EMCON Associates
1921 Ringwood Avenue • San Jose, California 95131-1721 • (408) 453-7300 • Fax (408) 437-9526

HAZMAT

94 SEP -6 PM 3:53

Date: August 30, 1994
Project 0C75-005.24

To:

Ms. Susan Hugo
Alameda County Health Care Services Agency
Department of Environmental Health
80 Swan Way, Room 200
Oakland, California 94621

We are enclosing:

Copies	Description
1	Second Quarter 1994 Groundwater Monitoring Report for ARCO Service Station 771

For your:			Sent by:	
	X	Use		Regular Mail
		Approval		Standard Air
		Review		Courier
		Information	X	Other Certified Mail

Comments: Please call with any questions or comments.

John C. Young
Project Manager

EMCON Associates
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August 26, 1994
Project 0c75-005.24

Mr. Michael Whelan
Environmental Engineer
ARCO Products Company
Post Office Box 5811
San Mateo, California 94420

Re: Second quarter 1994 groundwater monitoring program results, ARCO service station 0771, Livermore, California

Dear Mr. Whelan:

This letter presents the results of the second quarter 1994 groundwater monitoring program at ARCO Products Company (ARCO) service station 0771, 899 Rincon Avenue, Livermore, California (Figure 1).

MONITORING PROGRAM RESULTS

The second quarter 1994 groundwater monitoring event was performed by Integrated Wastestream Management, Inc. (IWM) on June 13, 1994. Groundwater samples collected during second quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPHG), and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The groundwater sample from monitoring well MW-6 was also analyzed for total recoverable petroleum hydrocarbons (TRPH) and total petroleum hydrocarbons as diesel (TPHD) (Table 1). Certified analytical reports, chain-of-custody documentation, and field data sheets are presented in Appendix A. Depths to groundwater and analytical data are presented in Table 1. Figure 2 presents groundwater elevation data along with TPHG and benzene concentrations from the June 13, 1994 monitoring event.

SITE STATUS UPDATE

This update reports site activities performed during the second quarter of 1994 and the anticipated site activities for the third quarter of 1994.

Second Quarter 1994 Activities

- Quarterly groundwater monitoring report for first quarter 1994 prepared and submitted by RESNA Industries Inc.
- IWM performed second quarter 1994 groundwater monitoring event.

Work Anticipated Third Quarter 1994

- Prepare and submit quarterly groundwater monitoring report for second quarter 1994.
- Perform quarterly groundwater monitoring for third quarter 1994.

Please call if you have questions.

Sincerely,

EMCON Associates

John C. Young
Project Manager

Mark Smolley, R.G. #4650
Senior Project Geologist

Attachments: Table 1 - Summary of Groundwater Sample Analyses for ARCO Facility A-771
Figure 1 - Site Location
Figure 2 - Site Plan
Appendix A - Certified Analytical Report, Chain-of-Custody Documentation and Field Data Sheets

I NTEGRATED
W ASTESTREAM
M ANAGEMENT

A0771Q2.XLS

Table 1

Summary of Ground Water Sample Analyses for ARCO Facility A-771, Livermore, California

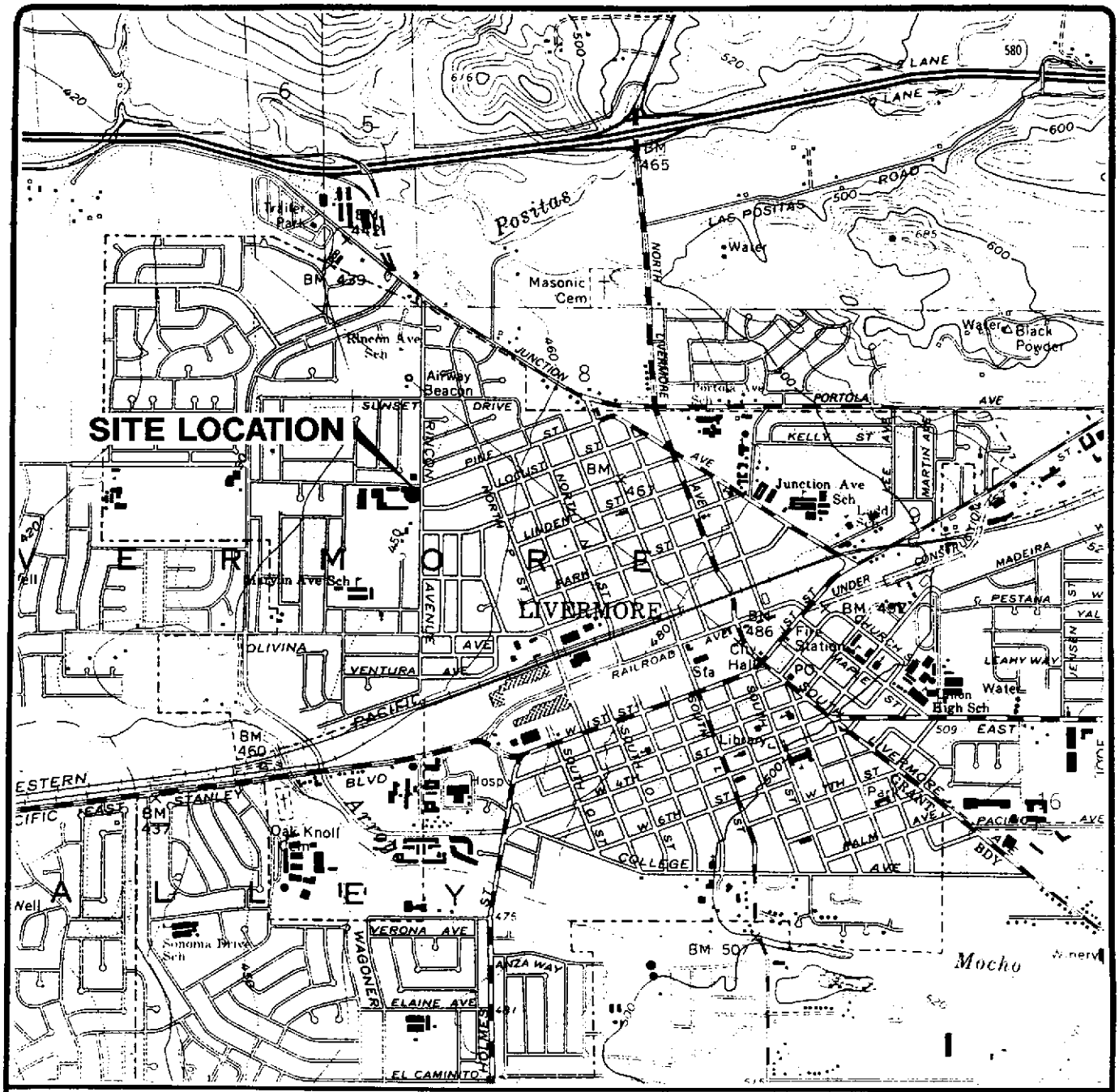
WELL NUMBER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	RW-1
DATE SAMPLED	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94
DEPTH TO WATER	29.86	27.28	28.71	28.88	29.29	29.20	27.94	35.10	27.69	28.23	33.39	29.48
SHEEN	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
PRODUCT THICKNESS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPHg	25,000	71,000	ND	17,000	28,000	2,300	21,000	ND	ND	ND	ND	4,900
BTEX												
BENZENE	600	4,100	ND	1,300	2,500	250	1,500	ND	ND	ND	ND	510
TOLUENE	160	4,600	ND	620	1,700	12	180	ND	ND	ND	ND	32
ETHLYBENZENE	500	1,700	ND	670	1,100	130	360	ND	ND	ND	ND	150
XYLENES	2,500	9,900	ND	1,600	3,900	31	1,900	ND	ND	ND	ND	170
EPA 418.1												
PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	0.80	NA	NA	NA	NA	NA	NA
TPHd												
DIESEL	NA	NA	NA	NA	NA	350+	NA	NA	NA	NA	NA	NA

FOOTNOTES:

Concentrations reported in ug/L (ppb).
TPHg = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015 Modified)
BTEX Distinction (USEPA Method 8020)
PCE = Tetrachloroethene (USEPA Method 8010)
* = Well inaccessible
** = Not sampled per consultant request.
+ = The sample contains a lower boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

DCE = cis-1, 2-Dichloroethene (USEPA Method 8010)
TCE = Trichloroethene (USEAP Method 8010)
ND = Not Detected.
NA = Not applicable.
FP = Floating product.

152753



Base map from USGS 7.5' Quad. Map:
Livermore, California. (Photorevised 1980).

N

Scale : 0 2000 4000 Feet

EMCON Associates

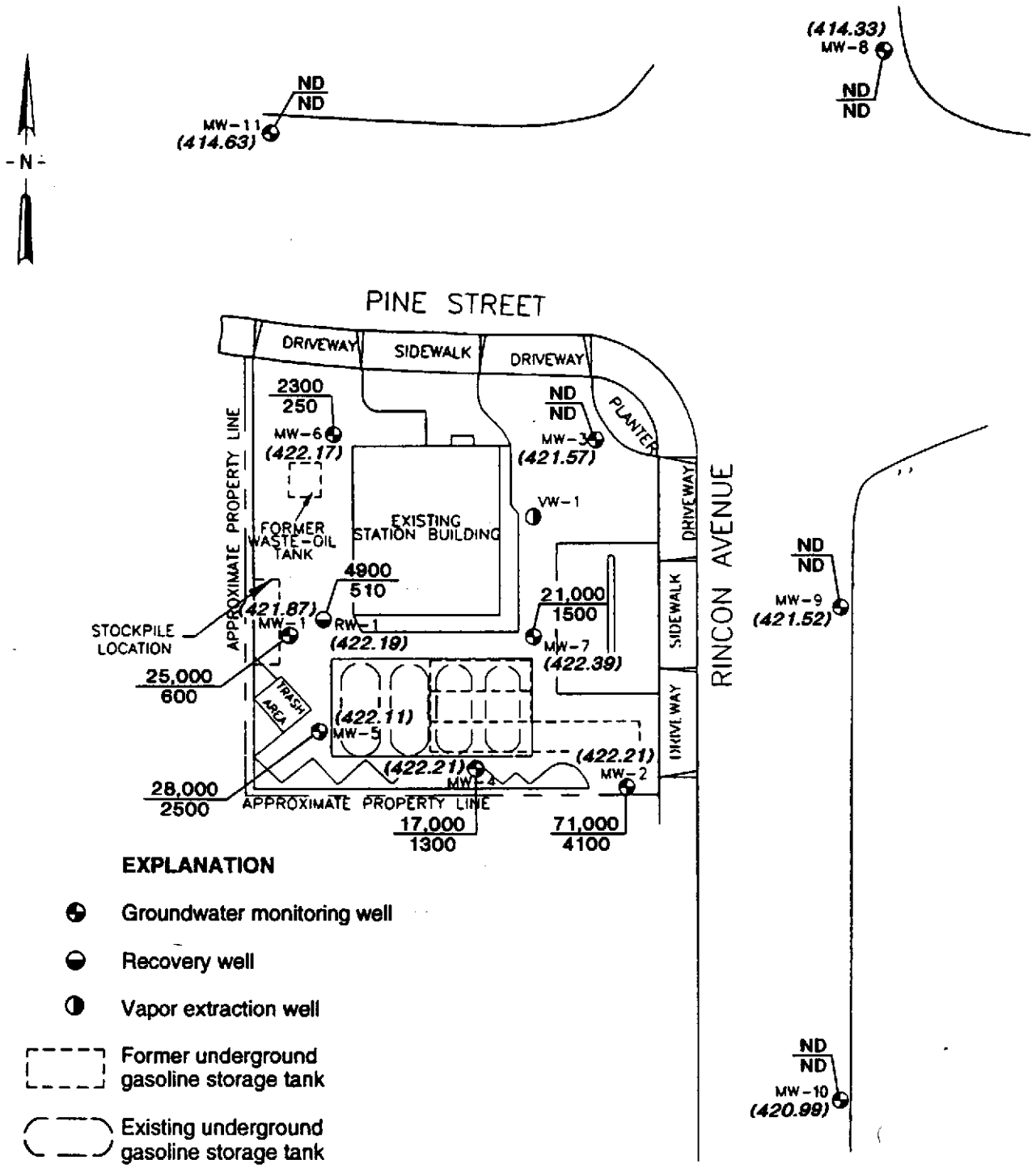
ARCO PRODUCTS COMPANY
SERVICE STATION 771, 899 RINCON AVENUE
QUARTERLY GROUNDWATER MONITORING
LIVERMORE, CALIFORNIA

SITE LOCATION

FIGURE
1

PROJECT NO.
C75-05.24

155812



EXPLANATION

- Groundwater monitoring well
- Recovery well
- Vapor extraction well
- Former underground gasoline storage tank
- Existing underground gasoline storage tank

(422.19) Groundwater elevation (Ft.-MSL); measured 6/13/94

4900 — TPHG concentration in groundwater (ppb)

510 — Benzene concentration in groundwater (ppb)

ND = Not detected

SCALE: 0 40 FEET

(Approximate)

Base map modified from RESNA, 1994.

EMCON Associates

ARCO PRODUCTS COMPANY
SERVICE STATION 771, 899 RINCON AVENUE
QUARTERLY GROUNDWATER MONITORING
LIVERMORE, CALIFORNIA

SITE PLAN

FIGURE 2

PROJECT NO. C75-05.24

APPENDIX A

CERTIFIED ANALYTICAL REPORT, CHAIN-OF-CUSTODY DOCUMENTATION AND FIELD DATA SHEETS

Columbia Analytical Services, Inc.

June 24, 1994

Service Request No. S940717

Gina Austin
Tom DeLon
IWM
950 Ames Avenue
Milpitas, CA 95035

Re: **ARCO Facility No. 771**

Dear Ms. Austin/Mr. DeLon:

Attached are the results of the water samples submitted to our lab on June 16, 1994. For your reference, these analyses have been assigned our service request number S940717.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted:

COLUMBIA ANALYTICAL SERVICES, INC.

Keoni A. Murphy
Laboratory Manager

Annelise J. Bazar
Regional QA Coordinator

KAM/ajb

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Acronyms

ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MRL	Method Reporting Limit
NA	Not Applicable
NAN	Not Analyzed
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected at or above the MRL
NR	Not Requested
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
VPH	Volatile Petroleum Hydrocarbons

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: 6/21/94
Date Analyzed: 6/23/94

Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: mg/L (ppm)

Sample Name	Lab Code	MRL	Result
MW-6 (34.3)	S940717-007	0.5	0.8
Method Blank	S940621-WB	0.5	ND

Approved By: Kathleen A Murphy Date: June 29, 1994

IAMRL/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: 6/20/94
Date Analyzed: 6/21/94

TPH as Diesel
EPA Method 3510/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name	Lab Code	MRL	Result
MW-6 (34.3)	S940717-007	50	350 *
Method Blank	S940620-WB	50	ND

* Sample contains a lower boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

Approved By: _____ Date: June 24 1994

IAMRL/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	IWM	**Service Request:**	S940717
Project:	ARCO Facility No. 771	**Date Collected:**	6/13/94
Sample Matrix:	Water	**Date Received:**	6/16/94
		Date Extracted:	NA
		Date Analyzed:	6/20/94

BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Analyte:	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes, Total
Units:	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)	ug/L (ppb)
Method Reporting Limit:	50	0.5	0.5	0.5	0.5
Sample Name	**Lab Code**				
MW-1 (36.1)	S940717-002	25,000	600	160	500	2,500
MW-2 (35.5)	S940717-003	71,000	4,100	4,600	1,700	9,900
MW-3 (34.1)	S940717-004	ND	ND	ND	ND	ND
MW-4 (35.2)	S940717-005	17,000	1,300	620	670	1,600
MW-5 (34.3)	S940717-006	28,000	2,500	1,700	1,100	3,900
MW-6 (34.3)	S940717-007	2,300	250	12	130	31
MW-7(36.3)	S940717-008	21,000	1,500	180	360	1,900
MW-8 (37.3)	S940717-009	ND	ND	ND	ND	ND
MW-9 (30.5)	S940717-010	ND	ND	ND	ND	ND
MW-10 (30.4)	S940717-011	ND	ND	ND	ND	ND
MW-11 (35.6)	S940717-012	ND	ND	ND	ND	ND
RW-1 (35.1)	S940717-013	4,900	510	32	150	170
Method Blank	S940620-WB	ND	ND	ND	ND	ND

Approved By: Kevin A Murphy Date: June 24, 1994

5ABTXGAS/061694

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771

Service Request: S940717
Date Analyzed: 6/23/94

Initial Calibration Verification (ICV) Summary
Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: ppm

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Hydorcarbon Mixture	40	43.0	108	90-110

Approved By: Kathleen M Murphy Date: June 24 1994

ICV25AL/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: 6/21/94
Date Analyzed: 6/23/94

Matrix Spike/Duplicate Matrix Spike Summary
Total Recoverable Petroleum Hydrocarbons
EPA Method 418.1
Units: mg/L (ppm)

Sample Name: MW-6 (34.3)
Lab Code: S940717-007

Analyte	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference
Hydrocarbon Mixture	8.0	8.0	0.77	8.26	8.26	94	94	57-127	<1

Approved By: _____ Date: Dec 24 1994

DMS1S/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: 6/20/94
Date Analyzed: 6/21/94

Surrogate Recovery Summary
TPH as Diesel
EPA Method 3510/California DHS LUFT Method

Sample Name	Lab Code	Percent Recovery p-Terphenyl
MW-6 (34.3)	S940717-007	87
MS	S940715-001MS	85
DMS	S940715-001DMS	77
Method Blank	S940620-WB	87

CAS Acceptance Limits: 66-123

Approved By: Kevin A Murphy Date: June 24, 1994

SUR1/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771

Service Request: S940717
Date Analyzed: 6/21/94

Initial Calibration Verification (ICV) Summary
TPH as Diesel
California DHS LUFT Method
Units: ppm

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
TPH as Diesel	500	488	98	90-110

Approved By: _____ Date: June 24 1994

ICV25AL/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: 6/20/94
Date Analyzed: 6/21/94

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Diesel
EPA Method 3510/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: Batch QC
Lab Code: S940715-001

Analyte	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference
TPH as Diesel	4.000	4.000	ND	4.280	4.010	107	100	61-141	7

Approved By: Kevin A Murphy Date: June 24, 1994

DMSIS/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: NA
Date Analyzed: 6/20/94

Surrogate Recovery Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method

Sample Name	Lab Code	Percent Recovery α,α,α-Trifluorotoluene
MW-1 (36.1)	S940717-002	104
MW-2 (35.5)	S940717-003	104
MW-3 (34.1)	S940717-004	101
MW-4 (35.2)	S940717-005	100
MW-5 (34.3)	S940717-006	101
MW-6 (34.3)	S940717-007	109
MW-7(36.3)	S940717-008	103
MW-8 (37.3)	S940717-009	96
MW-9 (30.5)	S940717-010	96
MW-10 (30.4)	S940717-011	98
MW-11 (35.6)	S940717-012	96
RW-1 (35.1)	S940717-013	97
MW-3 (34.1) MS	S940717-004MS	107
MW-3 (34.1) DMS	S940717-004DMS	107
Method Blank	S940620-WB	97

CAS Acceptance Limits: 69-116

Approved By: _____ Date: Dec 29/1994

SUR1/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771

Service Request: S940717
Date Analyzed: 6/20/94

Initial Calibration Verification (ICV) Summary
BTEX and TPH as Gasoline
EPA Methods 5030/8020/California DHS LUFT Method
Units: ppb

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Limits
Benzene	25	26.5	106	85-115
Toluene	25	25.3	101	85-115
Ethylbenzene	25	25.0	100	85-115
Xylenes, Total	75	73.7	98	85-115
Gasoline	250	240	96	90-110

Approved By: Karen A Murphy Date: June 24 1994

ICV25AL/060194

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: IWM
Project: ARCO Facility No. 771
Sample Matrix: Water

Service Request: S940717
Date Collected: 6/13/94
Date Received: 6/16/94
Date Extracted: NA
Date Analyzed: 6/20/94

Matrix Spike/Duplicate Matrix Spike Summary
TPH as Gasoline
EPA Methods 5030/California DHS LUFT Method
Units: ug/L (ppb)

Sample Name: MW-3 (34.1)
Lab Code: S940717-004

Analyte	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Limits	Relative Percent Difference
Gasoline	250	250	ND	275	273	110	109	67-121	<1

Approved By: Kevin M Murphy Date: June 24 1994

DMS1S/060194

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ARCO Products Company
Division of AtlanticRichfieldCompany

Task Order No. IWM-94-5CC

Chain of Custody

ARCO Facility no. A 771 | City (Facility) Livermore | Project manager (Consultant) TOM DeTon / J Young

ARCO engineer M.W. | Telephone no. (ARCO) 415 5712434 | Telephone no. (Consultant) 408/942 8955 | Fax no. (Consultant) 408/942 2499

Consultant name IWM / Round | Address (Consultant) 950 Ames av. Milp CA 95035

Laboratory name: Columbia

Contract number: 07077

Method of shipment: CAS COURIER

	Sample I.D.	Lab no.	Container no.	Matrix: Soil	Matrix: Water	Matrix: Other	Preservation: Ice	Preservation: Acid (HCl)	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 TOG 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 ☐	TPHd/Hoo 8015
	FB-1	1	2		✓		✓	✓	6-13-94	930		✓	✓									
36.1	MW-1	2	2		✓		✓	✓		1653		✓	✓									
35.5	MW-2	3	2		✓		✓	✓		1508		✓	✓									
34.1	MW-3	4	2		✓		✓	✓		1415		✓	✓									
35.2	MW-4	5	2		✓		✓	✓		1603		✓	✓									
34.8	MW-5	6	2		✓		✓	✓		1630		✓	✓									
34.3	MW-6	7	6		✓		✓	✓		1505		✓	✓		✓							✓
36.3	MW-7	8	2		✓		✓	✓		1416		✓	✓									
37.3	MW-8	9	2		✓		✓	✓		1240		✓	✓									
30.5	MW-9	10	2		✓		✓	✓		1205		✓	✓									
30.4	MW-10	11	2		✓		✓	✓		1135		✓	✓									
35.6	MW-11	12	2		✓		✓	✓		1317		✓	✓									
35.1	RW-1	13	2		✓		✓	✓		1327		✓	✓									

Special detection Limit/reporting

Special QA/QC

Remarks: Hold for FB-1

Lab number: SJ94-0717

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

Condition of sample: Good | Temperature received: Cool

Relinquished by sampler	Date	Time	Received by
Vince Valdis by Tom DeTon	6/16/94	950AM	Lina Austin

Relinquished by	Date	Time	Received by
Lina Austin	6-16-94	10:25	[signature] 6-16-94 10:25

Relinquished by	Date	Time	Received by laboratory	Date	Time

Distribution: White copy — Laboratory; Canary copy — ARCO Environmental Engineering; Pink copy — Consultant
APPC-3292 (2-91)

I NTEGRATED
W ASTESTREAM
M ANAGEMENT, INC.

July 13, 1994

Mr. Kyle Christie
ARCO Products Company
2000 Alameda De Las Pulgas
San Mateo, CA 94402

Dear Mr. Christie:

Attached are the field data sheets and analytical results for quarterly ground water sampling at ARCO Facility No. 771 in Livermore, California. Integrated Wastestream Management measured the depth to water and collected samples from wells at this site on June 13, 1994.

Sampling was carried out in accordance with the protocols described in the "Request for Bid for Quarterly Sampling at ARCO Facilities in Northern California".

Please call us if you have any questions.

Sincerely,
Integrated Wastestream Management

Tom DeLon
Project Manager

Walter H. Howe
Registered Geologist

REGISTERED GEOLOGIST
WALTER H. HOWE
No. 730
Exp. 4/96
STATE OF CALIFORNIA

950 AMES AVENUE MILPITAS, CA. 95035 (408) 942-8955

I NTEGRATED
W ASTESTREAM
M ANAGEMENT

A0771Q2.XLS

Summary of Ground Water Sample Analyses for ARCO Facility A-771, Livermore, California

WELL NUMBER	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	RW-1
DATE SAMPLED	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94	6/13/94
DEPTH TO WATER	29.86	27.28	28.71	28.88	29.29	29.20	27.94	35.10	27.69	28.23	33.39	29.48
SHEEN	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE
PRODUCT THICKNESS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPHg	25,000	71,000	ND	17,000	28,000	2,300	21,000	ND	ND	ND	ND	4,900
BTEX												
BENZENE	600	4,100	ND	1,300	2,500	250	1,500	ND	ND	ND	ND	510
TOLUENE	160	4,600	ND	620	1,700	12	180	ND	ND	ND	ND	32
ETHLYBENZENE	500	1,700	ND	670	1,100	130	360	ND	ND	ND	ND	150
XYLENES	2,500	9,900	ND	1,600	3,900	31	1,900	ND	ND	ND	ND	170
EPA 418.1												
PETROLEUM HYDROCARBONS	NA	NA	NA	NA	NA	0.80	NA	NA	NA	NA	NA	NA
TPHd												
DIESEL	NA	NA	NA	NA	NA	350+	NA	NA	NA	NA	NA	NA

FOOTNOTES:

Concentrations reported in ug/L (ppb).
TPHg = Total Purgeable Petroleum Hydrocarbons (USEPA Method 8015 Modified)
BTEX Distinction (USEPA Method 8020)
PCE = Tetrachloroethene (USEPA Method 8010)
* = Well inaccessible
** = Not sampled per consultant request.

+ = The sample contains a lower boiling point hydrocarbon mixture quantitated as diesel. The chromatogram does not match the typical diesel fingerprint.

DCE = cis-1, 2-Dichloroethene (USEPA Method 8010)
TCE = Trichloroethene (USEAP Method 8010)
ND = Not Detected.
NA = Not applicable.
FP = Floating product.

950 AMES AVENUE MILPITAS, CA 95035 (408) 942-8955

FIELD REPORT

Depth To Water / Floating Product Survey

Site Arrival Time:

Site Departure Time:

Weather Conditions:

DTW: Well Box or Well Casing (circle one) — Well Casing circled

Project No.:

Location: 899 Rincon and Pine

Date: June 13, 1994

Client / Station#: Arco 771

Field Technician: Vince / Cisco

Day of Week: Monday

DTW ORDER	WELL ID	SURFACE SEAL	LID SECURE	GASKET	LOCK	EXPANDING CAP	TOTAL DEPTH (Feet)	FIRST DEPTH TO WATER (Feet)	SECOND DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	SHEEN (Y=YES, N=NO)	COMMENTS	MATERIALS
11	MW-1	OK	Yes	OK	OK	OK	40.60	29.86	29.86	N/A	N/A	N	4" Behind AM/PM / sump	3/4
9	MW-2	OK	Yes	OK	OK	OK	37.90	27.28	27.28	N/A	N/A	N	4" Skimmer in Well / Sump	3/4
5	MW-3	OK	Yes	OK	OK	OK	39.60	28.71	28.71	N/A	N/A	N	4" Arco corner Planter Pine/Rincon	15/16
10	MW-4	OK	Yes	OK	OK	OK	41.10	28.88	28.88	N/A	N/A	N	4" [illegible] Planter area Sump	3/4
12	MW-5	OK	Yes	OK	OK	OK	41.10	29.29	29.29	N/A	N/A	N	4" Parking Spot Dumpster / Sump	3/4
6	MW-6	OK	Yes	OK	OK	OK	43.30	29.20	29.20	N/A	N/A	N	4" Arco Pine Driveway	15/16
8	MW-7	OK	Yes	OK	OK	OK	39.70	27.94	27.94	N/A	N/A	N	4" By Pumps / Sump.	3/4
3	MW-8	OK	Yes	OK	OK	OK	41.70	35.10+	35.10+	N/A	N/A	N	2" Corner Pine/Rincon	15/16
2	MW-9	OK	Yes	OK	OK	OK	40.20	27.69	27.69	N/A	N/A	N	2" Eastern Rincon	15/16
1	MW-10	OK	Yes	OK	OK	OK	36.10	28.23	28.23	N/A	N/A	N	2" Middle Rincon	~~[illegible]~~ 15/16
4	MW-11	OK	Yes	OK	OK	OK	38.60	33.39	33.39	N/A	N/A	N	2" Pine	15/16
7	RW-1	OK	Yes	OK	none	none	39.70	29.48	29.48	N/A	N/A	N	6" By Corner dumpster	3/8 Allen

PAGE ___ OF ___ DATE: 6-13-94 CLIENT/STATION #: Arco 771 ADDRESS: 889 Rincon Av.

WELL ID: MW-10 TD 36.10 - DTW 28.23 x 0.17 (Gal./Linear Ft.) x 3 (Casing Volume) = 4.01 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1124 END (2400 HR) 1129
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1135 DTW: 30.4

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1125	1	7.75	1.17	77.5	cloudy
1126	2	7.76	1.03	77.2	cloudy
1128	3	7.49	1.01	76.8	cloudy
1129	4	7.45	1.08	76.3	cloudy

Total purge: 4
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

WELL ID: MW-9 TD 40.20 - DTW 27.69 x 0.17 (Gal./Linear Ft.) x 3 (Casing Volume) = 6.38 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1156 END (2400 HR) 1202
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1205 DTW: 30.5

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1158	1.5	7.43	0.66	76.4	cloudy
1159	2.5	7.42	0.55	76.2	cloudy
1200	4	7.41	0.53	75.8	cloudy
1202	6.5	7.44	0.45	75.3	cloudy

Total purge: 6.5
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

WELL ID: MW-8 TD 41.70 - DTW 35.10+ x 0.17 (Gal./Linear Ft.) x 3 (Casing Volume) = 3.36 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1225 END (2400 HR) 1238
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1240 DTW: 37.3

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1228	1	7.51	0.38	71.4	cloudy
1233	2	7.50	0.37	69.2	cloudy
1238	3.5	7.47	0.35	68.9	cloudy

Total purge: 3.5
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

WELL ID: MW-11 TD 38.60 - DTW 33.39 x 0.17 (Gal./Linear Ft.) x 3 (Casing Volume) = 2.65 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1252 END (2400 HR) 1313
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1317 DTW: 35.6

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1255	.5	7.26	6.39	70.1	cloudy
1309	1.5	7.17	0.40	70.2	cloudy
1313	2.5	7.10	0.41	70.2	cloudy

Total purge: 2.5
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS:

PRINT NAME: Francisco Arvizu SIGNATURE: Francisco Arvizu

CASING DIAMETER (inches): 2 3 4 6 8 12 Other:

GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other:

PAGE ___ OF ___ DATE: 6-13-94 CLIENT/STATION #: Arco 771 ADDRESS: 847 Rincon Ave. Livermore

2

WELL ID: MW-7 TD 39.70 DTW 27.94 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 23.28 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1359 END (2400 HR) 1413
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1416 DTW: 36.3

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1403	4	7.13	0.96	69.8	clear
1408	10	7.11	0.94	69.6	clear
1413	14	7.09	0.92	69.4	clear

Total purge: 14
PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: Well pumped dry at 14 gallons

1

WELL ID: RW-1 TD 39.70 DTW 29.48 x [illegible] Gal. / Linear Ft. x 5.2 (Casing Volume) - 30.64 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1309 END (2400 HR) 1324
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1327 DTW: 35.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1312	3	6.34	3.77	68.9	cloudy
1316	12	6.96	0.95	69.5	clear
1320	21	6.90	0.99	69.1	clear
1324	24	6.89	1.00	68.8	clear

Total purge: 24
PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: Well pumped dry at 24 gallons

3

WELL ID: MW-2 TD 37.90 DTW 27.28 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 21.02 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1448 END (2400 HR) 1506
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1508 DTW: 35.5

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1454	5	7.15	0.97	69.9	cloudy (black)
1457	10	7.02	0.96	70.4	cloudy black
1502	15	7.01	1.01	70.1	cloudy
1506	19	7.04	0.97	69.8	cloudy

Total purge: 19
PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: Well pumped dry at 19 gallons.

4

WELL ID: MW-4 TD 41.10 DTW 28.88 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 24.19 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1547 END (2400 HR) 1600
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1603 DTW: 35.2

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1530	5	7.12	1.08	70.6	cloudy
1555	10	6.96	1.09	70.1	cloudy dark
1600	15	6.94	1.08	69.8	cloudy

Total purge:
PURGING EQUIP.: Centrifugal Pump / Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: Well pumped dry at 15 gallons

PRINT NAME: Vince Valdes SIGNATURE: [signature]

CASING DIAMETER (inches): 2 3 4 6 8 12 Other:
GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other:

#1 - 1653 3/4-1

PAGE ___ OF ___ DATE: 6-13-94 CLIENT/STATION #: Arco 771 ADDRESS: 899 Rincon Ave. Livermore

WELL ID: MW-3 TD 39.60 DTW 28.71 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 21.56 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1355 END (2400 HR) 1409
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1415 DTW: 34.1

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1358	3	7.55	0.41	76.8	CLEAR
1402	10	7.40	0.40	76.2	CLEAR
1405	15	7.34	0.44	75.7	CLEAR
1409	18	7.30	0.43	75.4	CLEAR

Total purge: 18
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: WELL PUMPED DRY AT 18 GALLONS

WELL ID: MW-6 TD 43.30 DTW 29.20 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 27.91 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1444 END (2400 HR) 1500
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1505 DTW: 36.9

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1446	3	7.49	0.41	73.2	CLEAR
1449	10	7.45	0.40	72.2	CLEAR
1454	18	7.35	0.39	71.9	CLEAR
1500	24	7.40	0.42	71.6	CLEAR

Total purge: 24
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: WELL PUMPED DRY AT 24 GALLONS.

WELL ID: MW-5 TD 41.10 DTW 29.29 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 23.38 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1611 END (2400 HR) 1624
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1630 DTW: 34.3

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1615	5	8.13	0.45	75.7	CLEAR
1618	12	7.62	0.44	75.6	CLEAR
1624	17	7.58	0.45	75.4	CLEAR

Total purge: 17
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: WELL PUMPED DRY AT 17 GALLONS

WELL ID: MW-1 TD 40.60 DTW 29.86 x 0.66 (Gal. / Linear Ft.) x 3 (Casing Volume) - 21.26 (Calculated Purge)

DATE PURGED: 6-13-94 START (2400 HR): 1611 END (2400 HR) 1625
DATE SAMPLED: 6-13-94 TIME (2400 HR): 1640 DTW: 33.2

TIME (2400 HR)	VOLUME (GAL)	pH (UNITS)	(E.C. X 1,000) (UMHOS/CM@25 C)	TEMP. (F)	COLOR (VISUAL)
1614	4	7.41	0.45	73.0	Cloudy
1618	11	7.38	0.44	72.5	Cloudy
1621	17	7.36	0.44	71.9	Clear
1625	21	7.34	0.43	70.9	Clear

Total purge: 21
PURGING EQUIP.: Centrifugal Pump Bailer Disp. SAMPLING EQUIP: Bailer Disp.
REMARKS: Done By Vince Vasquez

PRINT NAME: Francisco Abarzar SIGNATURE: Francisco Abarzar

CASING DIAMETER (inches): 2 3 4 6 8 12 Other: ___
GALLON/LINEAR FOOT: 0.17 0.38 0.66 1.5 2.6 5.8 Other: ___