URS

January 31, 2003

Mr. Amir Gholami,
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Third Quarter 2002 Groundwater Monitoring Report
ARCO Service Station # 5387
20200 Hesperian Blvd
Hayward, California
URS Project #38486033

Dear Mr. Gholami:

On behalf of Atlantic Richfield Company (ARCO – an affiliated company of the Group Environmental Management Company), URS Corporation (URS) is submitting the *Third Quarter 2002 Groundwater Monitoring Report* for ARCO Service Station # 5387, located at 20200 Hesperian Boulevard, Hayward, California.

If you have any questions regarding this submission, please call (510) 874-3280.

Sincerely,

URS CORPORATION

Scott Robinson
Project Manager

REGISTERED PROFESSIONAL ENGINEER
AMY BREKENRIDGE
No. 057141
Exp. 12/31/05
CIVIL
STATE OF CALIFORNIA

Amy P. Brekenridge, P.E.
Portfolio Manager

Enclosure: Third Quarter 2002 Groundwater Monitoring Report

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
Fax: 510.874.3268

ARCO Products Company
4 Centerpointe Drive
La Palma, California 90623-1066
Telephone 714 670 5300

Mailing Address: P.O. Box 6549
Moraga, California 94549

January 31, 2003

Re: ARCO Station # 5387 • 20200 Hesperian Boulevard • Hayward, CA
Third Quarter 2002 Quarterly Monitoring Report

"I declare, that to the best of my knowledge a the present time, that the information and/or recommendations contained in the attached proposal or report are true and correct."

Submitted by:

Paul Supple
Environmental Engineer

REPORT

THIRD QUARTER 2002 GROUNDWATER MONITORING

ARCO SERVICE STATION # 5387
20200 HESPERIAN BOULEVARD
HAYWARD, CALIFORNIA

Prepared for
Atlantic Richfield Company

January 31, 2003

URS
URS Corporation
500 12th Street, Suite 200
Oakland, California 94607

38486033

URS

Date: January 31, 2003
Quarter: 3Q 02

ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Former Facility No.:	5387	Address:	20200 Hesperian Boulevard, Hayward, California
ARCO Environmental Engineer:			Paul Supple
Consulting Co./Contact Person:			URS Corporation / Scott Robinson / (510) 874-3280
Consultant Project No.:			38486033
Primary Agency:			ACHCSA

WORK PERFORMED THIS QUARTER (Third – 2002):

1. Prepared second quarter 2002 groundwater monitoring report.
2. Performed third quarter 2002 groundwater monitoring event.

WORK PROPOSED FOR NEXT QUARTER (Fourth – 2002):

1. Prepare third quarter 2002 groundwater monitoring report.
2. Perform fourth quarter 2002 groundwater monitoring event.

Current Phase of Project:	GW monitoring/sampling
Frequency of Groundwater Sampling:	Wells MW-1 through MW-3, A-4 through A-10, AR-1 and AR-2 quarterly
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
Current Remediation Techniques:	Natural Attenuation
Approximate Depth to Groundwater:	10.30 ft (MW-3) to 13.78 ft (A-7)
Groundwater Gradient (direction):	West
Groundwater Gradient (magnitude):	0.004

DISCUSSION:

TPH-g and benzene was detected in one of the nine wells sampled this quarter (MW-2) at concentrations of 1,440 micrograms per liter (µg/L) and 11.2 µg/L, respectively. MTBE was detected in five wells at concentrations ranging from 1.30 µg/L in well A-5 to 228 µg/L in well MW-2. Well MW-1 was not sampled this quarter due to fencing associated with excavation activities. Well A-4 was not sampled because it could not be located. Well A-10 was not sampled because the well was dry.

URS

ATTACHMENTS:

- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Summary of Groundwater Flow Direction and Gradient
- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – September 23, 2002
- Attachment A - Field Procedures and Field Data Sheets
- Attachment B - Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C - EDCC Report

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
AR-2	03/30/93		38.39	11.53	26.86	390	4.1	1.6	<0.5	47	---
	04/14/93			11.87	26.52	310	18	<0.5	0.67	36	---
	08/12/93			13.59	24.80	130	16	<0.5	1.7	0.57	---
	10/26/93			14.25	24.14	110	15	<0.5	1.8	<0.5	---
	02/17/94			12.76	25.22	130	2.9	<0.5	15	0.8	---
	05/03/94			12.60	25.38	<50	<0.5	<0.5	<0.5	<0.5	---
	08/17/94		38.18	13.86	24.32	3,000	140	140	220	91	---
	11/18/94			13.33	24.85	623	10.5	10.5	27.9	8.0	---
	09/26/95		37.98	11.67	26.31	ND	ND	ND	ND	ND	---
	12/06/95			12.32	25.66	320	12	12	23	2.1	---
	02/14/96			10.74	27.24	ND	ND	ND	ND	0.76	---
	10/29/96			11.95	26.03	ND	ND	ND	ND	ND	---
	01/29/97			11.35	26.63	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			12.15	25.83	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			11.20	26.78	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			12.14	25.84	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			10.05	27.93	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			12.10	25.88	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			9.50	28.48	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			10.45	27.53	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			10.50	27.48	<50	<0.3	0.40	<0.3	0.53	<20
	04/29/99			11.48	26.50	<50	<0.3	<0.3	<0.3	0.82	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	17
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	39*
	09/23/02	**P**		**12.22**	**25.76**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**4.43**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-1	08/08/86		38.36	11.25	27.11	7,040	132	8.7	439	230	---
	12/24/91			16.12	22.24	2,200	190	8.5	6.9	2.6	---
	03/10/92			13.34	25.02	2,800	270	29	56	39	---
	06/09/92			14.12	24.24	2,900	960	27	99	63	---
	09/14/92			15.34	23.02	2,600	450	<5.0	45	21	---
	11/12/92			15.46	22.90	1,600	310	7.2	22	8.9	---
	02/11/93			11.95	26.41	4,000	510	47	200	91	---
	04/14/93			11.65	26.71	1,700	260	20	100	70	---
	08/12/93			12.93	25.43	830	60	3.8	39	3.6	---
	10/26/93			14.13	24.23	8,800	140	<10	41	<10	---
	02/17/94		37.26	11.86	25.40	1,200	130	12	54	58	---
	05/03/94			11.58	25.68	---	---	---	---	---	---
	08/17/94		37.33	12.78	24.55	3,900	86	5.1	78	9.4	---
	11/18/94			12.31	25.02	6,350	112	8.4	107	35	---
	09/26/95		37.26	11.26	26.00	ND	ND	ND	ND	ND	---
	12/06/95			12.16	25.10	4,100	0.86	0.46	0.38	0.92	---
	02/14/96			8.53	28.73	ND	ND	0.56	ND	0.82	---
	10/29/96			10.23	27.03	130	ND	ND	ND	ND	---
	01/29/97			8.15	29.11	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			8.05	29.21	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			10.50	26.76	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			11.15	26.11	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			4.95	32.31	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			8.10	29.16	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			8.02	29.24	<50	<0.3	<0.3	<0.3	<0.5	40
	10/22/98			9.70	27.56	230	0.43	1.9	0.99	0.99	33
	01/13/99			9.60	27.66	<50	0.43	<0.3	<0.3	<0.5	<20
	04/29/99			8.05	29.21	<50	<0.3	<0.3	<0.3	<0.5	^31/17
	01/15/02			---	---	<50	<0.05	<0.5	<0.5	<0.5	21
	04/24/02			---	---	160	1.5	ND<0.50	ND<0.50	ND<0.50	770*
	09/23/02	**a**		**NM**	**NM**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-2	08/08/86		38.58	11.62	26.96	1,910	20.1	2.8	1.8	---	---
	12/24/91			16.50	22.08	23,000	1,500	1,100	480	1,400	---
	03/10/92			13.50	25.08	210,000	44,000	3,900	1,700	5,800	---
	06/09/92			14.52	24.06	33,000	2,300	370	780	2,600	---
	09/14/92			15.78	22.80	16,000	3,700	10	470	1,000	---
	11/12/92			15.98	22.60	16,000	3,800	86	470	910	---
	02/11/93			12.27	26.31	27,000	3,500	720	1,600	380	---
	04/14/93			12.01	26.57	27,000	3,500	220	2,200	5,100	---
	08/12/93			13.81	24.77	16,000	1,600	27	1,300	1,200	---
	10/26/93			14.53	24.05	12,000	1,200	<25	510	330	---
	02/17/94			12.81	25.77	15,000	1,800	21	850	540	---
	05/03/94			12.63	25.95	---	---	---	---	---	---
	08/17/94		37.99	13.69	24.30	14,000	850	13	640	270	---
	11/18/94		38.06	13.18	24.88	14,900	640	3.4	532	156	---
	09/26/95		37.99	12.23	25.76	5,100	40	25	2.5	18	---
	12/06/95			12.82	25.17	810	34	23	11	11	---
	02/14/96			10.87	27.12	420	0.75	0.54	0.64	0.53	---
	10/29/96			12.95	25.04	670	1.7	1.3	0.6	0.8	---
	01/29/97			11.15	26.84	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			11.09	26.90	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			11.70	26.29	330	<0.3	0.58	0.53	<0.5	<20
	10/22/97			11.05	26.94	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			9.50	28.49	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			11.15	26.84	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			10.20	27.79	78	<0.3	<0.3	<0.3	<0.5	97
	10/22/98			11.10	26.89	270	0.37	2.0	0.91	0.73	26
	01/13/99			11.10	26.89	650	5.8	1.0	1.4	1.1	<20
	04/29/99			11.05	26.94	<50	<0.3	<0.3	<0.3	<0.5	^23/16
	01/15/02			---	---	1,200	15	4.5	<0.5	<0.5	190
	04/24/02			---	---	1,300	18	ND<10	ND<10	ND<10	170*
	09/23/02	**P**		**12.15**	**25.84**	**1,440**	**11.2**	**0.730**	**ND<0.500**	**ND<1.50**	**228**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
MW-3	08/08/86		37.77	10.61	27.16	7,450	510	549	409	1,380	---
	12/24/91			15.60	22.17	6,800	450	10	610	45	---
	03/10/92			12.90	24.87	11,000	2,500	75	400	560	---
	06/09/92			13.60	24.17	16,000	2,000	69	1,300	2,600	---
	09/14/92			14.78	22.99	14,000	630	<50	1,500	2,400	---
	11/12/92			14.92	22.85	7,400	400	<25	860	330	---
	02/11/93			11.65	26.12	8,600	580	<20	710	300	---
	04/14/93			11.16	26.61	6,900	300	8.8	580	99	---
	08/12/93			12.82	24.95	3,400	56	<5	190	<5	---
	10/26/93			13.60	24.17	2,900	42	<10	76	<10	---
	02/17/94		36.80	11.53	25.27	3,100	160	<10	36	8.6	---
	05/03/94			11.36	25.44	2,300	44	<2.5	8.0	<2.5	---
	08/17/94		36.87	12.38	24.49	1,900	7.0	<9.5	4.4	<5	---
	11/18/94			11.93	24.94	909	1.1	<0.5	0.9	4.0	---
	09/26/95		36.80	10.96	25.84	410	1.3	1.9	2.3	3.3	---
	12/06/95			11.56	25.24	---	0.9	4.6	3.0	4.3	---
	02/14/96			7.47	29.33	99	ND	0.49	0.46	ND	---
	10/29/96			9.80	27.00	250	0.7	0.6	ND	ND	---
	01/29/97			7.50	29.30	170	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			12.10	24.70	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			9.90	26.90	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			12.10	24.70	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			7.50	29.30	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			12.30	24.50	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			8.30	28.50	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			9.10	27.70	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			9.50	27.30	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			5.93	30.87	<50	<0.3	0.35	<0.3	<0.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	7.9
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50*
	09/23/02	**P**		**10.30**	**26.50**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**ND<0.500**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-4	03/06/91		39.46	13.22	26.24	34,000	11,000	870	2,500	2,100	---
	12/24/91		39.86	17.60	22.26	1,900	29	1.9	25	29	---
	03/10/92			14.76	25.10	7,400	37	<0.60	11	73	---
	06/09/92			15.63	24.23	4,500	3.2	1.5	37	16	---
	09/14/92			16.83	23.03	1,300	<2.5	2.5	61	6.8	---
	11/12/92			16.97	22.89	610	7.2	0.98	34	0.97	---
	02/11/93			13.43	26.43	740	2.4	<0.5	5.0	3.5	---
	04/14/93			13.06	26.80	380	<0.5	<0.5	10	1.6	---
	08/12/93			14.94	24.92	1,200	0.93	<0.5	0.91	<0.5	---
	10/26/93			15.52	24.34	160	<0.5	<0.5	1.0	<0.5	---
	02/17/94		39.46	14.02	25.44	320	0.5	<0.5	28	0.9	---
	05/03/94			13.85	25.61	130	<0.5	<0.5	1.1	<0.5	---
	08/17/94		39.53	14.95	39.53	62	34.58	<0.5	<0.5	<0.5	---
	11/18/94			14.46	25.07	98	1.3	0.6	<0.5	<0.5	---
	12/06/95			13.82	25.71	ND	0.6	ND	ND	ND	---
	02/14/96			11.24	28.29	ND	ND	2.3	ND	0.71	---
	10/29/96			13.50	26.03	140	ND	ND	ND	ND	---
	01/29/97			12.65	26.88	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			13.97	25.56	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			12.70	26.83	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			13.95	25.58	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			11.90	27.63	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			13.92	25.61	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			10.80	28.73	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			12.60	26.93	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			12.60	26.93	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			12.61	26.92	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	6.2
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50*
	09/23/02	a		**NM**	**NM**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-5	12/24/91		38.94	16.85	22.09	1,600	21	<0.30	32	52	---
	03/10/92			13.83	25.11	1,000	1.6	<0.30	43	100	---
	06/09/92			14.91	24.03	680	34	<1.5	14	16	---
	09/14/92			16.14	22.80	770	12	<0.30	51	65	---
	11/12/92			16.35	22.59	520	3.0	<2.5	29	36	---
	02/11/93			13.21	25.73	150	1.6	0.96	5.1	1.5	---
	04/14/93			12.97	25.97	190	5.4	<0.5	1.5	0.97	---
	08/12/93			14.12	24.82	230	1.7	<0.5	5.3	0.94	---
	10/26/93			14.72	24.22	190	2.8	<0.5	5.5	2.0	---
	02/17/94		38.47	13.20	25.27	340	<0.5	<0.5	13	2.9	---
	05/03/94			13.08	25.39	170	1.4	<0.5	4.0	1.9	---
	08/17/94		38.54	14.18	24.36	270	0.6	<0.5	7.3	1.1	---
	11/18/94			13.73	24.81	338	---	<0.5	4.6	<0.5	---
	09/26/95		38.47	12.44	26.03	ND	0.63	1.1	ND	1.2	---
	12/06/95			12.92	25.55	ND	ND	ND	ND	ND	---
	02/14/96			10.76	27.71	ND	ND	2.0	ND	1.1	---
	10/29/96			12.35	26.12	ND	ND	ND	ND	ND	---
	01/29/97			10.85	27.62	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			13.56	24.91	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			11.80	26.67	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			12.20	26.27	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			10.12	28.35	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			13.50	24.97	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			10.20	28.27	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			11.50	26.97	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			10.15	28.32	<50	0.32	0.38	<0.3	<0.5	<20
	04/29/99			11.50	26.97	<50	<0.3	<0.3	<0.3	0.58	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	5.0
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	1.2*
	09/23/02	**P**		**12.55**	**25.92**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**1.30**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-6	12/24/91		39.07	16.86	22.19	<30	<0.3	<0.3	<0.3	<0.3	---
	03/10/92			13.73	25.34	<30	<0.3	<0.3	<0.3	<0.3	---
	06/09/92			14.95	24.12	<30	<0.3	<0.3	<0.3	<0.3	---
	09/14/92			16.20	22.87	<50	<0.5	<0.5	<0.5	<0.5	---
	11/12/92			16.35	22.72	<50	<0.5	<0.5	<0.5	<0.5	---
	02/11/93			13.04	26.03	<50	<0.5	<0.5	<0.5	<0.5	---
	04/14/93			12.23	26.84	<50	<0.5	<0.5	<0.5	<0.5	---
	08/12/93			14.18	24.89	<50	<0.5	<0.5	<0.5	<0.5	---
	10/26/93			14.85	24.22	<50	<0.5	<0.5	<0.5	<0.5	---
	05/03/94			13.66	25.41	<50	<0.5	<0.5	<0.5	<0.5	---
	08/17/94		38.78	14.34	24.44	<50	<0.5	<0.5	<0.5	<0.5	---
	11/18/94			13.76	25.02	<50	<0.5	<0.5	<0.5	<0.5	---
	09/26/95			12.56	26.22	ND	ND	ND	ND	ND	---
	12/06/95			13.18	25.60	ND	ND	ND	ND	ND	---
	02/14/96			12.46	26.32	ND	ND	ND	ND	ND	---
	10/29/96			12.40	26.38	50	ND	ND	ND	ND	---
	01/29/97			13.85	24.93	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			12.49	26.29	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			12.10	26.68	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			15.20	23.58	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			13.80	24.98	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			12.45	26.33	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			10.30	28.48	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			11.10	27.68	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			10.40	28.38	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			13.80	24.98	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	5.7
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50*
	09/23/02	**P**		**12.61**	**26.17**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**ND<0.500**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-7	12/24/91		39.95	18.11	21.84	10,000	88	16	170	610	---
	03/10/92			15.30	24.65	320	9.3	0.54	8.8	34	---
	06/09/92			16.12	23.83	340	11	1.1	8.9	26	---
	09/14/92			17.35	22.60	510	12	<2.0	30	51	---
	11/12/92			17.47	22.48	760	17	0.83	50	73	---
	02/11/93			13.80	26.15	260	20	1.0	11	21	---
	04/14/93			13.60	26.35	1,300	89	2.1	48	87	---
	08/12/93			15.54	24.41	360	9.0	<0.50	13	9.0	---
	10/26/93			16.28	23.67	99	1.7	<0.50	4.0	3.0	---
	02/17/94		39.38	14.44	24.94	1,300	38	<1	35	25	---
	05/03/94			14.34	25.04	330	8.1	<0.5	7.8	3.7	---
	08/17/94		39.45	15.40	24.05	350	2.2	<0.5	9.6	3.6	---
	11/18/94			14.95	24.50	412	1.3	<0.5	6.2	2	---
	09/26/95		39.38	13.92	25.46	ND	ND	ND	ND	ND	---
	12/06/95			14.42	24.96	ND	ND	ND	ND	ND	---
	02/14/96			12.38	27.00	ND	ND	1.1	ND	0.59	---
	10/29/96			12.33	27.05	ND	ND	ND	ND	ND	---
	01/29/97			13.10	26.28	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			11.70	27.68	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			13.25	26.13	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			14.42	24.96	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			13.00	26.38	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			11.65	27.73	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			11.20	28.18	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			13.75	25.63	51	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			14.45	24.93	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			13.74	25.64	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	4.8
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	7.2*
	09/23/02	**P**		**13.78**	**25.60**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**3.48**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-8	09/14/92		37.23	14.19	23.04	<50	<0.5	<0.5	<0.5	<0.5	---
	11/12/92			14.35	22.88	<50	<0.5	<0.5	<0.5	<0.5	---
	02/11/93			11.25	25.98	<50	<0.5	<0.5	<0.5	<0.5	---
	04/14/93			12.33	24.90	<50	<0.5	<0.5	<0.5	<0.5	---
	08/12/93			12.41	24.82	<50	<0.5	<0.5	<0.5	<0.5	---
	10/26/93			13.02	24.21	<50	<0.5	<0.5	<0.5	<0.5	---
	02/17/94		36.76	11.47	25.29	<50	<0.5	<0.5	<0.5	<0.5	---
	05/03/94			11.35	25.41	<50	<0.5	<0.5	<0.5	<0.5	---
	08/17/94		36.84	12.34	24.50	<50	<0.5	1.7	<0.5	1.4	---
	11/18/94			11.90	24.94	<50	1.0	<0.5	<0.5	<0.5	---
	09/26/95		36.76	10.94	25.82	ND	ND	ND	ND	ND	---
	12/06/95			11.42	25.34	ND	ND	ND	ND	ND	---
	02/14/96			8.80	27.96	ND	ND	0.48	ND	ND	---
	10/29/96			11.30	25.46	200	ND	ND	ND	ND	---
	01/29/97			7.60	29.16	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			10.54	26.22	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			11.20	25.56	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			12.14	24.62	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			4.43	32.33	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			10.55	26.21	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			9.07	27.69	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			12.12	24.64	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			9.60	27.16	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			9.08	27.68	<50	<0.3	<0.3	<0.3	1.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	5.6
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50*
	09/23/02	**P**		**10.75**	**26.01**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**ND<0.500**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled		Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-9	09/14/92		38.71	16.12	22.59	<50	<0.5	<0.5	<0.5	<0.5	---
	11/12/92			16.29	22.42	<50	<0.5	<0.5	<0.5	<0.5	---
	02/11/93			12.31	26.40	<50	<0.5	<0.5	<0.5	<0.5	---
	04/14/93			12.01	26.70	<50	<0.5	<0.5	<0.5	<0.5	---
	08/12/93			13.90	24.81	<50	<0.5	<0.5	<0.5	<0.5	---
	10/26/93			14.86	23.85	<50	<0.5	<0.5	<0.5	<0.5	---
	02/17/94		38.19	12.99	25.20	<50	<0.5	<0.5	<0.5	<0.5	---
	08/17/94			14.03	24.16	<50	<0.5	<0.5	<0.5	<0.5	---
	11/18/94		37.24	13.44	23.80	<50	<0.5	<0.5	<0.5	<0.5	---
	09/26/95			12.43	25.81	ND	<0.5	ND	ND	ND	---
	12/06/95		38.19	13.14	25.05	ND	<0.5	ND	ND	ND	---
	02/14/96			9.05	29.14	ND	ND	1.8	0.49	0.82	---
	10/29/96			12.85	25.34	ND	ND	ND	ND	ND	---
	01/29/97			9.02	29.17	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/30/97			12.05	26.14	<20	<0.3	<0.3	<0.3	<0.5	<50
	07/31/97			12.18	26.01	<50	<0.3	<0.3	<0.3	<0.5	<20
	10/22/97			7.45	30.74	<50	<0.3	<0.3	<0.3	<0.5	<20
	01/28/98			21.25	16.94	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98			12.10	26.09	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98			10.40	27.79	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98			1.55	24.64	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99			12.05	26.14	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99			7.43	30.76	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/15/02			---	---	<50	<0.5	<0.5	<0.5	<0.5	4.3
	04/24/02			---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50*
	09/23/02	**P**		**12.35**	**25.84**	**ND<50.0**	**ND<0.500**	**ND<0.500**	**ND<0.500**	**ND<1.50**	**ND<0.500**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled	Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
A-10	12/07/92	38.94	16.81	22.13	660	30	<2.5	<2.5	<2.5	---
	02/11/93		13.15	25.79	210	<0.5	0.97	<0.5	<0.5	---
	04/14/93		12.19	26.75	770	<0.5	3.0	0.76	1.9	---
	08/12/93		14.87	24.07	390	<0.5	<0.5	<0.5	0.84	---
	10/26/93		15.65	23.29	290	<0.5	<0.5	<0.5	<0.5	---
	02/17/94	38.66	14.16	24.50	52	<0.5	<0.5	<0.5	<0.5	---
	05/03/94		14.00	24.66	<50	<0.5	<0.5	<0.5	<0.5	---
	08/17/94	38.72	15.08	23.64	<50	<0.5	<0.5	<0.5	<0.5	---
	11/18/94		14.68	24.04	<50	<0.5	<0.5	<0.5	<0.5	---
	09/26/95	38.66	13.58	25.08	ND	ND	ND	ND	ND	---
	12/06/95		14.24	24.42	ND	ND	ND	ND	ND	---
	02/14/96		6.70	31.96	ND	ND	ND	ND	ND	---
	10/29/96		14.10	24.56	ND	ND	ND	ND	1.1	---
	01/29/97		11.20	24.46	<50	0.41	4.8	0.6	4.4	37
	04/30/97		12.66	26.00	<20	0.40	4.2	0.5	3.8	50
	07/31/97		13.20	25.46	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/22/98		12.60	26.06	<50	<0.3	<0.3	<0.3	<0.5	<20
	07/08/98		8.08	30.58	<50	<0.3	<0.3	<0.3	<0.5	<5
	10/22/98		11.15	27.51	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/13/99		9.60	29.06	<50	<0.3	<0.3	<0.3	<0.5	<20
	04/29/99		11.15	27.51	<50	<0.3	<0.3	<0.3	<0.5	<5
	01/15/02		---	---	<50	<0.5	<0.5	<0.5	<0.5	17
	04/24/02		NM	NM	NS	NS	NS	NS	NS	NS
	09/23/02		**DRY**	**DRY**	**NS**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 1
Groundwater Analytical Data

ARCO Service Station #5387
20200 Hesperian Blvd.
Hayward, California

Well Number	Date Sampled	Casing Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)

TPH = Total Petroleum Hydrocarbons analyzed using EPA Method 8015B Modified
MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted
ND = Not Detected
NM = Not Measured
NS = Not Sampled
P = Purge
NP = No Purge
" --- " = Not analyzed/Not available
µg/L = Micrograms per liter
a = well inaccessable
* = Analyzed by EPA Method 8260B.

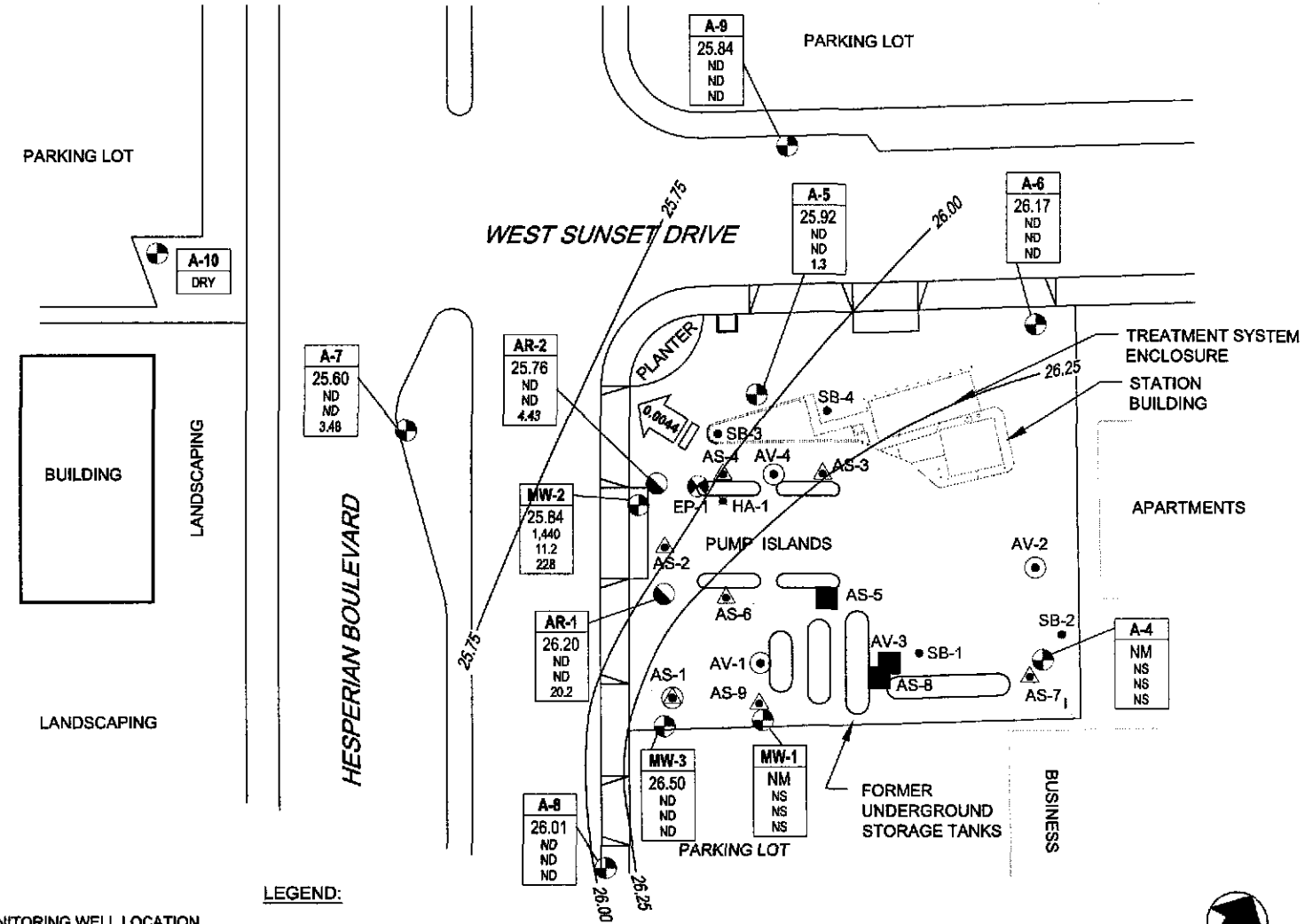
Source The data in this table prior to September 2002 was provided to URS by Group Environmental Management Company and its previous consultants. URS has not verified the accuracy of this data

Table 2
Groundwater Flow Direction and Gradient

ARCO Service Station #5387
20200 Hesperian Blvd
Hayward, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
04/24/02	-	-
09/23/02	**West**	**0.004**

X:\x_env\waste\BP GEM\Sites\Scott Robinson\Paul Supple\5387\Reports\Monitoring\Qtr. 2, 2002\Drawings\GWEC-AS_9-23.dwg



LEGEND:

- A-4 — ABANDONED MONITORING WELL LOCATION
- A-4 — MONITORING WELL LOCATION
- AR-1 — GROUNDWATER EXTRACTION WELL LOCATION
- AV-1 — SOIL VAPOR EXTRACTION WELL LOCATION
- AS-2 — AIR SPARGE WELL LOCATION
- AS-1 — DUAL AIR SPARGE/SOIL VAPOR EXTRACTION WELL LOCATION
- HA-1 — AIR SPARGE WELL LOCATION
- SB-3 — DUAL AIR SPARGE/SOIL VAPOR EXTRACTION WELL LOCATION
- EP-1 — EXTRACTION POINT
- 26.00 — GROUNDWATER ELEVATION CONTOUR (FEET ABOVE MSL)
- 0.0044 — GROUNDWATER FLOW DIRECTION AND GRADIENT (FEET ABOVE MSL)

Well
ELEV
TPH-g
Benzene
MTBE

- WELL DESIGNATION
- GROUNDWATER ELEVATION
- CONCENTRATIONS OF TPH-g, BENZENE AND MTBE IN MICROGRAMS PER LITER (µg/L)
- * NO GROUNDWATER ELEVATION DATA AVAILABLE
- NA NOT AVAILABLE
- ND NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- NS NOT SAMPLED

NORTH

0 50 100

SCALE IN FEET

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

URS

Project No. 38486033

Arco Service Station 5387
20200 Hesperian Boulevard
Hayward, California

GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP
Third Quarter 2002 (September 23, 2002)

FIGURE
1

ATTACHMENT A

FIELD PROCEDURES AND FIELD DATA SHEETS

FIELD PROCEDURES

Sampling Procedures

The sampling procedure for each well consists first of measuring the water level and depth to bottom, and checking for the presence of free phase petroleum product (free product), using either an electronic indicator and a clear Teflon™ bailer or an oil-water interface probe. Wells not containing free product are purged approximately three casing volumes of water (or until dewatered) using a centrifugal pump, gas displacement pump, or bailer. Equipment and purging method used for the current sampling event is noted on the attached field data sheets. During purging, temperature, pH, and electrical conductivity are monitored to document that these parameters are stable prior to collecting samples. After purging, water levels are allowed to partially (approximately 80%) recover. Groundwater samples (both purge and no purge) are collected using a Teflon bailer, placed into appropriate Environmental Protection Agency- (EPA) approved containers, labeled, logged onto chain-of-custody records, and transported on ice to a California State-certified laboratory. Wells with free product are not sampled and free product is removed according to California Code of Regulation, Title 23, Div. 3, Chap. 16, Section 2655, UST Regulations.

WELL GAUGING DATA

Project # 020927-MN2 Date 9/27/02 Client ARCO #4977

Site 2770 Castro Valley Blvd, Castro Valley #4977

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	4					9.29	15.10	TOC	
MW-2	4					7.18	14.81	↓	
MW-3	4					8.26	15.11	↓	

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 020927-DA-1	Station # 4977
Sampler: ~~David A.~~ MDN	Date: 9/27/02
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 15.10	Depth to Water: 9.29
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Middleburg / X Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Other: ___

Top of Screen: —

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.0 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 12.0 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1337	70.3	6.6	1604	4.0	Slightly Cloudy, odor
1338	72.1	6.7	1464	8.0	" "
1339	Well	dewatered			DTW = 13.13
					— Slow Recharge —
1413	71.2	6.9	1581	—	DTW = 13.10

Did well dewater? (Yes) No Gallons actually evacuated: 8.0

Sampling Time: 1413 Site depart Sampling Date: 9/27/02

Sample I.D.: MW-1 Laboratory: Pace (Sequoia) Other ___

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	(Post-purge:)	1.7	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 020927-DA-1	Station # 4977
Sampler: ~~David~~ A. MON	Date: 9/27/02
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 14.81	Depth to Water: 7.18
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Purge Method: Bailer / Disposable Bailer / Middleburg / X Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / X Disposable Bailer / Extraction Port / Other: _____

Top of Screen: — If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

5.0 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 15.0 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (uS))	Gals. Removed	Observations
1605	72.0	6.7	1225	5.0	cloudy, sweet HC odor
1606	73.9	6.7	1214	10.0	clearing, "
1607	well	dewatered			DTW= 12.55
					Slow Recharge
1425	71.1	6.8	1227	—	DTW= 11.87

Did well dewater? (Yes) No Gallons actually evacuated: 10.0

Sampling Time: 1425 (Site depart) Sampling Date: 9/27/02

Sample I.D.: MW-2 Laboratory: Pace (Sequoia) Other _____

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.5 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 020927-DA-1	Station # 4977
Sampler: ~~David A.~~ MDN	Date: 9/27/02
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 15.11	Depth to Water: 8.26
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	(4")	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Purge Method:
- Bailer
- Disposable Bailer
- Middleburg
- X Electric Submersible
- Extraction Pump
- Other: _____

Sampling Method:
- Bailer
- X Disposable Bailer
- Extraction Port
- Other: _____

Top of Screen: —

If well is listed as a no-purge, confirm that water level is below the top of screen. Otherwise, the well must be purged.

4.5 (1 Case Volume (Gals.)) X 3 (Specified Volumes) = 13.5 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1549	72.3	6.8	1099	4.5	Slightly cloudy, sweet HC odo
1551	75.1	6.6	965	9.0	" "
1552	74.8	6.7	968	13.5	" "

Did well dewater? Yes (No) Gallons actually evacuated: 13.5

Sampling Time: 1557 Sampling Date: 9/27/02

Sample I.D.: MW-3 Laboratory: Pace (Sequoia) Other _____

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.0 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

Chain of Custody Record

Project Name 020927 -MW2-
BP BU/GEM CO Portfolio:
BP Laboratory Contract Number:
Requested Due Date (mm/dd/yy)

e: 9/27/02

On-site Time:	Temp:
Off- site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

To:	BP/GEM Facility No.:	Consultant/Contractor: URS
lame: SEQUOIA	BP/GEM Facility Address: 2770 Castro Valley Rd, Castro Valley, CA	Address: 500 12th St., Ste. 200
ddress: 885 Jarvis Dr. Morgan Hill, CA 95037	Site ID No. ARCO 4977	Oakland, CA 94609-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #:	Consultant/Contractor Project No.: J5-00004977.01 00427
M: Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-1735/510-874-3268
ax: 408-776-9600 / 408-782-6308	Address:	Consultant/Contractor PM: Scott Robinson
t Type & QC Level: Send EDF Reports		Invoice to: Consultant/Contractor or (BP/GEM) (circle one)
EM Account No.:	Tele/Fax:	BP/GEM Work Release No: INTRIM -50467

ottle Order No:

No.	Sample Description	Time	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Sediments	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	Preservatives: H_2SO_4	Preservatives: HNO_3	Preservatives: HCl	Preservatives:	Preservatives:	Requested Analysis: TPH-G / BTEX (8015 / 8021)	Requested Analysis: TPH-D (8015)	Requested Analysis: MTBE (8021)	Requested Analysis: MTBE, TAME, ETBE DIPE, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Requested Analysis:	Sample Point Lat/Long and Comments
	MW-1			X				3				X			X		X								
	MW-2			↓				↓				↓			X		X								
	MW-3			↓				↓				↓			X		X								

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
ler's Name: Mukund Nimokata						
ler's Company: BTS	/BTS					
nent Date:						
nent Method:						
nent Tracking No:						

l Instructions: Address Invoice to BP/GEM but send to URS for approval

dy Seals In Place Yes ___ No ___ Temperature Blank Yes ___ No X Cooler Temperature on Receipt ___ °F/C Trip Blank Yes ___ No X

BP GEM OIL COMPANY TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING** FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT BP GEM OIL COMPANY FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY DILLARD ENVIRONMENTAL TO THE ALTAMONT LANDFILL AND RESOURCE RECOVERY FACILITY IN LIVERMORE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Avenue, San Jose, CA 95112 (phone [408] 573-0555). Blaine Tech Services, Inc. is authorized by BP GEM OIL COMPANY to recover, collect, apportion into loads the Non-Hazardous Well Purgewater that is drawn from wells at the BP GEM Oil Company facility indicated below and deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one BP GEM facility to the designated destination point; from one BP GEM facility to the designated destination point via another BP GEM facility; from a BP GEM facility to the designated destination point via the contractor's facility, or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of BP GEM Oil Company.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the BP GEM Oil Company facility described below:

4977

Station #

2770 Castro Valley Blvd, Castro Valley

Station Address

Total Gallons Collected From Groundwater Monitoring Wells:

added equip. rinse water 8

any other adjustments —

TOTAL GALS. RECOVERED 40

loaded onto BTS vehicle # 47

BTS event # 020927-MW2

time 1630

date 9/27/02

signature

* *

REC'D AT BTS

time 1745

date 9 27 02

unloaded by signature

ATTACHMENT B

LABORATORY PROCEDURES, CERTIFIED ANALYTICAL REPORTS, AND CHAIN-OF-CUSTODY RECORDS

LABORATORY PROCEDURES

Laboratory Procedures

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by Group Environmental Management Company have been reviewed and verified by that laboratory.

LABORATORY PROCEDURES

Laboratory Procedures

The groundwater samples were analyzed for the presence of the chemicals mentioned in the chain of custody using standard EPA methods. The methods of analysis for the groundwater samples are documented in the certified analytical report. The certified analytical reports and chain-of-custody record are presented in this attachment. The analytical data provided by the laboratory approved by Group Environmental Management Company have been reviewed and verified by that laboratory.

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

Scott Robinson
URS Corporation
500 12th Street, Suite 100
Oakland, CA 94607

RE: ARCO #4977, Castro Valley, CA
Sequoia Report: MLJ0074

Enclosed are the results of analyses for samples received by the laboratory on 10/01/02 16:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Latonya K. Pelt

Latonya Pelt
Project Manager

CA ELAP Certificate #1210

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

URS Corporation	Project: ARCO #4977, Castro Valley, CA	
500 12th Street, Suite 100	Project Number: ARCO #4977, Castro Valley, CA	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	10/14/02 10:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	MLJ0074-01	Water	09/27/02 14:13	10/01/02 16:55
MW-2	MLJ0074-02	Water	09/27/02 14:25	10/01/02 16:55
MW-3	MLJ0074-03	Water	09/27/02 15:51	10/01/02 16:55

Sequoia Analytical - Morgan Hill

Latonya K. Pelt

Latonya Pelt, Project Manager

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.

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

URS Corporation	Project: ARCO #4977, Castro Valley, CA	
500 12th Street, Suite 100	Project Number: ARCO #4977, Castro Valley, CA	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	10/14/02 10:20

Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MLJ0074-01) Water Sampled: 09/27/02 14:13 Received: 10/01/02 16:55									
Gasoline Range Organics (C6-C10)	**130**	50	ug/l	1	2J10003	10/10/02	10/10/02	8015Bm/8021B	HC-21
Benzene	**7.7**	0.50	"	"	"	"	"	"	
Toluene	**0.87**	0.50	"	"	"	"	"	"	
Ethylbenzene	**5.4**	0.50	"	"	"	"	"	"	
Xylenes (total)	**0.79**	0.50	"	"	"	"	"	"	
Methyl tert-butyl ether	**39**	2.5	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*130 %*	*70-130*		"	"	"	"	
MW-2 (MLJ0074-02) Water Sampled: 09/27/02 14:25 Received: 10/01/02 16:55									
Gasoline Range Organics (C6-C10)	**17000**	5000	ug/l	100	2J10003	10/10/02	10/10/02	8015Bm/8021B	HC-21
Benzene	**1400**	50	"	"	"	"	"	"	
Toluene	ND	50	"	"	"	"	"	"	
Ethylbenzene	**1200**	50	"	"	"	"	"	"	
Xylenes (total)	**3700**	50	"	"	"	"	"	"	
Methyl tert-butyl ether	**1400**	250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*93.2 %*	*70-130*		"	"	"	"	
MW-3 (MLJ0074-03) Water Sampled: 09/27/02 15:51 Received: 10/01/02 16:55									
Gasoline Range Organics (C6-C10)	**740**	250	ug/l	5	2J10003	10/10/02	10/10/02	8015Bm/8021B	HC-21
Benzene	**7.8**	2.5	"	"	"	"	"	"	
Toluene	ND	2.5	"	"	"	"	"	"	
Ethylbenzene	**6.8**	2.5	"	"	"	"	"	"	
Xylenes (total)	**4.4**	2.5	"	"	"	"	"	"	
Methyl tert-butyl ether	**1100**	12	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		*90.4 %*	*70-130*		"	"	"	"	

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

URS Corporation	Project: ARCO #4977, Castro Valley, CA	
500 12th Street, Suite 100	Project Number: ARCO #4977, Castro Valley, CA	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	10/14/02 10:20

Total Purgeable Hydrocarbons (C6-C10) by EPA 8015B modified, BTEXM by EPA 8021B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2J10003 - EPA 5030B [P/T]										
Blank (2J10003-BLK1)				Prepared & Analyzed: 10/10/02						
Gasoline Range Organics (C6-C10)	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	"							
Surrogate: a,a,a-Trifluorotoluene	*9.71*		"	*10.0*		*97.1*	*70-130*			
LCS (2J10003-BS1)				Prepared & Analyzed: 10/10/02						
Benzene	8.91	0.50	ug/l	10.0		89.1	70-130			
Toluene	9.31	0.50	"	10.0		93.1	70-130			
Ethylbenzene	9.48	0.50	"	10.0		94.8	70-130			
Xylenes (total)	27.4	0.50	"	30.0		91.3	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.1*		"	*10.0*		*101*	*70-130*			
LCS (2J10003-BS2)				Prepared & Analyzed: 10/10/02						
Gasoline Range Organics (C6-C10)	220	50	ug/l	250		88.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	*10.2*		"	*10.0*		*102*	*70-130*			
Matrix Spike (2J10003-MS1)		**Source: MLJ0070-04**		Prepared: 10/10/02 Analyzed: 10/11/02						
Gasoline Range Organics (C6-C10)	517	50	ug/l	550	ND	87.8	60-140			
Benzene	10.3	0.50	"	6.60	ND	156	60-140			QM-07
Toluene	43.7	0.50	"	39.7	ND	109	60-140			
Ethylbenzene	9.98	0.50	"	9.20	ND	108	60-140			
Xylenes (total)	47.4	0.50	"	46.1	ND	103	60-140			
Surrogate: a,a,a-Trifluorotoluene	*12.7*		"	*10.0*		*127*	*70-130*			
Matrix Spike Dup (2J10003-MSD1)		**Source: MLJ0070-04**		Prepared: 10/10/02 Analyzed: 10/11/02						
Gasoline Range Organics (C6-C10)	490	50	ug/l	550	ND	82.9	60-140	5.36	25	
Benzene	10.4	0.50	"	6.60	ND	158	60-140	0.966	25	QM-07
Toluene	44.7	0.50	"	39.7	ND	111	60-140	2.26	25	
Ethylbenzene	10.3	0.50	"	9.20	ND	112	60-140	3.16	25	
Xylenes (total)	49.5	0.50	"	46.1	ND	107	60-140	4.33	25	
Surrogate: a,a,a-Trifluorotoluene	*11.7*		"	*10.0*		*117*	*70-130*			

Sequoia Analytical

885 Jarvis Drive
Morgan Hill, CA 95037
(408) 776-9600
FAX (408) 782-6308
www.sequoialabs.com

URS Corporation	Project: ARCO #4977, Castro Valley, CA	
500 12th Street, Suite 100	Project Number: ARCO #4977, Castro Valley, CA	**Reported:**
Oakland CA, 94607	Project Manager: Scott Robinson	10/14/02 10:20

Notes and Definitions

HC-21	Chromatogram Pattern: Gasoline C6-C10
QM-07	The spike recovery was outside control limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Chain of Custody Record

Project Name 020927 - MW2

BP BU/GEM CO Portfolio:

BP Laboratory Contract Number:

Date: 9/27/02

Requested Due Date (mm/dd/yy)

MLJ0074

On-site: Time:	Temp:
Off-site: Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Send To:	BP/GEM Facility No.:	Consultant/Contractor: URS
Lab Name: SEQUOIA	BP/GEM Facility Address: 2770 Castro Valley Rd, Castro Valley, CA	Address: 500 12th St., Ste. 200
Lab Address: 885 Jarvis Dr, Morgan Hill, CA 95037	Site ID No. ARCO 4977	Oakland, CA 94608-4014
	Site Lat/Long:	e-mail EDD: syed_rehan@urscorp.com
	California Global ID #:	Consultant/Contractor Project No.: 25-00004977.01 00427
Lab PM: Latonya Pelt	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-874-1735/510-874-3268
Tele/Fax: 408-776-9600 / 408-782-6308	Address:	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: Send EDF Reports		Invoice to: Consultant/Contractor or BP/GEM (circle one)
BP/GEM Account No.:	Tele/Fax:	BP/GEM Work Release No: INTRIM-50467

Lab Bottle Order No:

Item No.	Sample Description	Time	Matrix: Soil/Solid	Matrix: Water/Liquid	Matrix: Sediments	Matrix: Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	Preservatives: H_2SO_4	Preservatives: HNO_3	Preservatives: HCl	Requested Analysis: TPH-D / BTEX (8015 / 8021)	Requested Analysis: TPH -D (8015)	Requested Analysis: MTBE (8021)	Requested Analysis: MTBE, TAME, ETBE, DIPE, TBA (8260)	Requested Analysis: 1,2-DCA & EDB (8260)	Sample Point Lat/Long and Comments
1	MW-1	14:13		X			01	3				X	X		X			
2	MW-2	14:25		X			02	3				X	X		X			
3	MW-3	15:53		X			03	3				X	X		X			
4																		
5																		
6																		
7																		
8																		
9																		
10																		

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: Michael Nimoketa						
Sampler's Company: BTS	[signature] BTS	10/1/02	0844	[signature]	10/1/02	8:44
Shipment Date:	[signature]	10/1/02	1655	[signature]	10/1/02	1655
Shipment: Method:						
Shipment Tracking No:						

Special Instructions: Address Invoice to BP/GEM but send to URS for approval

Coolers Seals In Place Yes ___ No ✓ Temperature Blank Yes ___ No X Cooler Temperature on Receipt 3 °F/C Trip Blank Yes ___ No X

Distribution: White Copy - Laboratory / Yellow Copy - BP/GEM / Pink Copy - Consultant/Contractor

ATTACHMENT C

EDCC REPORT

Error Summary Log

01/29/03

EDF 1.2i All files present in deliverable.

Laboratory:	Sequoia Analytical Laboratories, Inc., Morgan Hill, CA
Project Name:	ARCO #4977, Castro Valley
Work Order Number:	MLJ0074
Global ID:	NA
Lab Report Number:	MLJ0074012820030929

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
MLJ007401282003 0929	MW-1	MLJ007401	W	CS	SW8021F	SW5030B	09/27/02	10/10/02	10/10/02	2J10003	1	
MLJ007401282003 0929	MW-2	MLJ007402	W	CS	SW8021F	SW5030B	09/27/02	10/10/02	10/10/02	2J10003	1	
MLJ007401282003 0929	MW-3	MLJ007403	W	CS	SW8021F	SW5030B	09/27/02	10/10/02	10/10/02	2J10003	1	
		MLJ007004	W	NC	SW8021F	SW5030B	/ /	10/10/02	10/11/02	2J10003	1	
		2J10003BS1	WQ	BS1	SW8021F	SW5030B	/ /	10/10/02	10/10/02	2J10003	1	
		2J10003BS2	WQ	BS2	SW8021F	SW5030B	/ /	10/10/02	10/10/02	2J10003	1	
		2J10003BLK1	WQ	LB1	SW8021F	SW5030B	/ /	10/10/02	10/10/02	2J10003	1	
		2J10003MS1	W	MS1	SW8021F	SW5030B	/ /	10/10/02	10/11/02	2J10003	1	
		2J10003MSD1	W	SD1	SW8021F	SW5030B	/ /	10/10/02	10/11/02	2J10003	1	

EDFSAMP: Error Summary Log

01/29/03

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

EDFTEST: Error Summary Log

01/29/03

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

EDFRES: Error Summary Log

01/29/03

Error type	Labsampid	Qccode	Matrix	Anmcode	Pvccode	Anadate	Run number	Parlabel
Warning: extra parameter	2J10003MS1	MS1	W	SW8021F	PR	10/11/02	1	AAATFBZME
Warning: extra parameter	2J10003MS1	MS1	W	SW8021F	PR	10/11/02	1	GROC6C10
Warning: extra parameter	2J10003MSD1	SD1	W	SW8021F	PR	10/11/02	1	AAATFBZME
Warning: extra parameter	2J10003MSD1	SD1	W	SW8021F	PR	10/11/02	1	GROC6C10
Warning: extra parameter	MLJ007004	NC	W	SW8021F	PR	10/11/02	1	AAATFBZME
Warning: extra parameter	MLJ007004	NC	W	SW8021F	PR	10/11/02	1	GROC6C10
Warning: extra parameter	MLJ007401	CS	W	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	MLJ007401	CS	W	SW8021F	PR	10/10/02	1	GROC6C10
Warning: extra parameter	MLJ007401	CS	W	SW8021F	PR	10/10/02	1	MTBE
Warning: extra parameter	MLJ007402	CS	W	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	MLJ007402	CS	W	SW8021F	PR	10/10/02	1	GROC6C10
Warning: extra parameter	MLJ007402	CS	W	SW8021F	PR	10/10/02	1	MTBE
Warning: extra parameter	MLJ007403	CS	W	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	MLJ007403	CS	W	SW8021F	PR	10/10/02	1	GROC6C10
Warning: extra parameter	MLJ007403	CS	W	SW8021F	PR	10/10/02	1	MTBE
Warning: extra parameter	2J10003BLK1	LB1	WQ	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	2J10003BLK1	LB1	WQ	SW8021F	PR	10/10/02	1	GROC6C10
Warning: extra parameter	2J10003BLK1	LB1	WQ	SW8021F	PR	10/10/02	1	MTBE
Warning: extra parameter	2J10003BS1	BS1	WQ	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	2J10003BS2	BS2	WQ	SW8021F	PR	10/10/02	1	AAATFBZME
Warning: extra parameter	2J10003BS2	BS2	WQ	SW8021F	PR	10/10/02	1	GROC6C10

EDFQC: Error Summary Log

01/29/03

Error type	Lablotctl	Anmcode	Parlabel	Qccode	Labqcid
There are no errors in this data files					

EDFCL: Error Summary Log

01/29/03

Error type	Clrevdate	Anmcode	Exmcode	Parlabel	Clcode
There are no errors in this data file	/ /				