



## **Epigene International**

CONSULTING GEOLOGISTS

November 14, 1995

Mr. J. W. Silveira  
J. W. Silveira Company  
499 Embarcadero  
Oakland, CA 94606

Subject: Quarterly Monitoring Report for Site Located at 2301 East 12th Street,  
Oakland, Third Quarter 1995

Dear Mr. Silveira,

The purpose of this report is to provide data regarding the results of investigations that have been carried out at the subject site during the second quarter of 1995. The site is located at the southwest corner of the intersection of East 12th Street and 23rd Ave. in Oakland. The location of the site is shown on Figure 1. A site plan is shown on Figure 2. The former tenant at the site, Alejo Auto Repair Shop vacated the property in June 1994 and the site continues to be vacant.

### **GROUNDWATER GRADIENT**

In the past, groundwater elevations for the project wells were relative to an assumed elevation for the top of casing of MW-1. The top of casing elevations were resurveyed on June 20, 1995 using an automatic level. The elevations are now tied to a City of Oakland sea level datum. The revised elevations are tabulated on Table 1. The data from the most recent gauging events were recalculated using the new datum and are also presented on Table 1.

Gauging of the depth to groundwater was carried out for each project well on October 16, 1995 prior to any purging of the wells. An electronic probe was used to measure the depth to groundwater from the surveyed mark on the top of the casing. The probe is calibrated to hundredths of a foot. Several of the wells had significant vapor pressure and up to 2.5 hours were required for the water level in the wells to stabilize. The groundwater elevations were calculated and are presented on Figure 3. Groundwater elevation contours are also plotted on Figure 3.

In addition to the contouring, a direction and slope of the gradient was also calculated by a graphical solution to a three-point problem based on the groundwater elevations of MW-1, MW-5 and MW-6. The results of this calculation are plotted on Figure 3. The direction of the gradient is generally consistent with the groundwater elevation contouring and most of the more recent previous calculations.

### **GROUNDWATER SAMPLING**

Groundwater samples were collected on October 16 from all of the project wells. The wells were purged of approximately five casing volumes prior to sampling by bailing or pumping with a purge pump. Purge water was placed in new 55 gallon drums and left on the site. The samples were collected using a dedicated bailer for each well. The samples were placed in appropriate sample containers provided by the laboratory. After labeling each sample, it was stored in a cooled ice chest and transferred to a State certified laboratory under chain-of-custody control.

The requested analysis for each sample was based on the original Workplan, amendment and the results of the past quarter sampling and analysis. The results of the water samples are summarized for each well in Appendix B which also includes the results of previous data for each well. In addition, LUFT metals were run for the samples from MW-

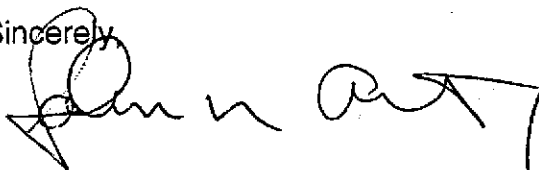
Quarterly Monitoring Report  
2301 East 12th Street, Oakland  
November 14, 1995  
Page 3

2, MW-3 and EW-1. These results are included in Appendix A.

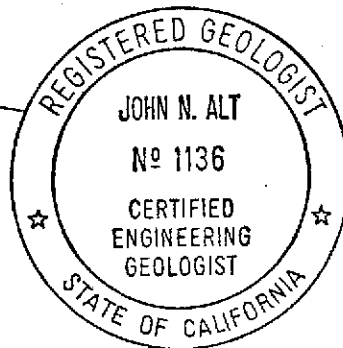
The Certified Laboratory Report and chain-of custody documentation are included in Appendix A. Significant levels of contamination continue to be present in all of the project wells. Summary graphs showing concentrations of contamination for each well through time are presented in Appendix C.

Other work for the site during this quarter included engineering of the proposed remediation system and preparation of cost estimates for the purchase and installation of the system. Should you have any questions, please contact the undersigned.

Sincerely,



John N. Alt, CEG No. 1136



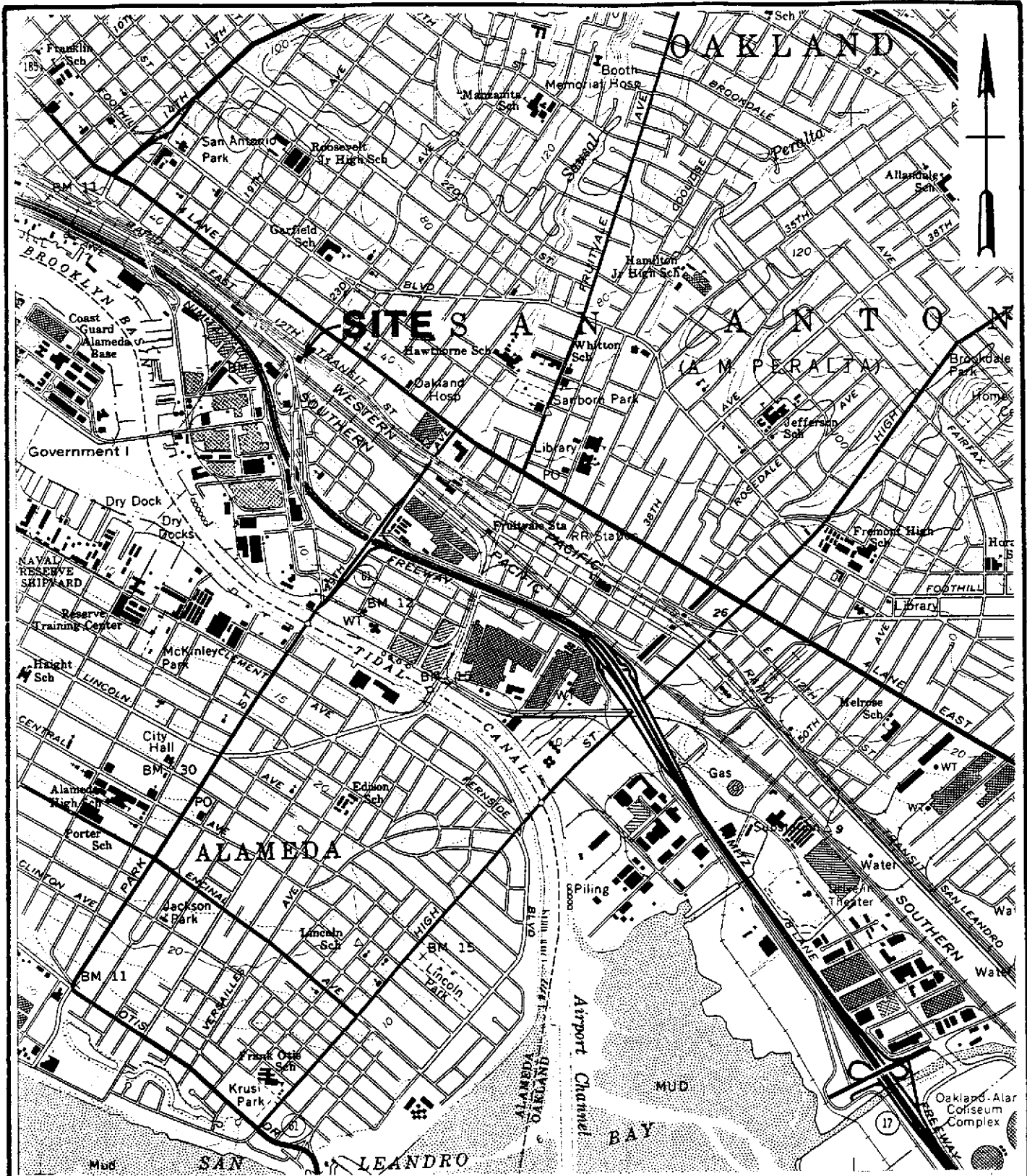
Attachments

cc: Mr. Barney Chan, Alameda County Dept. of Environmental Health  
Mr. Robert Shapiro, Esq.

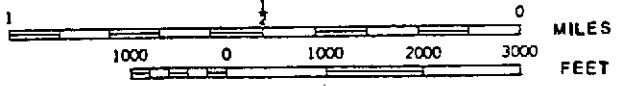
Summary of Groundwater Elevations and Gradients for site at 2301 East 12th Street, Oakland. October 16, 1994 through October 16, 1995

Well Number	Oct. 16, '94	February 13, 1995		June 20, 1995		October 16, 1995	
	Groundwater Elevation	Change in GW elevation	Groundwater Elevation	Change in GW elevation	Groundwater Elevation	Change in GW elevation	Groundwater Elevation
MW-1	7.10'	+1.44'	8.54'	- 0.07'	8.47'	-1.21'	7.26'
MW-2	6.66'	+2.46'	9.12'	- 0.25'	8.87'	-1.96'	6.91'
MW-3	6.72'	+1.71'	8.43'	+0.02'	8.45'	-1.43'	7.02'
MW-4	6.29'	+1.38'	7.67'	- 0.18'	7.49'	-0.83'	6.66'
MW-5	5.86'	+1.41'	7.27'	- 0.19'	7.08'	-0.81'	6.27'
MW-6	7.08'	+2.81'	9.89'	- 0.40'	9.49'	-1.86'	7.63'
EW-1	6.90'	+2.58'	9.48'	- 0.05'	9.43'	-2.03'	7.40'
Average	6.66'	+1.97'	8.63'	- 0.16'	8.47'	-1.45'	7.02'
		February 13, 1995		June 20, 1995		October 16, 1995	
		Change		Change		Change	
Groundwater Gradient	0.02 ft./ft.	+0.03	0.05 ft./ft.	- 0.02	0.03 ft./ft.	-0.01	0.02 ft./ft.
Gradient Direction	N 58 W	38 deg. N	N 20 W	14 deg. W	N 34 W	1 deg. W	N 35 W

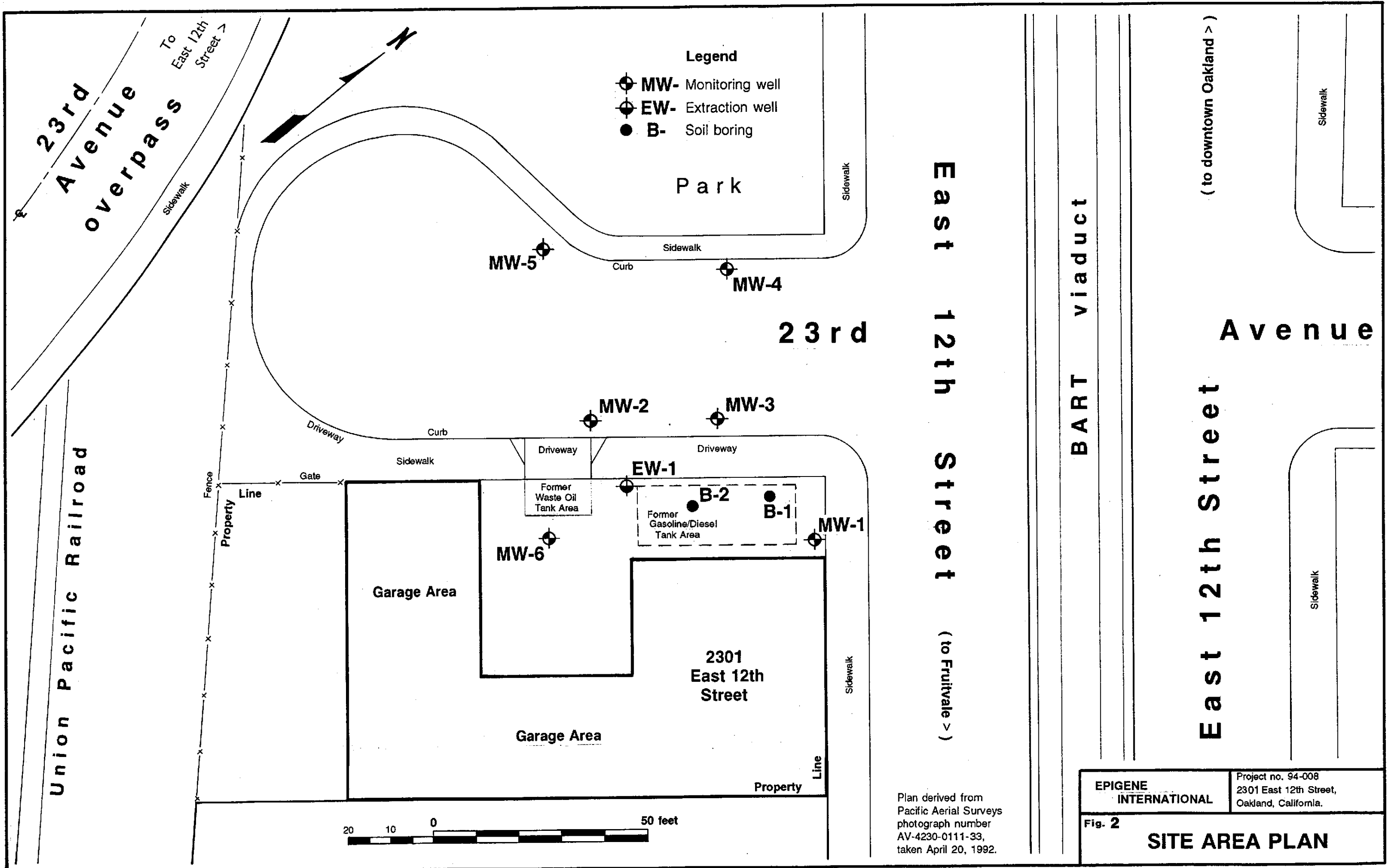
NOTE: Groundwater elevations for October 16, 1994 through February 13, 1995 have been adjusted from the elevations given in the reports for this period. They are based on the Top Of Casing elevations surveyed by Epigene International on June 20, 1995.



Base map from U.S.G.S. 7 1/2' series  
Oakland East quadrangle, 1980.



<b>EPIGENE INTERNATIONAL</b>	East 12th Street, Oakland, California.
Fig. 1	
<b>SITE LOCATION MAP</b>	



**Legend**

- ⊕ MW- Monitoring well
- ⊕ EW- Extraction well
- B- Soil boring

Plan derived from Pacific Aerial Surveys photograph number AV-4230-0111-33, taken April 20, 1992.

<b>EPIGENE INTERNATIONAL</b> Fig. 2	Project no. 94-008 2301 East 12th Street, Oakland, California.
	<b>SITE AREA PLAN</b>



APPENDIX A

CERTIFIED LABORATORY REPORT



McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

10/24/95


Dear John:

Enclosed are:

- 1). the results of 7 samples from your # 95-008; 2301 E. 12th St. project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,



Edward Hamilton



Epigene International 38750 Paseo Padre Pkwy, # A 11 Fremont, CA 94536	Client Project ID: # 95-008; 2301 E. 12th St.	Date Sampled: 10/16/95
		Date Received: 10/17/95
	Client Contact: John Alt	Date Extracted: 10/17/95
	Client P.O:	Date Analyzed: 10/18-10/19/95

**Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel \***

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) <sup>+</sup>	% Recovery Surrogate
57560	EW-1	W	940,d,a	95
57561	MW-1	W	2700,d,h	101
57562	MW-2	W	31,000,d,a	108
57563	MW-3	W	1900,d,a	98
57564	MW-4	W	1100,d	102
57565	MW-5	W	940,d	102
57566	MW-6	W	770,d	100
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	
	S		1.0 mg/kg	

\* water samples are reported in ug/L, soil samples in mg/kg, and all TCLP and STLC extracts in mg/L

# cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.



Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-008; 2301 E. 12th St.	Date Sampled: 10/16/95
		Date Received: 10/17/95
	Client Contact: John Alt	Date Extracted: 10/19/95
	Client P.O:	Date Analyzed: 10/19-10/24/95

## Volatile Halocarbons

EPA method 601 or 8010

Lab ID	57560	57561	57562	57563
Client ID	EW-1	MW-1	MW-2	MW-3
Matrix	W	W	W	W
Compound	Concentration*			
Bromodichloromethane	ND< 2.0	ND	ND	ND
Bromoform <sup>(b)</sup>	ND< 2.0	ND	ND	ND
Bromomethane	ND< 2.0	ND	ND	ND
Carbon Tetrachloride <sup>(c)</sup>	ND< 2.0	ND	ND	ND
Chlorobenzene	ND< 2.0	ND	5.1	ND
Chloroethane	ND< 2.0	ND	ND	ND
2-Chloroethyl Vinyl Ether <sup>(d)</sup>	ND< 2.0	ND	ND	ND
Chloroform <sup>(e)</sup>	ND< 2.0	ND	ND	ND
Chloromethane	ND< 2.0	ND	ND	ND
Dibromochloromethane	ND< 2.0	ND	ND	ND
1,2-Dichlorobenzene	ND< 2.0	ND	ND	ND
1,3-Dichlorobenzene	ND< 2.0	ND	ND	ND
1,4-Dichlorobenzene	ND< 2.0	ND	ND	ND
Dichlorodifluoromethane	ND< 2.0	ND	ND	ND
1,1-Dichloroethane	ND< 2.0	ND	ND	ND
1,2-Dichloroethane	ND< 2.0	ND	ND	ND
1,1-Dichloroethene	ND< 2.0	ND	ND	ND
cis 1,2-Dichloroethene	24	0.84	ND	7.1
trans 1,2-Dichloroethene	7.1	ND	ND	2.0
1,2-Dichloropropane	ND< 2.0	ND	ND	ND
cis 1,3-Dichloropropene	ND< 2.0	ND	ND	ND
trans 1,3-Dichloropropene	ND< 2.0	ND	ND	ND
Methylene Chloride <sup>(f)</sup>	ND< 2.0	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND< 2.0	ND	ND	ND
Tetrachloroethene	ND< 2.0	ND	ND	ND
1,1,1-Trichloroethane	ND< 2.0	ND	ND	ND
1,1,2-Trichloroethane	ND< 2.0	ND	ND	ND
Trichloroethene	46	2.5	ND	7.8
Trichlorofluoromethane	ND< 2.0	ND	ND	ND
Vinyl Chloride <sup>(g)</sup>	ND< 2.0	ND	ND	ND
% Recovery Surrogate	87	88	87	86
Comments	h			

\* water and vapor samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND&lt; 0.5ug/L; soil, ND&lt; 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene;

(h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-008; 2301 E. 12th St.	Date Sampled: 10/16/95
		Date Received: 10/17/95
	Client Contact: John Alt	Date Extracted: 10/19/95
	Client P.O:	Date Analyzed: 10/19-10/24/95

## Volatile Halocarbons

EPA method 601 or 8010

Lab ID	57564	57565	57566
Client ID	MW-4	MW-5	MW-6
Matrix	W	W	W
Compound	Concentration*		
Bromodichloromethane	ND	ND	ND < 5
Bromoform <sup>(b)</sup>	ND	ND	ND < 5
Bromomethane	ND	ND	ND < 5
Carbon Tetrachloride <sup>(c)</sup>	ND	ND	ND < 5
Chlorobenzene	ND	0.54	ND < 5
Chloroethane	ND	ND	ND < 5
2-Chloroethyl Vinyl Ether <sup>(d)</sup>	ND	ND	ND < 5
Chloroform <sup>(e)</sup>	ND	ND	ND < 5
Chloromethane	ND	ND	ND < 5
Dibromochloromethane	ND	ND	ND < 5
1,2-Dichlorobenzene	ND	ND	ND < 5
1,3-Dichlorobenzene	ND	ND	ND < 5
1,4-Dichlorobenzene	ND	ND	ND < 5
Dichlorodifluoromethane	ND	ND	ND < 5
1,1-Dichloroethane	ND	ND	ND < 5
1,2-Dichloroethane	ND	ND	ND < 5
1,1-Dichloroethene	ND	ND	ND < 5
cis 1,2-Dichloroethene	1.3	9.8	75
trans 1,2-Dichloroethene	ND	2.9	16
1,2-Dichloropropane	ND	ND	ND < 5
cis 1,3-Dichloropropene	ND	ND	ND < 5
trans 1,3-Dichloropropene	ND	ND	ND < 5
Methylene Chloride <sup>(f)</sup>	ND	ND	ND < 5
1,1,2,2-Tetrachloroethane	ND	ND	ND < 5
Tetrachloroethene	ND	ND	ND < 5
1,1,1-Trichloroethane	ND	ND	ND < 5
1,1,2-Trichloroethane	ND	ND	ND < 5
Trichloroethene	ND	2.0	110
Trichlorofluoromethane	ND	ND	ND < 5
Vinyl Chloride <sup>(g)</sup>	ND	7.6	54
% Recovery Surrogate	86	85	84
Comments			

\* water and vapor samples are reported in ug/L, soil samples in ug/kg and all TCLP extracts in ug/L.

Reporting limit unless otherwise stated: water/TCLP extracts, ND &lt; 0.5ug/L; soil, ND &lt; 5ug/kg

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis

(b) tribromomethane; (c) tetrachloromethane; (d) (2-chloroethoxy) ethene; (e) trichloromethane; (f) dichloromethane; (g) chloroethene;

(h) a lighter than water immiscible sheen is present; (i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

Epigene International 38750 Paseo Padre Pkwy, # A11 Fremont, CA 94536	Client Project ID: # 95-008; 2301 E. 12th St.	Date Sampled: 10/16/95
		Date Received: 10/17/95
	Client Contact: John Alt	Date Extracted: 10/20/95
	Client P.O:	Date Analyzed: 10/20/95

**LUFT Metals\***

EPA analytical methods 6010/200.7, 239.2<sup>+</sup>

Lab ID	Client ID	Matrix	Extraction <sup>o</sup>	Cadmium	Chromium	Lead	Nickel	Zinc	% Rec. Surrogate
57560	EW-1	W	TTLC	ND	ND	ND	0.078	ND	97
57562	MW-2	W	TTLC	ND	0.010	ND	ND	ND	99
57563	MW-3	W	TTLC	ND	0.014	ND	ND	ND	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	S	TTLC	0.5 mg/L	0.5	3.0	2.0	1.0		
	W	TTLC	0.01 mg/kg	0.005	0.005	0.05	0.05		
	---	STLC,TCLP	0.01 mg/L	0.05	0.2	0.05	0.05		

\* soil samples are reported in mg/kg, and water samples and all STLC & TCLP extracts in mg/L  
+ Lead is analysed using EPA method 6010 (ICP) for soils, STLC & TCLP extracts and method 239.2 (AA Furnace) for water samples  
o EPA extraction methods 1311(TCLP), 3010/3020(water,TTLC), 3040(organic matrices,TTLC), 3050(solids,TTLC); STLC from CA Title 22  
# surrogate diluted out of range; N/A means surrogate not applicable to this analysis  
i) liquid sample that contains greater than ~ 2 vol. % sediment; this sediment is extracted with the liquid, in accordance with EPA methodologies and can significantly effect reported metal concentrations.

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/25/95

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	104.6	104.5	100	105	104	0.1
Benzene	0	10.4	9.6	10	104.0	96.0	8.0
Toluene	0	10.2	9.4	10	102.0	94.0	8.2
Ethyl Benzene	0	10.6	9.6	10	106.0	96.0	9.9
Xylenes	0	33.5	30.2	30	111.7	100.7	10.4
TPH (diesel)	0	154	153	150	103	102	0.6
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$



## QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/18/95

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethyl Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH (diesel)	0	162	152	150	108	101	6.0
TRPH (oil & grease)	0	21600	22300	23700	91	94	3.2

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

## QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/18/95

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethyl Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPH (diesel)	0	162	152	150	108	101	6.0
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553

Tele: 510-798-1620 Fax: 510-798-1622

## QC REPORT FOR EPA 8010/8020/EDB

Date: 10/23/95-10/24/95

Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	10.2	9.2	10.0	102	92	10.3
Trichloroethene	0.0	9.4	9.4	10.0	94	94	0.0
EDB	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene	0.0	9.6	8.8	10.0	96	88	8.7
Benzene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobz (PID)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553  
Tele: 510-798-1620 Fax: 510-798-1622

## QC REPORT FOR AA METALS

Date: 10/20/95

Matrix: Water

Analyte	Concentration (mg/L)			Amount	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0	5	5	5	92	91	1
Total Cadmium	0.00	4.82	4.79	5.00	96	96	0.6
Total Chromium	0.00	4.79	4.70	5.00	96	94	1.9
Total Nickel	0.00	4.64	4.64	5.00	93	93	0.0
Total Zinc	0.00	4.58	4.55	5.00	92	91	0.7
Total Copper	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Iron	N/A	N/A	N/A	N/A	N/A	N/A	N/A

$$\% \text{ Rec.} = (\text{MS} - \text{Sample}) / \text{amount spiked} \times 100$$

$$\text{RPD} = (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) \times 2 \times 100$$

5085 AEIX64

# CHAIN OF CUSTODY



## Epigene International

CONSULTING GEOLOGISTS

38750 Paseo Padre Parkway, Suite B-4  
Fremont, California, 94536

Business: (510) 791-1986 FAX: (510) 791-3306

Laboratory: McCampbell Analytical, Inc.  
110 2nd Ave. South D-7  
Pacheco, CA 94553  
(510) 798-1629  
 Contact: Ed Hamilton

Contact: John Alt Sampler: JNA/APA/M  
 Project Name: 7301 E. 12th Street No. 95-008  
 Date: 10/16/95

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of Type		Lab. #	Analyses Requested							Comments		
						TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020	Oil & Grease	CAM 5			
+ 1. EW-1	10/16 AM	H <sub>2</sub> O	4	VOAS	w/HCl	X	X		X						57560
2. "	"	"	2	liter bottle				X			X				
3. "	"	"	1	plastic bottle	w/NaOH							X			
+ 4. MW-1	10/16 AM	"	4	VOAS	w/HCl	X	X		X						57561
5. "	"	"	1	liter bottle				X							
+ 6. MW-2	10/16 PM	"	4	VOAS	w/HCl	X	X		X						57562
7. "	"	"	2	liter bottles				X			X				
8. "	"	"	1	plastic bottle	w/NaOH							X			
+ 9. MW-3	10/16 PM	"	4	VOAS	w/HCl	X	X		X						57563
10. "	"	"	2	liter bottles				X			X				

Relinquished by: <u>John Alt</u>	Date: <u>10/17/95</u>	Time: <u>11:00</u>	Received by: <u>J-O.</u>	Date: <u>10/17/95</u>	Time: <u>11:00</u>
Relinquished by: <u>J-O.</u>	Date: <u>10-17-95</u>	Time: <u>12:30</u>	Received by: <u>Heidi Prica</u>	Date: <u>10/17/95</u>	Time: <u>1230</u>
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Turnaround Time: Standard

Additional Comments: Use method 418.1 for oil and Grease

Page 1 of 2

5085AEX 64

# CHAIN OF CUSTODY



## Epigene International

CONSULTING GEOLOGISTS

38750 Paseo Padre Parkway, Suite B-4  
Fremont, California, 94536

Business: (510) 791-1986 FAX: (510) 791-3306

Laboratory: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 Contact: \_\_\_\_\_

Contact: John Alt Sampler: \_\_\_\_\_  
 Project Name: Z 301 E. 12th Street No. 95-008  
 Date: 10/16/95

Sample I.D.	Date/Time Sampled	Matrix Desc.	Container No. of	Type	Lab. #	Analyses Requested							Comments	
						TPH/Gasoline	BTEX	TPH/Diesel	601/8010	602/8020	Oil & Grease	CAMS		
1. MW-3	10/16 PM	H <sub>2</sub> O	1	Plastic bottle	W/NaOH							X		
2. MW-4	10/16 PM	"	4	VOAS	W/HCl	X	X		X					57564
3. "	"	"	1	1 liter bottle				X						
4. MW-5	10/16 PM	"	4	VOAS	W/HCl	X	X		X					57565
5. "	"	"	1	1 liter bottle				X						
6. MW-6	10/16 AM	"	4	VOAS	W/HCl	X	X		X					57566
7. "	"	"	2	1 liter bottles				X		X				
8.														
9.														
10.														

Relinquished by: <u>John Alt</u>	Date: <u>10/17/95</u>	Time: <u>11:00</u>	Received by: <u>J.O.</u>	Date: <u>10/17/95</u>	Time: <u>11:00</u>
Relinquished by: <u>J.O.</u>	Date: <u>10-17-95</u>	Time: <u>12:30</u>	Received by: <u>Heidi Pina</u>	Date: <u>10/17/95</u>	Time: <u>12:30</u>
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____

Turnaround Time: Standard

Additional Comments: \_\_\_\_\_

ICEPT\* ✓ GOOD CONDITION ✓ HEAD SPACE ABSENT ✓ PRESERVE ATTACHED CONTAINERS ✓

VOAS 10 & 601/8010/8020 ✓

Page 2 of 2

**APPENDIX B**

**SUMMARY TABLES**

Table 1A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-1

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
7/27/92	360	1800	600	5.1	13	18	ND
11/6/92	670	8000	2400	6.1	41	ND	NA
3/2/93	1100	5600	3800	ND	120	ND	NA
5/26/93	1700	4800	3400	44	140	150	NA
8/27/93	1200	8400	2300	35	180	57	ND
12/23/93	ND	7800	29	16	5.8	26	NA
3/27/94	2600	10,000	2400	84	310	280	NA
6/24/94	1500	9000	2300	44	260	170	NA
10/16/94	2000	10,000	2100	35	250	140	NA
2/13/95	2500	16,000	3200	110	460	260	NA
6/20/95	3500	18,000	2600	87	450	220	NA
10/16/95	2700	13,000	2200	63	220	110	NA

MW-1 is a 2 inch PVC well installed 12/23/91 to a total depth of 28 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Recoverable Petroleum Hydrocarbons as oil and grease. Results for Total TRPH is presented in PPM with a detection limit of 5 PPM.



Table 1B-Summary of Volatile Halocarbon Concentrations (in PPB) Detected in MW-1

Sampling Date	Chlorobenzene	Chloroethane	1,2-Dichloroethane	Cis 1,2-Dichloroethane	Trans 1,2-Dichloroethane	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	5.8	ND
5/26/93	ND	ND	ND	ND	ND	ND	6.8	ND
8/27/93	ND	ND	ND	1.1	ND	5.4	ND	ND
12/23/94	NA	NA	NA	NA	NA	NA	NA	NA
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	NA	NA	NA	NA	NA	NA	NA	NA
10/16/94	NA	NA	NA	NA	NA	NA	NA	NA
2/13/95	ND	ND	ND	1.3	ND	ND	ND	ND
6/20/95	ND	1.1	ND	1.1	ND	ND	6.5	ND
10/16/95	ND	ND	ND	0.84	ND	ND	2.5	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 2A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-2

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
7/27/92	1500	20,000	110	6	37	39	ND
11/6/92	17,000	19,000	2800	120	790	1100	NA
3/2/93	37,000	14,000	3800	110	950	1100	NA
5/26/93	6000	11,000	5200	140	1000	990	32
8/27/93	5400	16,000	1700	120	640	710	ND
12/23/93	720	18,000	87	79	42	400	NA
3/27/94	6100	17,000	2100	100	630	750	ND
6/24/94	3000	15,000	2000	72	550	520	7.9
10/16/94	5300	15,000	1500	81	410	520	13
2/13/95	4900	18,000	2000	120	660	900	20
6/20/95	6600	30,000	1300	85	510	520	11
10/16/95	31,000	19,000	1500	92	400	330	11

MW- 2 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 2B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-2

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethane	Trans 1,2 Dichloro-ethane	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	ND	ND
5/26/93	9.8	ND	ND	2.7	2.7	ND	ND	ND
8/27/93	10	1.3	0.66	3.2	ND	ND	ND	2.2
12/23/93	4.3	ND	ND	1.0	ND	ND	ND	1.5
3/27/94	ND	ND	ND	ND	ND	ND	ND	ND
6/24/94	6.5	ND	ND	ND	ND	ND	ND	ND
10/16/94	5.7	1.1	ND	0.73	ND	ND	ND	1.0
2/13/95	12	ND	ND	ND	ND	ND	ND	ND
6/20/95	7.9	1.5	1.4	1.0	ND	ND	ND	2.1
10/16/95	5.1	ND	ND	ND	ND	ND	ND	ND

NOTE: Table presents only those compounds that have been detected in any of the wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 3A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-3

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
7/27/92	4000	8800	150	8.6	88	13	ND
11/6/92	21,000	10,000	78	3.1	830	13	NA
3/2/93	9300	3900	120	ND	240	37	NA
5/26/93	4400	7400	570	4.1	640	8.4	ND
8/27/93	8200	7100	180	15	110	9.4	ND
12/23/93	230	7900	30	14	12	62	NA
3/27/94	4300	5700	180	10	100	24	ND
6/24/94	1500	8400	230	13	93	7.6	NA
10/16/94	2700	6300	140	8.7	68	25	7.3
2/13/95	1600	7500	220	17	110	22	8.3
6/20/95	13,000	11,000	310	23	160	63	8.5
10/16/95	1900	4700	120	6.7	32	16	8.3

MW-3 is a 2 inch PVC well installed 7/8/92 to a total depth of 19 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 3B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-3

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethene	Trans 1,2 Dichloro-ethene	PCE	TCE	Vinyl Chloride
7/27/92	NA	NA	NA	NA	NA	NA	NA	NA
11/6/92	NA	NA	NA	NA	NA	NA	NA	NA
3/2/93	ND	ND	ND	ND	ND	ND	ND	ND
5/26/93	NA	NA	NA	NA	NA	NA	NA	NA
8/27/93	ND	ND	ND	ND	ND	ND	16	ND
12/23/93	NA	NA	NA	NA	NA	NA	NA	NA
3/27/94	ND	ND	ND	ND	ND	ND	6	ND
6/24/94	ND	ND	ND	6.0	1.5	ND	ND	ND
10/16/94	ND	ND	ND	8.4	2.1	ND	12	ND
2/13/95	ND	ND	ND	4.3	1.3	ND	5.1	ND
6/20/95	ND	0.5	ND	4.9	1.7	ND	5.7	ND
10/16/95	ND	ND	ND	7.1	2.0	ND	7.8	ND

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 4A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-4

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	TRPH*
3/27/94	1800	2200	19	1.2	2.9	12	NA
6/24/94	420	2300	2.9	1.6	2.8	4.6	NA
10/16/94	900	3500	3.8	2	5.2	24	NA
2/13/95	630	2600	100	100	3.8	7.1	NA
6/20/95	1100	3000	31	3.4	6.1	12	NA
10/16/95	1100	2000	43	2.3	8.4	6.9	NA

MW-4 is a 2 inch PVC well installed 3/18/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.



Table 5A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-5

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
3/27/94	870	2900	71	ND	27	15	NA
6/24/94	950	6100	220	12	38	24	NA
10/16/94	1100	4300	120	5.1	27	13	NA
2/13/95	1200	4600	130	7.9	38	29	NA
6/20/95	1000	6000	140	6.7	27	29	NA
10/16/95	940	2000	43	2.3	8.4	6.9	NA

MW-5 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.





Table 6A-Summary of Hydrocarbon Concentrations (in PPB) Detected in MW-6

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
3/27/94	1000	5000	1100	17	180	41	NA
6/24/94	660	8000	1200	21	210	54	NA
10/16/94	850	6300	870	14	140	49	NA
2/13/95	1000	5500	1000	17	210	55	NA
6/20/95	1400	9100	1300	24	240	79	NA
10/16/95	770	3000	590	8.8	84	24	2.8

MW-6 is a 2 inch PVC well installed 3/17/94 to a total depth of 20 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 6B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in MW-6

Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di-Chloro-ethane	Cis 1,2-Dichloro-ethane	Trans 1,2-Dichloro-ethane	PCE	TCE	Vinyl Chloride
3/27/94	NA	NA	NA	NA	NA	NA	NA	NA
6/24/94	NA	NA	NA	NA	NA	NA	NA	NA
10/16/94	NA	NA	NA	NA	NA	NA	NA	NA
2/13/95	ND	ND	ND	40	13	ND	99	87
6/20/95	ND	ND	ND	26	17	ND	29	130
10/16/95	ND<5	ND<5	ND<5	75	16	ND<5	110	54

NOTE: Table presents only those compounds that have been detected in any of the site wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

Table 7A-Summary of Hydrocarbon Concentrations (in PPB) Detected in EW-1

Sampling Date	TPH Diesel	TPH Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	TRPH*
3/27/94	920	1200	270	6.2	30	13	ND
6/24/94	1200	4600	410	5.6	78	22	NA
10/16/94	1200	4900	310	5.2	30	32	6.4
2/13/95	1000	3900	380	5.9	41	22	ND
6/20/95	1800	7800	710	14	260	52	6.5
10/16/95	940	3200	310	3.3	32	16	5.5

EW-1 is a 4 inch PVC well installed 3/16/94 to a total depth of 30 feet.

NOTE: NA is not analyzed; ND is not detected above detection limits which are typically 50 PPB for diesel and gasoline and 0.5 PPB for BTEX; \*TRPH is Total Recoverable Petroleum Hydrocarbons as oil and grease. Results for TRPH is presented in PPM with a detection limit of 5 PPM.

Table 7B-Summary of Volatile Halocarbons Concentrations (in PPB) Detected in EW-1

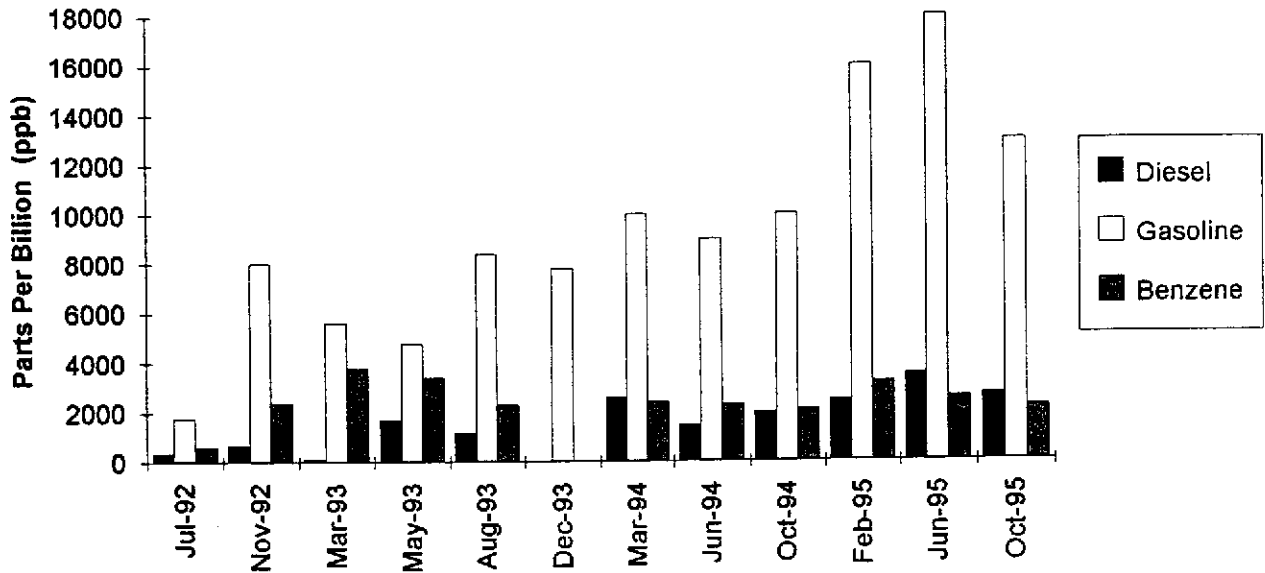
Sampling Date	Chloro-benzene	Chloro-ethane	1,2-Di Chloro-ethane	Cis 1,2 Dichloro-ethane	Trans 1,2 Dichloro-ethane	PCE	TCE	Vinyl Chloride
3/27/94	ND	ND	ND	ND	ND	ND	40	ND
6/24/94	ND	ND	1.3	42	11	ND	68	3.2
10/16/94	ND	ND	ND	36	ND	ND	74	ND
2/13/95	ND	ND	ND	13	4.4	ND	53	ND
6/20/95	ND	2.0	ND	4.3	2.0	ND	6.0	2.8
10/16/95	ND <2.0	ND <2.0	ND <2.0	24	7.1	ND <2.0	46	ND <2.0

NOTE: Table presents only those compounds that have been detected in any of the wells; data from EPA Method either 8010 or 8240; NA is not analyzed; ND is not detected above detection limits which are typically 0.5 PPB.

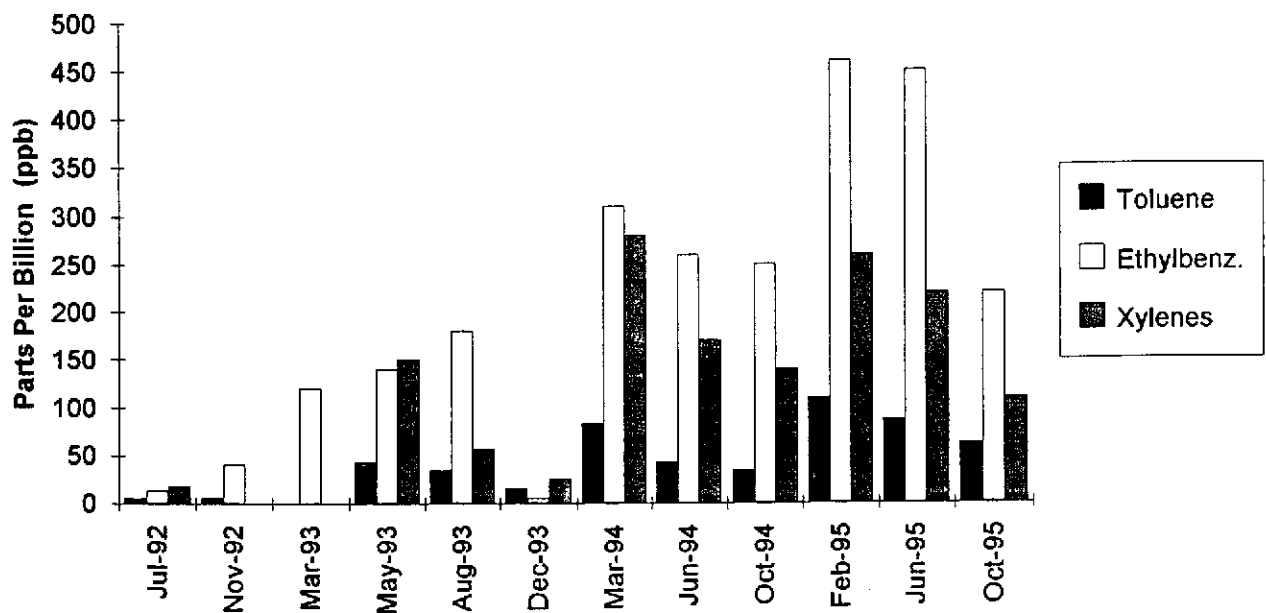
APPENDIX C

SUMMARY GRAPHS OF CONTAMINATION

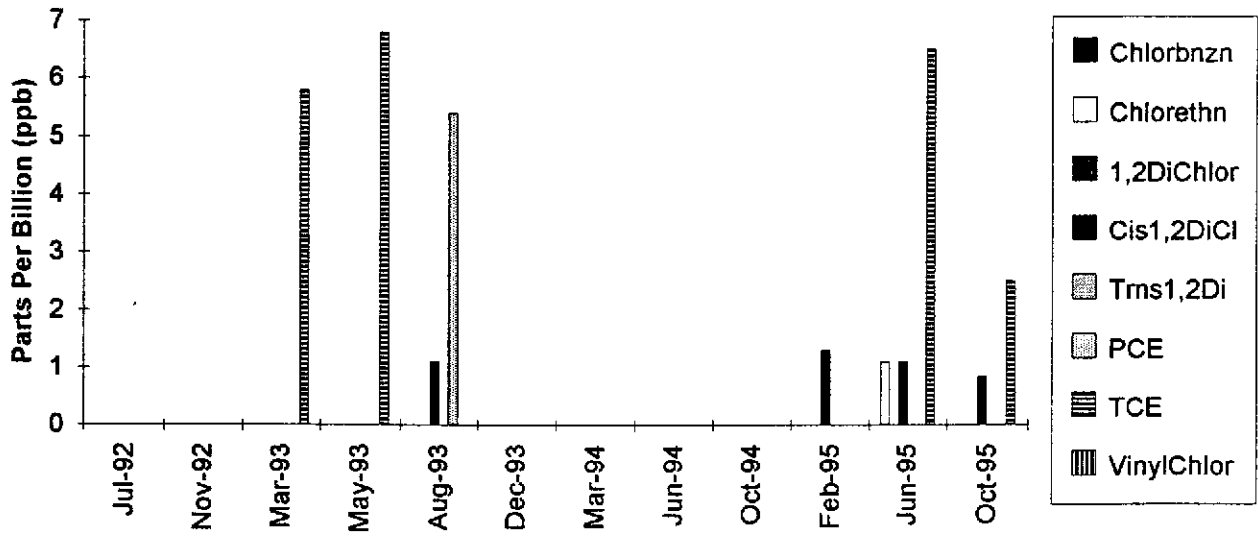
**MW-1: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations**



**MW-1: Toluene, Ethylbenzene, and Xylenes Concentrations**

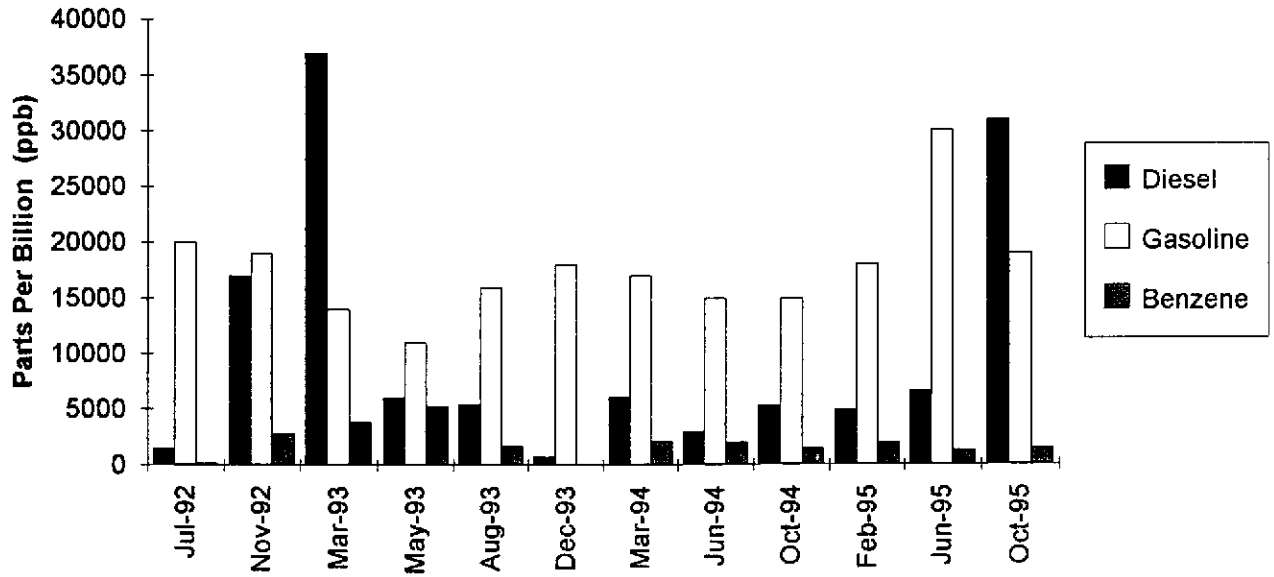


**MW-1: Volatile Halocarbons Concentrations: Chlorobenzene;  
 Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
 Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride.**

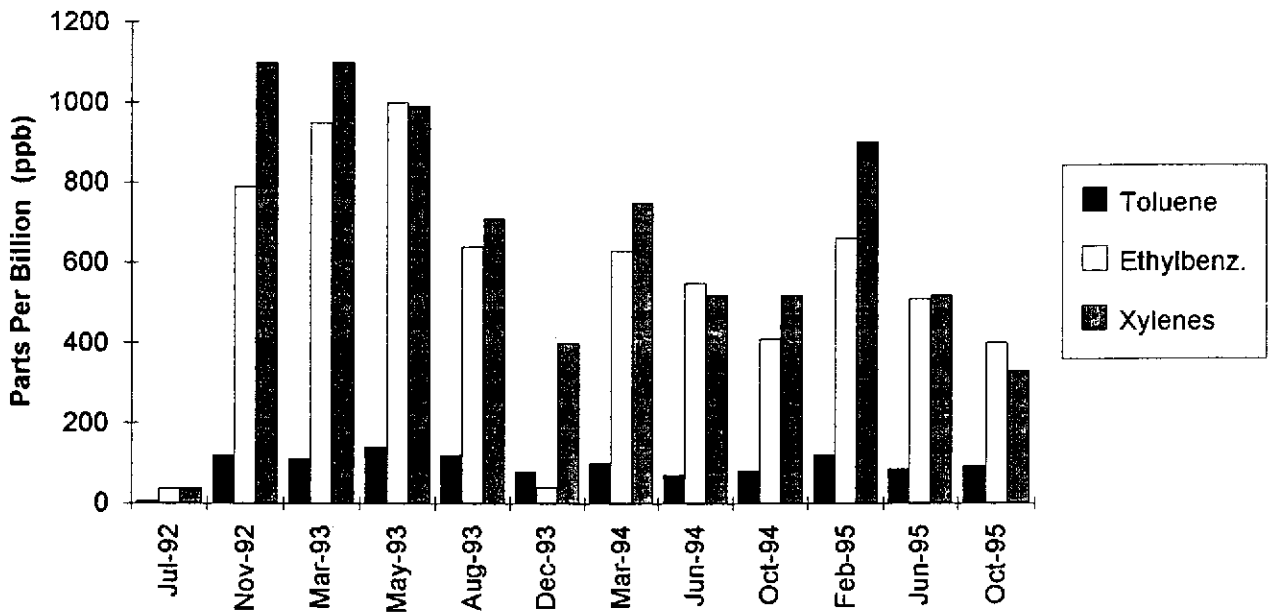




**MW-2: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations**

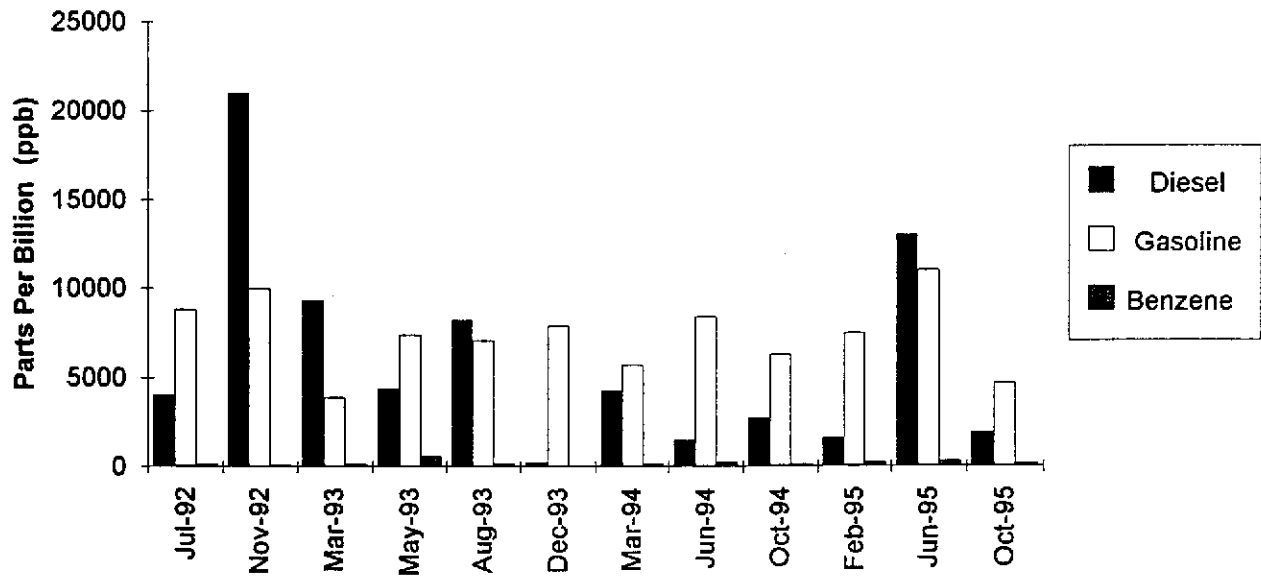


**MW-2: Toluene, Ethylbenzene, and Xylenes Concentrations**

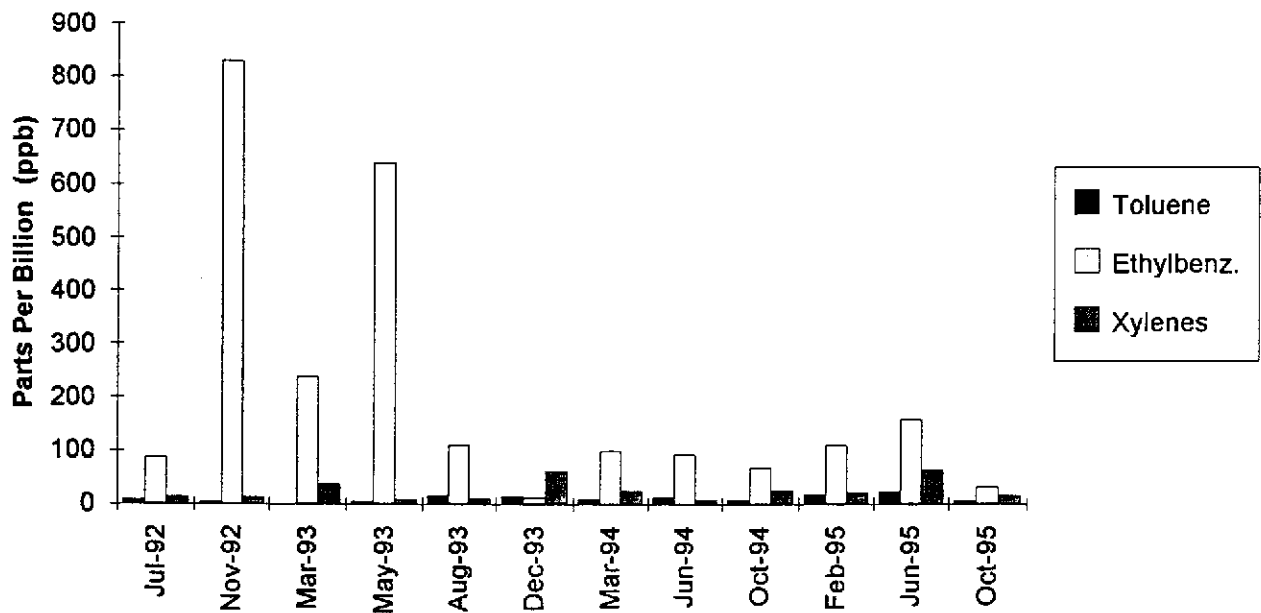




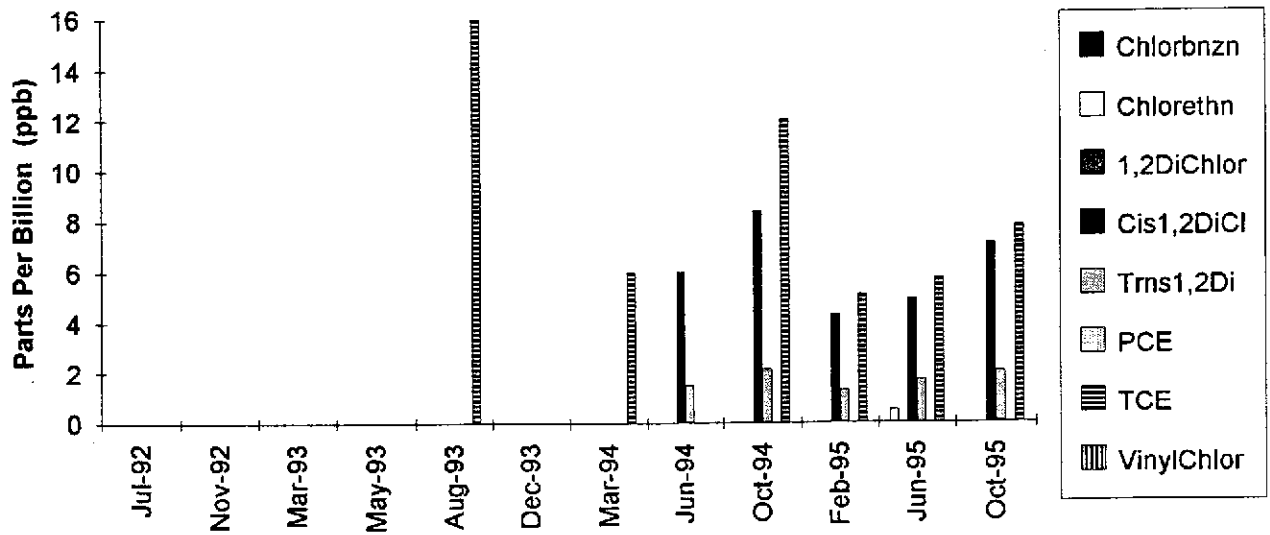
**MW-3: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations**



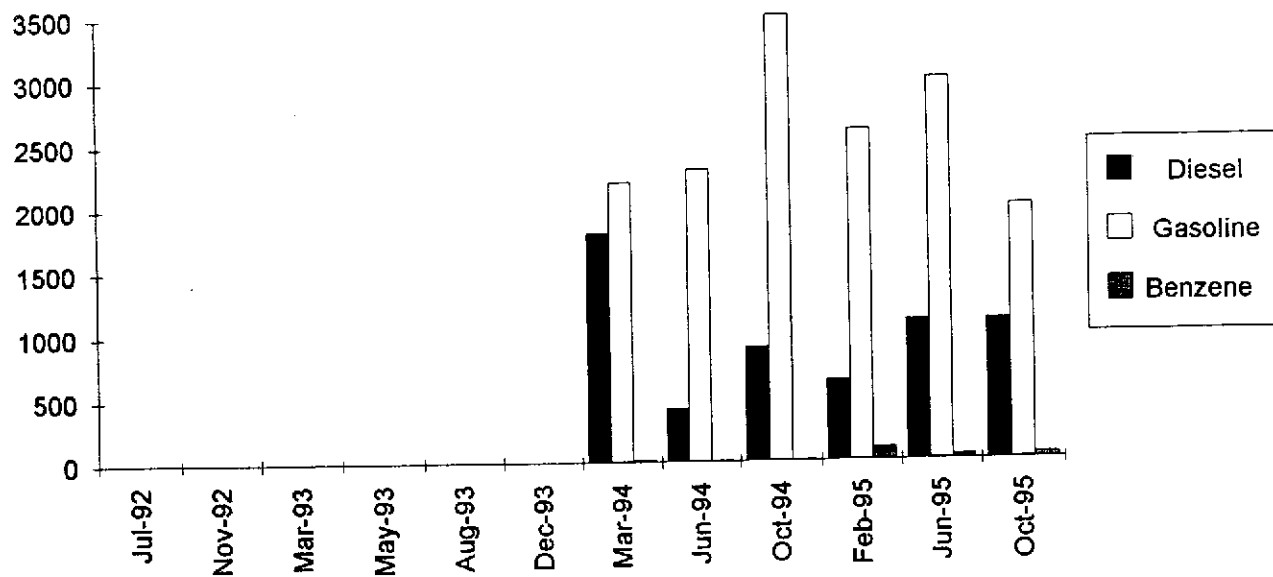
**MW-3: Toluene, Ethylbenzene, and Xylenes Concentrations**



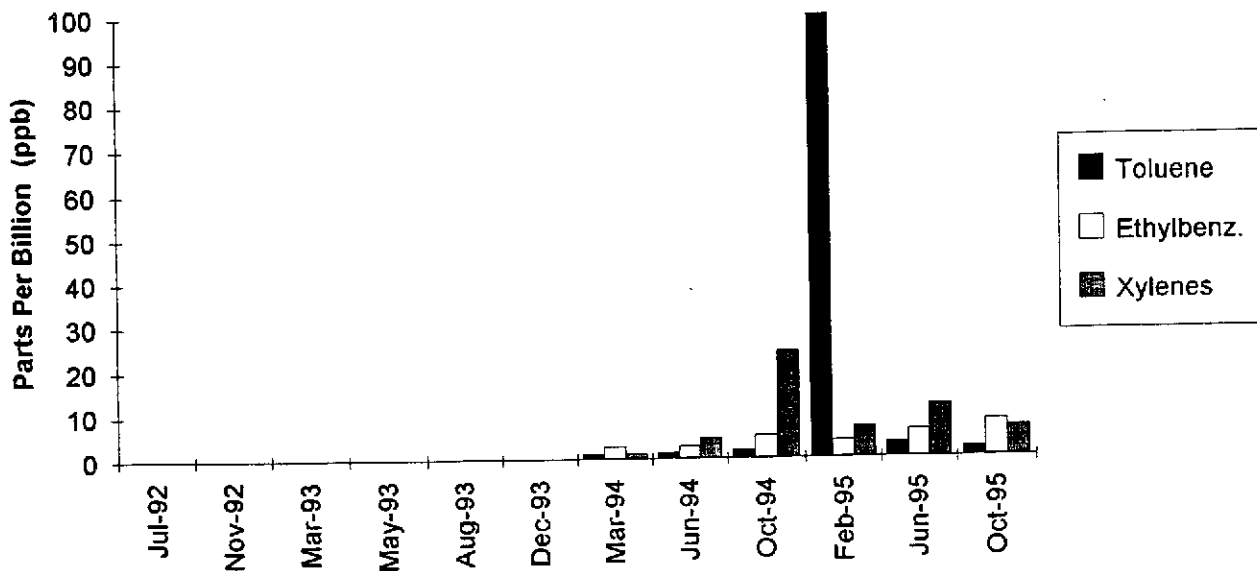
**MW-3: Volatile Halocarbons Concentrations: Chlorobenzene;  
 Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
 Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride.**



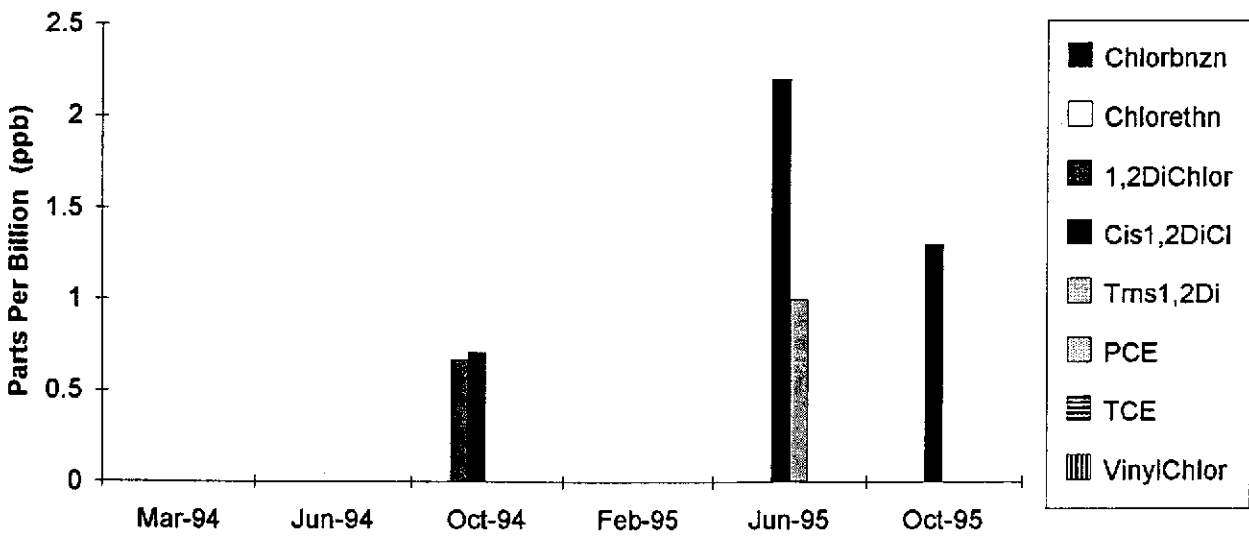
**MW-4: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations (Well installed March 1994)**



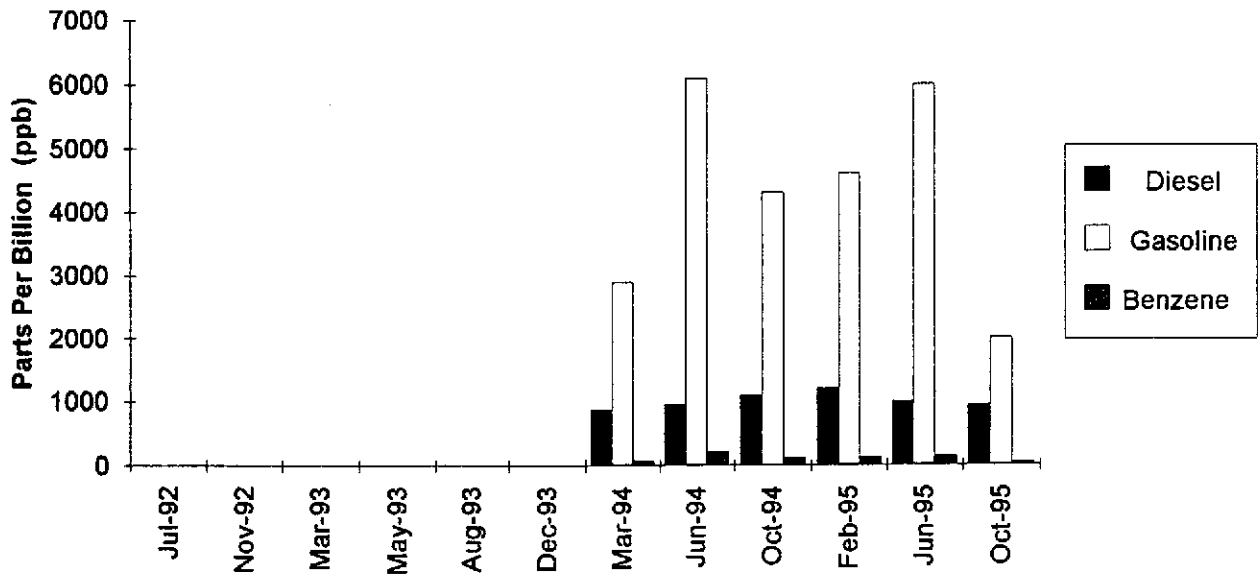
**MW-4: Toluene, Ethylbenzene, and Xylenes Concentrations (Well installed March 1994)**



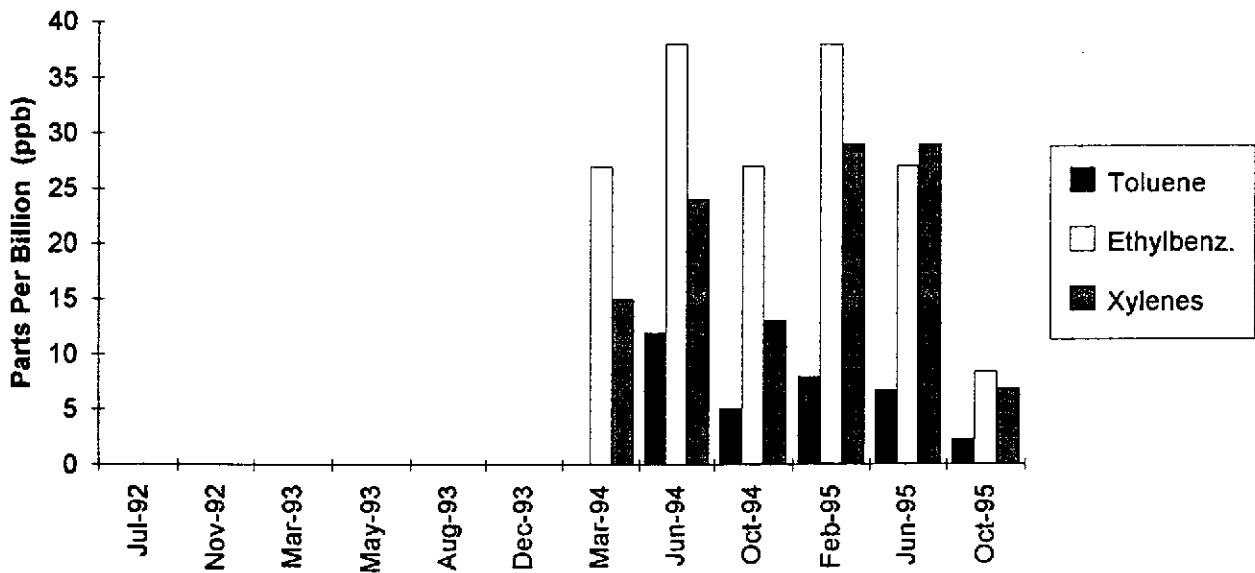
**MW-4: Volatile Halocarbons Concentrations: Chlorobenzene;  
Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride.**



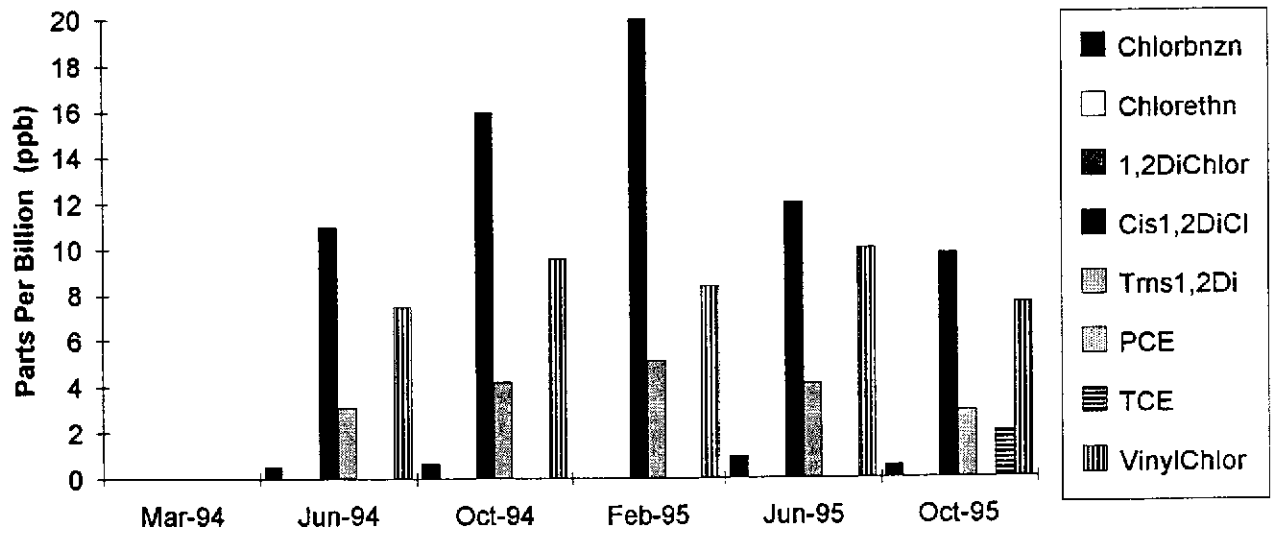
**MW-5: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations (Well installed March 1994)**



**MW-5: Toluene, Ethylbenzene, and Xylenes Concentrations (Well installed March 1994)**

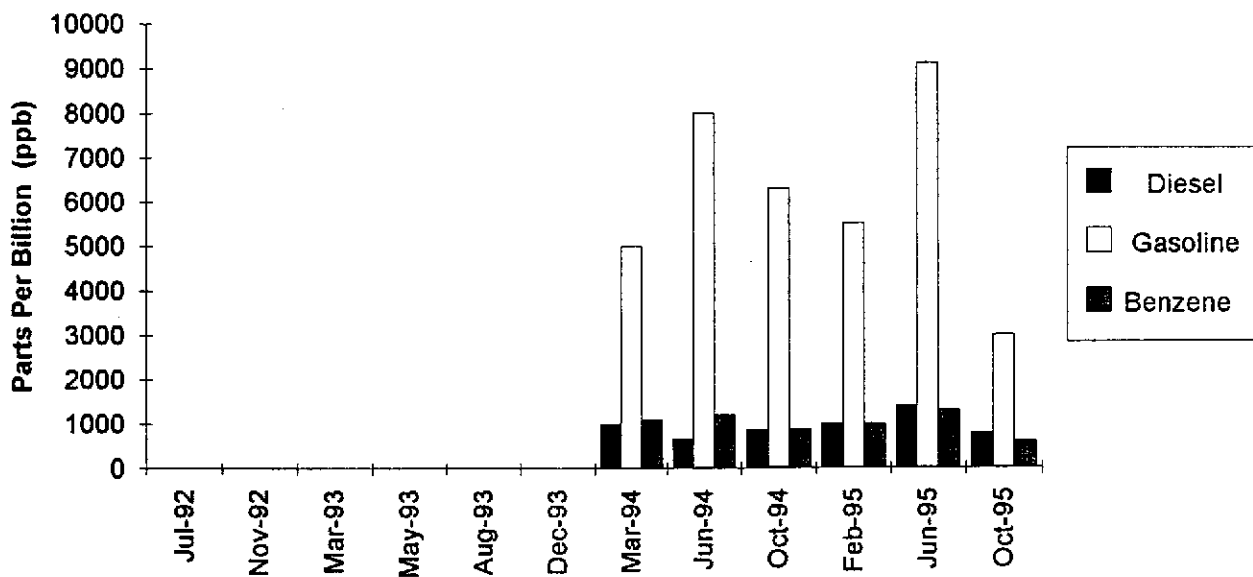


**MW-5: Volatile Halocarbons Concentrations: Chlorobenzene;  
 Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
 Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride**

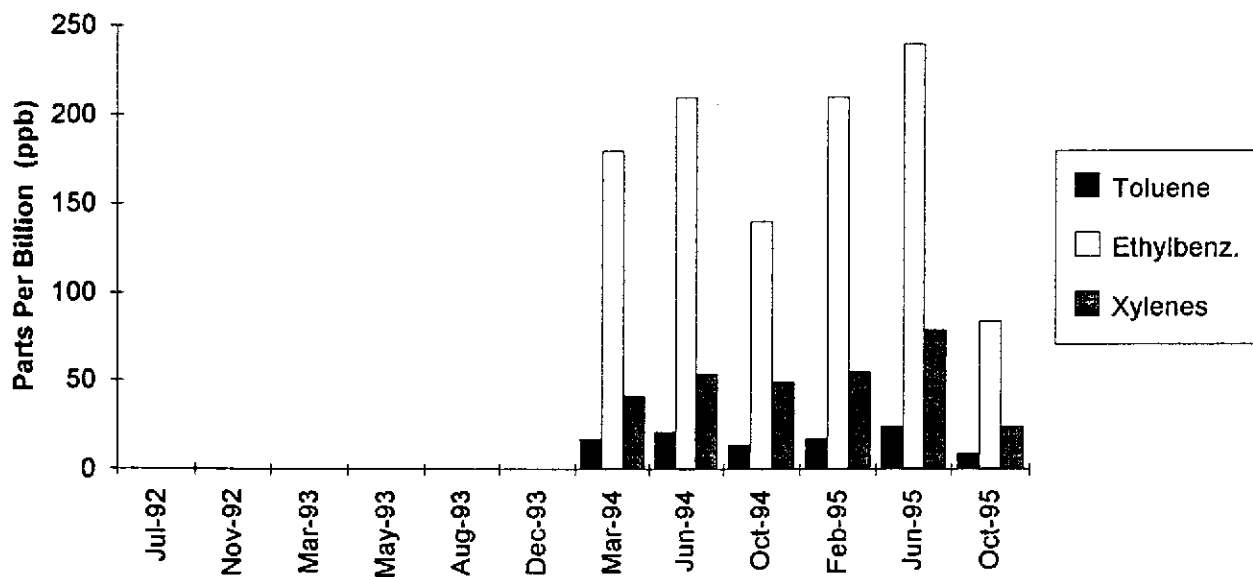




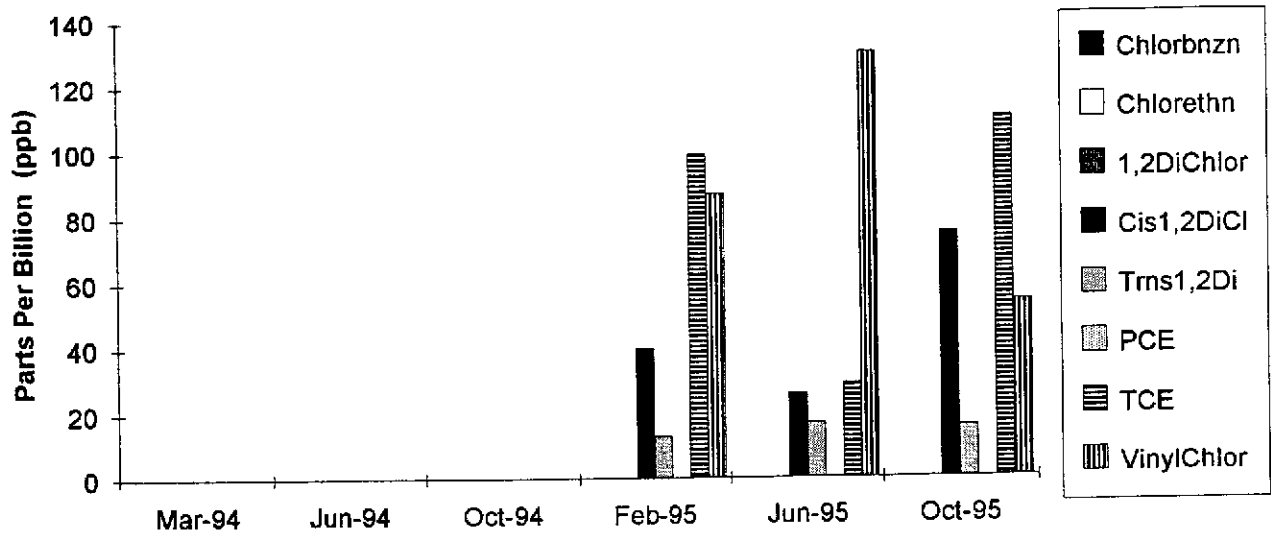
**MW-6: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations (Well installed March 1994)**



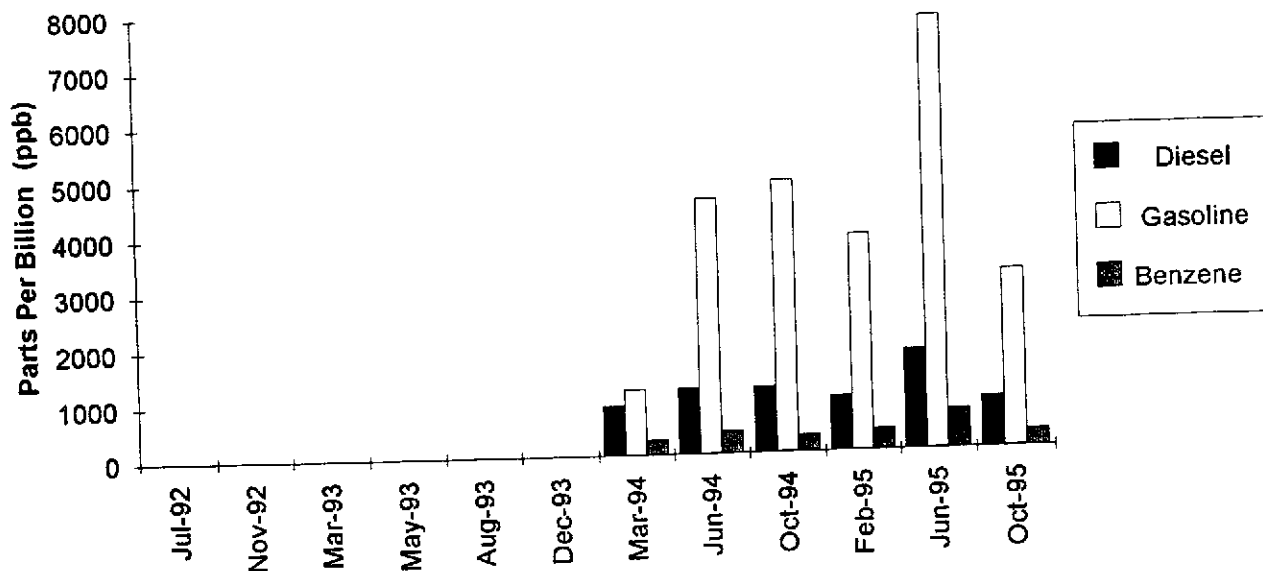
**MW-6: Toluene, Ethylbenzene, and Xylenes Concentrations (Well installed March 1994)**



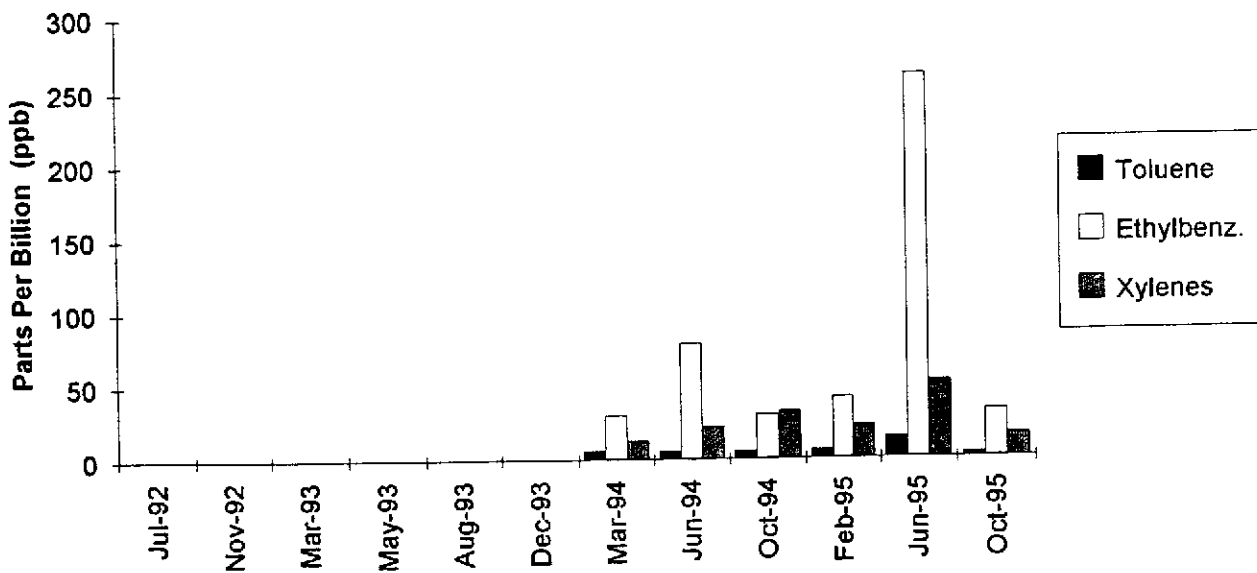
**MW-6: Volatile Halocarbons Concentrations: Chlorobenzene;  
 Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
 Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride**



**EW-1: TPH as Diesel, TPH as Gasoline, and Benzene Concentrations (Well installed March 1994)**



**EW-1: Toluene, Ethylbenzene, and Xylenes Concentrations (Well installed March 1994)**



**EW-1: Volatile Halocarbons Concentrations: Chlorobenzene;  
 Chloroethane; 1,2 Dichloroethane; Cis 1,2 Dichloroethene;  
 Trans 1,2 Dichloroethene; PCE; TCE; Vinyl Chloride**

