no - 2436

URS

April 9, 2004

Ms. eva chu
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: First Quarter 2004 Groundwater Monitoring Report
ARCO Service Station #4977
2770 Castro Valley Blvd
Castro Valley, California
URS Project #38486724

Dear Ms. chu

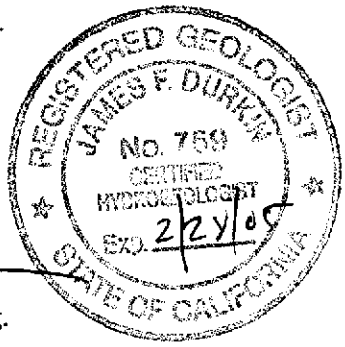
On behalf of Atlantic Richfield Company (ARCO – a BP affiliated company), URS Corporation (URS) is submitting the *First Quarter 2004 Groundwater Monitoring Report* for ARCO Service Station #4977, located at 2770 Castro Valley Blvd, Castro Valley, California.

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

Sincerely,
URS CORPORATION

Scott Robinson
Project Manager

James F. Durkin, C.Hg.
Senior Geologist



Enclosure: First Quarter 2004 Groundwater Monitoring Report

cc: Mr. Paul Supple, ARCO (electronic copy uploaded to ENFOS)

URS Corporation
1333 Broadway, Suite 800
Oakland, CA 94612-1924
Tel: 510.893.3600
Fax: 510.874.3268

Atlantic Richfield Company
(a BP affiliated company)

P.O. Box 6549
Moraga, California 94570
Phone: (925) 299-8891
Fax: (925) 299-8872

April 9, 2004

RE: First Quarter 2004 Groundwater Monitoring Report
ARCO Service Station #4977
2770 Castro Valley Boulevard
Castro Valley, California
URS Project #38486724

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

Submitted by:

Paul Supple
Environmental Business Manager

REPORT

FIRST QUARTER 2004 GROUNDWATER MONITORING

ARCO SERVICE STATION #4977
2770 CASTRO VALLEY BLVD
CASTRO VALLEY, CALIFORNIA

Prepared for
Atlantic Richfield Company

April 9, 2004

URS
URS Corporation
1333 Broadway, Suite 800
Oakland, California 94612

38486724

Date: April 9, 2004
Quarter: 1Q 04

ATLANTIC RICHFIELD COMPANY QUARTERLY GROUNDWATER MONITORING REPORT

Facility No.:	4977	Address:	2770 Castro Valley Blvd, Castro Valley, CA
ARCO Environmental Business Manager:			Paul Supple
Consulting Co./Contact Person:			URS Corporation / Scott Robinson
Consultant Project No.:			38486724
Primary Agency:			Alameda County Health Services Agency (ACHCSA)

WORK PERFORMED THIS QUARTER (First – 2004):

1. Performed first quarter groundwater monitoring event on March 11, 2004.
2. Resurveyed wells MW-1 through MW-3 on March 23, 2004.
3. Wells MW-1 and MW-3 were repaired on January 6, 2004.

WORK PROPOSED FOR NEXT QUARTER (Second – 2004):

1. Perform second quarter groundwater monitoring event.
2. Prepare and submit first quarter 2004 groundwater monitoring report.
3. Prepare second quarter 2004 groundwater monitoring report.

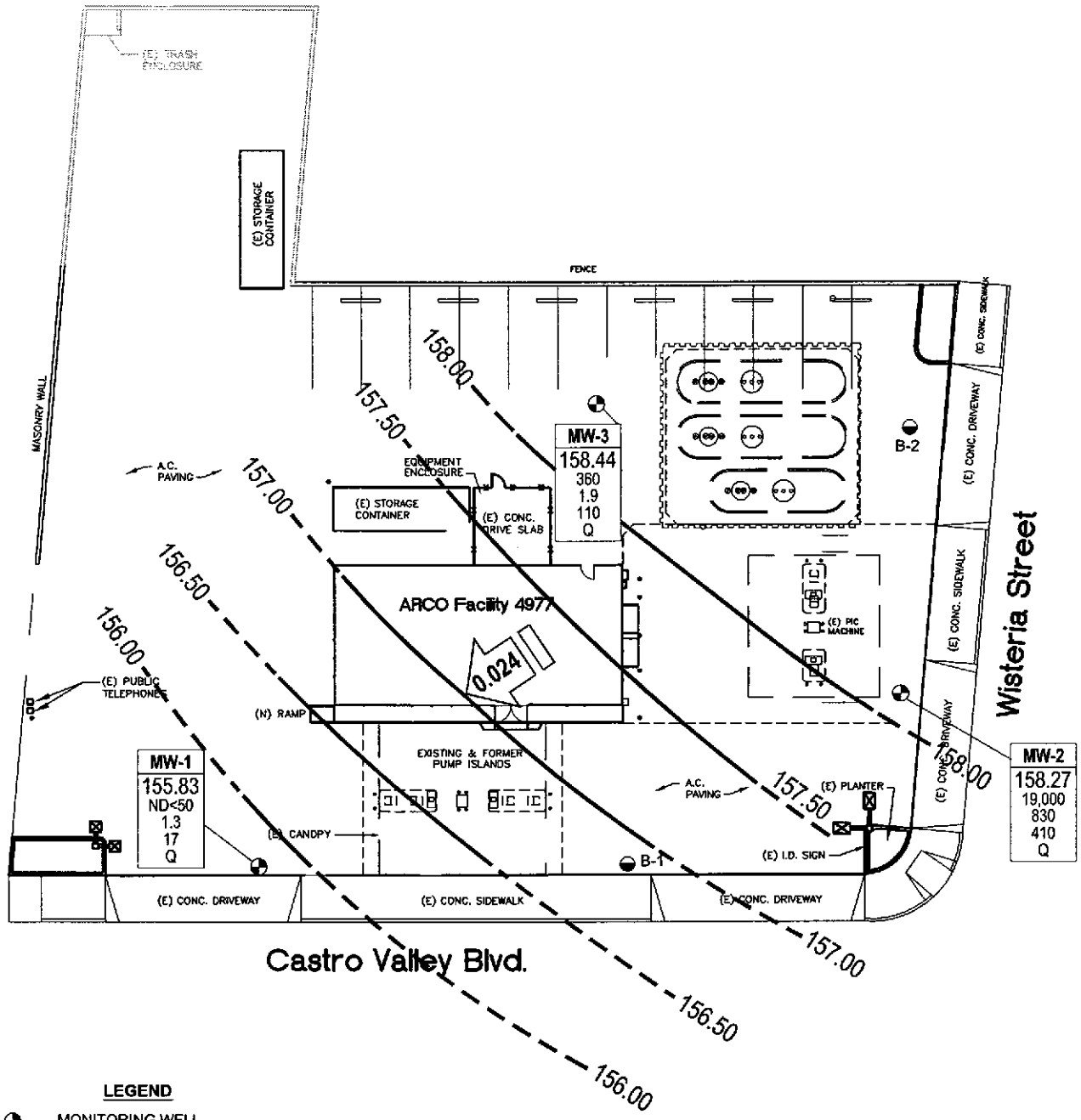
Current Phase of Project:	GW monitoring/sampling
Frequency of Groundwater Sampling:	Quarterly: Wells MW-1 through MW-3
Frequency of Groundwater Monitoring:	Quarterly
Is Free Product (FP) Present On-Site:	No
Current Remediation Techniques:	Natural Attenuation
Approximate Depth to Groundwater:	6.02 ft (MW-2) to 7.61 ft (MW-1)
Groundwater Gradient (direction):	South
Groundwater Gradient (magnitude):	0.024 feet per foot

DISCUSSION:

Gasoline range organics (GRO) were detected above laboratory reporting limits in two of the three wells sampled this quarter at concentrations of 360 µg/L (MW-3) and 19,000 µg/L (MW-2). Benzene was detected above laboratory reporting limits in all three wells at concentrations ranging from 1.3 µg/L (MW-1) to 830 µg/L (MW-2). Methyl-tert-butyl ether (MTBE) was detected above laboratory reporting limits in all three wells at concentrations ranging from 17 µg/L (MW-1) to 410 µg/L (MW-2). tert-Butyl alcohol (TBA) was detected above laboratory reporting limits in one well, MW-3, at a concentration of 570 µg/L. No other fuel oxygenates were detected in any of the samples.

ATTACHMENTS:

- Figure 1 - Groundwater Elevation Contour and Analytical Summary Map – March 11, 2004
- Table 1 - Groundwater Elevation and Analytical Data
- Table 2 - Groundwater Flow Direction and Gradient
- Table 3 - Fuel Oxygenate Analytical Data
- Attachment A - Field Procedures and Field Data Sheets
- Attachment B - Laboratory Procedures, Certified Analytical Reports and Chain-of-Custody Records
- Attachment C - EDCC Report and EDF/Geowell Submittal Confirmation
- Attachment D – Well Repair Data
- Attachment E – Well Survey Data



LEGEND

- MONITORING WELL
- SOIL BORING
- Well / ELEV / GRO / Benzene / MTBE / Q — WELL DESIGNATION; GROUNDWATER ELEVATION (FT ABOVE MSL); CONCENTRATION OF GRO, BENZENE AND MTBE IN GROUNDWATER (µg/L); SAMPLING FREQUENCY
- ND< — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
- Q — SAMPLED QUARTERLY
- 156.00 — GROUNDWATER ELEVATION CONTOUR (FT ABOVE MSL)
- 0.024 — GROUNDWATER FLOW DIRECTION AND GRADIENT (FT/FT)

NORTH

0 30 60

SCALE IN FEET

"Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPHg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported."

NOTE: SITE MAP ADAPTED FROM DELTA ENVIRONMENTAL FIGURES. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED.

URS	Project No. 38486724 Arco Service Station #4977 2770 Castro Valley Boulevard Castro Valley, California	GROUNDWATER ELEVATION CONTOUR AND ANALYTICAL SUMMARY MAP First Quarter 2004 (March 11, 2004)	FIGURE 1

Apr 05, 2004 - 10:42am
X:\x_env_waste\BP GEM\Sites\Scott Robinson\Paul Supple\4977\Monitoring\Qtr. 1, 2004\GWEC-AS_3-11.dwg

Table 1
Groundwater Elevation and Analytical Data

ARCO Service Station #4977
2770 Castro Valley Boulevard
Castro Valley, California

Sample ID	Date	Top of Casing Elevation (ft amsl)	Depth to Top of Screen (ft., bgs)	Depth of Well/Bottom of Screen (ft., bgs)	Depth to Groundwater (ft btc)	Groundwater Elevation (ft amsl)	GRO/TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Dissolved Oxygen [c] (mg/L)	pH [c]
MW-1	04/19/02	161.11	5.0	15.0	11.21	149.90	660	12	1.3	4.3	0.80	38	NA	NA
	09/27/02				9.29	151.82	130	7.7	0.87	5.4	0.79	39	1.7	6.9
	12/16/02[a]				8.55	152.56	77	1.8	ND<0.50	0.69	ND<1.0	42	1.6	6.9
	03/11/03				8.07	153.04	140	9.8	ND<0.50	5.6	ND<0.50	20	1.4	7.4
	06/17/03				8.31	152.80	510	60	1.4	81	ND<1.0	23	2.2	7.0
	09/18/03 [b]				9.45	151.66	72	2.4	1.4	1.6	1.5	39	2.7	7.0
	12/11/03				8.80	152.31	79	1.5	ND<0.50	1.5	4.4	48	2.1	7.0
	3/11/2004[d]	**163.44**			**7.61**	**155.83**	**ND<50**	**1.3**	**ND<0.50**	**0.77**	**1.3**	**17**	**1.4**	**6.8**
MW-2	04/19/02	161.87	5.0	15.0	6.59	155.28	28,000	970	120	860	6,900	760	NA	NA
	09/27/02				7.18	154.69	17,000	1,400	ND<50	1,200	3,700	1,400	1.5	6.8
	12/16/02[a]				7.31	154.56	17,000	1,000	ND<50	980	3,300	980	1.9	6.8
	03/11/03				6.02	155.85	24,000	1,600	70	1,300	4,300	920	1.7	7.4
	06/17/03				6.31	155.56	28,000	1,300	55	1,300	4,500	610	1.4	6.9
	09/18/03				7.61	154.26	19,000	960	63	1,100	3,100	580	2.7	6.8
	12/11/03				6.50	155.37	29,000	710	53	1,300	3,800	490	2.0	7.0
	3/11/2004[d]	**164.29**			**6.02**	**158.27**	**19,000**	**830**	**49**	**1,500**	**4,000**	**410**	**0.8**	**6.5**
MW-3	04/19/02	162.14	5.0	15.0	6.94	155.20	1,200	29	1.1	43	62	1,700	NA	NA
	09/27/02				8.26	153.88	740	7.8	ND<2.5	6.8	4.4	1,100	1.0	6.7
	12/16/02[a]				6.76	155.38	1,200	13	ND<10	170	88	910	2.3	6.8
	03/11/03				6.92	155.22	ND<2,500	ND<25	ND<25	ND<25	ND<25	470	1.7	7.5
	06/17/03				7.44	154.70	ND<1,000	ND<10	ND<10	14	ND<10	530	1.9	7.0
	09/18/03				8.43	153.71	470	4.8	ND<2.5	10	9.2	300	2.9	6.8
	12/11/03				6.72	155.42	ND<500	ND<5.0	ND<5.0	7.0	13	180	1.9	6.9
	3/11/2004[d]	**164.53**			**6.09**	**158.44**	**360**	**1.9**	**ND<1.0**	**5.6**	**5.0**	**110**	**2.6**	**6.8**

Notes:

Please note that beginning in the Fourth Quarter 2003, the laboratory modified the reported analyte list. Total Petroleum Hydrocarbons as Gasoline (TPHg) has been changed to Gasoline Range Organics (GRO). The resulting data may be impacted by the potential inclusion of non-TPHg analytes within the requested fuel range resulting in a higher concentration being reported.

amsl = above mean sea level
bgs = below ground surface
btc = below top of casing
ft = feet
GRO = Gasoline Range Organics C6 - C10 Range
mg/L = milligrams per liter
MTBE = Methyl tertiary butyl ether analyzed by EPA Method 8021B unless otherwise noted. (before 12/16/02)
ND< = Not detected at or above laboratory reporting limits
TPH-g = Total petroleum hydrocarbons in the gasoline range (C5-C9).
µg/L = micrograms per liter
a =TPH, BTEX, and MTBE analyzed by EPA Method 8260B beginning on 4th Quarter Sampling event (12/16/02)
b = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose.
c = Dissolved oxygen and pH are field measurements.
d = Wells re-survey on 03/23/04

Source : The data within this table collected prior to September 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

Table 2

Groundwater Flow Direction and Gradient

ARCO Service Station #4977
2770 Castro Valley Boulevard
Castro Valley, California

Date Measured	Average Flow Direction	Average Hydraulic Gradient
04/19/02	Southwest	0.038
09/27/02	Southwest	0.021
12/16/02	Southeast	0.029
03/11/03	South	0.024
06/17/03	South-Southwest	0.022
09/18/03	South-Southwest	0.022
12/11/03	South-Southwest	0.024
03/11/04	**South-Southwest**	**0.024**

Source : The data within this table collected prior to September 2002 was provided to URS by Atlantic Richfield Company and their previous consultants. URS has not verified the accuracy of this information.

Table 3
Fuel Oxygenate Analytical Data

ARCO Service Station #4977
2770 Castro Valley Boulevard
Castro Valley, California

Well Number	Date Sampled	Ethanol (µg/L)	TBA (µg/L)	MTBE (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)
MW-1	12/16/02	ND<50	ND<5.0	42	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	03/11/03	ND<100	ND<20	20	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	06/17/03	ND<200	ND<40	23	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
	09/18/03 [a]	ND<100	ND<20	39	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	12/11/03	ND<100	ND<20	48	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50
	03/11/04	**ND<100**	**ND<20**	**17**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**	**ND<0.50**
MW-2	12/16/02	ND<5,000	ND<500	980	ND<50	ND<50	ND<50	ND<50	ND<50
	03/11/03	ND<10,000	ND<2,000	920	ND<50	ND<50	ND<50	ND<50	ND<50
	06/17/03	ND<10,000	ND<2,000	610	ND<50	ND<50	ND<50	ND<50	ND<50
	09/18/03	ND<5,000	ND<1,000	580	ND<25	ND<25	ND<25	ND<25	ND<25
	12/11/03	ND<5,000	ND<1,000	490	ND<25	ND<25	ND<25	ND<25	ND<25
	03/11/04	**ND<2,000**	**ND<400**	**410**	**ND<10**	**ND<10**	**ND<10**	**ND<10**	**ND<10**
MW-3	12/16/02	ND<1,000	ND<100	910	ND<10	ND<10	12	ND<10	ND<10
	03/11/03	ND<5,000	ND<1,000	470	ND<25	ND<25	ND<25	ND<25	ND<25
	06/17/03	ND<2,000	ND<400	530	ND<10	ND<10	ND<10	ND<10	ND<10
	09/18/03	ND<500	ND<100	300	ND<2.5	ND<2.5	3.2	ND<2.5	ND<2.5
	12/11/03	ND<1,000	ND<200	180	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
	03/11/04	**ND<200**	**570**	**110**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**	**ND<1.0**

Note = All fuel oxygenate compounds analyzed using EPA Method 8260B
1,2-DCE = 1,2-Dichloroethane
DIPE = Di-isopropyl ether
EDB = 1, 2 Dibromoethane
ETBE = Ethyl tert butyl ether
MTBE = Methyl tert-butyl ether
ND< = Not detected at or above laboratory reporting limit
TAME = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
µg/L = micrograms per liter

a = This sample was originally analyzed within the EPA recommended hold time. Re-analysis for confirmation or dilution was performed past the recommended hold time. The results may still be used for their intended purpose. For more details see Attachment B.

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 # 040311-DA4 Date 3/11/04 Client 4977

Site 2770 Castro Valley Blvd. Castro Valley, CA

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					7.61	14.98	TOC	
MW-2	4					6.02	14.76	↓	
MW-3	4					6.09	15.03	↓	

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040311-DA4	Station # 4977
Sampler: DA	Date: 3/11/04
Well I.D.: MW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 14.98	Depth to Water: 7.61
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 / Positive Air Displacement / Electric Submersible / Extraction Pump / Other: ___

Sampling Method: Bailer / 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.

4.8 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 14.4 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1324	71.9	6.7	1331	5	clear
1325	70.1	6.7	1330	10	"
1328	69.9	6.8	1346	15	tan, turbid

Did well dewater? Yes (No) Gallons actually evacuated: 15

Sampling Time: 1331 Sampling Date: 3/11/04

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: See CoC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	1.4 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040311-DA4	Station # 4977
Sampler: DA	Date: 3/11/04
Well I.D.: MW-2	Well Diameter: 2 3 (4) 6 8 ____
Total Well Depth: 14.76	Depth to Water: 6.02
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
- Positive Air Displacement
- Y Electric Submersible
- Extraction Pump
- Other: ____

Sampling Method:
- Bailer
- Y 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.

5.7 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 17.1 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1306	76.1	6.5	853	6	clear, slight odor (gas)
1307	71.3	6.5	891	12	"
1308	71.0	6.5	897	17.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 17.5

Sampling Time: 1313 Sampling Date: 3/11/04

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.8 mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

ARCO / BP WELL MONITORING DATA SHEET

BTS #: 040311-DA4	Station # 4977
Sampler: DA	Date: 3/11/04
Well I.D.: MW-3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 15.03	Depth to Water: 6.09
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
- Positive Air Displacement
- ✓ Electric Submersible
- Extraction Pump
- Other: ___

Sampling Method:
- Bailer
- ✓ 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.

5.8 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 17.4 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Conductivity (mS or (µS))	Gals. Removed	Observations
1339	68.5	6.8	943	6	cloudy, slight odor
1341	67.8	6.8	929	12	"
1342	67.4	6.8	918	17.5	tan, turbid

Did well dewater? Yes (No) Gallons actually evacuated: 17.5

Sampling Time: 1345 Sampling Date: 3/11/04

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: see COC

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	2.6	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:		mV

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:

50

added equip. rinse water 3

any other adjustments

TOTAL GALS. RECOVERED 53

loaded onto BTS vehicle # 49

BTS event # 040311-DAY

time 1355

date 3/11/04

signature David Althaus

* *

REC'D AT

time

date

__/__/__

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 Atlantic Richfield 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

25 March, 2004

Scott Robinson
URS Corporation [Arco]
1333 Broadway, Suite 800
Oakland, CA 94612

RE: ARCO #4977, Castro Valley, CA
Work Order: MNC0357

Enclosed are the results of analyses for samples received by the laboratory on 03/12/04 13:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Race
Senior 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 [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-4977-031104	MNC0357-01	Water	03/11/04 00:00	03/12/04 13:10
MW-1	MNC0357-02	Water	03/11/04 13:31	03/12/04 13:10
MW-2	MNC0357-03	Water	03/11/04 13:13	03/12/04 13:10
MW-3	MNC0357-04	Water	03/11/04 13:45	03/12/04 13:10

These samples were received with intact custody seals.

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (MNC0357-02) Water Sampled: 03/11/04 13:31 Received: 03/12/04 13:10									
Ethanol	ND	100	ug/l	1	4C22001	03/22/04	03/23/04	EPA 8260B	
tert-Butyl alcohol	ND	20	"	"	"	"	"	"	
Methyl tert-butyl ether	**17**	0.50	"	"	"	"	"	"	
Di-isopropyl ether	ND	0.50	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	0.50	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	0.50	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.50	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.50	"	"	"	"	"	"	
Benzene	**1.3**	0.50	"	"	"	"	"	"	
Toluene	ND	0.50	"	"	"	"	"	"	
Ethylbenzene	**0.77**	0.50	"	"	"	"	"	"	
Xylenes (total)	**1.3**	0.50	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	ND	50	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*111 %*		*78-129*		"	"	"	
MW-2 (MNC0357-03) Water Sampled: 03/11/04 13:13 Received: 03/12/04 13:10									
Ethanol	ND	2000	ug/l	20	4C22001	03/22/04	03/23/04	EPA 8260B	
tert-Butyl alcohol	ND	400	"	"	"	"	"	"	
Methyl tert-butyl ether	**410**	10	"	"	"	"	"	"	
Di-isopropyl ether	ND	10	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	10	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	10	"	"	"	"	"	"	
1,2-Dichloroethane	ND	10	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	10	"	"	"	"	"	"	
Benzene	**830**	10	"	"	"	"	"	"	
Toluene	**49**	10	"	"	"	"	"	"	
Ethylbenzene	**1500**	10	"	"	"	"	"	"	
Xylenes (total)	**4000**	10	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**19000**	1000	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*		*78-129*		"	"	"	

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Volatile Organic Compounds by EPA Method 8260B

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (MNC0357-04) Water Sampled: 03/11/04 13:45 Received: 03/12/04 13:10									
Ethanol	ND	200	ug/l	2	4C22001	03/22/04	03/23/04	EPA 8260B	
tert-Butyl alcohol	**570**	40	"	"	"	"	"	"	
Methyl tert-butyl ether	**110**	1.0	"	"	"	"	"	"	
Di-isopropyl ether	ND	1.0	"	"	"	"	"	"	
Ethyl tert-butyl ether	ND	1.0	"	"	"	"	"	"	
tert-Amyl methyl ether	ND	1.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	1.0	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	1.0	"	"	"	"	"	"	
Benzene	**1.9**	1.0	"	"	"	"	"	"	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	**5.6**	1.0	"	"	"	"	"	"	
Xylenes (total)	**5.0**	1.0	"	"	"	"	"	"	
Gasoline Range Organics (C6-C10)	**360**	100	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*103 %*		*78-129*	"	"	"	"	

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4C22001 - EPA 5030B P/T										
Blank (4C22001-BLK1)				Prepared & Analyzed: 03/22/04						
Ethanol	ND	100	ug/l							
tert-Butyl alcohol	ND	20	"							
Methyl tert-butyl ether	ND	0.50	"							
Di-isopropyl ether	ND	0.50	"							
Ethyl tert-butyl ether	ND	0.50	"							
tert-Amyl methyl ether	ND	0.50	"							
1,2-Dichloroethane	ND	0.50	"							
1,2-Dibromoethane (EDB)	ND	0.50	"							
Benzene	ND	0.50	"							
Toluene	ND	0.50	"							
Ethylbenzene	ND	0.50	"							
Xylenes (total)	ND	0.50	"							
Gasoline Range Organics (C6-C10)	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	*5.69*		"	*5.00*		*114*	*78-129*			
Laboratory Control Sample (4C22001-BS1)				Prepared & Analyzed: 03/22/04						
Ethanol	206	100	ug/l	200		103	31-143			
tert-Butyl alcohol	48.4	20	"	50.0		96.8	56-131			
Methyl tert-butyl ether	10.2	0.50	"	10.0		102	63-137			
Di-isopropyl ether	8.11	0.50	"	10.0		81.1	76-130			
Ethyl tert-butyl ether	9.85	0.50	"	10.0		98.5	81-121			
tert-Amyl methyl ether	9.41	0.50	"	10.0		94.1	82-140			
1,2-Dichloroethane	10.8	0.50	"	10.0		108	77-136			
1,2-Dibromoethane (EDB)	10.7	0.50	"	10.0		107	77-132			
Benzene	8.83	0.50	"	10.0		88.3	69-124			
Toluene	9.38	0.50	"	10.0		93.8	78-129			
Ethylbenzene	9.58	0.50	"	10.0		95.8	84-132			
Xylenes (total)	28.6	0.50	"	30.0		95.3	83-137			
Surrogate: 1,2-Dichloroethane-d4	*5.31*		"	*5.00*		*106*	*78-129*			

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4C22001 - EPA 5030B P/T										
Laboratory Control Sample (4C22001-BS2)				Prepared & Analyzed: 03/22/04						
Gasoline Range Organics (C6-C10)	319	50	ug/l	440		72.5	70-124			
Surrogate: 1,2-Dichloroethane-d4	*5.34*		"	*5.00*		*107*	*78-129*			
Laboratory Control Sample Dup (4C22001-BSD1)				Prepared & Analyzed: 03/22/04						
Ethanol	211	100	ug/l	200		106	31-143	2.40	20	
tert-Butyl alcohol	45.5	20	"	50.0		91.0	56-131	6.18	20	
Methyl tert-butyl ether	10.2	0.50	"	10.0		102	63-137	0.00	20	
Di-isopropyl ether	8.22	0.50	"	10.0		82.2	76-130	1.35	20	
Ethyl tert-butyl ether	9.80	0.50	"	10.0		98.0	81-121	0.509	20	
tert-Amyl methyl ether	10.1	0.50	"	10.0		101	82-140	7.07	20	
1,2-Dichloroethane	11.2	0.50	"	10.0		112	77-136	3.64	20	
1,2-Dibromoethane (EDB)	11.2	0.50	"	10.0		112	77-132	4.57	20	
Benzene	8.97	0.50	"	10.0		89.7	69-124	1.57	20	
Toluene	9.73	0.50	"	10.0		97.3	78-129	3.66	20	
Ethylbenzene	9.83	0.50	"	10.0		98.3	84-132	2.58	20	
Xylenes (total)	29.7	0.50	"	30.0		99.0	83-137	3.77	20	
Surrogate: 1,2-Dichloroethane-d4	*5.31*		"	*5.00*		*106*	*78-129*			
Laboratory Control Sample Dup (4C22001-BSD2)				Prepared & Analyzed: 03/22/04						
Gasoline Range Organics (C6-C10)	338	50	ug/l	440		76.8	70-124	5.78	20	
Surrogate: 1,2-Dichloroethane-d4	*5.36*		"	*5.00*		*107*	*78-129*			
Matrix Spike (4C22001-MS1)	**Source: MNC0535-09**			Prepared: 03/22/04 Analyzed: 03/23/04						
Methyl tert-butyl ether	970	10	ug/l	202	770	99.0	63-137			
Benzene	96.0	10	"	130	5.6	69.5	69-124			
Toluene	628	10	"	594	ND	106	78-129			
Ethylbenzene	148	10	"	144	ND	103	84-132			
Xylenes (total)	748	10	"	674	ND	111	83-137			
Gasoline Range Organics (C6-C10)	7200	1000	"	8800	1300	67.0	70-124			QM02
Surrogate: 1,2-Dichloroethane-d4	*5.21*		"	*5.00*		*104*	*78-129*			

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Sequoia Analytical - Morgan Hill

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4C22001 - EPA 5030B P/T										
Matrix Spike Dup (4C22001-MSD1)	**Source: MNC0535-09**			Prepared: 03/22/04		Analyzed: 03/23/04				
Methyl tert-butyl ether	968	10	ug/l	202	770	98.0	63-137	0.206	20	
Benzene	100	10	"	130	5.6	72.6	69-124	4.08	20	
Toluene	660	10	"	594	ND	111	78-129	4.97	20	
Ethylbenzene	155	10	"	144	ND	108	84-132	4.62	20	
Xylenes (total)	789	10	"	674	ND	117	83-137	5.34	20	
Gasoline Range Organics (C6-C10)	7600	1000	"	8800	1300	71.6	70-124	5.41	20	
Surrogate: 1,2-Dichloroethane-d4	*5.33*		"	*5.00*		*107*	*78-129*			

Sequoia Analytical

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

URS Corporation [Arco]	Project: ARCO #4977, Castro Valley, CA	MNC0357
1333 Broadway, Suite 800	Project Number: INTRIM-50467	**Reported:**
Oakland CA, 94612	Project Manager: Scott Robinson	03/25/04 14:50

Notes and Definitions

QM02	The spike recovery was below 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 4977GWM
BP BU/GEM CO Portfolio Retail
BP Laboratory Contract Number: Atlantic Richfield Company
Requested Due Date (mm/dd/yy) 14 day TAT

MNC0357

Date: 3/11/04

On-site Time:	1245 Temp: 79.1
Off- site Time:	1215 Temp: 78.3
Sky Conditions:	clear
Meteorological Events:	—
Wind Speed:	5 mph Direction: N

Send To:	BP/GEM Facility No.: ARCO 4977	Consultant/Contractor: URS
Lab Name: SEQUOIA	BP/GEM Facility Address: 2770 Castro Valley Rd, Castro Valley, CA	Address: 1333 Broadway, Suite 800
Lab Address: 885 Jarvis Dr.	Site ID No. ARCO 4977	Oakland, CA 94612
Morgan Hill, CA 95037	Site Lat/Long:	e-mail EDD: donna_cosper@URSCorp.com
	California Global ID #:	Consultant/Contractor Project No.: 35-00004977.01 00427
Lab PM Lisa Race	BP/GEM PM Contact: PAUL SUPPLE	Consultant Tele/Fax: 510-893-3600/510-874-3268
Tele/Fax: 408-776-9600 / 408-782-6308	Address: P.O. Box 6549	Consultant/Contractor PM: Scott Robinson
Report Type & QC Level: 1 Send EDF Reports	Moraga, CA 94570	Invoice to: Consultant/Contractor or BP/GEM (Circle one)
BP/GEM Account No.:	Tele/Fax: 925-299-8891/925-299-8872	BP/GEM Work Release No: INTRIM -50467

Lab Bottle Order No:

Item No.	Sample Description	Time	Matrix: Soil/Solid	Water/Liquid	Sediments	Air	Laboratory No.	No. of containers	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	Requested Analysis: TPH-G / BTEX & 8015/8021 & 8260	TPH-D (8015)	MTBE (8021)	MTBE (8260)	MTBE, TAME, EtBE, DIPE, TBA (8260)	1,2-DCA & EDB (8260)	Ethanol (8260)	Sample Point Lat/Long and Comments
1	TB-4977-031104	—		X			01	2				X	X				X			on hold
2	MW-1	1331		↓			02	3				↓	X				X	X	X	
3	MW-2	1313					03						X				X	X	X	
4	MW-3	1345					04						X				X	X	X	
5																				
6																				
7																				
8																				
9																				
10																				

	Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
Sampler's Name: David Allbut						
Sampler's Company: Blaine Tech	David Allbut / BTS	3/11/04	1125		3/11/04	1125
Shipment Date:		3/12/04	1310	Helen Hernandez	3/12/04	1310
Shipment Method:						
Shipment Tracking No:						

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

Custody Seals In Place Yes Y No ___ Temperature Blank Yes Y No ___ Cooler Temperature on Receipt 4 °F/C Trip Blank Yes Y No ___

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

BP COC Rev. 1 2/5/02

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME: BP/ARS
REC. BY (PRINT): NH
WORKORDER: MNC 0057

DATE REC'D AT LAB: 3/12/04
TIME REC'D AT LAB: 1310
DATE LOGGED IN: 3-15-04

DRINKING WATER for regulatory purposes: YES / NO
WASTE WATER for regulatory purposes: YES / NO

CIRCLE THE APPROPRIATE RESPONSE	LAB SAMPLE #	DASH #	CLIENT ID	CONTAINER DESCRIPTION	PRESERVATIVE	SAMPLE MATRIX	DATE SAMPLED	REMARKS: CONDITION (ETC.)
1. Custody Seal(s) (Present) / Absent			TB-4977-031104	(2) VOAS	—	C	3/11/04	
(Intact) / Broken*			MW-1	(3)	HCL			
2. Chain-of-Custody (Present) / Absent*			-2					
3. Traffic Reports or Packing List: Present / Absent			√ -3	√ √	√	√	√	
4. Airbill: Airbill / Sticker Present / (Absent)								
5. Airbill #:								
6. Sample Labels: (Present) / Absent								
7. Sample IDs: (Listed) / Not Listed on Chain-of-Custody								
8. Sample Condition: (Intact) / Broken* / Leaking*								
9. Does information on chain-of-custody, traffic reports and sample labels agree? (Yes) / No*								
10. Sample received within hold time: (Yes) / No*								
11. Adequate sample volume received? (Yes) / No*								
12. Proper Preservatives used: (Yes) / No*								
13. Temp Rec. at Lab: 4 C Is temp 4 +/-2°C? (Yes) / No**								

(Acceptance range for samples requiring thermal pres.)

**Exception (if any): METALS / DFF ON ICE or Problem COC

NH 3-12-04

*IF CIRCLED, CONTACT PROJECT MANAGER AND ATTACH RECORD OF RESOLUTION.

SRL rv 4.xls
Revision 4 (11/10/03)
Replaces Revision 3 (03/18/03)
Effective 11/10/03

ATTACHMENT C

EDCC REPORT AND EDF/GEOWELL SUBMITTAL CONFIRMATION

Error Summary Log

03/29/04

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:	MNC0357
Global ID:	T0600100089
Lab Report Number:	MNC0357032520041450

Report Summary

Labreport	Sampid	Labsampid	Mtrx	QC	Anmcode	Exmcode	Logdate	Extdate	Anadate	Lablotctl	Run	Sub
MNC0357032520041450	MW-1	MNC035702	W	CS	8260TPH	SW5030B	03/11/04	03/22/04	03/23/04	4C22001	1	
MNC0357032520041450	MW-2	MNC035703	W	CS	8260TPH	SW5030B	03/11/04	03/22/04	03/23/04	4C22001	1	
MNC0357032520041450	MW-3	MNC035704	W	CS	8260TPH	SW5030B	03/11/04	03/22/04	03/23/04	4C22001	1	
		MNC053509	W	NC	8260TPH	SW5030B	/ /	03/22/04	03/23/04	4C22001	1	
		4C22001BSD1	WQ	BD1	8260TPH	SW5030B	/ /	03/22/04	03/22/04	4C22001	1	
		4C22001BSD2	WQ	BD2	8260TPH	SW5030B	/ /	03/22/04	03/22/04	4C22001	1	
		4C22001BS1	WQ	BS1	8260TPH	SW5030B	/ /	03/22/04	03/22/04	4C22001	1	
		4C22001BS2	WQ	BS2	8260TPH	SW5030B	/ /	03/22/04	03/22/04	4C22001	1	
		4C22001BLK1	WQ	LB1	8260TPH	SW5030B	/ /	03/22/04	03/22/04	4C22001	1	
		4C22001MS1	W	MS1	8260TPH	SW5030B	/ /	03/22/04	03/23/04	4C22001	1	
		4C22001MSD1	W	SD1	8260TPH	SW5030B	/ /	03/22/04	03/23/04	4C22001	1	

EDFSAMP: Error Summary Log

03/29/04

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

EDFTEST: Error Summary Log

03/29/04

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

EDFRES: Error Summary Log

03/29/04

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

EDFQC: Error Summary Log

03/29/04

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

EDFCL: Error Summary Log

03/29/04

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

AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

Your EDF file has been succcessfully uploaded!

Confirmation Number: 2324113249
Date/Time of Submittal: 3/29/2004 9:25:59 AM
Facility Global ID: T0600100089
Facility Name: ARCO
Submittal Title: 1Q04-monitoring report for site 4977
Submittal Type: GW Monitoring Report

Logged in as URSCORP-OAKLAND (CONTRACTOR)

CONTACT SITE ADMINISTRATOR.

AB2886 Electronic Delivery

Main Menu | View/Add Facilities | Upload EDD | Check EDD

UPLOADING A GEO_WELL FILE

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Title:	**1Q04- geowell data for site 4977**
Submittal Date/Time:	**3/25/2004 1:02:23 PM**
Confirmation Number:	**8379444718**

Back to Main Menu

Logged in as URSCORP-OAKLAND (CONTRACTOR)

CONTACT SITE ADMINISTRATOR.

ATTACHMENT D

WELL REPAIR DATA

REPAIR DATA SHEET

Client BP/Arco # 4977 Date 1/6/04

Site Address 2770 Castro Valley Blvd, Castro Valley

Job Number 040106-MG3 Technician MG

Repair Location MW-1

Deficiencies Corrected Tabs stripped. Helicoiled 2 tabs + added 2 new bolts.

Materials Used 2 helicoils, 2 bolts

Repair Location MW-3

Deficiencies Corrected Tabs stripped, no bolts. Helicoiled 2 tabs + added 2 new bolts.

Materials Used 2 helicoils, 2 bolts

Repair Location

Deficiencies Corrected

Materials Used

Repair Location

Deficiencies Corrected

Materials Used

Repair Location

Deficiencies Corrected

Materials Used

Repair Location

Deficiencies Corrected

Materials Used

ATTACHMENT E

WELL SURVEY DATA

BP/ARCO Survey Sheet

ARCO Service Sation
2770 Castro Valley Boulevard
Castro Valley, CA

Site: **4977**
Date: 3/23/2004

Well ID	X-coord (NAV'83)	Y-coord (NAV'83)	Top of Casing (NAVD'88)	Top of Lid (NAVD'88)	Ground Surface (NAVD'88)	Comments
MW-1	-122.0853845	37.6947963	163.44	163.99	163.99	
MW-2	-122.0850336	37.6949823	164.29	164.54	164.54	
MW-3	-122.0852758	37.6950628	164.53	164.99	164.99	