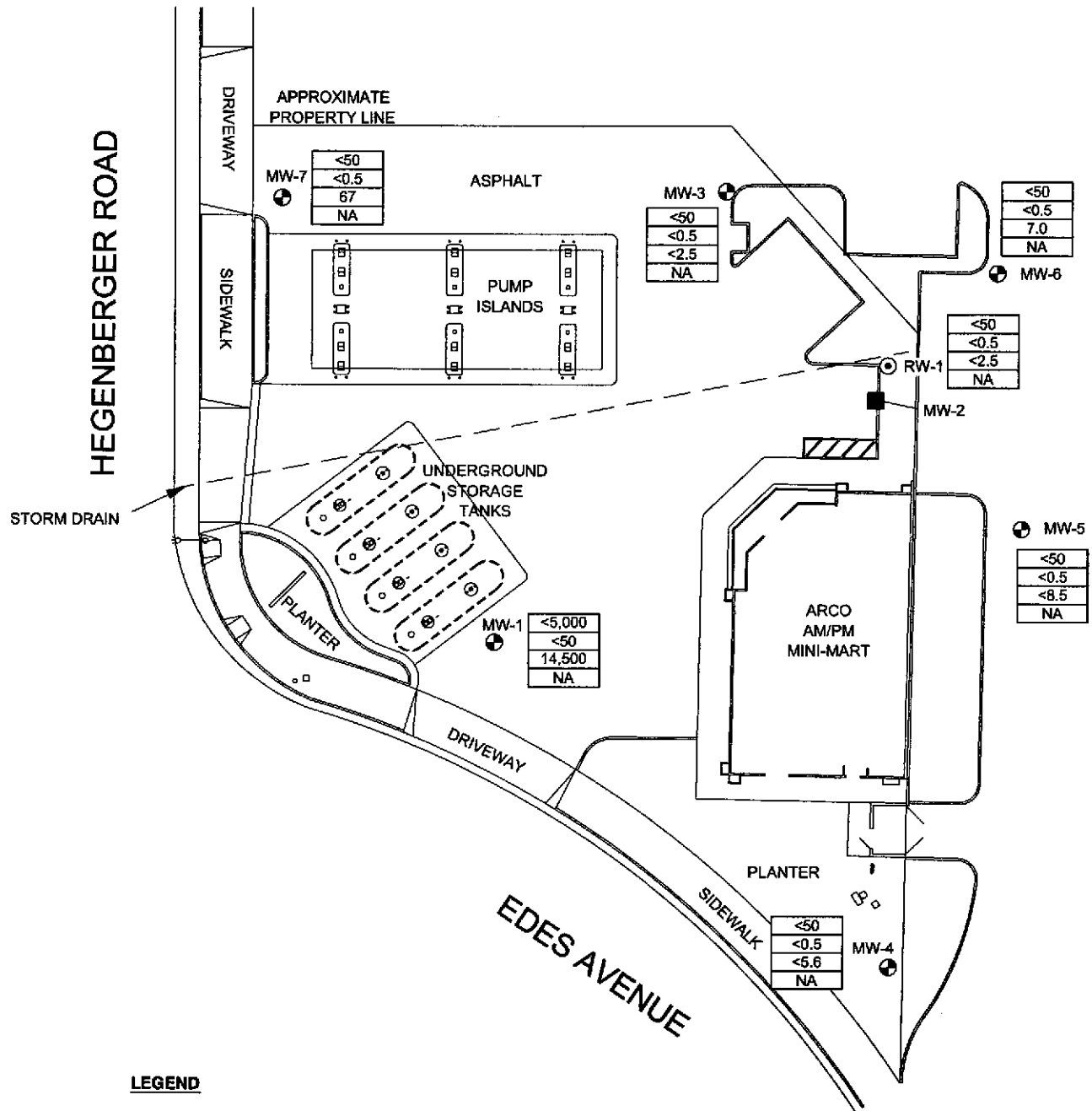
TABLE 2

GROUNDWATER FLOW DIRECTION AND GRADIENT

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

Date Measured	Average Flow Direction	Average Hydraulic Gradient
06/20/00	North-Northeast	0.015
09/28/00	North	0.018
12/17/00	North-Northwest	0.013
03/28/01	Northwest	0.011
06/21/01	North	0.017
09/23/01	North	0.020
12/31/01	North-Northwest	0.023
03/14/02	North-Northwest	0.017
04/14/02	Northwest	23.00

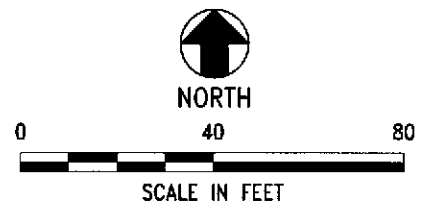
Note: Please refer to Appendix B for Historical Groundwater Elevation and Analytical Data Tables developed by IT Corporation



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 |
| NA | MTBE CONFIRMED BY EPA METHOD 8260 |
- NA NOT ANALYZED/ NOT APPLICABLE

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



Project No. 38465951
Arco Service Station 4494
566 Hegenberger Road
Oakland, California

GROUNDWATER ANALYTICAL SUMMARY
Second Quarter 2002 (April 17, 2002)

FIGURE
1