



Epigene International
CONSULTING GEOLOGISTS

November 11, 1994

Mr. James Brinker
Bernabe and Brinker, Inc.
1281 30th Street
Oakland, CA 94608

Subject: Quarterly Monitoring Report for Site Located at 2301 East 12th Street,
Oakland, Third Quarter 1994

Dear Mr. Brinker;

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 third quarter. 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. The former tenant at the site, Alejo Auto Repair Shop vacated the property in June.

GROUNDWATER GRADIENT

The relative elevation for the top of casing for each of the wells was established using a spirit level. Measurements were made to hundredths of a foot at a spot marked on the north side of each casing. An assumed elevation of 10 feet for the top of casing of MW-1 was used for the elevation control. There are no reported City of Oakland benchmarks in the vicinity of the site.

Gauging of the depth to groundwater was carried out for each well on October 16, 1994 prior to any pumping 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. The relative groundwater elevations were calculated and are presented in Table 1. Groundwater elevation contours are 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 north-northwest and generally consistent with the contouring.

GROUNDWATER SAMPLING

Groundwater samples were collected on October 16 from all of the project wells. The wells were purged prior to sampling by bailing or pumping with a purge pump. Purge water was placed in 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 placed in a cooled ice chest and transferred to a State certified laboratory under chain-of-custody control.

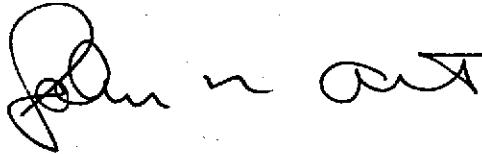
The requested analysis for each sample was based on the original workplan, amendment and the results of the past quarter samplings. The results of the water samples are summarized in Table 2 (hydrocarbons) and Table 3 (volatile halocarbons). In addition, LUFT metals were run for the samples from MW-2 and EW-1. These results are presented in Table 4. The Certified Laboratory Report and chain-of custody documentation are included in Appendix A.

A separate letter report discussing proposed groundwater remediation based on the

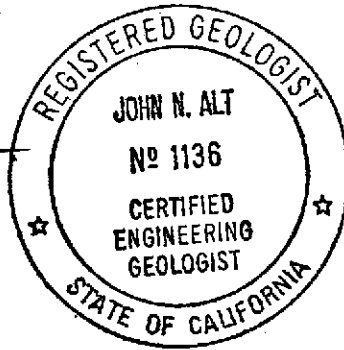
2301 East 12th Street, Oakland
November 11, 1994
Page 3

existing data and the results of the pump test is being sent under separate cover. 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. Rich Hiett, RWQCB
Mr. Robert Shapiro, Esq.

TABLE 1 - Groundwater Elevations; 2301 East 12th Street, Oakland; October 16, 1994

Well Number	Elevation Top of Casing (ft)*	Depth to Water (ft)	Groundwater Elevation (ft)
MW-1	10.00	9.11	0.89
MW-2	8.22	7.77	0.45
MW-3	8.71	8.23	0.48
MW-4	8.46	8.37	0.09
MW-5	8.48	8.81	- 0.33
MW-6	9.05	8.20	0.85
EW-1	8.63	8.46	0.17

* Based on assumed elevation of 10.00 feet for MW-1

Table 2 - Summary of Groundwater Sample Analysis TPH and BTEX; 2301 East 12th Street, Oakland; October 16, 1994
 Results Presented in Parts Per Billion (PPB)

Analysis	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	EW-1
TPH Diesel	2000	5300	2700	900	1100	850	1200
TPH Gas	10000	15000	6300	3500	4300	6300	4900
Benzene	2100	1500	140	3.8	120	870	310
Toluene	35	81	8.7	2.0	5.1	14	5.2
Ethylben.	250	410	68	5.2	27	140	30
Xylenes	140	520	25	24	13	49	32
O&G 418.1	NA	13	7.3	NA	NA	NA	6.4

Note: NA indicates Not Analyzed

Table 3 - Summary of Groundwater Sample Analysis, Volatile Halocarbons; 2301 East 12th Street, Oakland; October 16, 1994, Results Presented in Parts Per Billion(PPB)

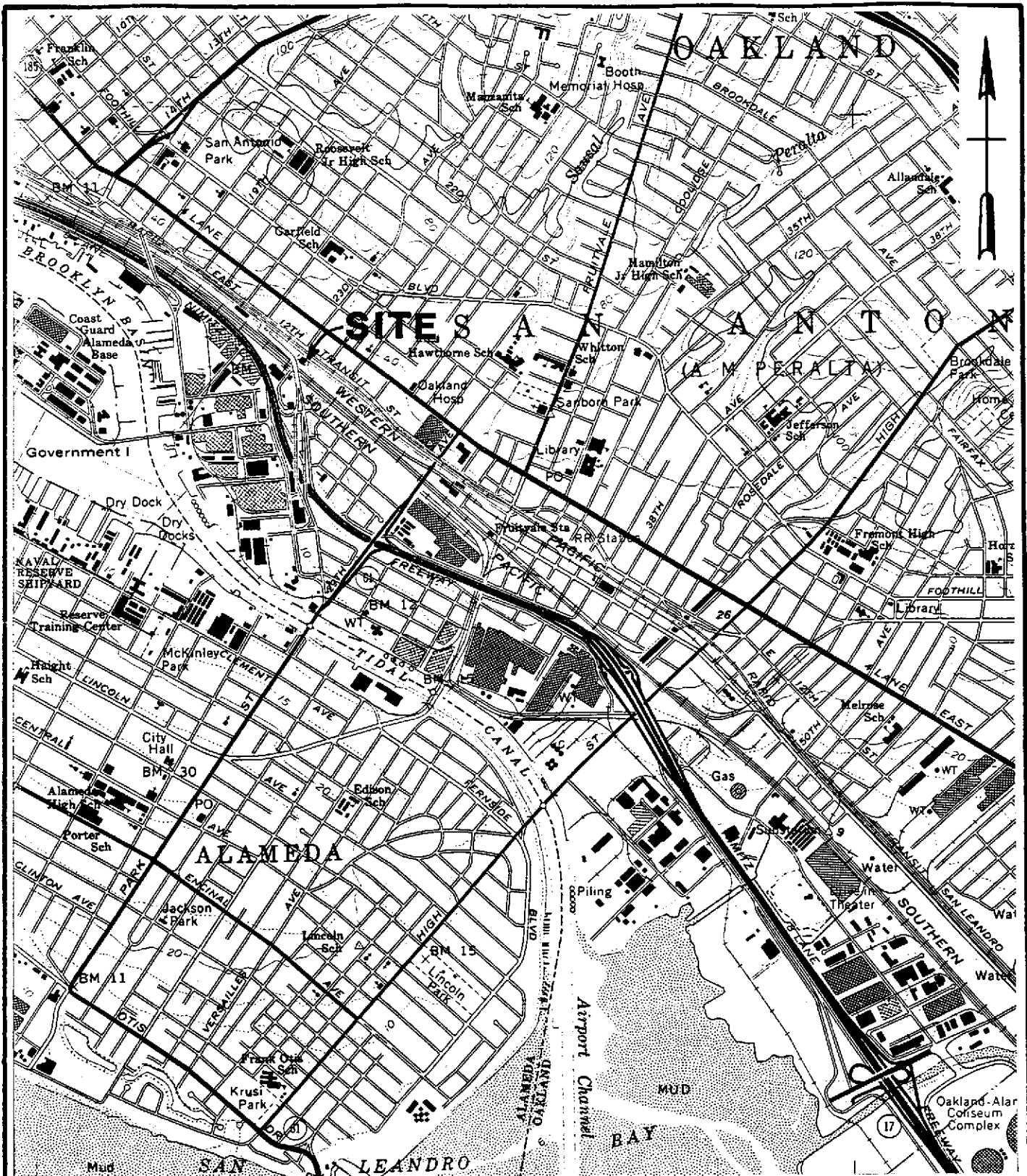
COMPOUND	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	EW-1
Chlorobenzene	NA	5.7	ND	ND	0.66	NA	ND
Chloroethane	NA	1.1	ND	ND	ND	NA	ND
1,2-Dichloroethane	NA	ND	ND	0.67	ND	NA	ND
cis 1,2-Dichloroethene	NA	0.73	8.4	0.71	16	NA	36
trans 1,2-Dichloroethene	NA	ND	2.1	ND	4.2	NA	ND
t.* 1,3Dichloropropene	NA	ND	ND	ND	ND	NA	11
Trichloroethene	NA	ND	12	ND	ND	NA	74
Vinyl Chloride	NA	1.0	ND	ND	9.6	NA	ND

t. indicates trans, NA indicates Not Analyzed, ND indicates Not Detected

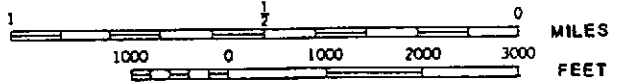
Table 4 - Summary of Groundwater Sample Analysis, LUFT Metals; 2301 East 12th Street, Oakland; October 16, 1994
 Results Presented in Parts Per Million (PPM)

Analysis	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	EW-1
Lead	NA	0.010	NA	NA	NA	NA	ND
Cadmium	NA	0.015	NA	NA	NA	NA	ND
Chromium	NA	0.014	NA	NA	NA	NA	0.070
Nickel	NA	0.024	NA	NA	NA	NA	0.21
Zinc	NA	0.049	NA	NA	NA	NA	0.049

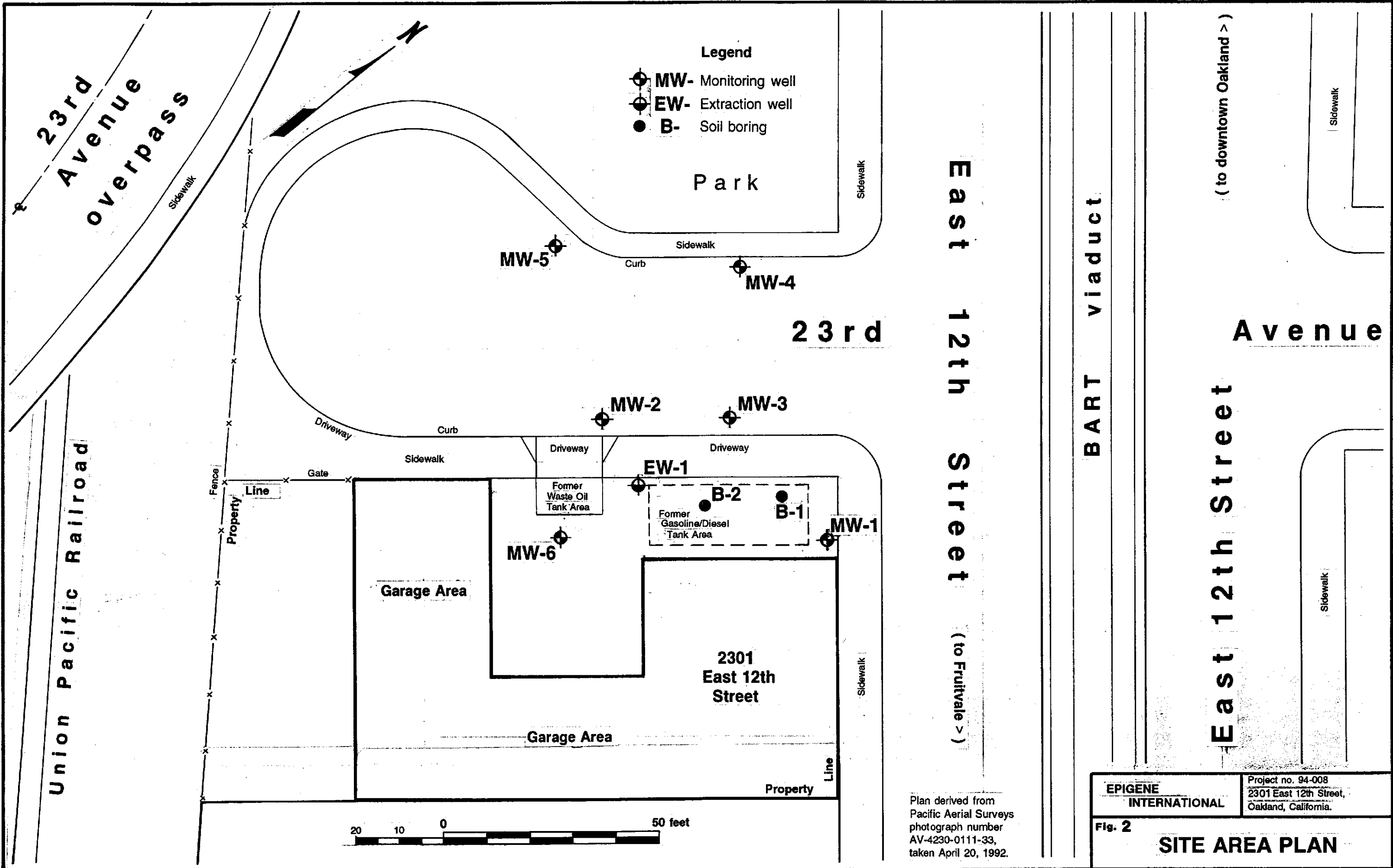
NA indicates Not Analyzed, ND indicates Not Detected



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



EPIGENE INTERNATIONAL	East 12th Street, Oakland, California.
Fig. 1 SITE LOCATION MAP	






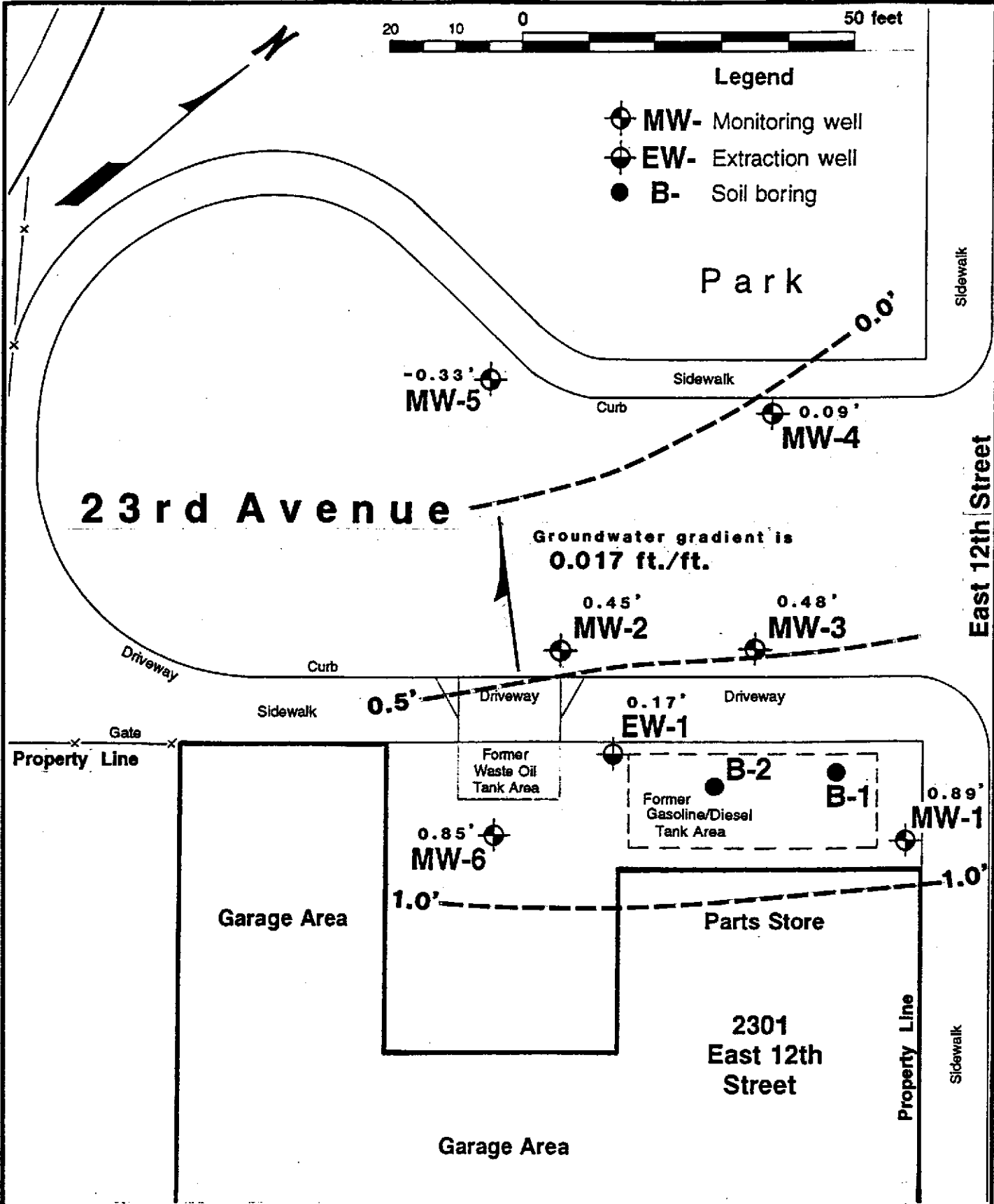
Plan derived from Pacific Aerial Surveys photograph number AV-4230-0111-33, taken April 20, 1992.

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

20 10 0 50 feet

Legend

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



Groundwater gradient is 0.017 ft./ft.

X.XX' Groundwater elevation in feet.
 Groundwater elevations measured on
October 16, 1994

EPIGENE INTERNATIONAL	Project No. 94-008
	2301 East 12th Street, Oakland, California.

Fig. 3 **GROUNDWATER GRADIENT**

APPENDIX A
LABORATORY DATA

McCAMPBELL ANALYTICAL INC.

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

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

10/26/94

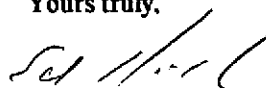
Dear John:

Enclosed are:

- 1). the results of 7 samples from your # 94-008; 2301 E. 12th St., Oakland 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

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, # B4 Fremont, CA 94536	Client Project ID: # 94-008; 2301 E. 12th St., Oakland	Date Sampled: 10/16/94
	Client Contact: John Alt	Date Received: 10/17/94
	Client P.O:	Date Extracted: 10/18/94
		Date Analyzed: 10/18-10/19/94

Total Recoverable Petroleum Hydrocarbons as Oil & Grease (with Silica Gel Clean-up) by Scanning IR Spectrometry*

EPA method 418.1 or 9073; Standard Methods 5520 C&F

Lab ID	Client ID	Matrix	TRPH ⁺
41623	MW-2	W	13
41624	MW-3	W	7.3
41628	EW-1	W	6.4
Detection Limit unless otherwise stated; ND means Not Detected	W	5 mg/L	
	S	50 mg/kg	

*water samples are reported in mg/L and soils in mg/kg

+ If TPH(d) is not requested then all positive results are run by direct injection chromatography with FID detection. The following comments pertain to these GC results: a) gasoline-range compounds (C6-C12) present; b) diesel range compounds (C10-C23) present; c) oil-range compounds (> C18) present; d) other patterned solvent(?); e) isolated peaks; f) GC compounds are absent or insignificant relative to TRPH inferring that complex biologically derived molecules (lipids?) are the source of IR absorption.

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		Date Received: 10/17/94
	Client Contact: John Alt	Date Extracted: 10/17-10/22/94
	Client P.O:	Date Analyzed: 10/17-10/22/94

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	41623	41624	41625	41626
Client ID	MW-2	MW-3	MW-4	MW-5
Matrix	W	W	W	W
Compound ⁽¹⁾	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND	ND	ND	ND
Bromoform ⁽²⁾	ND	ND	ND	ND
Bromomethane	ND	ND	ND	ND
Carbon Tetrachloride ⁽³⁾	ND	ND	ND	ND
Chlorobenzene	5.7	ND	ND	0.66
Chloroethane	1.1	ND	ND	ND
2-Chloroethyl Vinyl Ether ⁽⁴⁾	ND	ND	ND	ND
Chloroform ⁽⁵⁾	ND	ND	ND	ND
Chloromethane	ND	ND	ND	ND
Dibromochloromethane	ND	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND
1,2-Dichloroethane	ND	ND	0.67	ND
1,1-Dichloroethene	ND	ND	ND	ND
cis 1,2-Dichloroethene	0.73	8.4	0.71	16
trans 1,2-Dichloroethene	ND	2.1	ND	4.2
1,2-Dichloropropane	ND	ND	ND	ND
cis 1,3-Dichloropropene	ND	ND	ND	ND
trans 1,3-Dichloropropene	ND	ND	ND	ND
Methylene Chloride ⁽⁶⁾	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND
Tetrachloroethene ⁽⁷⁾	ND	ND	ND	ND
1,1,1-Trichloroethane	ND	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND	ND
Trichloroethene	ND	12	ND	ND
Trichlorofluoromethane	ND	ND	ND	ND
Vinyl Chloride ⁽⁸⁾	1.0	ND	ND	9.6
% Recovery Surrogate	101	95	90	92
Comments				

Detection limit unless otherwise stated: water, ND < 0.5ug/L; soil, ND < 10ug/kg.

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

(1) IUPAC allows "ylene" or "ene"; ex. ethylene or ethene; (2) tribromomethane; (3) tetrachloromethane; (4) (2-chloroethoxy) ethene; (5) trichloromethane; (6) dichloromethane; (7) perchlorethylene, PCE or perclor; (8) chloroethene; (9) unidentified peak(s) present.

DHS Certification No. 1644

Edward Hamilton, Lab Director

Epigene International 38750 Paseo Padre Pkwy, # B4 Fremont, CA 94536	Client Project ID: # 94-008; 2301 E. 12th St., Oakland	Date Sampled: 10/16/94
	Client Contact: John Alt	Date Received: 10/17/94
	Client P.O.:	Date Extracted: 10/17-10/22/94
		Date Analyzed: 10/17-10/22/94

Volatile Halocarbons

EPA method 601 or 8010

Lab ID	41628			
Client ID	EW-1			
Matrix	W			
Compound ⁽¹⁾	Concentration*	Concentration*	Concentration*	Concentration*
Bromodichloromethane	ND < 3			
Bromoform ⁽²⁾	ND < 3			
Bromomethane	ND < 3			
Carbon Tetrachloride ⁽³⁾	ND < 3			
Chlorobenzene	ND < 3			
Chloroethane	ND < 3			
2-Chloroethyl Vinyl Ether ⁽⁴⁾	ND < 3			
Chloroform ⁽⁵⁾	ND < 3			
Chloromethane	ND < 3			
Dibromochloromethane	ND < 3			
1,2-Dichlorobenzene	ND < 3			
1,3-Dichlorobenzene	ND < 3			
1,4-Dichlorobenzene	ND < 3			
1,1-Dichloroethane	ND < 3			
1,2-Dichloroethane	ND < 3			
1,1-Dichloroethene	ND < 3			
cis 1,2-Dichloroethene	36			
trans 1,2-Dichloroethene	ND < 3			
1,2-Dichloropropane	ND < 3			
cis 1,3-Dichloropropene	ND < 3			
trans 1,3-Dichloropropene	11			
Methylene Chloride ⁽⁶⁾	ND < 3			
1,1,2,2-Tetrachloroethane	ND < 3			
Tetrachloroethene ⁽⁷⁾	ND < 3			
1,1,1-Trichloroethane	ND < 3			
1,1,2-Trichloroethane	ND < 3			
Trichloroethene	74			
Trichlorofluoromethane	ND < 3			
Vinyl Chloride ⁽⁸⁾	ND < 3			
% Recovery Surrogate	90			
Comments				

Detection limit unless otherwise stated: water, ND < 0.5ug/L; soil, ND < 10ug/kg.

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

(1) IUPAC allows "ylene" or "ene"; ex ethylene or ethene; (2) tribromomethane; (3) tetrachloromethane; (4) (2-chloroethoxy) ethene; (5) trichloromethane; (6) dichloromethane; (7) perchlorethylene, PCE or perclor; (8) chloroethene; (9) unidentified peak(s) present.

McCAMPBELL ANALYTICAL INC.

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

Epigene International 38750 Paseo Padre Pkwy, # B4 Fremont, CA 94536	Client Project ID: # 94-008; 2301 E. 12th St., Oakland	Date Sampled: 10/16/94
	Client Contact: John Alt	Date Received: 10/17/94
	Client P.O:	Date Extracted: 10/18/94
		Date Analyzed: 10/18/94

LUFT Metals*

EPA analytical methods				239.2,7420*	213.1,7130	218.1,7190	249.1,7520	289.1,7950
Lab ID	Client ID	Matrix	Extraction ^o	Lead*	Cadmium*	Chromium*	Nickel*	Zinc*
41623	MW-2	W	TTLC	0.010	0.015	0.014	0.024	0.049
41628	EW-1	W	TTLC	ND	ND	0.070	0.21	0.049
Detection Limit unless otherwise stated; ND means Not Detected	W	TTLC	0.005mg/L	0.01	0.010	0.02	0.02	
	S	TTLC	4.0 mg/kg	1.0	5.0	2.0	1.0	
	--	STLC,TCLP	0.20 mg/L	0.05	0.25	0.10	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 7420 (AA Flame) 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

QC REPORT FOR HYDROCARBON ANALYSES

Date: 10/17-10/18/94

Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
TPH (gas)	0.0	101.7	106.0	100	101.7	106.0	4.1
Benzene	0	10.8	10.9	10	108.0	109.0	0.9
Toluene	0	10.6	10.7	10	106.0	107.0	0.9
Ethyl Benzene	0	10.5	10.6	10	105.0	106.0	0.9
Xylenes	0	32.9	33.2	30	109.7	110.7	0.9
TPH (diesel)	0	160	165	150	107	110	3.2
TRPH (oil & grease)	0	21900	23700	23700	92	100	7.9

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

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

QC REPORT FOR EPA 8010/8020/EDB

Date: 10/17/94

Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	4.4	4.3	5.0	88	87	2.1
Trichloroethene	0.0	4.9	4.8	5.0	98	97	1.0
EDB	0.0	3.9	3.9	5.0	77	77	0.0
Chlorobenzene	0.0	5.1	5.0	5.0	101	101	0.6
Benzene	0.0	5.1	5.1	5.0	101	102	1.0
Toluene	0.0	4.9	5.1	5.0	99	101	2.4
Chlorobz (PID)	0.0	5.1	5.0	5.0	101	101	0.6

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

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

QC REPORT FOR EPA 8010/8020/EDB

Date: 10/22/94

Matrix: Water

Analyte	Concentration (ug/L)				% Recovery		
	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD
1,1-DCE	0.0	4.4	4.4	5.0	88	87	0.7
Trichloroethene	0.0	4.8	4.8	5.0	96	97	0.6
EDB	0.0	3.6	3.6	5.0	72	73	0.3
Chlorobenzene	0.0	5.1	5.0	5.0	102	100	1.6
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

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

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

QC REPORT FOR AA METALS

Date: 10/18/94

Matrix: Water

Analyte	Concentration (mg/L)			Amount Spiked	% Recovery		
	Sample	MS	MSD		MS	MSD	RPD
Total Lead	0.00	1.81	1.86	2.00	91	93	2.7
Total Cadmium	0.00	5.16	5.12	5.00	103	102	0.8
Total Chromium	0.00	5.19	5.24	5.00	104	105	1.0
Total Nickel	0.00	5.23	5.29	5.00	105	106	1.1
Total Zinc	0.00	5.12	5.19	5.00	102	104	1.4
STLC Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Organic Lead	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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

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

