GeoStrategies Inc.

LETTER OF TRANSMITTAL

Environmental Consulting
Engineering and Geologic Services

DATE September 8, 1993

TO: Ms. Susan Hugo
ACHCSA
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

PROJECT NO. 790970-22
SUBJECT: 2nd QMR 1993 for ARCO Station 4931 @ 731 W. MacArthur Blvd, Oakland, CA

THE FOLLOWING ITEMS ARE:

☑ ATTACHED ☐ FORWARDED SEPARATELY VIA _____

QUANTITY	PROJECT NO.	DATE	DESCRIPTION
1	790970-22	9/3/93	2nd QMR 93

THESE ARE TRANSMITTED as checked below:

☐ For approval
☑ For your use
☐ As requested
☐ For review and

☐ Approved
☐ Approved as noted
☐ Returned for
☐ Other _____

COMMENTS:

Signed: Robert S. Gunnell

☑ 2140 W. Winton Avenue, Hayward, CA 94545
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GeoStrategies Inc.

RECOVERY SYSTEM EVALUATION REPORT - SECOND QUARTER 1993

ARCO Station 4931
731 West MacArthur Boulevard
Oakland, California

790970-22

September 3, 1993

GeoStrategies Inc.

September 3, 1993
Mr. Michael Whelan
ARCO Products Company
Post Office Box 5811
San Mateo, California 94402

Subject: Recovery System Evaluation Report, Second Quarter 1993 at ARCO Service Station 4931, 731 West MacArthur Boulevard in Oakland, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), GeoStrategies, Inc (GSI) has prepared this Recovery System Evaluation Report for the Second Quarter 1993, evaluating the performance of the interim groundwater remediation system at the above referenced site (Plate 1) for the period from April 1993 through June 1993.

SITE BACKGROUND

There are currently twelve groundwater monitoring wells (A-2 through A-13) and three groundwater recovery wells (AR-1 through AR-3) at the site (Plate 2). These wells were installed between 1982 and 1992 by Groundwater Technology, Inc., Pacific Environmental Group, and GSI. Wells A-2 through A-10 and AR-1 through AR-3 are onsite and wells A-11, A-12, and A-13 are offsite. The interim groundwater remedial system was completed in early November 1992 and began operating on November 10, 1992.

Quarterly monitoring and sampling of site wells began in 1989. Quarterly groundwater samples were collected from wells A-2 through A-13 and monthly water samples were collected from the interim groundwater remediation system influent (sample D), midpoint (between carbon canisters [sample ports C and B]), and effluent (sample port A) during the

second quarter 1993. The interim groundwater remediation system process flow diagram is shown on Plate 3.

EXECUTIVE SUMMARY

A summary of activities and findings associated with the 1993 second quarter system evaluation are presented below:

- The groundwater remediation system appears to be hydraulically controlling the groundwater flow beneath the site.
- The groundwater monitoring wells were sampled on April 1, 1993, and were analyzed for TPHg and BTEX.
- Benzene was detected in one of the nine wells sampled during the second quarter of 1993.
- The existing interim groundwater remediation system consists of three recovery wells (AR-1 through AR-3). Each well contains a pneumatic total fluids pump. Groundwater is pumped to an onsite treatment system. The groundwater remedial system was activated on November 10, 1992. Approximately 680,260 gallons of groundwater have been removed and 0.13 pounds of hydrocarbons have been recovered by the system this quarter.
- The groundwater treatment facility consists of a surge tank, particulate filter, and three in-series 1,500-pound activated carbon vessels (Plate 3).
- TPHg and benzene were reported as not detected in samples from the groundwater treatment systems' midpoint (port B).
- Groundwater containing dissolved hydrocarbons was pumped through the treatment system at a rate ranging from 2 to 9 gallons per minute (gpm) during the second quarter of 1993.

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HYDRAULIC MONITORING

Depth-to-water (DTW) measurements were performed on wells A-2, A-3, A-5 through A-7, and A-10 through A-13 on April 1, 1993. Well A-4 contained floating product, and wells A-8, A-9, and AR-1 through AR-3 were not monitored this quarter due to remedial system equipment installed in these wells. Static groundwater levels were measured from the surveyed top of each well box and recorded to the nearest +/-0.01 foot. Groundwater elevations were calculated from Mean Seal Level (MSL) datum and are presented with DTW measurements in Table 1, Groundwater Analytical Data. Historical water-level data are presented in Table 2, Historical Water-Level Data. The potentiometric map (Plate 4) indicates that current pumping from recovery wells AR-1, AR-2, and AR-3 have influenced shallow groundwater flow generating a depression in groundwater beneath most of the site.

Each well was checked for the presence of floating product. Floating product was detected in well A-4 with a thickness of approximately 0.02 foot. Floating product was not detected in any of the other wells this quarter. Current floating product measurements are presented in Table 1 and have been added to the Historical Water-Level Data (Table 2). Current quarter monitoring data are presented in Appendix A.

The groundwater remediation system appears to be operating as designed. No modifications are recommended at this time.

CHEMICAL MONITORING

EMCON Associates (EMCON) field personnel sampled the interim groundwater monitoring wells A-2, A-3, A-5 through A-7, and A-10 through A-13 on April 1, 1993. Well A-4 was not sampled because it contained floating product, and wells A-8, A-9, and AR-1 through AR-3 were not sampled this quarter due to remedial system equipment installed in these wells. Gettler-Ryan field personnel collected D-influent, B-midpoint, and A-effluent water samples from the groundwater remediation system on April 21, May 11, and June 11, 1993. Groundwater samples

collected by EMCON and Gettler-Ryan field personnel were preserved as required by the applicable analytical method and delivered, with Chain of Custody Records, to Sequoia Analytical Laboratories of Redwood City, California, a State-certified laboratory (Hazardous Waste Testing Laboratory Certification #1210) for water analyses. The groundwater samples collected from the scheduled monitoring wells, and were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) by Environmental Protection Agency (EPA) Methods 5030/8015/8020. Results of current analytical data are shown on Table 1. Groundwater Analytical Data and historical analytical data are presented in Table 3, Historical Groundwater Quality Database. TPHg and benzene data are plotted on Plate 5, TPH-G/Benzene Concentration Map. The EMCON Groundwater Sampling and Monitoring Reports are included in Appendix A.

GROUNDWATER TREATMENT SYSTEM MONITORING

Chemical Analytical Results

Monthly samples from ports A, B, and D of the interim groundwater remediation system, collected by Gettler-Ryan field personnel, were preserved as required by the applicable analytical method and delivered, with Chain of Custody Records, to Sequoia Analytical Laboratories of Redwood City, California, a State-certified laboratory (Hazardous Waste Testing Laboratory Certification #1210). These samples were analyzed for EPA Priority Pollutant Metals, purgeable halocarbons by EPA Methods 5030/601 and 5030/8010. During the June 1993 system monitoring event, samples from ports A, B, and D were analyzed for TPHg and BTEX by EPA Methods 5030/8015/8020. The interim groundwater remediation system analytical data is shown on Tables 4A and 4B. The chain of custody and groundwater analytical reports are included in Appendix B.

During the second quarter 1993 sampling period, the mid-point samples (between carbon vessels [port B]) were reported as not detected (ND) for TPHg and BTEX, and ND for purgeable halocarbons. Metals were nondetectable in all samples this quarter, with the exception of the

influent samples and mid-point samples collected on June 11, 1993. The influent samples contained detectable concentrations of chromium (53 ppb), thallium (4.1 ppb), and zinc (34 ppb), and the mid-point samples contained detectable concentrations of zinc (17 ppb). Sample analyses indicate that the effluent discharge meets the parameters of the POTW permit. Chemical analytical data indicates that the treatment system is effectively removing dissolved hydrocarbons from groundwater prior to discharge to the sanitary sewer.

Groundwater Recovery System Operation

Flowmeter readings from the groundwater recovery system were recorded at the time of sampling and are presented in Table 5. Groundwater was pumped through the treatment system at approximate flow rates ranging from 2 to 9 gpm. Approximately 680,260 gallons of groundwater and approximately 0.13 pounds of hydrocarbons were recovered and treated from April through June 1993.

DISCUSSION

The groundwater remediation system appears to be operating as designed during the second quarter of 1993. Current quarter increases in concentrations of TPHg in Well A-2 may result from recent static water-level increases which dissolve residual hydrocarbons in the soil, and the movement of hydrocarbons during groundwater extraction. The need for modifications to the remediation system will be evaluated as additional data becomes available.

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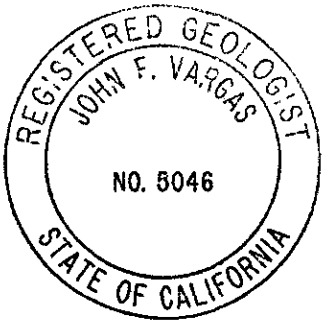
If you have any questions or comments, please call us at (510) 352-4800.

Sincerely,
GeoStrategies Inc.

Robert D. Campbell
Assistant Project Geologist

John F. Vargas
Senior Geologist
R.G. 5076



TABLES

Table 1. Groundwater Analytical Data
Table 2. Historical Water-Level Data
Table 3. Historical Groundwater Quality Database
Table 4A. Groundwater Remedial System Analytical Data-TPHg, BTEX, Metals
Table 4B. Groundwater Remedial System Analytical Data-VOCs
Table 5. Groundwater Treatment System Flow Data

PLATES

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Groundwater System Process Flow Diagram
Plate 4. Potentiometric Map (April 1, 1993)
Plate 5. TPH-Gasoline/Benzene Concentration Map

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APPENDICES

Appendix A.	EMCON Groundwater Sampling and Monitoring Reports
Appendix B.	Groundwater Recovery System Analytical Reports

QC Review: _____

TABLES

TABLE 1

GROUNDWATER ANALYTICAL DATA

WELL NO.	SAMPLE DATE	ANALYZED DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	WELL ELEV. (FT)	STATIC WATER ELEV. (FT)	PRODUCT THICKNESS (FT)	DEPTH TO WATER (FT)
A-2	01-Apr-93	12-Apr-93	16,000	<10	<10	<10	<10	55.48	50.33	0.00	5.15
A-3	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	54.66	44.05	0.00	10.61
A-4	01-Apr-93	12-Apr-93	---	---	---	---	---	54.73	44.58	0.02	10.17
A-5	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	54.17	43.81	0.00	10.36
A-6	01-Apr-93	12-Apr-93	310	4.8	0.74	3.3	8.7	55.17	47.58	0.00	7.59
A-7	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	54.71	47.36	0.00	7.35
A-8	01-Apr-93	12-Apr-93	---	---	---	---	---	53.77	44.39	---	9.38
A-9	01-Apr-93	12-Apr-93	---	---	---	---	---	53.04	---	---	---
A-10	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	54.26	43.41	0.00	10.85
A-11	01-Apr-93	12-Apr-93	<50	<0 50	<0.50	<0.50	<0.50	53.74	43.63	0.00	10.11
A-12	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0 50	<0.50	52.05	41.38	0.00	10.67
A-13	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	55.11	45.93	0.00	9 18
AR-1	01-Apr-93	12-Apr-93	---	---	---	---	---	54.72	---	---	---
AR-2	01-Apr-93	12-Apr-93	---	---	---	---	---	54.77	---	---	---
AR-3	01-Apr-93	12-Apr-93	---	---	---	---	---	54.19	---	---	---
XDUP (A-2)	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	---	---	---	---
FB-1	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	---	---	---	---
TB-1	01-Apr-93	12-Apr-93	<50	<0.50	<0.50	<0.50	<0.50	---	---	---	---

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
PPB = Parts Per Billion.
TB = Trip Blank.
FB = Field Blank.
XDUP = Duplicate Sample.

Notes:
1. All data shown as <x are reported as ND (none detected).
2. Water level elevations referenced to Mean Sea Level (MSL).
3. Static water levels corrected for floating product (conversion factor = 0.80).

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
20-Mar-89	A-2	3.45	55.38	51.93	0.00
24-May-89	A-2	6.80	55.38	48.58	0.00
18-Aug-89	A-2	10.82	55.38	44.56	0.00
27-Oct-89	A-2	8.25	55.38	47.13	0.00
15-Jan-90	A-2	4.87	55.38	50.51	0.00
04-Apr-90	A-2	7.03	55.38	48.35	0.00
30-Jul-90	A-2	10.01	55.38	45.37	0.00
29-Oct-90	A-2	11.60	55.38	43.78	0.00
16-Jan-91	A-2	9.43	55.38	45.95	0.00
12-Apr-91	A-2	3.65	55.38	51.73	0.00
10-Jul-91	A-2	9.57	55.38	45.81	0.00
21-Oct-91	A-2	11.54	55.38	43.84	0.00
01-Feb-92	A-2	11.20	55.38	44.18	0.00
29-Apr-92	A-2	7.18	55.38	48.20	0.00
29-Jul-92	A-2	11.81	55.48	43.67	0.00
29-Oct-92	A-2	11.91	55.48	43.57	0.00
26-Jan-93	A-2	5.06	55.48	50.42	0.00
01-Apr-93	A-2	5.15	55.48	50.33	0.00
20-Mar-89	A-3	7.51	54.48	46.97	0.00
24-May-89	A-3	10.29	54.48	44.19	0.00
18-Aug-89	A-3	11.60	54.48	42.88	0.00
27-Oct-89	A-3	10.16	54.48	44.32	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
15-Jan-90	A-3	8.55	54.48	45.93	0.00
04-Apr-90	A-3	10.66	54.48	43.82	0.00
30-Jul-90	A-3	11.26	54.48	43.22	0.00
29-Oct-90	A-3	11.86	54.48	42.62	0.00
16-Jan-91	A-3	11.46	54.48	43.02	0.00
12-Apr-91	A-3	9.28	54.48	45.20	0.00
10-Jul-91	A-3	11.29	54.48	43.19	0.00
21-Oct-91	A-3	11.51	54.48	42.97	0.00
02-Feb-92	A-3	N/A	54.48	-----	----
29-Apr-92	A-3	N/A	54.48	-----	----
29-Jul-92	A-3	11.59	54.66	43.07	0.00
28-Oct-92	A-3	12.00	54.66	42.66	0.00
26-Jan-93	A-3	9.82	54.66	44.84	0.00
01-Apr-93	A-3	10.61	54.66	44.05	0.00
21-Mar-86	A-4	-----	54.62	-----	3.50
07-Jan-88	A-4	-----	54.62	-----	0.02
20-Mar-89	A-4	8.13	54.62	46.49	0.00
24-May-89	A-4	11.40	54.62	43.22	0.00
18-Aug-89	A-4	11.91	54.62	42.72	0.01
27-Oct-89	A-4	11.37	54.62	43.26	0.01
15-Jan-90	A-4	9.74	54.62	44.89	0.01
04-Apr-90	A-4	11.19	54.62	43.43	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
30-Jul-90	A-4	11.71	54.62	42.92	0.01
29-Oct-90	A-4	12.21	54.62	42.43	0.03
16-Jan-91	A-4	11.89	54.62	42.74	0.01
12-Apr-91	A-4	9.54	54.62	45.08	0.00
10-Jul-91	A-4	11.55	54.62	43.07	0.00
20-Sep-91	A-4	12.12	54.62	42.50	0.00
21-Oct-91	A-4	11.76	54.62	42.88	0.03
02-Feb-92	A-4	11.18	54.62	43.46	0.02
29-Apr-92	A-4	10.78	54.62	43.86	0.02
29-Jul-92	A-4	11.74	54.73	43.02	0.04
28-Oct-92	A-4	11.93	54.73	42.82	0.03
26-Jan-93	A-4	10.59	54.73	44.17	0.04
01-Apr-93	A-4	10.17	54.73	44.58	0.02
20-Mar-89	A-5	8.09	54.15	46.06	0.00
24-May-89	A-5	11.13	54.15	43.02	0.00
18-Aug-89	A-5	11.58	54.15	42.57	0.00
27-Oct-89	A-5	10.68	54.15	43.47	0.00
15-Jan-90	A-5	9.24	54.15	44.91	0.00
04-Apr-90	A-5	10.93	54.15	43.22	0.00
30-Jul-90	A-5	11.48	54.15	42.67	0.00
29-Oct-90	A-5	11.77	54.15	42.38	0.00
16-Jan-91	A-5	11.36	54.15	42.79	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
12-Apr-91	A-5	9.64	54.15	44.51	0.00
10-Jul-91	A-5	11.30	54.15	42.85	0.00
21-Oct-91	A-5	11.48	54.15	42.67	0.00
02-Feb-92	A-5	10.73	54.15	43.42	0.00
29-Apr-92	A-5	10.58	54.15	43.57	0.00
29-Jul-92	A-5	11.46	54.17	42.71	0.00
28-Oct-92	A-5	11.55	54.17	42.62	0.00
26-Jan-93	A-5	10.32	54.17	43.85	0.00
01-Apr-93	A-5	10.36	54.17	43.81	0.00
20-Mar-89	A-6	6.43	55.13	48.70	0.00
24-May-89	A-6	9.43	55.13	45.70	0.00
18-Aug-89	A-6	10.10	55.13	45.03	0.00
27-Oct-89	A-6	9.16	55.13	45.97	0.00
15-Jan-90	A-6	8.02	55.13	47.11	0.00
04-Apr-90	A-6	9.29	55.13	45.84	0.00
30-Jul-90	A-6	9.93	55.13	45.20	0.00
29-Oct-90	A-6	10.42	55.13	44.71	0.00
16-Jan-91	A-6	10.15	55.13	44.98	0.00
12-Apr-91	A-6	8.05	55.13	47.08	0.00
10-Jul-91	A-6	10.03	55.13	45.10	0.00
21-Oct-91	A-6	10.30	55.13	44.83	0.00
02-Feb-92	A-6	9.81	55.13	45.32	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
29-Apr-92	A-6	N/A	55.13	-----	----
29-Jul-92	A-6	10.40	55.17	44.77	0.00
28-Oct-92	A-6	10.55	55.17	44.62	0.00
26-Jan-93	A-6	7.50	55.17	47.62	0.00
01-Apr-93	A-6	7.59	55.17	47.58	0.00
20-Mar-89	A-7	6.29	54.67	48.38	0.00
24-May-89	A-7	9.26	54.67	45.41	0.00
18-Aug-89	A-7	9.97	54.67	44.70	0.00
27-Oct-89	A-7	9.02	54.67	45.65	0.00
15-Jan-90	A-7	7.90	54.67	46.77	0.00
04-Apr-90	A-7	9.15	54.67	45.52	0.00
30-Jul-90	A-7	9.80	54.67	44.87	0.00
29-Oct-90	A-7	10.30	54.67	44.37	0.00
16-Jan-91	A-7	11.35	54.67	43.32	0.00
12-Apr-91	A-7	7.90	54.67	46.77	0.00
10-Jul-91	A-7	9.82	54.67	44.85	0.00
21-Oct-91	A-7	10.12	54.67	44.55	0.00
02-Feb-92	A-7	9.28	54.67	45.39	0.00
29-Apr-92	A-7	8.85	54.67	45.82	0.00
29-Jul-92	A-7	10.09	54.71	44.62	0.00
28-Oct-92	A-7	10.31	54.71	44.40	0.00
26-Jan-93	A-7	7.33	54.71	47.38	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
01-Apr-93	A-7	7.35	54.71	47.36	0.00
21-Mar-86	A-8	-----	53.61	-----	0.02
07-Jan-88	A-8	-----	53.61	-----	0.18
20-Mar-89	A-8	8.21	53.61	45.93	0.66
24-May-89	A-8	11.41	53.61	43.16	1.20
18-Aug-89	A-8	10.88	53.61	43.35	0.77
27-Oct-89	A-8	11.66	53.61	43.00	1.31
15-Jan-90	A-8	9.84	53.61	44.47	0.87
04-Apr-90	A-8	11.35	53.61	42.46	0.25
30-Jul-90	A-8	10.48	53.61	44.53	1.75
29-Oct-90	A-8	11.39	53.61	42.30	0.10
16-Jan-91	A-8	11.11	53.61	42.51	0.01
12-Apr-91	A-8	9.16	53.61	44.46	0.01
10-Jul-91	A-8	10.73	53.61	42.89	0.01
21-Oct-91	A-8	10.98	53.61	42.72	0.11
02-Feb-92	A-8	10.80	53.61	43.93	1.40
29-Apr-92	A-8	11.15	53.61	43.50	1.30
29-Jul-92	A-8	11.33	53.77	42.49	0.06
28-Oct-92	A-8	N/A	53.77	-----	-----
26-Jan-93	A-8	N/A	53.77	-----	-----
01-Apr-93	A-8	9.38	53.77	44.39	0.00
20-Mar-89	A-9	6.28	52.96	46.68	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
24-May-89	A-9	10.12	52.96	42.84	0.00
18-Aug-89	A-9	9.51	52.96	43.45	0.00
27-Oct-89	A-9	8.56	52.96	44.40	0.00
15-Jan-90	A-9	7.20	52.96	45.76	0.00
04-Apr-90	A-9	8.78	52.96	44.18	0.00
30-Jul-90	A-9	10.16	52.96	42.80	0.00
29-Oct-90	A-9	10.71	52.96	42.25	0.00
16-Jan-91	A-9	10.44	52.96	42.52	0.00
12-Apr-91	A-9	8.69	52.96	44.27	0.00
10-Jul-91	A-9	10.23	52.96	42.73	0.00
20-Sep-91	A-9	10.47	52.96	42.49	0.00
21-Oct-91	A-9	10.39	52.96	42.57	0.00
02-Feb-92	A-9	9.05	52.96	43.91	0.00
29-Apr-92	A-9	9.56	52.96	43.40	0.00
29-Jul-92	A-9	10.43	53.04	42.61	0.00
28-Oct-92	A-9	N/A	53.04	-----	-----
26-Jan-93	A-9	N/A	53.04	-----	-----
01-Apr-93	A-9	N/A	53.04	-----	-----
20-Mar-89	A-10	8.52	54.16	45.64	0.00
24-May-89	A-10	11.31	54.16	42.85	0.00
18-Aug-89	A-10	11.82	54.16	42.34	0.00
27-Oct-89	A-10	10.94	54.16	43.22	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
15-Jan-90	A-10	9.58	54.16	44.58	0.00
04-Apr-90	A-10	N/A	54.16	-----	----
30-Jul-90	A-10	11.67	54.16	42.49	0.00
29-Oct-90	A-10	12.11	54.16	42.05	0.00
16-Jan-91	A-10	11.60	54.16	42.56	0.00
12-Apr-91	A-10	10.04	54.16	44.12	0.00
10-Jul-91	A-10	11.55	54.16	42.61	0.00
21-Oct-91	A-10	11.79	54.16	42.37	0.00
02-Feb-92	A-10	N/A	54.16	-----	----
29-Apr-92	A-10	10.85	54.16	43.31	0.00
29-Jul-92	A-10	11.84	54.26	42.42	0.00
28-Oct-92	A-10	11.89	54.26	42.37	0.00
26-Jan-93	A-10	10.81	54.26	43.45	0.00
01-Apr-93	A-10	10.85	54.26	43.41	0.00
20-Mar-89	A-11	8.11	53.75	45.64	0.00
24-May-89	A-11	10.92	53.75	42.83	0.00
18-Aug-89	A-11	11.52	53.75	42.23	0.00
27-Oct-89	A-11	10.63	53.75	43.12	0.00
15-Jan-90	A-11	9.22	53.75	44.53	0.00
04-Apr-90	A-11	10.85	53.75	42.90	0.00
30-Jul-90	A-11	11.29	53.75	42.46	0.00
29-Oct-90	A-11	11.66	53.75	42.09	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
16-Jan-91	A-11	11.31	53.75	42.44	0.00
12-Apr-91	A-11	9.55	53.75	44.20	0.00
10-Jul-91	A-11	11.18	53.75	42.57	0.00
21-Oct-91	A-11	11.24	53.75	42.51	0.00
02-Feb-92	A-11	10.70	53.75	43.05	0.00
29-Apr-92	A-11	10.57	53.75	43.18	0.00
29-Jul-92	A-11	11.33	53.74	42.41	0.00
28-Oct-92	A-11	11.54	53.74	42.20	0.00
26-Jan-93	A-11	9.90	53.74	43.84	0.00
01-Apr-93	A-11	10.11	53.74	43.63	0.00
20-Mar-89	A-12	8.00	52.05	44.05	0.00
24-May-89	A-12	10.35	52.05	41.70	0.00
18-Aug-89	A-12	10.75	52.05	41.30	0.00
27-Oct-89	A-12	10.06	52.05	41.99	0.00
15-Jan-90	A-12	8.88	52.05	43.17	0.00
04-Apr-90	A-12	10.30	52.05	41.75	0.00
30-Jul-90	A-12	10.66	52.05	41.39	0.00
29-Oct-90	A-12	10.90	52.05	41.15	0.00
16-Jan-91	A-12	10.60	52.05	41.45	0.00
12-Apr-91	A-12	9.45	52.05	42.60	0.00
10-Jul-91	A-12	10.56	52.05	41.49	0.00
21-Oct-91	A-12	10.62	52.05	41.43	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
02-Feb-92	A-12	10.10	52.05	41.95	0.00
29-Apr-92	A-12	10.19	52.05	41.86	0.00
29-Jul-92	A-12	10.81	52.05	41.24	0.00
28-Oct-92	A-12	10.81	52.05	41.24	0.00
26-Jan-93	A-12	9.48	52.05	42.57	0.00
01-Apr-93	A-12	10.67	52.05	41.38	0.00
01-Jul-92	A-13	9.93	55.11	45.18	0.00
29-Jul-92	A-13	11.12	55.11	43.99	0.00
28-Oct-92	A-13	10.84	55.11	44.27	0.00
26-Jan-93	A-13	8.99	55.11	46.12	0.00
01-Apr-93	A-13	9.18	55.11	45.93	0.00
01-Jul-92	AR-1	10.27	54.72	44.45	0.00
29-Jul-92	AR-1	11.32	54.72	43.40	0.00
28-Oct-92	AR-1	N/A	54.72	-----	----
26-Jan-93	AR-1	N/A	54.72	-----	----
01-Apr-93	AR-1	N/A	54.72	-----	----
01-Jul-92	AR-2	11.33	54.77	43.44	0.00
29-Jul-92	AR-2	11.90	54.77	42.87	0.00
28-Oct-92	AR-2	N/A	54.77	-----	----
26-Jan-93	AR-2	N/A	54.77	-----	----
01-Apr-93	AR-2	N/A	54.77	-----	----
01-Jul-92	AR-3	10.11	54.19	44.08	0.00

TABLE 2

HISTORICAL WATER-LEVEL DATA

MONITORING DATE	WELL NUMBER	DEPTH TO WATER (FT)	WELL ELEVATION (FT)	STATIC WATER ELEVATION (FT)	FLOATING PRODUCT THICKNESS (FT)
29-Jul-92	AR-3	11.55	54.19	42.64	0.00
28-Oct-92	AR-3	N/A	54.19	-----	—
01-Apr-93	AR-3	N/A	54.19	-----	—
26-Jan-93	AR-3	N/A	54.19	-----	—

N/A = Not Accessible.

Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
2. Static water-levels corrected for floating product (conversion factor = 0.80).
3. Wells A-3 and A-10 were not monitored on February 2, 1992 due to site construction activities.
4. Wells A-3 and A-6 were not monitored on April 29, 1992 due to site construction activities.
5. Water level data prior to March, 1989 are not available.
6. Depth-to-water from wells AR-1, AR-2, and AR-3 measured on July 1, 1992 were referenced to the top of the casing. These measurements have been adjusted to the top of well box referenced.
7. Well elevations and depth-to-water are referenced to the top of the well box.
8. Wells re-surveyed July 30, 1992.
9. Wells A-8, A-9, and AR-1 through AR-3 were not measured on April 1, 1993 and after, due to remediation equipment installed in the wells.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
21-Mar-86	A-2	31000.	----	----	----	----
07-Jan-88	A-2	12000.	920.	1500.	----	4000.
20-Mar-89	A-2	22000.	1200.	1800.	1200.	7700.
24-May-89	A-2	9000.	460.	260.	250.	2400.
18-Aug-89	A-2	14000.	900.	200.	<200.	1300.
27-Oct-89	A-2	16000.	1200.	340.	90.	3100.
15-Jan-90	A-2	9900.	1100.	460.	150.	2900.
04-Apr-90	A-2	16000.	1100.	400.	380.	3900.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
30-Jul-90	A-2	16000.	1400.	340.	290.	3600.
29-Oct-90	A-2	14000.	1100.	210.	66.	2700.
16-Jan-91	A-2	15000.	1200.	800.	190.	4600.
12-Apr-91	A-2	16000	640	290	280	2600
21-Oct-91	A-2	26000	1100	560	81	3900
02-Feb-92	A-2	11000	150	13	91	94
29-Apr-92	A-2	5400	120	16	129	19
30-Jul-92	A-2	590	10	<2.0	<2.0	9.0
29-Oct-92	A-2	77	0.56	<0.50	<0.50	0.51
26-Jan-93	A-2	390	0.87	<0.50	<0.50	4.3
01-Apr-93	A-2	16,000	<10	<10	<10	<10
21-Mar-86	A-3	1000.	----	----	----	----

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
07-Jan-88	A-3	250.	2.3	8.	----	21.
20-Mar-89	A-3	230.	1.6	<1.	3.	3.
24-May-89	A-3	170.	0.9	2.	1.	<3.
18-Aug-89	A-3	180.	0.7	1.	<1.	<3.
27-Oct-89	A-3	120.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-3	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-3	88.	1.2	2.0	0.8	4.
30-Jul-90	A-3	120.	8.3	2.9	2.3	12.
29-Oct-90	A-3	780.	10.	27.	18.	85.
16-Jan-91	A-3	69.	2.0	3.5	<0.5	9.6
12-Apr-91	A-3	<30	<0.30	<0.30	<0.30	<0.30
10-Jul-91	A-3	59	<0.30	<0.30	0.50	0.51
21-Oct-91	A-3	56	0.44	0.77	0.41	1.3
01-Feb-92	A-3		Not accessible			
29-Apr-92	A-3		Not accessible			
30-Jul-92	A-3	<50	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-3	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-3	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-3	<50	<0.50	<0.50	<0.50	<0.50
21-Mar-86	A-4			Floating product		
07-Jan-88	A-4			Floating product		

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
20-Mar-89	A-4	360000.	1500.	3700.	6500.	35000.
24-May-89	A-4	1500000.	1000.	2000.	6000.	23000.
18-Aug-89	A-4			Floating product		
27-Oct-89	A-4			Floating product		
15-Jan-90	A-4			Floating product		
04-Apr-90	A-4	40000.	680.	320.	1400.	4900.
30-Jul-90	A-4			Floating product		
29-Oct-90	A-4			Floating product		
16-Jan-91	A-4			Floating product		
12-Apr-91	A-4	1800	<60	90	650	1700
10-Jul-91	A-4	61000	2700	8500	1700	8200
20-Sep-91	A-4	N/A	1200	5300	1500	11000
21-Oct-91	A-4			Floating product		
01-Feb-92	A-4			Floating product		
29-Apr-92	A-4			Floating product		
29-Jul-92	A-4			Floating product		
28-Oct-92	A-4			Floating product		
26-Jan-93	A-4			Floating product		
01-Apr-93	A-4			Floating product		
21-Mar-86	A-5	88.	----	----	----	----
07-Jan-88	A-5	<50.	0.5	1.	----	4.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
20-Mar-89	A-5	60.	0.5	1.	2.	10.
24-May-89	A-5	<50.	0.5	<1.	<1.	<3.
18-Aug-89	A-5	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-5	<50.	<0.50	<0.50	<0.50	<1.
15-Jan-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-5	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-5	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-5	280.	<0.5	<0.5	<0.5	<0.5
16-Jan-91	A-5	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-5	<30	<0.30	<0.30	<0.30	0.84
10-Jul-91	A-5	<30	<0.30	<0.30	<0.30	<0.30
21-Oct-91	A-5	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-5	<30	1.7	<0.30	<0.30	<0.30
29-Apr-92	A-5	<30	<0.30	<0.30	<0.30	<0.30
30-Jul-92	A-5	<50	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-5	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-5	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-5	<50	<0.50	<0.50	<0.50	<0.50
21-Mar-86	A-6	<10.	----	----	----	----
07-Jan-88	A-6	390.	54.	89.	----	110.
20-Mar-89	A-6	220.	33.	21.	9.	39.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
24-May-89	A-6	110.	13.	6.	3.	13.
18-Aug-89	A-6	<50.	2.1	1.	<1.	<3.
27-Oct-89	A-6	55.	3.8	1.6	1.7	6.
15-Jan-90	A-6	100.	12.	2.5	5.5	18.
04-Apr-90	A-6	100.	17.	7.1	5.5	18.
30-Jul-90	A-6	<50.	2.6	<0.5	<0.5	1.2
29-Oct-90	A-6	<50.	0.7	<0.5	<0.5	<0.5
16-Jan-91	A-6	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-6	430	24	5.1	9.4	32
10-Jul-91	A-6	<30	1.4	0.39	0.47	1.5
21-Oct-91	A-6	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-6	<30	2.0	0.40	0.58	1.7
29-Apr-92	A-6		Not accessible			
30-Jul-92	A-6	<50	0.64	<0.50	<0.50	<0.50
28-Oct-92	A-6	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-6	1600	4.8	1.2	14	46
01-Apr-93	A-6	310	4.8	0.74	3.3	8.7
07-Jan-88	A-7	<50.	<0.5	1.	----	4.
20-Mar-89	A-7	<50.	0.9	<1.	<1.	<3.
24-May-89	A-7	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-7	<50.	<0.5	<1.	<1.	<3.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
27-Oct-89	A-7	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-7	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-7	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-7	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-7	<50.	2.7	7.6	1.1	3.0
16-Jan-91	A-7	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-7	<30	<0.30	<0.30	<0.30	0.48
10-Jul-91	A-7	<30	<0.30	0.49	<0.30	1.2
21-Oct-91	A-7	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-7	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-7	<30	<0.30	<0.30	<0.30	<0.30
29-Jul-92	A-7	<50.	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-7	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-7	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-7	<50	<0.50	<0.50	<0.50	<0.50
21-Mar-86	A-8	Floating Product				
07-Jan-88	A-8	Floating Product				
20-Mar-89	A-8	Floating Product				
24-May-89	A-8	Floating Product				
18-Aug-89	A-8	Floating Product				
27-Oct-89	A-8	Floating Product				

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
15-Jan-90	A-8		Floating Product			
04-Apr-90	A-8		Floating Product			
30-Jul-90	A-8		Floating Product			
29-Oct-90	A-8		Floating Product			
16-Jan-91	A-8		Floating Product			
12-Apr-91	A-8		Floating Product			
10-Jul-91	A-8		Floating Product			
21-Oct-91	A-8		Floating Product			
01-Feb-92	A-8		Floating Product			
29-Apr-92	A-8		Floating Product			
29-Jul-92	A-8		Floating Product			
28-Oct-92	A-8		Not Accessible			
26-Jan-93	A-8		Not Accessible			
01-Apr-93	A-8		Not Accessible			
07-Jan-88	A-9	300.	45.	14.	----	43.
21-Mar-89	A-9	50.	2.8	1.	1.	3.
24-May-89	A-9	120.	26.	12.	4.	79.
18-Aug-89	A-9	14000.	400.	800.	400.	2000.
27-Oct-89	A-9	1700.	150.	36.	30.	110.
15-Jan-90	A-9	860.	140.	58.	38.	140.
04-Apr-90	A-9	620.	36.	13.	9.4	32.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
30-Jul-90	A-9	180.	77.	1.6	2.1	4.2
29-Oct-90	A-9	110.	30.	3.7	4.1	8.3
16-Jan-91	A-9	<50.	15.	<0.5	<0.5	0.6
12-Apr-91	A-9	130	52	0.83	5.3	6.0
10-Jul-91	A-9	<30	7.8	<0.30	<0.30	<0.30
20-Sep-91	A-9	N/A	21	<2.0	<2.0	<2.0
21-Oct-91	A-9	240	63	0.65	5.1	1.6
01-Feb-92	A-9	320	77	0.95	11	6.5
29-Apr-92	A-9	170	52	<0.30	5.6	1.4
30-Jul-92	A-9	<50	14	<0.50	1.7	6.0
28-Oct-92	A-9	Not Accessible				
26-Jan-93	A-9	Not Accessible				
01-Apr-93	A-9	Not Accessible				
07-Jan-88	A-10	<50.	0.6	11.	----	4.
20-Mar-89	A-10	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-10	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-10	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-10	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-10	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-10	Not accessible				
30-Jul-90	A-10	<50.	<0.5	<0.5	<0.5	<0.5

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
29-Oct-90	A-10	<50.	2.3	6.9	1.2	3.0
16-Jan-91	A-10	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-10	<30	0.67	0.55	<0.30	0.90
10-Jul-91	A-10	<30	<0.30	<0.30	<0.30	<0.30
21-Oct-91	A-10	<30	<0.30	<0.30	<0.30	<0.30
02-Feb-92	A-10		Not accessible			
29-Apr-92	A-10	<30	<0.30	<0.30	<0.30	<0.30
29-Jul-92	A-10	<50	25	<0.50	<0.50	1.8
28-Oct-92	A-10	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-10	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-10	<50	<0.50	<0.50	<0.50	<0.50
07-Jan-88	A-11	<50.	1.1	2.	----	5.
20-Mar-89	A-11	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-11	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-11	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-11	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-11	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-11	<50.	<0.5	0.6	<0.5	0.5
29-Oct-90	A-11	<50.	0.6	2.4	0.6	1.5
16-Jan-91	A-11	<50.	<0.5	<0.5	<0.5	<0.5

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
12-Apr-91	A-11	<30	<0.30	0.37	<0.30	<0.30
10-Jul-91	A-11	<30	0.61	0.46	<0.30	1.0
21-Oct-91	A-11	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-11	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-11	<30	<0.30	<0.30	<0.30	<0.30
30-Jul-92	A-11	<50.	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-11	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-11	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-11	<50	<0.50	<0.50	<0.50	<0.50
07-Jan-88	A-12	<50.	<0.5	2.	----	<4.
20-Mar-89	A-12	<50.	<0.5	<1.	<1.	<3.
24-May-89	A-12	<50.	<0.5	<1.	<1.	<3.
18-Aug-89	A-12	<50.	<0.5	<1.	<1.	<3.
27-Oct-89	A-12	<50.	<0.5	<0.5	<0.5	<1.
15-Jan-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
04-Apr-90	A-12	<50.	<0.5	<0.5	<0.5	<1.
30-Jul-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5
29-Oct-90	A-12	<50.	<0.5	<0.5	<0.5	<0.5
16-Jan-91	A-12	<50.	<0.5	<0.5	<0.5	<0.5
12-Apr-91	A-12	<30	<0.30	<0.30	<0.30	<0.30
10-Jul-91	A-12	<30	<0.30	<0.30	<0.30	<0.30

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
21-Oct-91	A-12	<30	<0.30	<0.30	<0.30	<0.30
01-Feb-92	A-12	<30	<0.30	<0.30	<0.30	<0.30
29-Apr-92	A-12	<30	<0.30	<0.30	<0.30	<0.30
30-Jul-92	A-12	<50.	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-12	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-12	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-12	<50	<0.50	<0.50	<0.50	<0.50
01-Jul-92	A-13	<50	<0.50	<0.50	<0.50	<0.50
30-Jul-92	A-13	<50	<0.50	<0.50	<0.50	<0.50
28-Oct-92	A-13	<50	<0.50	<0.50	<0.50	<0.50
26-Jan-93	A-13	<50	<0.50	<0.50	<0.50	<0.50
01-Apr-93	A-13	<50	<0.50	<0.50	<0.50	<0.50
01-Jul-92	AR-1	2300	260	150	38	470
29-Jul-92	AR-1	1600	340	180	52	320
28-Oct-92	AR-1	Not Accessible				
26-Jan-93	AR-1	Not Accessible				
01-Apr-93	AR-1	Not Accessible				
01-Jul-92	AR-2	<50	<0.50	<0.50	<0.50	<0.50
29-Jul-92	AR-2	350	130	8.5	<10	<10
28-Oct-92	AR-2	Not Accessible				
26-Jan-93	AR-2	Not Accessible				

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
01-Apr-93	AR-2		Not Accessible			
01-Jul-92	AR-3	<50	1.8	0.86	<0.50	2.2
29-Jul-92	AR-3	<50	1.6	<0.50	<0.50	<0.50
28-Oct-92	AR-3		Not Accessible			
26-Jan-93	AR-3		Not Accessible			
01-Apr-93	AR-3		Not Accessible			

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
PPB = Parts Per Billion.

Notes:
1. All data shown as <x are reported as ND (none detected)
2. Ethylbenzene & Xylenes were combined in 1986 and 1988.
3. Wells A-4 and A-9 were sampled in September, 1991 for water discharge permits for the proposed groundwater treatment system.
4. Wells A-8, A-9, and AR-1 through AR-3 were not sampled on April 1, 1993 due to remediation equipment in the wells.

TABLE 4A

GROUNDWATER REMEDIAL SYSTEM
ANALYTICAL DATA - TPH-G, BTEX AND METALS

DATE	SAMPLE NO.	TPH-G	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	Sb	As	Be	Cd	Cr	Cu	Pb	Hg	Ni	Se	Ag	Tl	Zn
20-Jan-93	A	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	48
	B	<50	<0.50	<0.50	<0.50	<0.50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	D	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	12	<0.2	<50	<5	<10	<5	<10
10-Feb-93	A	NA	NA	NA	NA	NA	16	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	92
	B	NA	NA	NA	NA	NA	7.4	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	D	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	34
14-Mar-93	A	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	21	<5	<0.2	<50	<5	<10	<5	25
	B	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	89	<5	<0.5	<50	<5	<10	<5	29
	D	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	82	<5	<0.2	<50	<5	<10	<5	<10
21-Apr-93	A	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	B	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	D	NA	NA	NA	NA	NA	<5	<5	<10	<10	<10	<10	<5	<0 2	<50	<5	<10	<5	<10
11-May-93	A	<50	<0 50	<0.50	<0.50	<0.50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	B	<50	<0.50	<0.50	<0.50	<0.50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	D	<50	<0.50	<0.50	<0.50	<0.50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
11-Jun-93	A	<50	<0.50	<0.50	<0.50	<0 50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	<10
	B	<50	<0.50	<0.50	<0.50	<0.50	<5	<5	<10	<10	<10	<10	<5	<0.2	<50	<5	<10	<5	17
	D	<50	<0.50	<0.50	<0.50	<0.50	<5	<5	<10	<10	53	<10	<5	<0.2	<50	<5	<10	4.1	34

All Metals were analyzed by EPA priority pollutants metals
Analytical results in parts per billion (ppb).

TPH-g = Total Petroleum Hydrocarbons calculated as Gasoline by EPA Methods 5030/8015.

Sample A = Effluent
Sample B = Midpoint
Sample D = Influent

TABLE 4A

GROUNDWATER REMEDIAL SYSTEM
ANALYTICAL DATA - TPH-G, BTEX AND METALS

Sb	=	Antimony	Hg	=	Mercury
As	=	Arsenic	Ni	=	Nickel
Be	=	Beryllium	Se	=	Selenium
Cd	=	Cromium	Ag	=	Silver
Cr	=	Chromium	Tl	=	Thallium
Cu	=	Copper	Zn	=	Zinc
Pb	=	Lead			

NA	=	Not Analyzed
<	=	Less than the detection limit

TABLE 4B

GROUNDWATER REMEDIAL SYSTEM ANALYTICAL DATA - VOC's

DATE	SAMPLE NO.	COMPOUND	RESULT
20-Jan-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	2.3
		Chloroform	1.6
		cis-1,2-Dichloroethene	3.3
		Tetrachlorethene	20
		Trichloroethene	1.1
10-Feb-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	1.9
		Chloroform	1.3
		cis-1,2-Dichloroethene	1.0
		Tetrachloroethene	21
14-Mar-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	1.9
		Chloroform	1.3
		cis-1,2-Dicloroethene	1.0
		Tetrachloroethene	21
21-Apr-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	3.5
		Chloroform	1.5
		cis-1,2-Dichloroethene	<0.50
		Tetrachloroethene	11
11-May-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	2.2
		Chloroform	1.4
		cis-1,2-Dichloroethene	1.4
		Tetrachloroethene	19

TABLE 4B

GROUNDWATER REMEDIAL SYSTEM ANALYTICAL DATA - VOC's

DATE	SAMPLE NO.	COMPOUND	RESULT
11-Jun-93	A	---	<1.0 for all compounds
	B	---	<1.0 for all compounds
	D	Carbon Tetrachloride	<0.50
		Chloroform	<0.50
		cis-1,2-Dichloroethene	3.6
		Tetrachloroethene	23
		Trichloroethene	1.1
		Vinyl Chloride	2.4

Results in parts per billion (ppb).
VOCs = Volatile Organic Compounds by EPA Methods 5030/601 and 5030/8010.
< = Less than detection limit.

Sample A = Effluent
Sample B = midpoint
Sample D = Influent

Arco Station 4931
731 W. MacArthur Blvd.
Oakland, CA

Table 5
Groundwater Treatment System Flow Data

Reading Date	Flow Meter Reading	Cumulative flow (gallons)	Average Flowrates (gal/day)	Average Flowrates (gal/min)	Laboratory Results effluent TPHg (ug/l)	Laboratory Results effluent Benzene (ug/l)	Laboratory Results influent TPHg (ug/l)	Laboratory Results influent Benzene (ug/l)	Periodic Hydrocarbon Recovery (LBS)
11/16/92	1,090	0	---	---					
11/18/92	22,690	21,600	10,800	8					0.02
11/20/92	44,920	43,830	11,115	8					0.02
12/17/92	92,210	91,120	1,751	1	<50	<0.50	92	25	0.04
1/12/93	564,680	563,590	18,172	13					0.36
2/10/93	838,640	837,550	9,447	7					0.21
2/24/93	947,220	946,130	7,756	5					0.08
3/14/93	1,086,630	1,085,540	7,745	5					0.11
4/1/93	1,129,690	1,128,600	2,392	2					0.03
4/20/93	1,193,300	1,192,210	3,348	2					0.05
4/29/93	1,259,700	1,258,610	7,378	5					0.05
6/11/93	1,614,620	1,613,530	8,254	6	<50	<0.50	<50	<0.50	0.00
6/21/93	1,722,260	1,721,170	10,764	7					0.00
6/28/93	1,809,950	1,808,860	12,527	9					0.00
2nd Quarter 1993		680,260							0.13
Total		1,808,860							0.97
Averages			8,075	6					

Notes:

1) Average flowrates calculated using flowmeter readings and days between readings.

2) Periodic Hydrocarbon Recovery calculated using prior laboratory concentration data.

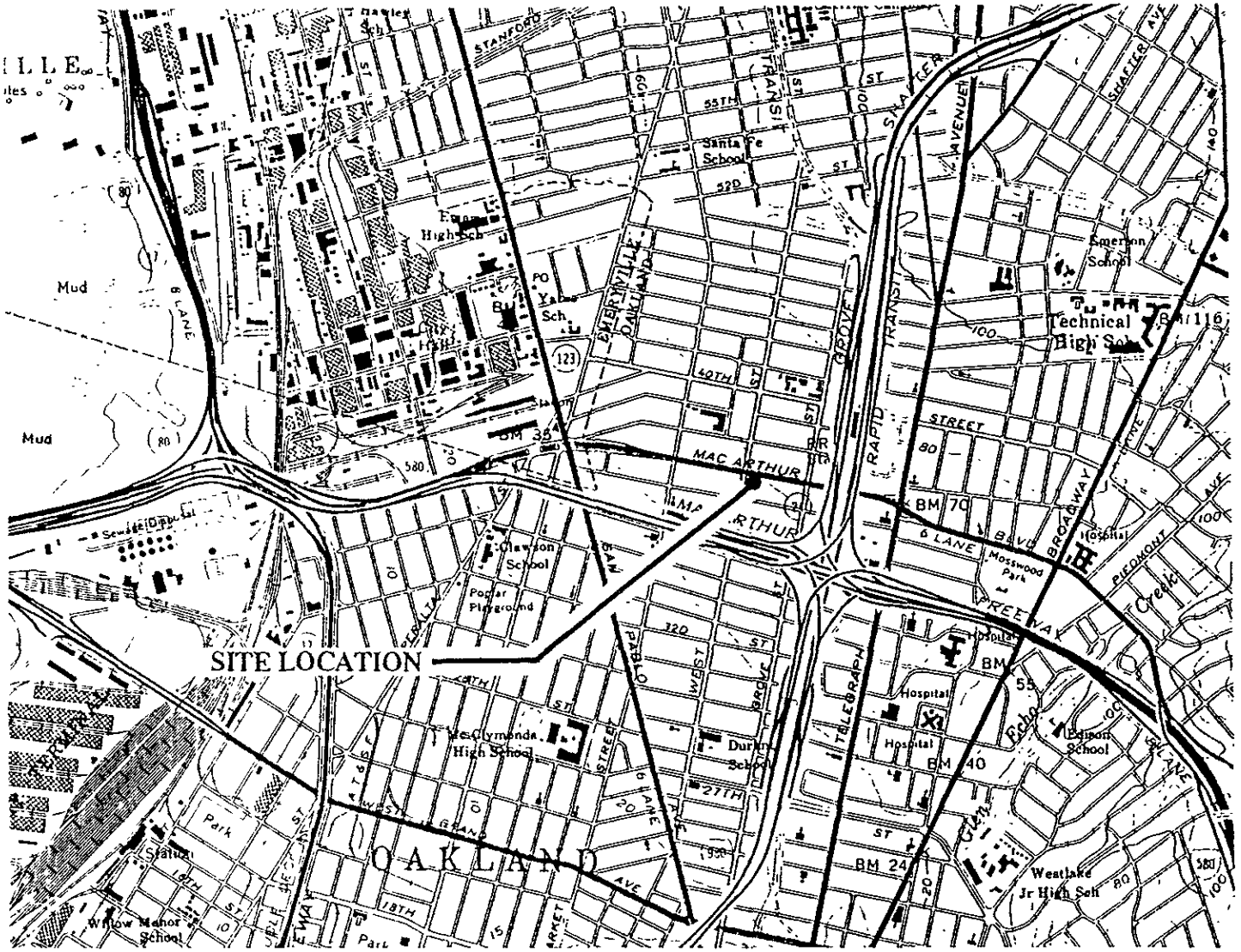
3) TPHg (Total Purgeable Hydrocarbons as gasoline) quantitated against a fresh gasoline standard.

4) ug/l = micrograms per liter.

5) <x indicates concentration below laboratory detection limits.

6) Effluent concentrations reported on 12/17/92 taken between first and second carbon vessels.

ILLUSTRATIONS



N

0 2000

Scale in Feet

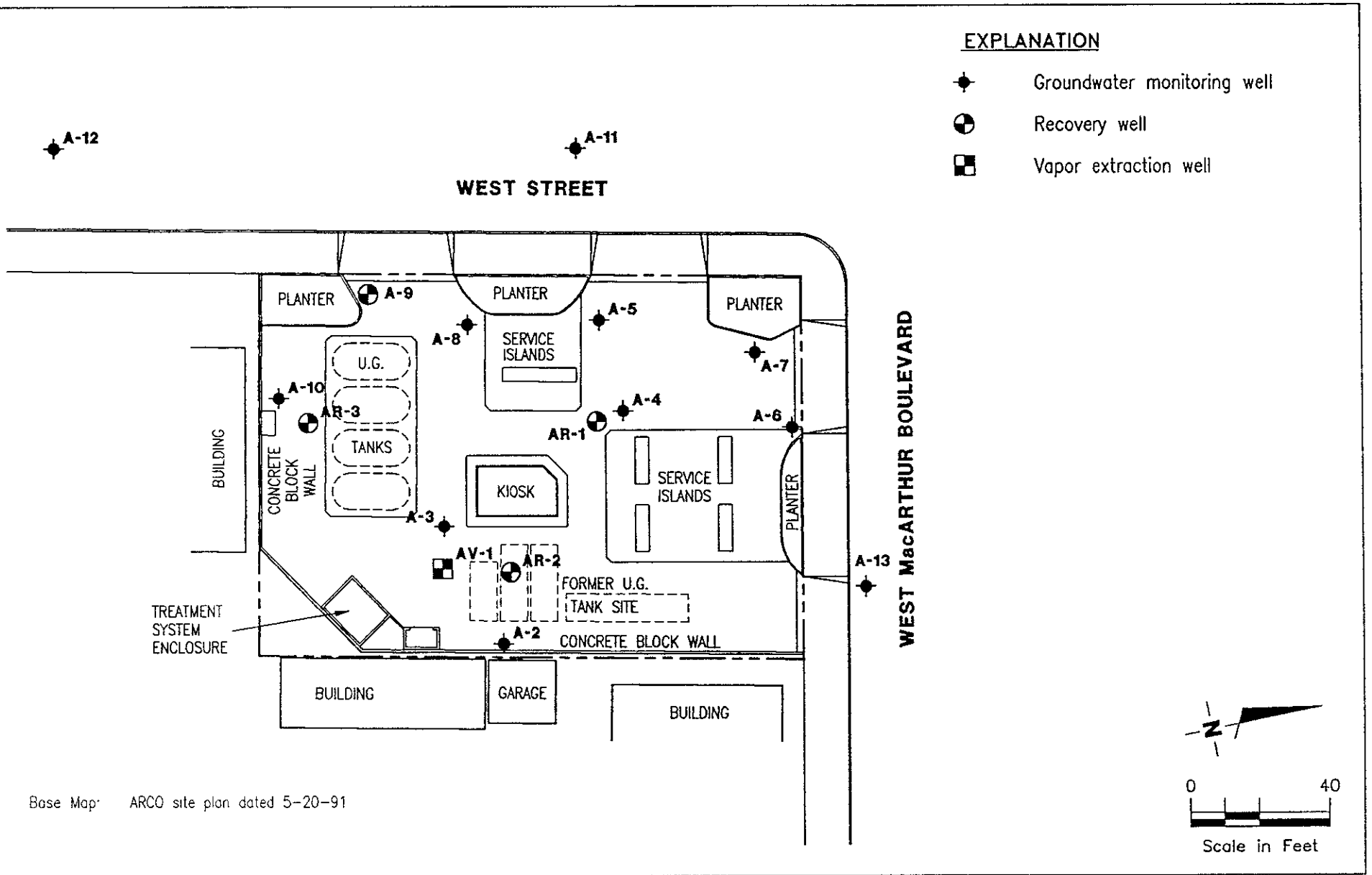
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7909		9/91	



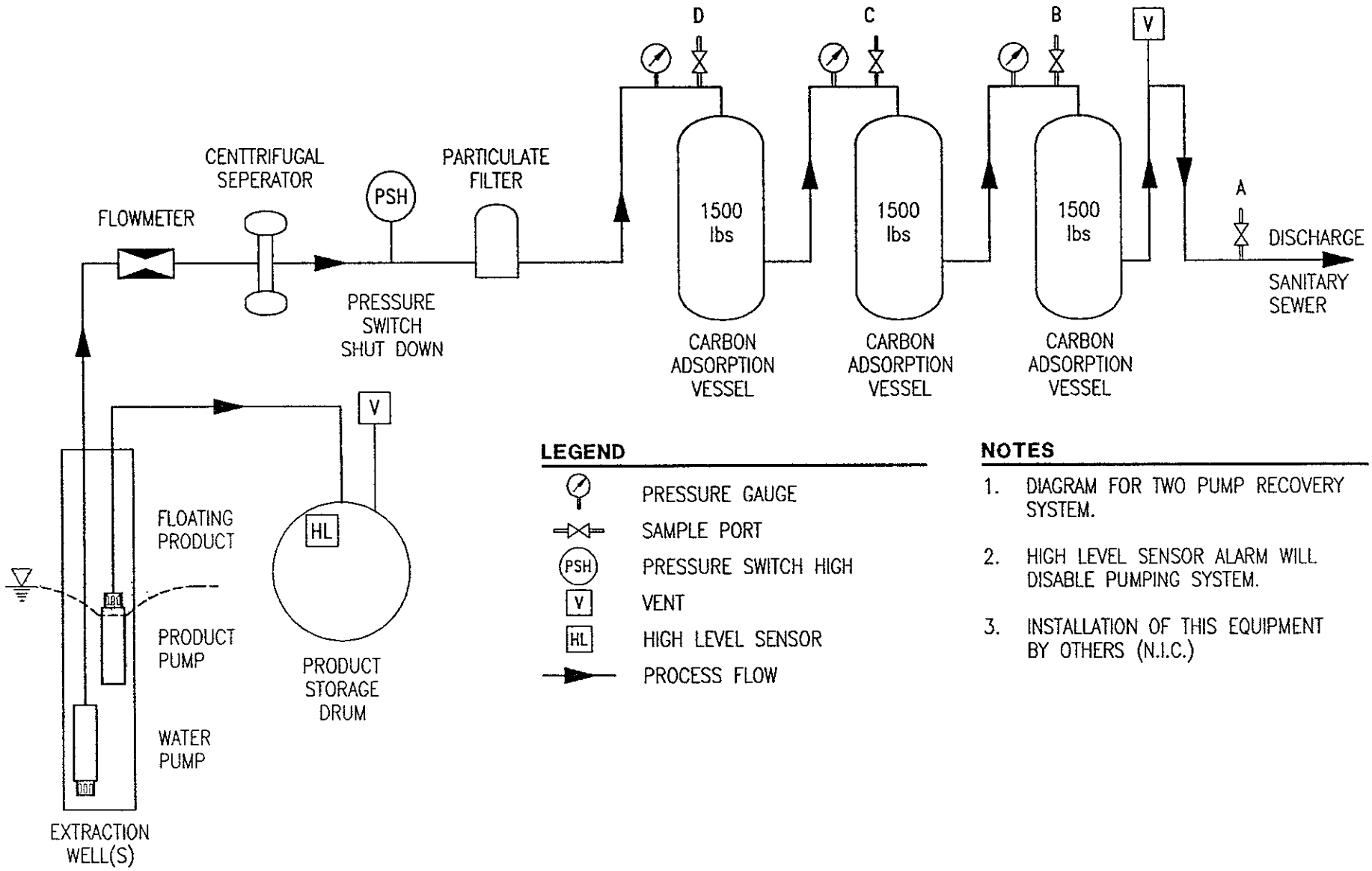
Base Map: ARCO site plan dated 5-20-91

GeoStrategies Inc.

SITE PLAN
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7909		7/93	



LEGEND

- PRESSURE GAUGE
- SAMPLE PORT
- PSH — PRESSURE SWITCH HIGH
- V — VENT
- HL — HIGH LEVEL SENSOR
- PROCESS FLOW

NOTES

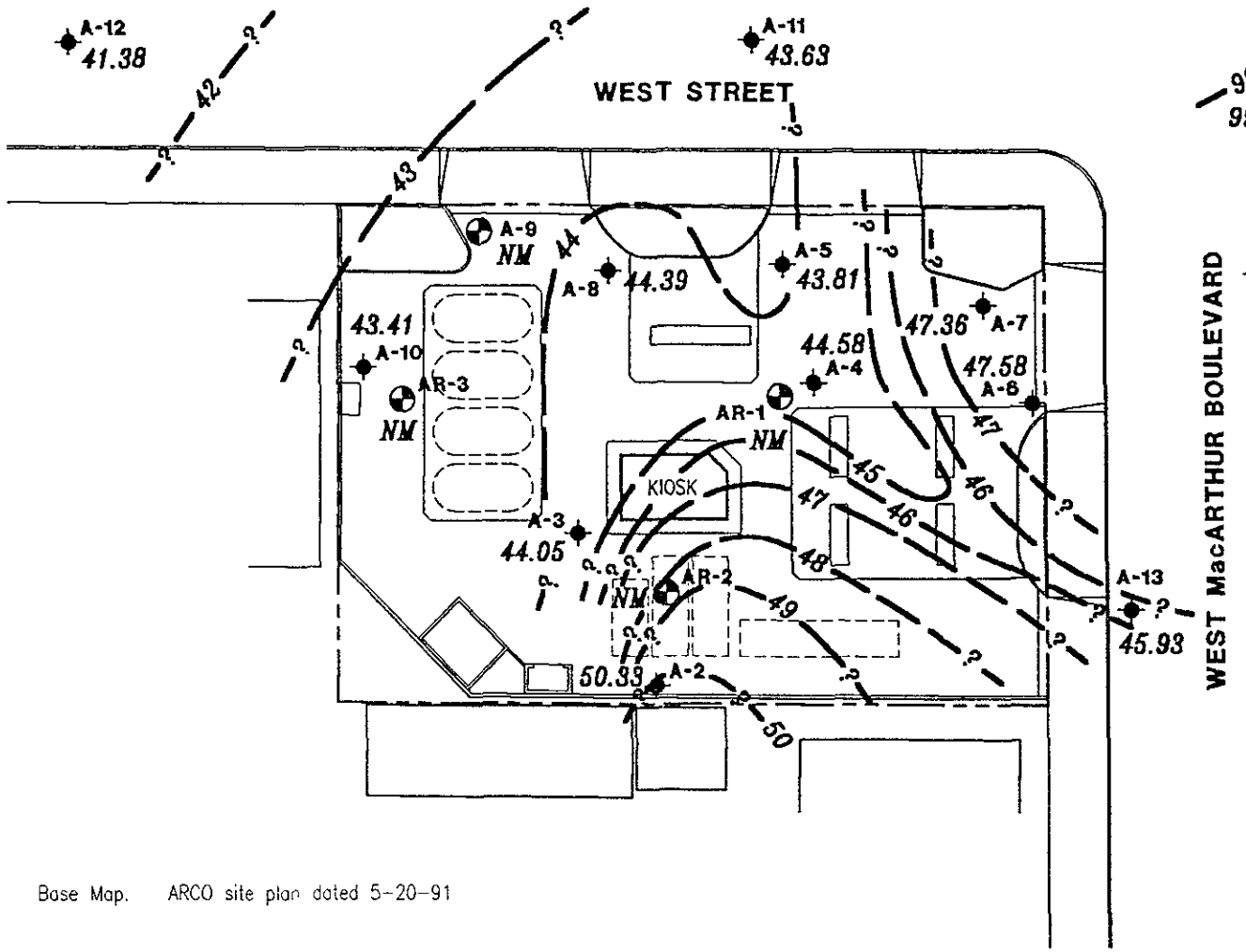
1. DIAGRAM FOR TWO PUMP RECOVERY SYSTEM.
2. HIGH LEVEL SENSOR ALARM WILL DISABLE PUMPING SYSTEM.
3. INSTALLATION OF THIS EQUIPMENT BY OTHERS (N.I.C.)

GSI GeoStrategies Inc.

PROCESS FLOW DIAGRAM
ARCO Service Station #4931
731 W. MacArthur Boulevard
Oakland, California

PLATE **3**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7909		6/93	



EXPLANATION

- Groundwater monitoring well
- Recovery well
- 99.99 — Groundwater elevation contour.
- 99.99 — Groundwater elevation in feet referenced to Mean Sea Level (MSL) measured on April 1, 1993
- NM — Not Measured

NOTES: 1. Contours may be influenced by irrigation practices, groundwater pumping and/or construction activities.

Base Map. ARCO site plan dated 5-20-91

N

0 40

Scale in Feet

GeoStrategies Inc.

POTENTIOMETRIC MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

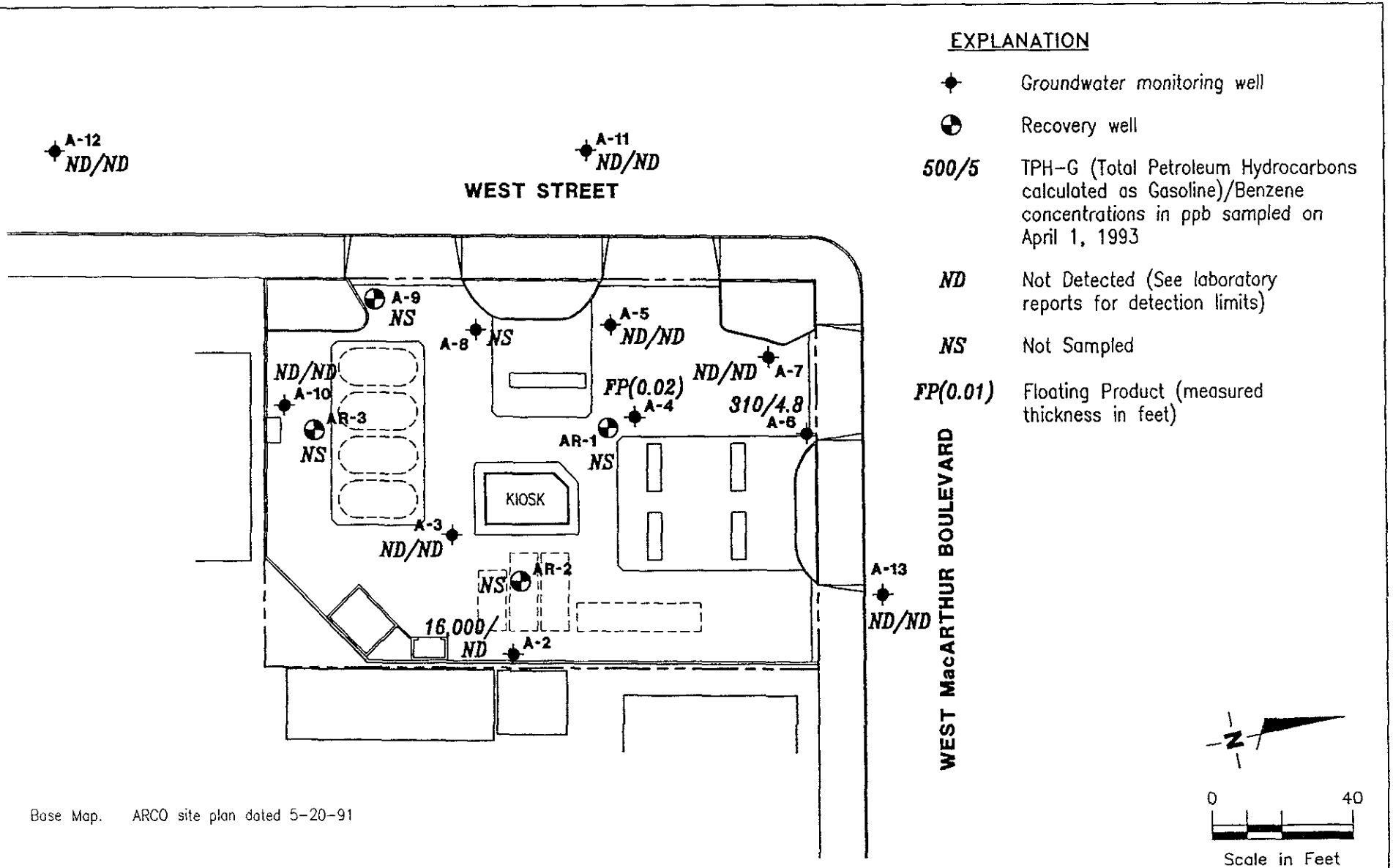
PLATE
4

JOB NUMBER
790970-22

REVIEWED BY

DATE
7/93

REVISED DATE



Base Map. ARCO site plan dated 5-20-91

GeoStrategies Inc.

TPH-G/BENZENE CONCENTRATION MAP
ARCO Service Station #4931
731 West MacArthur Boulevard
Oakland, California

PLATE 5

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
790970-22		7/93	

APPENDIX A

EMCON GROUNDWATER SAMPLING AND MONITORING REPORTS

EMCON Associates

[illegible] Junction Avenue • San Jose, California 95131-2102 • (408) 453-0719 • Fax (408) [illegible]

APR 26 199[illegible]

GeoStrategies Inc

Date April 16 1993

Project 0G70-032.01

To:

Mr. John Vargas
GeoStrategies, Inc
2140 West Winton Avenue
Hayward, California 94545

We are enclosing:

Copies	Description
1	Depth To Water / Floating Product Survey Results
1	Summary of Groundwater Monitoring Data
1	Certified Analytical Reports with Chain-of-Custody
15	Water Sample Field Data Sheets

For your: X Information Sent by: X Mail

Comments:

Enclosed are the data from the second quarter 1993 monitoring event at ARCO service station 4931, 731 West MacArthur Boulevard, Oakland, CA. Groundwater monitoring is conducted consistent with applicable regulatory guidelines. Please call if you have any questions: (408) 453-2266.

Reviewed by:

Jim Butera

REGISTERED PROFESSIONAL ENGINEER ROBERT CURTIS PORTER No. 4021 Exp. 6/30/96 ENGINEERING GEOLOGIST STATE OF CALIFORNIA

Robert Porter, Senior Project Engineer.

Summary of Groundwater Monitoring Data
Second Quarter 1993
ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California
micrograms per liter (µg/l) and milligrams per liter (mg/l)

Well ID and Sample Depth	Sampling Date	Depth To Water (feet)	Floating Product Thickness (feet)	TPH[1] as Gasoline (µg/l)	Benzene (µg/l)	Toluene (µg/l)	Ethyl-benzene (µg/l)	Total Xylenes (µg/l)
AR-1	04/01/93	NR.[2]	NR.	NR.	NR.	NR.	NR.	NR
AR-2	04/01/93	NR.	NR.	NR.	NR.	NR.	NR.	NR
AR-3	04/01/93	NR.	NR.	NR.	NR.	NR	NR.	NR.
A-2(18)	04/01/93	5.15	ND.[3]	16,000.	<10.	<10.	<10.	<10
A-3(17)	04/01/93	10.61	ND.	<50.	<0.5	<0 5	<0.5	<0 5
A-4	04/01/93	10.17	0.02	FP.[4]	FP.	FP.	FP.	FP
A-5(22)	04/01/93	10.36	ND.	<50.	<0.5	<0 5	<0.5	<0 5
A-6(23)	04/01/93	7.59	ND.	310.	4.8	0.74	3 3	8 7
A-7(21)	04/01/93	7.35	ND.	<50.	<0.5	<0.5	<0 5	<0 5
A-8	04/01/93	NR.	NR.	NR.	NR.	NR.	NR	NR
A-9	04/01/93	NR.	NR.	NR.	NR.	NR.	NR	NR
A-10(29)	04/01/93	10.85	ND.	<50	<0.5	<0.5	<0.5	<0 5
A-11(27)	04/01/93	10.11	ND.	<50.	<0.5	<0 5	<0 5	<0 5
A-12(28)	04/01/93	10.67	ND.	<50.	<0.5	<0.5	<0 5	<0 5
A-13(28)	04/01/93	9.18	ND.	<50.	<0.5	<0.5	<0 5	<0 5
XDup[5]	04/01/93	NA.[6]	ND.	<50	<0.5	<0.5	<0 5	<0 5
FB-1[7]	04/01/93	NA.	NA.	<50.	<0.5	<0.5	<0.5	<0.5
TB-1[8]	04/01/93	NA.	NA.	<50.	<0.5	<0 5	<0 5	<0.5

1. TPH = Total petroleum hydrocarbons
2. NR. = Not recorded due to ground water extraction system installed in well.
3. ND. = Not detected
4. FP. = Floating product; well was not sampled due to detection of floating product
5. XDup = Duplicate well sample collected at well A-2
6. NA = Not applicable
7. FB = Field Blank
8. TB = Trip Blank

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-032.01 STATION ADDRESS : 731 West MacArthur Blvd. Oakland, DATE : 4-1-93

ARCO STATION # : 4931 FIELD TECHNICIAN : B. Stafford / J. Williams DAY : Thursday

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
1	AR-1	ok	Yes	~~None~~ ok	None	None	NR	NR	ND	ND	NR	No sample port and no W.L hole in casing lid
2	AR-2	ok cracked	Yes	~~None~~ ok	None	None	NR	NR	ND	ND	NR	No sounder hole and No sample port
3	AR-3	ok	Yes	~~None~~ ok	None	None	NR	NR	ND	ND	NR	No sounder hole and no sample port
4	A-8	ok	Yes	ok	None	None	9.38	9.38	ND	ND	NR	ET system for well No sample port
5	A-9	ok	Yes	ok	None	None	NR	NR	ND	ND	NR	No sounder port or sampling port in Vault
6	A-13	ok	Yes	None	2357	Yes	9.18	9.18	ND	ND	29.3	Well in Planter box
7	A-11	ok	Yes	None	3200	locking cap	10.11	10.11	ND	ND	27.7	—
8	A-12	ok	Yes	None	2268	locking cap	10.67	10.67	ND	ND	29.5	—
9	A-3	ok	Yes	None	~~2357~~ ~~2268~~	Yes	10.61	10.61	ND	ND	18.1	—
10	A-5	ok	Yes	None	~~2008~~ ~~2008~~	No lid locking	10.36	10.36	ND	ND	23.9	—
11	A-7	ok	Yes	None	2008	No lid locking	7.35	7.35	ND	ND	22.8	—
12	A-10	ok	Yes	None	3283	locking lid	10.85	10.85	ND	ND	30.2	—
13	A-2	ok	Yes	None	2357	locking lid	5.15	5.15	ND	ND	19.8	—
14	A-6	ok	Yes	None	2268	locking cap	7.59	7.59	ND	ND	29.5	locking lid Arco

SURVEY POINTS ARE TOP OF WELL BOXES

FIELD REPORT
DEPTH TO WATER / FLOATING PRODUCT SURVEY

PROJECT # : 0G70-032.01 STATION ADDRESS : 731 West MacArthur Blvd. Oakland, DATE : 4-1-93

ARCO STATION # : 4931 FIELD TECHNICIAN : B. Stafford / J. Williams DAY : Thursday

DTW Order	WELL ID	Well Box Seal	Well Lid Secure	Gasket	Lock	Locking Well Cap	FIRST DEPTH TO WATER (feet)	SECOND DEPTH TO WATER (feet)	DEPTH TO FLOATING PRODUCT (feet)	FLOATING PRODUCT THICKNESS (feet)	WELL TOTAL DEPTH (feet)	COMMENTS
15	A-4	ok	Yes	none	3283	locking well cap	10.17	10.18	10.16	0.02	19.9	—

SURVEY POINTS ARE TOP OF WELL BOXES

Summary of Analytical Results
Second Quarter 1993
ARCO Service Station 4931
731 West MacArthur Boulevard, Oakland, California
milligrams per liter (mg/l)

Well ID and Sample Depth	Sampling Date	Lead (mg/L)	Total oil and Grease (mg/L)
A-2(18)	04/01/93	0.0080	6.0

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Avenue
San Jose, CA 95131
Attention Jim Butera

Project: EMCGC-92-1/Arco 4931, Oakland

Enclosed are the results from 13 water samples received at Sequoia Analytical on April 5,1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3D17101	Water, A-2 (18)	4/1/93	EPA 5030/8015/8020
3D17102	Water, A-3 (17)	4/1/93	EPA 5030/8015/8020
3D17103	Water, A-5 (22)	4/1/93	EPA 5030/8015/8020
3D17104	Water, A-6 (23)	4/1/93	EPA 5030/8015/8020
3D17105	Water, A-7 (21)	4/1/93	EPA 5030/8015/8020
3D17106	Water, A-10 (29)	4/1/93	EPA 5030/8015/8020
3D17107	Water, A-11 (27)	4/1/93	EPA 5030/8015/8020
3D17108	Water, A-12 (28)	4/1/93	EPA 5030/8015/8020
3D17109	Water, A-13 (28)	4/1/93	EPA 5030/8015/8020
3D17110	Water, X-Dup	4/1/93	EPA 5030/8015/8020
3D17111	Water, FB-1	4/1/93	EPA 5030/8015/8020
3D17112	Water, TB-1	4/1/93	EPA 5030/8015/8020
3D17113	Water, A-2 (18)	4/1-2/93	Lead SM 5520 B&F (Gravimetric)

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	EMCGC-92-1/Arco 4931, Oakland	Sampled: Apr 1, 1993
1938 Junction Avenue	Sample Matrix:	Water	Received: Apr 5, 1993
San Jose, CA 95131	Analysis Method:	EPA 5030/8015/8020	Reported: Apr 15, 1993
Attention: Jim Butera	First Sample #:	3D17101	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3D17101 A-2 (18)	Sample I.D. 3D17102 A-3 (17)	Sample I.D. 3D17103 A-5 (22)	Sample I.D. 3D17104 A-6 (23)	Sample I.D. 3D17105 A-7 (21)	Sample I.D. 3D17106 A-10 (29)
Purgeable Hydrocarbons	50	16,000	N.D.	N.D.	310	N.D.	N.D.
Benzene	0.50	N.D.	N.D.	N.D.	4.8	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	0.74	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	3.3	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	8.7	N.D.	N.D.
Chromatogram Pattern:		Weathered gas	--	--	Gas	--	--

Quality Control Data

Report Limit Multiplication Factor:	20	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93	4/12/93	4/12/93
Instrument Identification:	GCHP-2	GCHP-2	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Surrogate Recovery, %: (QC Limits = 70-130%)	114	110	100	108	95	100

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	EMCGC-92-1/Arco 4931, Oakland	Sampled: Apr 1, 1993
1938 Junction Avenue	Sample Matrix:	Water	Received: Apr 5, 1993
San Jose, CA 95131	Analysis Method:	EPA 5030/8015/8020	Reported: Apr 15, 1993
Attention: Jim Butera	First Sample #:	3D17107	

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3D17107 A-11 (27)	Sample I.D. 3D17108 A-12 (28)	Sample I.D. 3D17109 A-13 (28)	Sample I.D. 3D17110 X-Dup	Sample I.D. 3D17111 FB-1	Sample I.D. 3D17112 TB-1
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	--	--	--	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0	1.0
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93	4/12/93	4/12/93
Instrument Identification:	GCHP-2	GCHP-2	GCHP-3	GCHP-3	GCHP-3	GCHP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	103	102	104	107	105	102

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
Revised report: 4/19/93

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	EMCGC-92-1/Arco 4931, Oakland	Sampled:	Apr 1, 1993
1938 Junction Avenue	Sample Descript:	Water, A-2 (18)	Received:	Apr 5, 1993
San Jose, CA 95131			Analyzed:	see below
Attention: Jim Butera	Lab Number:	3D17113	Reported:	Apr 15, 1993

LABORATORY ANALYSIS

Analyte	Date Analyzed	Detection Limit mg/L	Sample Result mg/L
Lead	4/8/93	0.0050	0.0080

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates	Client Project ID:	EMCGC-92-1/Arco 4931, Oakland	Sampled:	Apr 1, 1993
1938 Junction Avenue	Matrix Descript:	Water	Received:	Apr 5, 1993
San Jose, CA 95131	Analysis Method:	SM 5520 B&F (Gravimetric)	Extracted:	Apr 12, 1993
Attention: Jim Butera	First Sample #:	3D17113	Analyzed:	Apr 12, 1993
			Reported:	Apr 15, 1993

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L
3D17113	A-2 (18)	6.0

Detection Limits:	5.0

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Avenue
San Jose, CA 95131
Attention: Jim Butera

Client Project ID: EMCGC-92-1/Arco 4931, Oakland
Matrix: Water

QC Sample Group: 3D17101-02, 07-08, 12

Reported: Apr 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK041293	GBLK041293	GBLK041293	GBLK041293
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
LCS % Recovery:	120	110	120	120
Control Limits:	80-120	80-120	80-120	80-120
MS/MSD Batch #:	G930418120B	G930418120B	G930418120B	G930418120B
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Matrix Spike % Recovery:	77	77	76	77
Matrix Spike Duplicate % Recovery:	87	85	87	87
Relative % Difference:	12	9.9	13	12

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Avenue
San Jose, CA 95131
Attention: Jim Butera

Client Project ID: EMCGC-92-1/Arco 4931, Oakland
Matrix: Water

QC Sample Group: 3D17103-06, 09-11

Reported: Apr 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	M. Nipp	M. Nipp	M. Nipp	M. Nipp
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK041293	GBLK041293	GBLK041293	GBLK041293
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
LCS % Recovery:	98	98	98	100
Control Limits:	80-120	80-120	80-120	80-120
MS/MSD Batch #:	G930418104C	G930418104C	G930418104C	G930418104C
Date Prepared:	N.A.	N.A.	N.A.	N.A.
Date Analyzed:	4/12/93	4/12/93	4/12/93	4/12/93
Instrument I.D.#:	GCHP-3	GCHP-3	GCHP-3	GCHP-3
Matrix Spike % Recovery:	78	77	77	77
Matrix Spike Duplicate % Recovery:	78	79	77	77
Relative % Difference:	0.0	2.6	0.0	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

SEQUOIA ANALYTICAL
680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Emcon Associates
1938 Junction Avenue
San Jose, CA 95131
Attention: Jim Butera

Client Project ID: EMCGC-92-1/Arco 4931, Oakland
Matrix: Water

QC Sample Group: 3D17113

Reported: Apr 15, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Total Recoverable Petroleum Oil
Method:	EPA 239.2	SM 5520 B&F
Analyst:	S. Chin	M. Shkidt
Conc. Spiked:	0.050	30
Units:	mg/L	mg/L
LCS Batch#:	BLK040793	BLK041293
Date Prepared:	4/7/93	4/12/93
Date Analyzed	4/8/93	4/12/93
Instrument I.D.#:	MV-1	N.A.
LCS % Recovery:	104	90
Control Limits:	75-125	70-110
MS/MSD Batch #:	9304203-1D	BLK041293
Date Prepared:	4/7/93	4/12/93
Date Analyze	4/8/93	4/12/93
Instrument I.D.#:	MV-1	N.A.
Matrix Spike % Recovery:	116	90
Matrix Spike Duplicate % Recovery:	104	93
Relative % Difference:	11	3.6

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Eileen A. Manning
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

ARCO Products Company
Division of AtlanticRichfieldCompany

Chain of Custody

Task Order No. EMCGC-92-1

ARCO Facility no. 4931	City (Facility) OAKLAND	Project manager (Consultant) JIM BUTERA	Laboratory name SEQUOIA
ARCO engineer Kyle Christie	Telephone no. (ARCO) 571-2434	Telephone no. (Consultant) 453-0719	Fax no. (Consultant) 453-0452
Consultant name EMCON ASSOCIATES	Address (Consultant) 1938 JUNCTION Avenue, San Jose		Contract number

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH GAS EPA 8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 8240/8260	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	
MW-1		2		X		X	HCl	No Sample			X		No	Way to Sample.							
MW-2		2						No Sample			X		No	Way to Sample.							
MW-3		2						No Sample			X		No	Way to Sample							
1-2 (18)		2						4-1-93	1805		X										9304171-01
1-3 (17)		2						4-1-93	1618		X										02
1-4	No	2	Sample	Product	in well 0.02' thick						X				→						
1-5 (22)		2						4-1-93	1649		X										03
1-6 (23)		2	-					4-1-93	1718		X										04
1-7 (21)		2						4-1-93	1652		X										05
1-8		2	No	Sample				No	Sample		X		pot.								
1-9		2	No	Sample				No	Way to	purge	Well.										
1-10 (29)		2						4-1-93	1752		X										06
1-11 (27)		2						4-1-93	1414		X										07
1-12 (28)		2						4-1-93	1445		X										08
1-13 (28)		2						4-1-93	1545		X										09
XDX		2		X		↓	↓	4-1-93	—		X										10

Method of shipment: Courier will Pick up

Special detection Limit/reporting: Lowest Possible

Special QA/QC: As Normal

Remarks:
2-40 ml HCl VOA's
1-Liter HNO3 PLASTIC
2-Liters H2SO4 GLASS
(SEQUOIA BOTTLE)

Lab number

Turnaround time
- Priority Rush 1 Business Day
- Rush 2 Business Days
- Expedited 5 Business Days
- Standard 10 Business Days X

Condition of sample:

Temperature received:

	Date	Time		Date	Time
Relinquished by (Sampler)	4-1-93	1800	Received by		
Relinquished by	4/5/93	11:30	Received by		
Relinquished by			Received by laboratory	4/5/93	1130

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

ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. ENCGC-92-1

Chain of Custody

ARCO Facility no. 4931	City (Facility) OAKLAND	Project manager (Consultant) JIM BUTERA	Laboratory name SEQUOIA
ARCO engineer Kyle Christie	Telephone no. (ARCO) 571-2434	Telephone no. (Consultant) 453-0719	Fax no. (Consultant) 453-0452
Consultant name EMCON ASSOCIATES	Address (Consultant) 1938 Junction Avenue San Jose		Contract number

Method of shipment: Courier will pick up

Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 8020/EPA 8020	BTEX/TPH GAS EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org/DHS ☐ Lead EPA 7420/7421 ☐	TOTAL LEAD
B-1		2		X		X	HCl	4-1-93			X					930	41	71 -	11		
B-1		2		X		X	HCl	4-1-93			X						↓		12		
3(18)		1		X		X	HNO_3	4-2-93	1500								↓		13		X
2(18)		2		X		X	H_2SO_4	4-1-93	1805				X								

Special detection Limit/reporting: Lowest possible

Special QA/QC: Normal

Remarks: TOTAL WITH 1 LITER LINES TOG 5520 B&F(HC) 2 Liter H_2SO_4

Lab number

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

Condition of sample:

Temperature received:

Relinquished by Sampler	Date	Time	Received by	Date	Time
	4-2-93	1530		4/5/93	11:00
Relinquished by	Date	Time	Received by		
	4/6/93	11:30			
Relinquished by	Date	Time	Received by laboratory	Date	Time
				4/5/93	11:30

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-032 C1 | SAMPLE ID: A-2 (18)
PURGED BY: B. Stafford | CLIENT NAME: Arco 4731
SAMPLED BY: B. Stafford | LOCATION: 7311 MacArthur Blvd. Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X | 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NA | VOLUME IN CASING (gal.): 9.55
DEPTH TO WATER (feet): 5.15 | CALCULATED PURGE (gal): 28.6
14.65 DEPTH OF WELL (feet): 19.8 | ACTUAL PURGE VOL. (gal.): 12.0

DATE PURGED: 4-1-93 | Start (2400 Hr): 1517 | End (2400 Hr): 1522
DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1805 | End (2400 Hr): 1815

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1520	10.0	6.57	516.	65.7	Tan	Moderate
Well	~~2nd~~	dried	at 12.0 gallons	at	1522	
	~~2nd~~ 2.0					
	4/2/93					
1422	Recharge	6.07	365.	66.1	Gray	Heavy

D. O. (ppm): NA | ODOR: Moderate | NA (COBALT 0 - 100) | NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): X DUP; FB-1

PURGING EQUIPMENT				SAMPLING EQUIPMENT			
___	2" Bladder Pump	___	Bailer (Teflon®)	___	2" Bladder Pump	X	Bailer (Teflon®)
X	Centrifugal Pump	___	Bailer (PVC)	___	DDL Sampler	___	Bailer (Stainless Steel)
___	Submersible Pump	___	Bailer (Stainless Steel)	___	Dipper	___	Submersible Pump
___	Well Wizard™	___	Dedicated	___	Well Wizard™	___	Dedicated

Other: ___ | Other: ___

WELL INTEGRITY: OK | LOCK #: 2357

REMARKS: DTW At 17:30 = 19.66'
DTW At 1804 = 18.78'
Sampled & Total Lead Sampled on 4-7-93 at 15:00

Meter Calibration: Date: 4-1-93 | Time: 1419 1340 | Meter Serial #: 5412 5264 | Temperature °F: 72.8
(EC 1000 1072 / 1000.) (DI ___) (pH 7 7.15 / 7.00) (pH 10 9.87 / 10.00) (pH ___ 3.97 ___)

Location of previous calibration: A-12

Signature: [signature] | Reviewed By: JP | Page 1 of 15

WATER SAMPLE FIELD DATA SHEET

Rev. 2.5

EMCON ASSOCIATES

PROJECT NO: 0670-032.01 | SAMPLE ID: MW-3(17)
PURGED BY: K. Stafford | CLIENT NAME: Arco 4731
SAMPLED BY: K. Stafford | LOCATION: 7311 W. MacArthur Blvd. Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 X 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL):	NA	VOLUME IN CASING (gal.)	4.68
DEPTH TO WATER (feet):	10.61 ~~9.27~~ BR	CALCULATED PURGE (gal.)	14.66
7.49 DEPTH OF WELL (feet):	18.1 ~~15.3~~ BR	ACTUAL PURGE VOL. (gal.)	7.0

DATE PURGED: 4-1-93 | Start (2400 Hr): 1608 | End (2400 Hr): 1610
DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1618 | End (2400 Hr): 1620

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1609	5.0	6.34	1228.	68.6	Tan	Moderate
	~~10.0~~					
well dried	~~15.0~~	at 1610	at 7.0 gal/hrs			
1621	Recharge	6.38	1155.	61.0	Tan	low

D. O. (ppm): NA | ODOR: None | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 2268.

REMARKS:

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-12

Signature: [signature] | Reviewed By: [signature] | Page 2 of 15

WATER SAMPLE FIELD DATA SHEET

Rev. 2 5.9

EMCON ASSOCIATES

PROJECT NO: 0670-C32-21 | SAMPLE ID: A-4

PURGED BY: B. Stafford | CLIENT NAME: Arco 4931

SAMPLED BY: NM | LOCATION: 731 W. MacArthur, Oakland, CA

TYPE: Ground Water V | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 V 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR | VOLUME IN CASING (gal.): N/A

DEPTH TO WATER (feet): 10.17 | CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): 19.9 | ACTUAL PURGE VOL. (gal.): N/A

DATE PURGED: 4-1-93 | Start (2400 Hr) N/A | End (2400 Hr) N/A

DATE SAMPLED: 4-1-93 | Start (2400 Hr) N/A | End (2400 Hr) N/A

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
0.02' of product in well. No Sample.						

D. O. (ppm): N/A | ODOR: V. Strong | COLOR (COBALT 0 - 100): N/A | TURBIDITY (NTU 0 - 200): N/A

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	___ Bailer (Teflon®)
___ Centrifugal Pump N/A	___ Bailer (PVC)	___ DDL Sampler N/A	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 3283

REMARKS: No Sample 0.02' of product in well.

Meter Calibration: Date: 4-1-93 Time: 1342 Meter Serial #: 9204 Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: MW-12

Signature: [signature] Reviewed By [signature] Page 5 of 15

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-032-01 | SAMPLE ID: 1-5 (22)
PURGED BY: B. Stafford / T. Williams | CLIENT NAME: Arco 4931
SAMPLED BY: B. Stafford / T. Williams | LOCATION: 731 N. MacArthur Blvd. Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ | 3 X | 4 ___ | 4.5 ___ | 6 ___ | Other ___

CASING ELEVATION (feet/MSL): N/A
DEPTH TO WATER (feet): 10.36
DEPTH OF WELL (feet): 23.9 (13.54)
VOLUME IN CASING (gal.): 4.57
CALCULATED PURGE (gal.): 14.7
ACTUAL PURGE VOL. (gal.): 15.0

DATE PURGED: 4-1-93 | Start (2400 Hr): 16:36 | End (2400 Hr): 1646
DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1699 | End (2400 Hr): 1651

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1641	5.0	6.43	964.	63.3	Red-Brown	Heavy
1643	10.0	6.46	925.	63.8	↓	↓
1646	15.0	6.53	832.	64.3	↓	↓

D. O. (ppm): NA | ODOR: None | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 2008

REMARKS: ___

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9204 | Temperature °F: ___
(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)
Location of previous calibration: A-12

Signature: [signature] | Reviewed By: [signature] | Page 4 of 15

WATER SAMPLE FIELD DATA SHEET

EMCON ASSOCIATES

PROJECT NO: 0670-032.01 | SAMPLE ID: A-6 (23)

PURGED BY: K. Stafford / J. Williams | CLIENT NAME: Arco 4731

SAMPLED BY: K. Stafford / J. Williams | LOCATION: 7311 MacArthur Blvd Oakland, CA

TYPE: Ground Water X | Surface Water ____ | Treatment Effluent ____ | Other ____

CASING DIAMETER (inches): 2 ____ | 3 X | 4 ____ | 4.5 ____ | 6 ____ | Other ____

CASING ELEVATION (feet/MSL):	NA	VOLUME IN CASING (gal.):	6.21
DEPTH TO WATER (feet):	7.58	CALCULATED PURGE (gal.):	18.62
DEPTH OF WELL (feet):	24.5	ACTUAL PURGE VOL. (gal.):	15.0

16.92

DATE PURGED: 4-1-93 | Start (2400 Hr) 1705 | End (2400 Hr) 1717

DATE SAMPLED: 4-1-93 | Start (2400 Hr) 1715 | End (2400 Hr) 1721

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1711	6.5	6.96	581.	60.4	Brown	Heavy
1714	13.0	6.92	603.	61.1	"	"
1716	15.0	6.90	614.	62.0	"	"

D. O. (ppm): NA | ODOR: Moderate | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	X Bailer (Teflon®)
____ Centrifugal Pump	X Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: OK | LOCK #: 2025

REMARKS: ____

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: IA-12

Signature: [signature] | Reviewed By: [signature] | Page 5 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2.5

EMCON ASSOCIATES

PROJECT NO: 0670-032.01 SAMPLE ID: A-7(21)

PURGED BY: K. Stafford / J. Williams CLIENT NAME: Arco 4931

SAMPLED BY: K. Stafford / J. Williams LOCATION: 731 W. MacArthur Blvd Oakland, CA

TYPE: Ground Water X Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ____ 3 X 4 ____ 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL):	NA	VOLUME IN CASING (gal.):	5.67
DEPTH TO WATER (feet):	7.35	CALCULATED PURGE (gal.):	17.00
15.45 DEPTH OF WELL (feet):	22.8	ACTUAL PURGE VOL. (gal.):	17.0

DATE PURGED: 4-1-93 Start (2400 Hr) 1638 End (2400 Hr) 1646

DATE SAMPLED: 4-1-93 Start (2400 Hr) 1652 End (2400 Hr) 1654

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1639	6.0	6.96	247	64.7	Red Brown	Heavy
1641	12.0	6.73	446	63.6	"	"
1645	17.0	6.67	557	63.4	"	"

D. O. (ppm): NA ODOR: Lime NA (COBALT 0 - 100) NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: OK LOCK #: 2202

REMARKS: ____

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: A-12

Signature: [signature] Reviewed By [signature] Page 5 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2 5

EMCON ASSOCIATES

PROJECT NO: 0670-032-01 | SAMPLE ID: A-8

PURGED BY: B. Stafford | CLIENT NAME: Arco 4931

SAMPLED BY: NA | LOCATION: 731 W. MacArthur Oakland, CA

TYPE: Ground Water V | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ 3 ___ 4 V 4.5 ___ 6 ___ Other ___

CASING ELEVATION (feet/MSL): NR | VOLUME IN CASING (gal.): NA

DEPTH TO WATER (feet): 5.38 | CALCULATED PURGE (gal.): NA

DEPTH OF WELL (feet): NR | ACTUAL PURGE VOL. (gal.): NA

DATE PURGED: 4-1-93 | Start (2400 Hr) NA | End (2400 Hr) NA

DATE SAMPLED: 4-1-93 | Start (2400 Hr) NA | End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
	No Readings.		No Sample.			

D. O. (ppm): NA | ODOR: None | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	___ Bailer (Teflon®)
___ Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler NA	___ Bailer (Stainless Steel)
___ Submersible Pump NA	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: POOR | LOCK #: None

REMARKS: No lid to well casing. Extraction system in well going down well casing. No Sample port. Unable to get T.D. Unable to Sample.

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9204 | Temperature °F. ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: A-12

Signature: [signature] | Reviewed By: [signature] | Page 7 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2.5

EMCON ASSOCIATES

PROJECT NO. 0070-032-01 SAMPLE ID. A-9

PURGED BY: B. Stafford CLIENT NAME. Arco 4931

SAMPLED BY: NA LOCATION. 731 W. MacArthur Oakland, CA

TYPE: Ground Water V Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ____ 3 ____ 4 ____ 4.5 ____ 6 V Other ____

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): NR

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): NR

DEPTH OF WELL (feet): NR ACTUAL PURGE VOL. (gal.): NR

DATE PURGED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

DATE SAMPLED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
No	Sample	Port	or hole	for Sounder.		
	No	Sample.				

D. O. (ppm): NA ODOR: NR

COLOR (COBALT 0 - 100): NA TURBIDITY (NTU 0 - 200): NA

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump NA	____ Bailer (PVC)	____ DDL Sampler NA	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: OK LOCK #: None

REMARKS: No way to purge H2O manually No discharge hose No Readings No Sounder port No sample

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: MW-12

Signature: [signature] Reviewed By: [signature] Page 3 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2.5

EMCON ASSOCIATES

PROJECT NO: 0670-032.01 | SAMPLE ID: A-12 (25')

PURGED BY: B. Stafford | CLIENT NAME: Arco 4931

SAMPLED BY: B. Stafford | LOCATION: 731 W. MacArthur Bl. Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ | 3 X | 4 ___ | 4.5 ___ | 6 ___ | Other ___

CASING ELEVATION (feet/MSL): NA | VOLUME IN CASING (gal.): 7.10

DEPTH TO WATER (feet): 10.85 | CALCULATED PURGE (gal.): 21.30

DEPTH OF WELL (feet): 30.2 (ft. 35) | ACTUAL PURGE VOL. (gal.): 21.5

DATE PURGED: 4-1-93 | Start (2400 Hr): 1745 | End (2400 Hr): 1750

DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1752 | End (2400 Hr): 1753

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1747	7.0	7.43	702.	60.9	Brown	Heavy
1748	14.0	7.31	688.	61.7	"	"
1749	21.5	7.25	682.	62.4	"	"

D. O. (ppm): NA | ODOR: None | NA (COBALT 0 - 100) | NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
P Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 3283

REMARKS: ___

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9204 | Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: A-12

Signature: [signature] | Reviewed By: [signature] | Page 5 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2 5

EMCON ASSOCIATES

PROJECT NO: 0677-032.01 | SAMPLE ID: A-11 (27)

PURGED BY: B. Stafford / J. Williams | CLIENT NAME: Arco 4931

SAMPLED BY: B. Stafford / J. Williams | LOCATION: 731 W. MacArthur Blvd Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ | 3 X | 4 ___ | 4.5 ___ | 6 ___ | Other ___

CASING ELEVATION (feet/MSL): NA | VOLUME IN CASING (gal.): 6.45

DEPTH TO WATER (feet): 10.11 BS | CALCULATED PURGE (gal): 19.36

17.59 DEPTH OF WELL (feet): 7.27 | ACTUAL PURGE VOL. (gal.): 19.5

DATE PURGED: 4-1-93 | Start (2400 Hr): 14:05 | End (2400 Hr): 1413

DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1414 | End (2400 Hr): 1416

TIME (2400 Hr)	VOLUME (gal)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1408	6.5	5.53	725	67.5	Brown	Heavy
1410	13.0	6.21	699.	66.8	"	"
1412	19.5	6.31	694.	66.7	"	"

D. O. (ppm): NA | ODOR: None | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 3500

REMARKS: ___

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9204 | Temperature °F: 72.6

(EC 1000 716. / 1000.) (DI 4.68) (pH 7 free / 7.00) (pH 10 9.75 / 10.01) (pH 4 3.71 / ___)

Location of previous calibration: plt

Signature: [signature] | Reviewed By: [signature] | Page 10 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2 5

EMCON ASSOCIATES

PROJECT NO: 0670-232.01 | SAMPLE ID: H-12(28)

PURGED BY: B. Stafford | CLIENT NAME: Arco 4731

SAMPLED BY: B. Stafford | LOCATION: 7311 MacArthur Blvd Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ | 3 X | 4 ___ | 4.5 ___ | 6 ___ | Other ___

CASING ELEVATION (feet/MSL): NA | VOLUME IN CASING (gal.): 7.06

DEPTH TO WATER (feet): 10.67 | CALCULATED PURGE (gal.): 21.17

19.23 DEPTH OF WELL (feet): 29.9 | ACTUAL PURGE VOL. (gal.): 21.50

DATE PURGED: 4-1-93 | Start (2400 Hr): 1430 | End (2400 Hr): 1444

DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1445 | End (2400 Hr): 1446

TIME (2400 Hr)	VOLUME (gal)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1435	7.0	6.50	701.	66.7	Brown	Heavy
1439	14.0	6.56	685.	63.8	"	"
1443	21.5	6.58	684.	63.2	"	"

D. O. (ppm): NA | ODOR: None | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
___ Centrifugal Pump	X Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 22 68

REMARKS: ___

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9224 | Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: Dale H-12.

Signature: [signature] | Reviewed By: [signature] | Page 11 of 25

WATER SAMPLE FIELD DATA SHEET

Rev. 2 5/93

EMCON ASSOCIATES

PROJECT NO: 0670-032.01 | SAMPLE ID: F-13 (28)

PURGED BY: B. Stafford | CLIENT NAME: Arco 4931

SAMPLED BY: B. Stafford | LOCATION: 731 W. MacArthur Blvd Oakland, CA

TYPE: Ground Water X | Surface Water ___ | Treatment Effluent ___ | Other ___

CASING DIAMETER (inches): 2 ___ | 3 X | 4 ___ | 4.5 ___ | 6 ___ | Other ___

CASING ELEVATION (feet/MSL): NA | VOLUME IN CASING (gal.): 7.35

DEPTH TO WATER (feet): 9.18 | CALCULATED PURGE (gal.): 22.1

DEPTH OF WELL (feet): 25.3 | ACTUAL PURGE VOL. (gal.): 22.0

DATE PURGED: 4-1-93 | Start (2400 Hr): 1537 | End (2400 Hr): 1541

DATE SAMPLED: 4-1-93 | Start (2400 Hr): 1545 | End (2400 Hr): 1548

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
1538	7.5	6.29	729.	67.5	Clear	Clear
1539	15.0	6.36	730	67.4	"	"
1540	22.0	6.41	717.	67.1	"	"

D. O. (ppm): NA | ODOR: low | COLOR: NA (COBALT 0 - 100) | TURBIDITY: NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): MS/MSD

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
___ 2" Bladder Pump	___ Bailer (Teflon®)	___ 2" Bladder Pump	X Bailer (Teflon®)
X Centrifugal Pump	___ Bailer (PVC)	___ DDL Sampler	___ Bailer (Stainless Steel)
___ Submersible Pump	___ Bailer (Stainless Steel)	___ Dipper	___ Submersible Pump
___ Well Wizard™	___ Dedicated	___ Well Wizard™	___ Dedicated
Other: ___		Other: ___	

WELL INTEGRITY: OK | LOCK #: 2357

REMARKS: ___

Meter Calibration: Date: 4-1-93 | Time: 1340 | Meter Serial #: 9204 | Temperature °F: ___

(EC 1000 ___ / ___) (DI ___) (pH 7 ___ / ___) (pH 10 ___ / ___) (pH 4 ___ / ___)

Location of previous calibration: A-12

Signature: [signature] | Reviewed By: [signature] | Page 15 of 15

WATER SAMPLE FIELD DATA SHEET

Rev 2. 5/9

EMCON ASSOCIATES

PROJECT NO. 0670-032-01 SAMPLE ID. AR-1

PURGED BY: B. Stafford CLIENT NAME: Arco 4931

SAMPLED BY: N/A LOCATION: 731 W. MacArthur Oakland, CA

TYPE: Ground Water V Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ____ 3 ____ 4 ____ 4.5 ____ 6 X Other ____

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): N/A

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): N/A

DEPTH OF WELL (feet): NR ACTUAL PURGE VOL. (gal.): N/A

DATE PURGED: 4-1-93 Start (2400 Hr) N/A End (2400 Hr) N/A

DATE SAMPLED: 4-1-93 Start (2400 Hr) N/A End (2400 Hr) N/A

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
No	Sounder	Point.	No Way	to Sample		
	No	Sample.				

D. O. (ppm): N/A ODOR: None COLOR (COBALT 0 - 100): N/A TURBIDITY (NTU 0 - 200): N/A

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): N/A

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump N/A	____ Bailer (PVC)	____ DDL Sampler	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper N/A	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: OK LOCK #: None

REMARKS: No sounder Point No Way to get Sample. No Sample

Meter Calibration: Date: 4-1-93 Time: 1342 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: A-12

Signature: Brent Stafford Reviewed By: ____ Page 13 of 15

WATER SAMPLE FIELD DATA SHEET

Rev. 2

EMCON ASSOCIATES

PROJECT NO. 0470-032-01 SAMPLE ID: AR-2

PURGED BY: B. Stafford CLIENT NAME: Arco 4931

SAMPLED BY: NA LOCATION: 731 W. MacArthur Oakland, CA

TYPE: Ground Water V Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ____ 3 ____ 4 ____ 4.5 ____ 6 V Other ____

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): NA

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): NA

DEPTH OF WELL (feet): NR ACTUAL PURGE VOL. (gal.): NA

DATE PURGED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

DATE SAMPLED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
No	Sounder port.	No Sample.	No way to Sample.			

D. O. (ppm): NA ODOR: None NA (COBALT 0 - 100) NA (NTU 0 - 200)

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT		SAMPLING EQUIPMENT	
____ 2" Bladder Pump	____ Bailer (Teflon®)	____ 2" Bladder Pump	____ Bailer (Teflon®)
____ Centrifugal Pump NA	____ Bailer (PVC)	____ DDL Sampler NA	____ Bailer (Stainless Steel)
____ Submersible Pump	____ Bailer (Stainless Steel)	____ Dipper	____ Submersible Pump
____ Well Wizard™	____ Dedicated	____ Well Wizard™	____ Dedicated
Other: ____		Other: ____	

WELL INTEGRITY: OK LOCK #: None

REMARKS: No Sounder port. No way to get sample. No Sample.

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: AR-12

Signature: [signature] Reviewed By: [signature] Page 14 of 15

WATER SAMPLE FIELD DATA SHEET

Rev. 2

EMCON ASSOCIATES

PROJECT NO. 0670-032-01 SAMPLE ID: AR-3

PURGED BY: B. Stafford CLIENT NAME: Arco 4931

SAMPLED BY: NA LOCATION: 731 W. MacArthur Oakland, CA

TYPE: Ground Water V Surface Water ____ Treatment Effluent ____ Other ____

CASING DIAMETER (inches): 2 ____ 3 ____ 4 V 4.5 ____ 6 ____ Other ____

CASING ELEVATION (feet/MSL): NR VOLUME IN CASING (gal.): NA

DEPTH TO WATER (feet): NR CALCULATED PURGE (gal.): NA

DEPTH OF WELL (feet): NR ACTUAL PURGE VOL (gal.): NA

DATE PURGED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

DATE SAMPLED: 4-1-93 Start (2400 Hr) NA End (2400 Hr) NA

TIME (2400 Hr)	VOLUME (gal.)	pH (units)	E.C. (µmhos/cm @ 25° C)	TEMPERATURE (°F)	COLOR (visual)	TURBIDITY (visual)
	No Sampling point		No	sample.		

D. O. (ppm): NA ODOR: ND COLOR (COBALT 0 - 100): NA TURBIDITY (NTU 0 - 200): NA

FIELD QC SAMPLES COLLECTED AT THIS WELL (i.e. FB-1, XDUP-1): NA

PURGING EQUIPMENT

- ____ 2" Bladder Pump
- ____ Centrifugal Pump NA
- ____ Submersible Pump
- ____ Well Wizard™
- ____ Bailer (Teflon®)
- ____ Bailer (PVC)
- ____ Bailer (Stainless Steel)
- ____ Dedicated

Other: ____

SAMPLING EQUIPMENT

- ____ 2" Bladder Pump
- ____ DDL Sampler
- ____ Dipper NA
- ____ Well Wizard™
- ____ Bailer (Teflon®)
- ____ Bailer (Stainless Steel)
- ____ Submersible Pump
- ____ Dedicated

Other: ____

WELL INTEGRITY: OK LOCK #: none

REMARKS: No sounder hole. No way to get Sample No Sample.

Meter Calibration: Date: 4-1-93 Time: 1340 Meter Serial #: 9204 Temperature °F: ____

(EC 1000 ____ / ____) (DI ____) (pH 7 ____ / ____) (pH 10 ____ / ____) (pH 4 ____ / ____)

Location of previous calibration: A-12

Signature: [signature] Reviewed By: [signature] Page 15 of 15

APPENDIX B

GROUNDWATER RECOVERY SYSTEM ANALYTICAL REPORTS

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Project: 4031-93-4E, Arco 4931-Oakland

Enclosed are the results from 4 water samples received at Sequoia Analytical on April 21,1993. The requested analyses are listed below.

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3D91701	Water, A. Effl.	4/21/93	Priority Pollutants EPA 601
3D91702	Water, B-Mid	4/21/93	Priority Pollutants EPA 601
3D91703	Water, D-Inf.	4/21/93	Priority Pollutants EPA 601
3D91704	Water, Trip Blank	N.A.	EPA 601

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

7909 17

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID.	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W Winton Avenue	Sample Descript:	Water, A-Eff.	Received. Apr 21, 1993
Hayward, CA 94545	Analysis Method	EPA 601	Analyzed. Apr 23, 1993
Attention John Vargas	Lab Number	3D91701	Reported May 3, 1993

PURGEABLE HALOCARBONS (EPA 601)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Nokowhai D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W Winton Avenue	Sample Descript:	Water, Bid-Mid	Received: Apr 21, 1993
Hayward, CA 94545	Analysis Method:	EPA 601	Analyzed: Apr 23, 1993
Attention: John Vargas	Lab Number:	3D91702	Reported: May 3, 1993

PURGEABLE HALOCARBONS (EPA 601)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Nokowhai D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W. Winton Avenue	Sample Descript:	Water, D- Inf.	Received: Apr 21, 1993
Hayward, CA 94545	Analysis Method:	EPA 601	Analyzed: Apr 23, 1993
Attention: John Vargas	Lab Number	3D91703	Reported: May 3, 1993

PURGEABLE HALOCARBONS (EPA 601)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	3.5
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	1.5
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	11
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Nokowhai D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4031-93-4E, Arco 4931-Oakland	Sampled: N.A
2150 W. Winton Avenue	Sample Descript:	Water, Trip Blank	Received: Apr 21, 1993
Hayward, CA 94545	Analysis Method:	EPA 601	Analyzed: Apr 23, 1993
Attention: John Vargas	Lab Number:	3D91704	Reported: May 3, 1993

PURGEABLE HALOCARBONS (EPA 601)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W. Winton Avenue	Sample Descript	Water, A. Effl	Received: Apr 21, 1993
Hayward, CA 94545			
Attention: John Vargas	Lab Number:	3D91701	Reported: May 3, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W. Winton Avenue	Sample Descript:	Water, B-Mid	Received: Apr 21, 1993
Hayward, CA 94545			
Attention: John Vargas	Lab Number:	3D91702	Reported: May 3, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4031-93-4E, Arco 4931-Oakland	Sampled: Apr 21, 1993
2150 W. Winton Avenue	Sample Descript:	Water, D-inf	Received: Apr 21, 1993
Hayward, CA 94545			
Attention: John Vargas	Lab Number:	3D91703	Reported: May 3, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4031-93-4E, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3D91701 - 02, 04

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Chloro-benzene
Method:	EPA 601	EPA 601	EPA 601
Analyst:	V.Nunzir	V.Nunzir	V.Nunzir
Conc. Spiked:	25	25	25
Units:	µg/L	µg/L	µg/L
LCS Batch#:	VBLK042393	VBLK042393	VBLK042393
Date Prepared:	-	-	-
Date Analyzed:	4/23/93	4/23/93	4/23/93
Instrument I.D.#:	GCHP-8	GCHP-8	GCHP-8
LCS % Recovery:	88	100	96
Control Limits:	61-145	71-120	75-130
MS/MSD Batch #:	V3D80601	V3D80601	V3D80601
Date Prepared:	-	-	-
Date Analyzed:	4/23/93	4/23/93	4/23/93
Instrument I.D.#:	GCHP-8	GCHP-8	GCHP-8
Matrix Spike % Recovery:	92	156	104
Matrix Spike Duplicate % Recovery:	80	152	96
Relative % Difference:	14	2.6	8.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory only.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4031-93-4E Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3D91703

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Chloro-benzene
Method:	EPA 601	EPA 601	EPA 601
Analyst:	V.Nunzir	V.Nunzir	V.Nunzir
Conc. Spiked:	25	25	25
Units:	µg/L	µg/L	µg/L
LCS Batch#:	VBLK042793	VBLK042793	VBLK042793
Date Prepared:	-	-	-
Date Analyzed:	4/27/93	4/27/93	4/27/93
Instrument I.D.#:	GCHP-8	GCHP-8	GCHP-8
LCS % Recovery:	84	96	92
Control Limits:	61-145	71-120	75-130
MS/MSD Batch #:	V3D84310	V3D84310	V3D84310
Date Prepared:	-	-	-
Date Analyzed:	4/27/93	4/27/93	4/27/93
Instrument I.D.#:	GCHP-8	GCHP-8	GCHP-8
Matrix Spike % Recovery:	72	88	80
Matrix Spike Duplicate % Recovery:	76	92	80
Relative % Difference:	9.5	4.4	0.0

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory only.

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Getter Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4031-93-4E, Arco 4931-Oakland
Matrix: Water
QC Sample Grou: 3D91701 - 03

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Beryllium	Cadmium	Chromium	Nickel	Arsenic	Selenium	Antimony
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 206.2	EPA 206.2	EPA 206.2
Analyst:	C.Medelesser	C.Medelesser	C.Medelesser	C.Medelesser	K.Newberry	K.Newberry	K.Newberry
Conc. Spiked:	1000	1000	1000	1000	50	50	50
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK042293	BLK042293	BLK042293	BLK042293	BLK042293	BLK042293	BLK042293
Date Prepared:	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93
Date Analyzed:	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2	MTJA-3	MTJA-3	MTJA-3
LCS % Recovery:	107	103	103	104	110	117	112
Control Limits:	90-110	90-110	90-110	90-110	75-125	75-125	75-125
MS/MSD Batch #:	3D90101	3D90101	3D90101	3D90101	3D91604	3D91604	3D91604
Date Prepared:	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93
Date Analyzed:	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93	4/22/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2	MTJA-3	MTJA-3	MTJA-3
Matrix Spike % Recovery:	138	59	93	87	90	56	113
Matrix Spike Duplicate % Recovery:	127	66	94	90	90	56	128
Relative % Difference:	8.3	11	1.1	3.4	0.0	0.0	12

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used to validation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory only.

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680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4031-93-4E, Arco 4931-Oakland
Matrix: Water

QC Sample Grou: 3D91701 - 03

Reported: May 3, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Thallium	Mercury	Lead
Method:	EPA 279.2	EPA 245.1	EPA 239.2
Analyst:	K.Newberry	J.Martinez	S.Chin
Conc. Spiked:	50	1.0	50
Units:	µg/L	µg/L	µg/L
LCS Batch#:	BLK042293	BLK042793	BLK042293
Date Prepared:	4/22/93	4/27/93	4/22/93
Date Analyzed:	4/22/93	4/27/93	4/22/93
Instrument I.D.#:	MTJA-3	MPE-2	MV-1
LCS % Recovery:	101	95	82
Control Limits:	75-125	90-110	75-125
MS/MSD Batch #:	3D91604	3DA1002	3D91601
Date Prepared:	4/22/93	4/27/93	4/21/93
Date Analyzed:	4/22/93	4/27/93	4/22/93
Instrument I.D.#:	MTJA-3	MPE-2	MV-1
Matrix Spike % Recovery:	88	91	54
Matrix Spike Duplicate % Recovery:	91	94	52
Relative % Difference:	3.3	3.2	3.8

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note:

The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used to evaluation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory and

Products Company
Division of AtlanticRichfieldCompany

Chain of Custody

Task Order No. 4931-93-5

ility no. 4931	City (Facility) Oakland	Project manager (Consultant) John Vargas	Laboratory name SEQ
ager Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 510-783-7560	Fax no (Consultant) 510-783-1023
name Geraghty Ryan Inc	Address (Consultant) 2150 W. Winton Hayward CA		Contract number 01-01

Method of shipment: GR

Lab no	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas / Diesel	Oil and Grease 413.1 / 413.2	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 8240/8240	EPA 625/8270	TCLP Metals / VOA / VOA	CAM Metals EPA 6010/7000 / STLC / TTLC	Lead Org/DHS / Lead EPA 7420/7421	Priority Pollutant Metals
	3		✓		✓	✓	5/13/93	14:10			✓			X		9305630			01	X
	3		✓		✓	✓		14:15			✓			X					02	X
	3		✓		✓	✓		14:20						X					03	X
	1		✓		✓	✓								X						

Special detection Limit/reporting: Standard

Special QA/QC: Standard

Remarks: GR-#9909.7C

Lab number

Turnaround time
- Priority Rush 1 Business Day
- Rush 2 Business Days
- Expedited 5 Business Days
- Standard 10 Business Days ✓

Temperature received: COO

Sampled by sampler	Date 5-13-93	Time 7:00 pm	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: Date 5/13/93 Time 7:00

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Project: 4931-93-5, Arco 4931-Oakland

Enclosed are the results from 3 water samples received at Sequoia Analytical on May 13,1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3E63001	Water, A-EFF	5/11/93	EPA 5030/8010 Priority Pollutants
3E63002	Water, B-MID	5/11/93	EPA 5030/8010 Priority Pollutants
3E63003	Water, C-INF	5/11/93	EPA 5030/8010 Priority Pollutants

Please contact me if you have any questions. In the meantime, thank you for the opportun EPA 5030/8010 on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Project: 4931-93-5, Arco 4931-Oakland

Enclosed are the results from 3 water samples received at Sequoia Analytical on May 13,1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3E63001	Water, A-EFF	5/11/93	EPA 5030/8010
3E63002	Water, B-MID	5/11/93	EPA 5030/8010
3E63003	Water, C-INF	5/11/93	EPA 5030/8010

Please contact me if you have any questions. In the meantime, thank you for the opportun EPA 5030/8010 on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID	4931-93-5, Arco 4931-Oakland	Sampled	May 11, 1993
2150 W. Winton Avenue	Sample Descript	Water, A-EFF	Received	May 13, 1993
Hayward, CA 94545	Analysis Method	EPA 5030/8010	Analyzed	May 17 1993
Attention: John Vargas	Lab Number	3E63001	Reported	May 21, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachlonoe	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID	4931-93-5, Arco 4931-Oakland	Sampled	May 11, 1993
2150 W Winton Avenue	Sample Descript	Water, B-MID	Received	May 13, 1993
Hayward, CA 94545	Analysis Method	EPA 5030/8010	Analyzed	May 17, 1993
Attention: John Vargas	Lab Number	3E63002	Reported	May 21, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4931-93-5, Arco 4931-Oakland	Sampled	May 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, C-INF	Received	May 13, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed	May 17, 1993
Attention: John Vargas	Lab Number:	3E63003	Reported:	May 21, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	2.2
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	1.4
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	1.4
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	19
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan	Client Project ID:	4931-93-5, Arco 4931-Oakland	Sampled: May 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, A-EFF	Received: May 13, 1993
Hayward, CA 94545			Analyzed: May 17 1993
Attention: John Vargas	Lab Number:	3E63001	Reported: May 21, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Nikou hbat D. Hersey

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID	4931-93-5, Arco 4931-Oakland	Sampled: May 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, B-MID	Received: May 13, 1993
Hayward, CA 94545			Analyzed: May 17, 1993
Attention: John Vargas	Lab Number:	3E63002	Reported: May 21, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4931-93-5, Arco 4931-Oakland	Sampled: May 11, 1993
2150 W. Winton Avenue	Sample Descrip:	Water, C-IN	Received May 13 1993
Hayward, CA 94545			Analyzed May 17, 1993
Attention: John Vargas	Lab Number:	3E63003	Reported: May 21, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4931-93-5, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3E63001 -03

Reported: May 21, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Chloro-benzene	Beryllium	Cadmium	Chromium	Nicke
Method:	EPA 8010	EPA 8010	EPA 8010	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200 7
Analyst:	B.Samra	B.Samra	B.Samra	C.Medefesser	C.Medefesser	C.Medefesser	C.Medefesser
Conc. Spiked:	25	25	25	1000	1000	1000	1000
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	VBLK051793	VBLK051793	VBLK051793	BLK051793	BLK051793	BLK051793	BLK051793
Date Prepared:	-	-	-	5/17/93	5/17/93	5/17/93	5/17/93
Date Analyzed:	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Instrument I.D.#:	GCHP-9	GCHP-9	GCHP-9	MTJA-2	MTJA-2	MTJA-2	MTJA-2
LCS % Recovery:	92	92	80	97	93	95	94
Control Limits:	61-145	71-120	76-127	75-125	75-125	75-125	75-125
MS/MSD Batch #:	V3E63001	V3E63001	V3E63001	3E63002	3E63002	3E63002	3E63002
Date Prepared:	-	-	-	5/17/93	5/17/93	5/17/93	5/17/93
Date Analyzed:	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Instrument I.D.#:	GCHP-9	GCHP-9	GCHP-9	MTJA-2	MTJA-2	MTJA-2	MTJA-2
Matrix Spike % Recovery:	82	82	82	98	92	94	90
Matrix Spike Duplicate % Recovery:	88	88	82	99	93	95	94
Relative % Difference:	4.7	4.7	0.0	1.0	1.1	1.1	4.3

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory only

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: John Vargas

Client Project ID: 4931-93-5, Arco 4931-Oakland
Matrix: Water

QC Sample Group 3E63001-03

Reported May 21 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Antimony	Thallium	Lead	Arsenic	Selenium	Mercury
Method:	EPA 204.2	EPA 279.2	EPA 239.2	EPA 206.2	EPA 270.2	EPA 245.1
Analyst:	F.Contreras	F.Contreras	S.Chin	F.Contreras	F.Contreras	J.Martinez
Conc. Spiked:	50	50	50	50	50	1.0
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK051793	BLK051793	BLK051793	BLK051793	BLK051793	BLK051993
Date Prepared:	5/17/93	5/17/93	5/17/93	5/17/93	5/17/93	5/19/93
Date Analyzed:	5/18/93	5/18/93	5/18/93	5/19/93	5/19/93	5/19/93
Instrument I.D.#:	TJA-3	TJA-3	MV-1	TJA-3	TJA-3	MPE-2
LCS % Recovery:	84	98	102	102	102	90 .
Control Limits:	75-125	75-125	75-125	75-125	75-125	90-110
MS/MSD Batch #:	3E60916	3E60916	3E60916	BLK051793	BLK051793	3E44602
Date Prepared:	4/17/93	4/17/93	5/17/93	5/17/93	5/17/93	5/17/93
Date Analyzed:	5/17/93	5/17/93	5/18/93	5/19/93	5/19/93	5/17/93
Instrument I.D.#:	TJA-3	TJA-3	MV-1	TJA-3	TJA-3	MPE-2
Matrix Spike % Recovery:	72	20	100	68	58	100
Matrix Spike Duplicate % Recovery:	39	28	96	98	60	95
Relative % Difference:	7.4	33	4.1	28	3.4	5.1

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSDs are advisory only

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Gettler Ryan
2150 W. Winton Avenue
Hayward. CA 94545
Attention Joel Coffman

Project: 9909.70, Arco 4193

Enclosed are the results from 4 water samples received at Sequoia Analytical on June 14,1993. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
3F62101	Water, A	6/11/93	Priority Pollutants EPA 5030/8010 EPA 5030/8015/8020
3F62102	Water, B	6/11/93	Priority Pollutants EPA 5030/8010 EPA 5030/8015/8020
3F62103	Water, D	6/11/93	Priority Pollutants EPA 5030/8010 EPA 5030/8015/8020
3F62104	Water, T.B.	6/11/93	EPA 5030/8010 EPA 5030/8015/8020

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan	Client Project ID:	4931-93-4E, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Matrix:	Water	Received:	Jun 14, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8015/8020	Reported:	Jun 28, 1993
Attention: Joel Coffman	First Sample #:	3F62101		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 3F62101 A	Sample I.D. 3F62102 B	Sample I.D. 3F62103 D	Sample I.D. 3F62104 T.B.	Sample I.D.	Sample I.D.
Purgeable Hydrocarbons	50	N.D.	N.D.	N.D.	N.D.		
Benzene	0.50	N.D.	N.D.	N.D.	N.D.		
Toluene	0.50	N.D.	N.D.	N.D.	N.D.		
Ethyl Benzene	0.50	N.D.	N.D.	N.D.	N.D.		
Total Xylenes	0.50	N.D.	N.D.	N.D.	N.D.		
Chromatogram Pattern:		--	--	--	--		

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Analyzed:	6/19/93	6/19/93	6/19/93	6/19/93
Instrument Identification:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	98	102	100	99

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

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Gettler Ryan	Client Project ID	4931-93-4B, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, A	Received:	Jun 14, 1993
Hayward, CA 94545			Analyzed:	6/15,16/17/93
Attention: Joel Coffman	Lab Number:	3F62101	Reported:	Jun 28, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled: Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, B	Received: Jun 14, 1993
Hayward, CA 94545			Analyzed: 6/15 16/17.21.23/93
Attention: Joel Coffman	Lab Number:	3F62102	Reported: Jun 28, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	N.D.
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	N.D.
Zinc	10	17

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled: Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, D	Received: Jun 14, 1993
Hayward, CA 94545			Analyzed: 6/15.16/17/93
Attention: Joel Coffman	Lab Number:	3F62103	Reported: Jun 28, 1993

E.P.A. PRIORITY POLLUTANTS: METALS

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Antimony	5.0	N.D.
Arsenic	5.0	N.D.
Beryllium	10	N.D.
Cadmium	10	N.D.
Chromium	10	53
Copper	10	N.D.
Lead	5.0	N.D.
Mercury	0.20	N.D.
Nickel	50	N.D.
Selenium	5.0	N.D.
Silver	10	N.D.
Thallium	5.0	4.1
Zinc	10	34

Analytes reported as N.D. were not present above the stated limit of detection.

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, A	Received:	Jun 14, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 16, 1993
Attention: Joel Coffman	Lab Number:	3F62101	Reported:	Jun 28, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Nokowhat D. Herrera
Project Manager

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, B	Received:	Jun 14, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 16, 1993
Attention: Joel Coffman	Lab Number:	3F62102	Reported:	Jun 28, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Nokowhat D. Herrera
Project Manager

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, D	Received	Jun 14, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 16, 1993
Attention: Joel Coffman	Lab Number:	3F62103	Reported	Jun 28, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	3.6
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	23
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	1.1
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	2.4

Analytes reported as N.D. were not present above the stated limit of detection.

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Nokowhat D. Herrera
Project Manager

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Gettler Ryan	Client Project ID:	4931-93-4B, Arco 4931-Oakland	Sampled:	Jun 11, 1993
2150 W. Winton Avenue	Sample Descript:	Water, T.B.	Received:	Jun 14, 1993
Hayward, CA 94545	Analysis Method:	EPA 5030/8010	Analyzed:	Jun 16, 1993
Attention: Joel Coffman	Lab Number:	3F62104	Reported:	Jun 28, 1993

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Nokowhat D. Herrera
Project Manager

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62101 - 04

Reported Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
Conc. Spiked:	10	10	10	30
Units:	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	GBLK061993	GBLK061993	GBLK061993	GBLK061993
Date Prepared:	-	-	-	-
Date Analyzed:	6/19/93	6/19/93	6/19/93	6/19/93
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
LCS % Recovery:	95	95	95	97
Control Limits:	80-120	80-120	80-120	80-120
MS/MSD Batch #:	3F61801	3F61801	3F61801	3F61801
Date Prepared:	-	-	-	-
Date Analyzed:	6/19/93	6/19/93	6/19/93	6/19/93
Instrument I.D.#:	GCHP-2	GCHP-2	GCHP-2	GCHP-2
Matrix Spike % Recovery:	88	89	89	87
Matrix Spike Duplicate % Recovery:	94	96	94	93
Relative % Difference:	6.6	7.4	5.5	6.7

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62101

Reported: Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Beryllium	Cadmium	Chromium	Nickel
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
Conc. Spiked:	1.0	1.0	1.0	1.0
Units:	mg/L	mg/L	mg/L	mg/L
LCS Batch#:	BLK061693	BLK061693	BLK061693	BLK061693
Date Prepared:	6/16/93	6/16/93	6/16/93	6/16/93
Date Analyzed:	6/16/93	6/16/93	6/16/93	6/16/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
LCS % Recovery:	97	110	100	106
Control Limits:	90-110	90-110	90-110	90-110
MS/MSD Batch #:	3F65001	3F65001	3F65001	3F65001
Date Prepared:	6/16/93	6/16/93	6/16/93	6/16/93
Date Analyzed:	6/16/93	6/16/93	6/16/93	6/16/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
Matrix Spike % Recovery:	96	104	98	104
Matrix Spike Duplicate % Recovery:	96	114	97	103
Relative % Difference:	0.0	9.2	1.0	0.97

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62102

Reported: Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Beryllium	Cadmium	Chromium	Nickel
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
Conc. Spiked:	1.0	1.0	1.0	1.0
Units:	mg/L	mg/L	mg/L	mg/L
LCS Batch#:	BLK061593	BLK061593	BLK061593	BLK061593
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
LCS % Recovery:	101	105	103	107
Control Limits:	90-110	90-110	90-110	90-110
MS/MSD Batch #:	3F62102	3F62102	3F62102	3F62102
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
Matrix Spike % Recovery:	102	86	102	107
Matrix Spike Duplicate % Recovery:	100	89	101	105
Relative % Difference:	2.0	3.4	0.99	1.9

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62103

Reported: Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Beryllium	Cadmium	Chromium	Nickel
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
Conc. Spiked:	1.0	1.0	1.0	1.0
Units:	mg/L	mg/L	mg/L	mg/L
LCS Batch#:	BLK061593	BLK061593	BLK061593	BLK061593
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
LCS % Recovery:	102	103	102	103
Control Limits:	90-110	90-110	90-110	90-110
MS/MSD Batch #:	3F62103	3F62103	3F62103	3F62103
Date Prepared:	6/15/93	6/15/93	6/15/93	6/15/93
Date Analyzed:	6/15/93	6/15/93	6/15/93	6/15/93
Instrument I.D.#:	MTJA-2	MTJA-2	MTJA-2	MTJA-2
Matrix Spike % Recovery:	102	94	96	102
Matrix Spike Duplicate % Recovery:	101	87	94	101
Relative % Difference:	0.99	4.4	2.1	0.99

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note.
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results.

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Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62101 - 03

Reported: Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Mercury	Lead	Lead	Lead	Arsenic	Selenium	Antimony
Method:	EPA 245.1	EPA 239.2	EPA 239.2	EPA 239.2	EPA 206.2	EPA 270.2	EPA 204.2
Analyst:	A.McDonald	S.Chin	S.Chin	S.Chin	F.Contreras	F.Contreras	W.Thant
Conc. Spiked:	2.0	50	50	50	0.050	0.050	50
Units:	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LCS Batch#:	BLK061793	BLK061593	BLK061693	BLK061893	BLK061693	BLK061693	BLK061893
Date Prepared:	6/17/93	6/15/93	6/16/93	6/18/93	6/16/93	6/16/93	6/18/93
Date Analyzed:	6/17/93	6/16/93	6/16/93	6/18/93	6/21/93	6/21/93	6/23/93
Instrument I.D.#:	MPE-2	MV-1	MV-1	MV-1	TJA-3	TJA-3	MTJA-1
LCS % Recovery:	107	102	89	104	100	98	94
Control Limits:	90-110	75-125	75-125	75-125	75-125	75-125	75-125
MS/MSD Batch #:	3F62103	3F62102	3F67301	3F79401	3F67301	3F67301	3F79401
Date Prepared:	6/17/93	6/15/93	6/16/93	6/18/93	6/16/93	6/16/93	6/18/93
Date Analyzed:	6/17/93	6/16/93	6/16/93	6/18/93	6/21/93	6/21/93	6/23/93
Instrument I.D.#:	MPE-2	MV-1	MV-1	MV-1	TJA-3	TJA-3	MTJA-1
Matrix Spike % Recovery:	117	85	60	93	96	82	93
Matrix Spike Duplicate % Recovery:	115	83	60	86	92	90	94
Relative % Difference:	1.7	2.4	0.0	7.8	4.3	9.3	1.1

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note:
The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation and analytical methods employed for the samples. The LCS % recovery data is used for validation of sample batch results. Due to matrix effects, the QC limits for MS/MSD's are advisory only and are not used to accept or reject batch results

SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063
(415) 364-9600 • FAX (415) 364-9233

Gettler Ryan
2150 W. Winton Avenue
Hayward, CA 94545
Attention: Joel Coffman

Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water

QC Sample Group: 3F62101 - 03

Reported Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Thallium	Thallium	Antimony
Method:	EPA 279.2	EPA 279.2	EPA 204.2
Analyst:	W.Thant	W.Thant	W.Thant
Conc. Spiked:	50	50	50
Units:	µg/L	µg/L	µg/L
LCS Batch#:	BLK061893	BLK061593	BLK061593
Date Prepared:	6/18/93	6/15/93	6/15/93
Date Analyzed:	6/21/93	6/21/93	6/23/93
Instrument I.D.#:	MTJA-1	MTJA-1	MTJA-1
LCS % Recovery:	88	114	95
Control Limits:	75-125	75-125	75-125
MS/MSD Batch #:	3F79401	3F62102	3F62102
Date Prepared:	6/18/93	6/15/93	6/15/93
Date Analyzed:	6/21/93	6/21/93	6/23/93
Instrument I.D.#:	MTJA-1	MTJA-1	MTJA-1
Matrix Spike % Recovery:	35	54	89
Matrix Spike Duplicate % Recovery:	49	57	88
Relative % Difference:	33	5.4	1.1

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

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Client Project ID: 4931-93-4B, Arco 4931-Oakland
Matrix: Water
QC Sample Group: 3F62101 -04

Reported Jun 28, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloroethene	Trichloroethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	B. Samra	B. Samra	B. Samra
Conc. Spiked:	25	25	25
Units:	µg/L	µg/L	µg/L
LCS Batch#:	VBLK061693	VBLK061693	VBLK061693
Date Prepared:	-	-	-
Date Analyzed:	6/16/93	6/16/93	6/16/93
Instrument I.D.#:	GCPE-4	GCPE-4	GCPE-4
LCS % Recovery:	116	100	92
Control Limits:	61-145	71-120	76-127
MS/MSD Batch #:	V3F56832	V3F56832	V3F56832
Date Prepared:	-	-	-
Date Analyzed:	6/16/93	6/16/93	6/16/93
Instrument I.D.#:	GCPE-4	GCPE-4	GCPE-4
Matrix Spike % Recovery:	116	100	96
Matrix Spike Duplicate % Recovery:	108	100	92
Relative % Difference:	7.1	0.0	4.3

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

SEQUOIA ANALYTICAL

Nokowhat D. Herrera
Project Manager

Please Note.
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ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. 6 4193-93-4B

ARCO Facility no 4193	City (Facility) Oakland	Project manager (Consultant) Joel	Laboratory no. SEQ
ARCO engineer ~~Kyle~~ Mike Whelan	Telephone no. (ARCO)	Telephone no. (Consultant) 510-783-7560	Fax no. (Consultant) 510-783-1089
Consultant name Cecttler Ryan Inc	Address (Consultant) 2150 W. Winton Ave Hayward CA		Contract number 07-073

Method of shipment: 6R

Sample I.D.	Lab no	Container no	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid	Sampling date	Sampling time	BTEX 602/EPA 8020	BTEX/TPH EPA M602/8020/8015	TPH Modified 8015 Gas ☐ Diesel ☐	Oil and Grease 413.1 ☐ 413.2 ☐	TPH EPA 418.1/SM503E	EPA 601/8010	EPA 624/8240	EPA 625/8270	TCLP Metals ☐ VOA ☐ Semi VOA ☐	CAM Metals EPA 6010/7000 TTLC ☐ STLC ☐	Lead Org./DHS ☐ Lead EPA 7420/7421 ☐	Priority Pollutant 5 metals	
A		5		X		X	X	6-11-93	1500		X				X						X	
B		5				X	X		15:02		X				X						X	
D		5				X	X		15:04		X				X						X	
TB		2				X	X	—	—		X				X							

Special detection Limit/reporting: Standard

Special QA/QC: Standard

Remarks: 6R=# 9909-10

Lab number: 9306621 01-04

Condition of sample: OK

Temperature received: Cool

Relinquished by Sampler	Date 6-14-93	Time 12:25	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory L. M. Reed

Date 6-14-93 Time 12:25

Turnaround time

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

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