

Stockpile

FARR, FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: April 7, 1988  
Date Submitted: April 6, 1988  
Project: Not specified

FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY

Sample #

GC Characterization

SB9-1-2

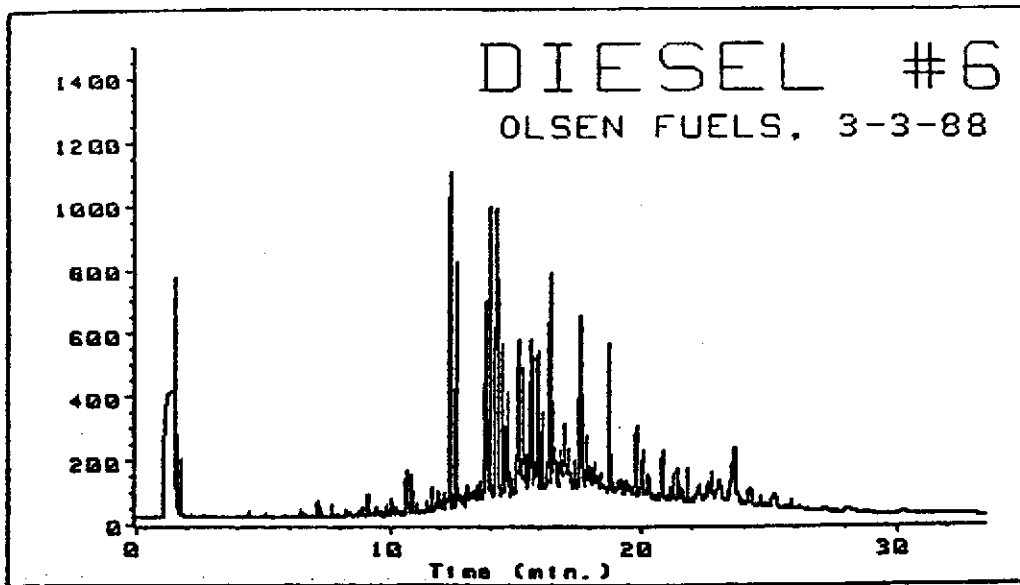
The gas chromatographic trace was indicative of a heavy diesel fuel, probably a #6 diesel. There appears to be a heavier product present in a much smaller amount, possibly a motor oil. These assignments are made on the basis of the boiling ranges and predominant peaks presented in the chromatogram (enclosed).

SB11-2-2

The gas chromatographic trace was indicative of a heavy diesel fuel, probably a #6 diesel. There appears to be a heavier product present in a much smaller amount, possibly a motor oil. These assignments are made on the basis of the boiling ranges and predominant peaks presented in the chromatogram (enclosed). The product in this sample seems to be considerably degraded, probably by microbial degradation since there is very little loss of the front end compounds relative to the later ones.

SB12-1-3

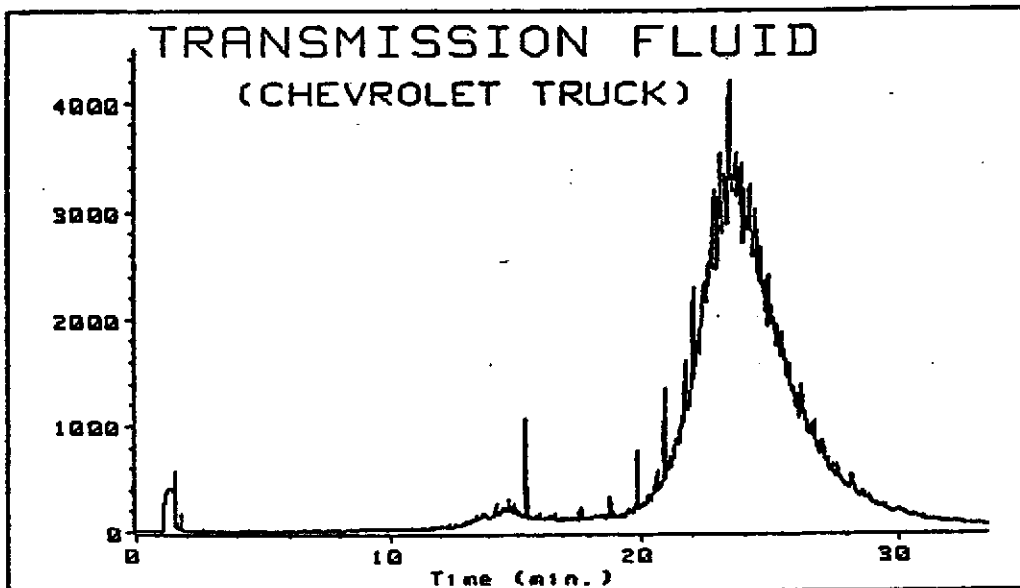
Three attempts were made to extract hydrocarbon material from this sample. None of the samples showed appreciable amounts of any fuel or lubricating-type products (>100 ppm).



T: null.  
 Z: Sig. 2 of DATA:G&D\_D23A.D  
 Y: Sig. 2 of DATA:G&D\_D24A.D  
 X: Sig. 2 of DATA:G&D\_D25A.D

[GR1]

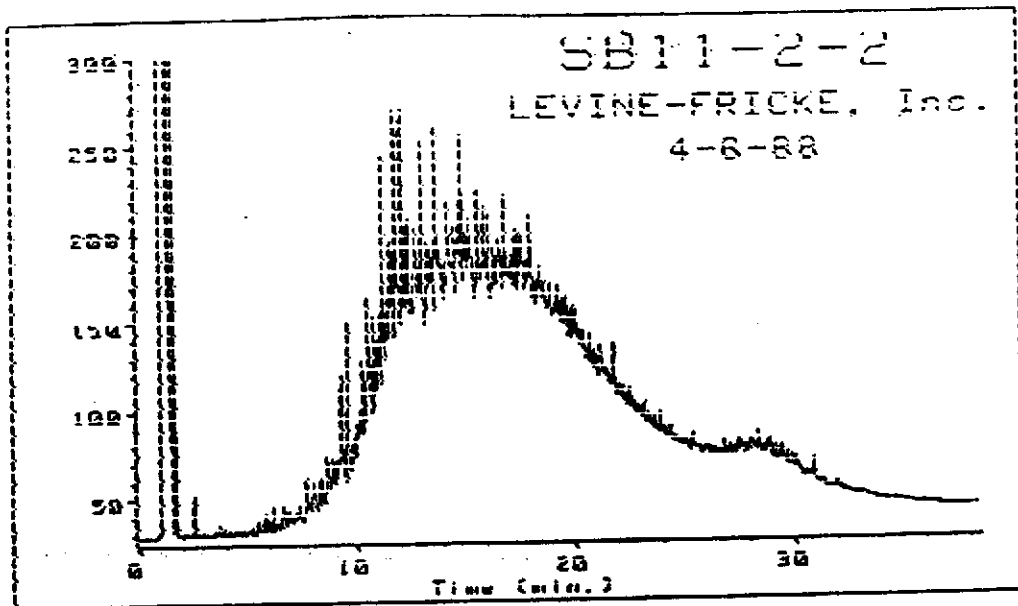
Print/Plot	Horizontal Scale	Vertical Scale	Zoom to Window 4	Zoom In	Zoom Out	MORE KEYS	EXIT
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T: Sig. 2 of DATA:G&D\_D23A.D  
 Z: Sig. 2 of DATA:G&D\_D24A.D  
 Y: Sig. 2 of DATA:G&D\_D25A.D  
 X: Sig. 2 of DATA:G&D\_D26A.D

[GR1]

Print/Plot	Horizontal Scale	Vertical Scale	Zoom to Window 4	Zoom In	Zoom Out	MORE KEYS	EXIT
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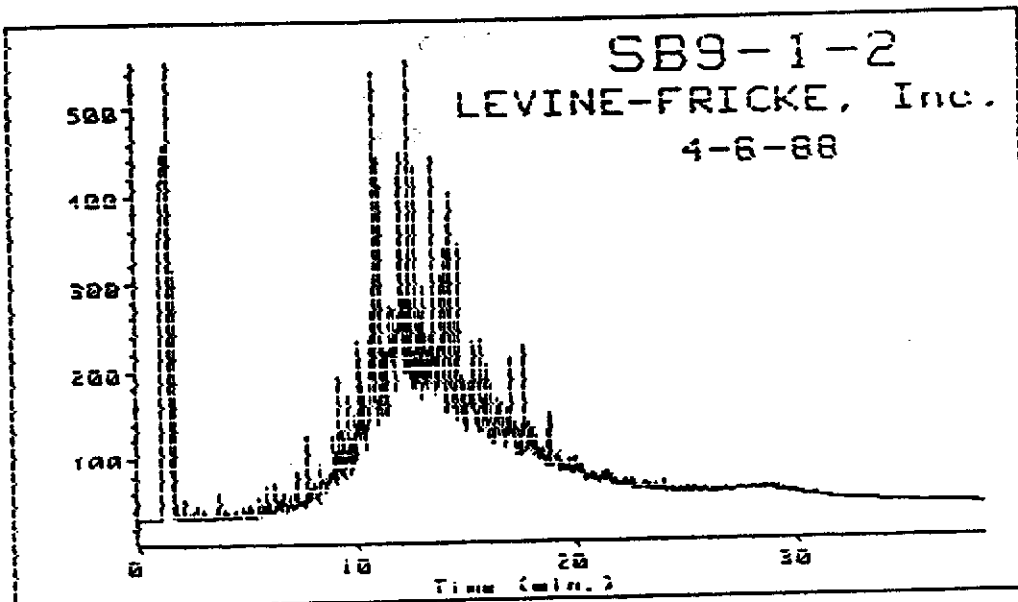


T: null.  
 Z: null.  
 Y: Sig. 2 of DATA:LF1\_A05A.D  
 X: Sig. 2 of DATA:LF1\_A04A.D

[DE]

Open Data	Response	Resolution	MATH
File	Wave	Wave	Plot

Zoom	Zoom	HELP	QUIT
In	Out		



Object: Sig. 2 of DATA:LF1\_A03A.D      PRINTING NEW LABELS TO WINDOW: 3  
 Text: 4-6-88  
 Position: 0.6684-0.7544 window units    Color: 1    Size: 16    Rotation: 0

File	Response	Resolution	MATH
File	Wave	Wave	Plot

2/88  
Stockpile

TABLE 1  
SOIL LABORATORY ANALYSIS RESULTS  
TOTAL PETROLEUM HYDROCARBONS (TPH)  
AND BENZENE, TOLUENE, XYLENE AND ETHYLBENZENE (BTXE)

SAMPLE NO.	SAMPLE DEPTH* (FEET)	DATE SAMPLED	TPH AS DIESEL (ppm)	TPH AS GASOLINE (ppm)	BENZENE (ppm)	TOLUENE (ppm)	XYLENE (ppm)	ETHYLBENZENE (ppm)
SB6-1-2	(8-8.5)	2/12/88	NA	1.3	0.003	0.006	0.056	0.010
SB68-2-2	(10-10.5)	2/12/88	NA	<0.1	<0.001	0.001	<0.003	<0.001
SB7-1-3	(7.5-8)	2/11/88	<50	NA	0.005	0.006	0.004	<0.001
SB8-1-3	(8.5-9)	2/12/88	13,000	NA	<0.001	<0.001	<0.003	<0.001
SB8-2-3	(10.5-11)	2/12/88	<50	NA	<0.001	<0.001	<0.003	<0.001
SB10A-2	(11.5-13)	2/17/88	NA	<0.1	<0.001	0.064	<0.003	<0.001
SB13-1	(7-8.5)	2/17/88	<50	<0.1	<0.001	0.066	<0.003	<0.001
SB14-1-3	(6-6.5)	2/17/88	520**	NA	NA	NA	NA	NA
SB14-1-3	(6-6.5)	2/17/88	130**	NA	NA	NA	NA	NA
SB14-2-3	(7-7.5)	2/17/88	<50	NA	NA	NA	NA	NA
SB17-2-3	(8-8.5)	2/17/88	<50	NA	NA	NA	NA	NA
SB18-1-3	(10.5-11)	2/17/88	<50	NA	NA	NA	NA	NA
SB18-2-3	(12-12.5)	2/17/88	<50	NA	NA	NA	NA	NA
RR2-100	(4-5)	2/17/88	74	NA	NA	NA	NA	NA
RR4-200	(4-5)	2/17/88	<50	NA	NA	NA	NA	NA

Laboratory Analysis performed by Med-Tox Associates, using EPA method 8015 and modified EPA method 8020.

NA - Not Analyzed

< - Below Detection Limit

\* Below Ground Surface

\*\* Sediments in sample SB14-1-3 contained intermittent small pockets of petroleum staining. Original analysis results (520 ppm TPH) may represent a hydrocarbon concentration within one of these pockets. The sample was re-analyzed after homogenizing the sediments. The results of this analysis (130 ppm) is considered more representative of the sampling interval than the original analysis result.

## ENVIRONMENTAL CHEMISTS

Date of Report: September 12, 1988  
Date Submitted: July 27, 1988  
Project: 1245

FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHYSample #GC Characterization

Tank #2-3, Soil  
Around Heating  
Heating Element

The gas chromatographic trace showed a small amount of material indicative of a diesel fuel. Very little else was present, and, indeed, the level of diesel fuel in the samples was quite low (<100 ppm).

Tank 1-N1

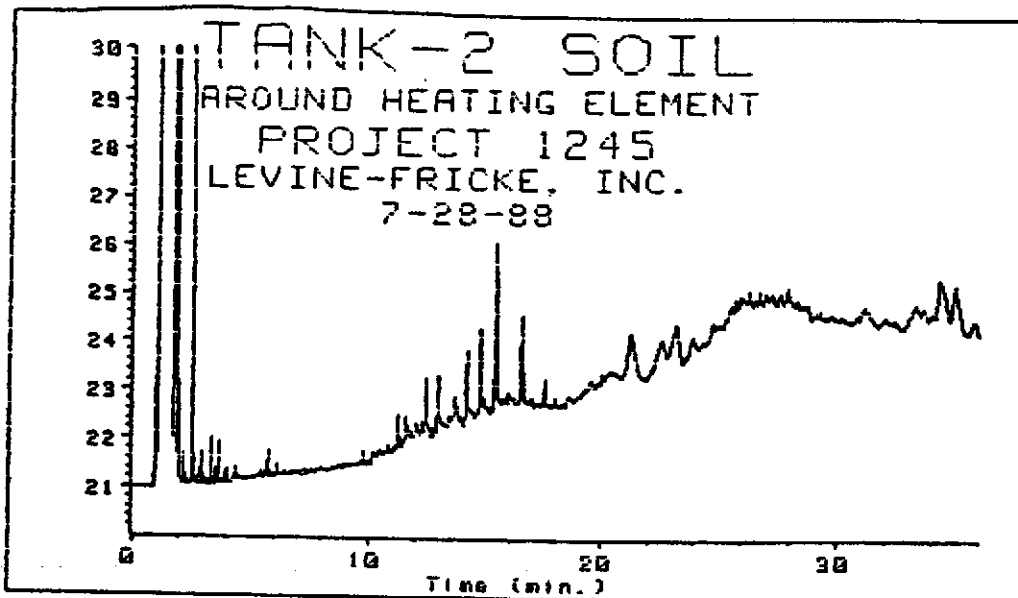
The gas chromatographic trace was indicative of a weathered diesel fuel. The boiling range presented ( $n$ -C<sub>10</sub> to  $n$ -C<sub>20</sub>) indicates that a #2 diesel or fuel oil is the most probable source. The lack of a smooth envelope of  $n$ -alkanes indicates that substantial weathering or biological degradation has taken place.

Tank 2-W2

Repeated efforts to find hydrocarbons indicative of petroleum input failed to detect any down to the 50 ppm range.

Tank 2 Sludge

The gas chromatographic trace was indicative of a diesel #2. The smooth envelope of  $n$ -alkanes extending from  $n$ -C<sub>10</sub> to  $n$ -C<sub>24</sub>, with an abundance maximum at  $n$ -C<sub>15</sub> is a classic pattern given by this material. Little indication of weathering or degradation was present.

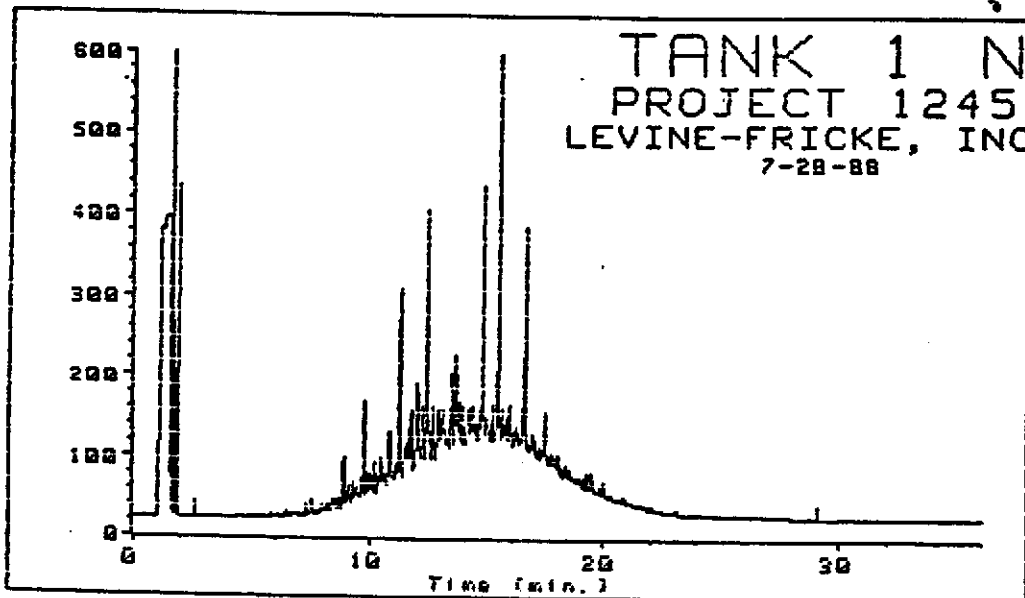


T: null.  
 Z: null.  
 Y: null.  
 X: Sig. 2 of V3:LF7\_A65A.D

[OE]

New Data  
 File  
 CHROMAT  
 KEYS  
 GRAPHICS  
 KEYS  
 MATH &  
 LIST

Zoom  
 In  
 Zoom  
 Out  
 HELP  
 QUIT

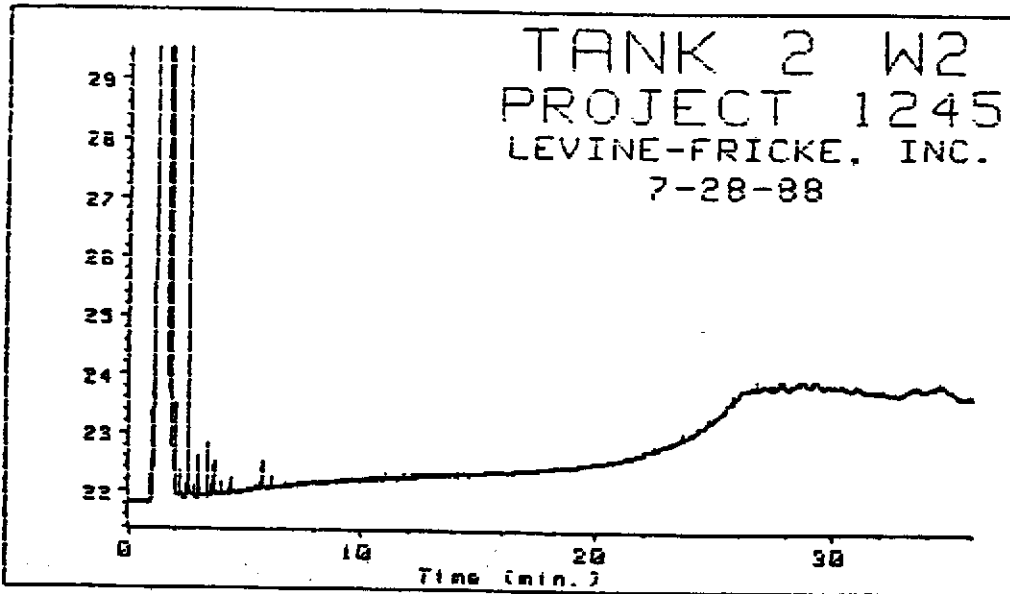


T: null.  
 Z: null.  
 Y: Sig. 2 of V3:LF7\_A65A.D  
 X: Sig. 2 of V3:LF7\_A65A.D

[OE]

New Data  
 File  
 CHROMAT  
 KEYS  
 GRAPHICS  
 KEYS  
 MATH &  
 LIST

Zoom  
 In  
 Zoom  
 Out  
 HELP  
 QUIT

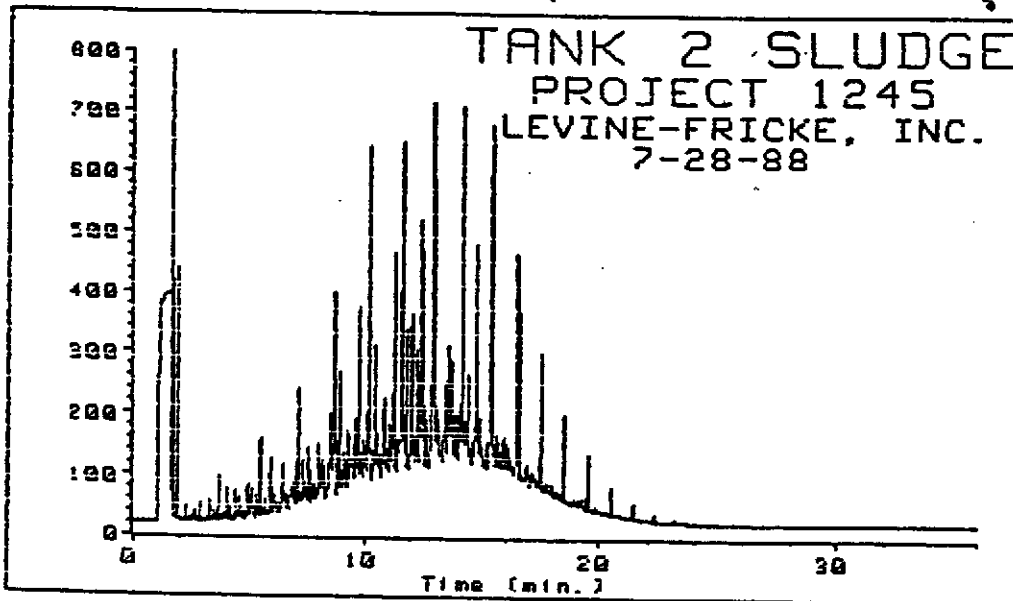


T: null.  
Z: null.  
Y: null.  
X: Sig. 2 of V3:LF7\_A67A.D

[DE]

New Data	CHROMA	GRAPHICS	MATH &
File	KEYS	KEYS	LIST

Zoom	Zoom		
In	Out	HELP	EXIT



T: null.  
Z: null.  
Y: Sig. 2 of V3:LF7\_A67A.D  
X: Sig. 2 of V3:LF7\_A68A.D

[GR1]

Print	Horizontal	Vertical	Zoom to
Plot	Scale	Scale	Window 4

Zoom	Zoom	MORE	
In	Out	KEYS	EXIT

stockpile

ENVIRONMENTAL CHEMISTS

Date of Report: September 12, 1988  
Date Submitted: July 20, 1988  
Project: 1245

**FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY**

Sample #

GC Characterization

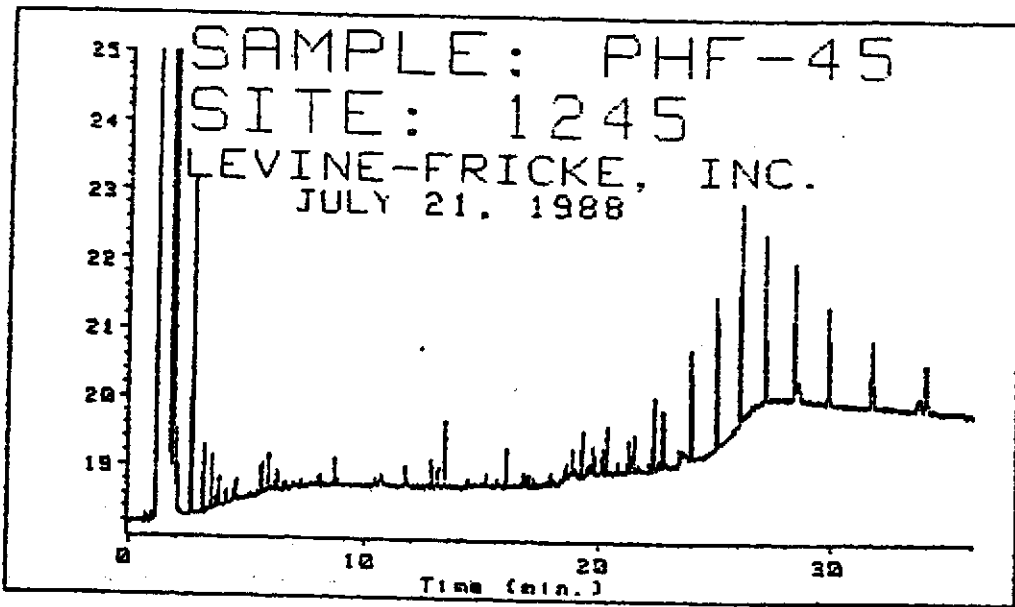
PHF-27

The gas chromatographic trace was indicative of a weathered diesel fuel with a boiling range from  $n$ -C<sub>10</sub> to  $n$ -C<sub>22</sub>, indicating it was probably a #2 diesel fuel. The loss of the smooth alkane distribution is indicative of substantial biological degradation.

PHF-45

The gas chromatographic trace showed only a small amount of a late eluting pattern of  $n$ -alkanes, indicating the possible presence of a small amount of a heavy residual petroleum distillate.

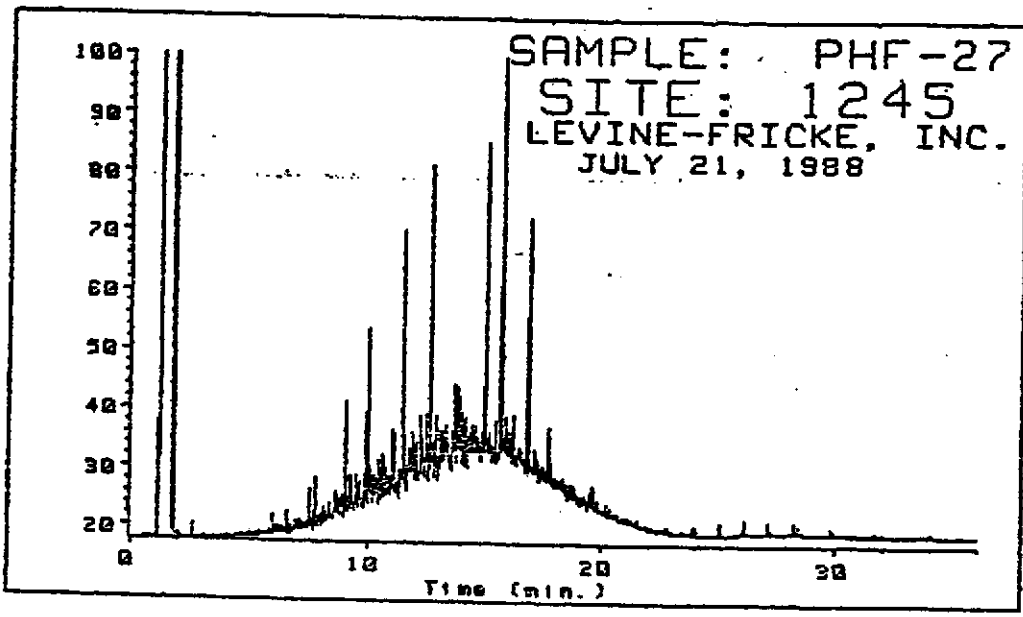




T: null.  
 Z: null.  
 Y: Sig. 2 of DATA:G&D\_A02A.D  
 X: Sig. 2 of DATA:G&D\_A03A.D

[CR1]

Print/Plot	Horizontal Scale	Vertical Scale	Zoom to Window	Zoom In	Zoom Out	MORE KEYS	EXIT
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T: null.  
 Z: Sig. 2 of DATA:G&D\_A02A.D  
 Y: Sig. 2 of DATA:G&D\_A03A.D  
 X: Sig. 2 of DATA:G&D\_A04A.D

[CR1]

Print/Plot	Horizontal Scale	Vertical Scale	Zoom to Window	Zoom In	Zoom Out	MORE KEYS	EXIT
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ENVIRONMENTAL CHEMISTS

Date of Report: September 12, 1988  
Date Submitted: July 27, 1988  
Project: 1245

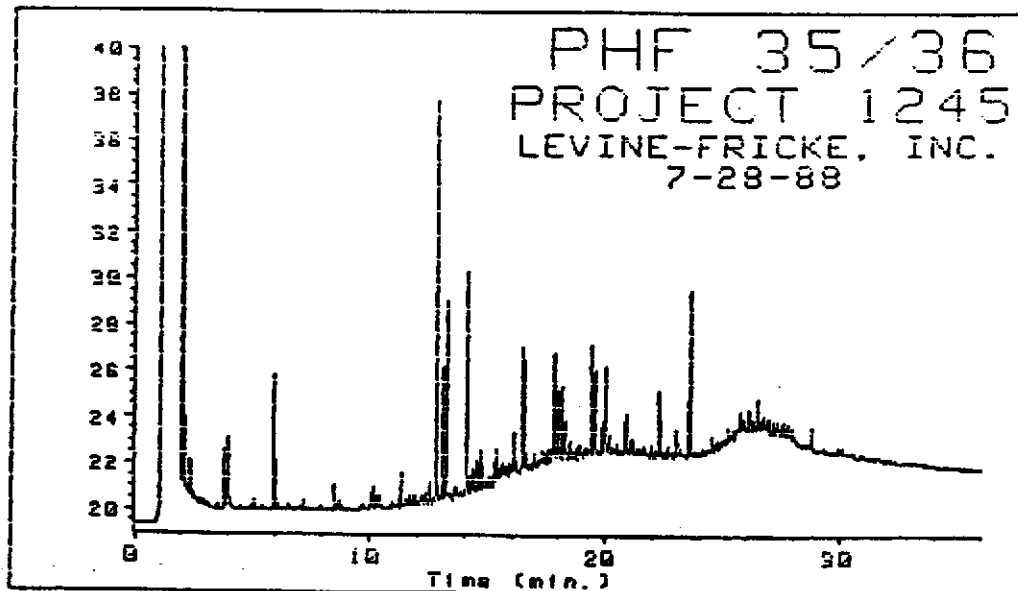
**FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY**

Sample #

PHF-35/36

GC Characterization

The gas chromatographic trace was indicative of a heavy diesel fuel (possibly a #6) or a mixture of compounds of a nature unknown to us. The chromatogram has a similar pattern to a diesel #6, but not the expected unresolved mass of hydrocarbons. The pattern is also similar to that given by mixtures of PNAs found in coal-gasification residues, but a tlc analysis did not find the high PNA level expected in such a case.



T: null.

Z: null.

Y: null.

X: Sig. 2 of V3:LF7\_A63A.D

[GR1]

Print/	Horizon	Vertical	Zoom to
Plot	Scale	Scale	Window

Zoom	Zoom	HOME	
In	Out	RG'S	EXIT

Stacked soils

EAD  
stockpile

# MED-TOX

ASSOCIATES, INC.

## ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES

3440 Vincent Road • Pleasant Hill, CA 94523 • (415) 930-9090

### LABORATORY ANALYSIS REPORT

LEVINE-FRICKE CONSULTING  
1900 POWELL ST., 12TH FL.  
EMERYVILLE, CA 94608

ATTN: ELIZABETH NIXON

CLIENT ID: 1245

REPORT DATE: 07/06/88

DATE SAMPLED: 06/23-24/88

DATE RECEIVED: 06/24/88

DATE ANALYZED: 06/27/88

MED-TOX JOB NO: 8806173

ANALYSIS OF: THIRTEEN SOIL COMPOSITES AND ONE SOIL SAMPLE FOR  
TOTAL PETROLEUM HYDROCARBONS

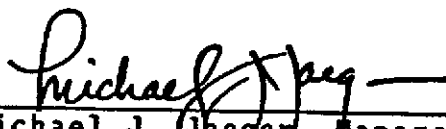
METHOD: EPA 8015 (EXTRACTION)

Sample Identification Client	Lab No.	Total Petroleum Hydrocarbons As Diesel (mg/kg)
PHFSP-1,2 composite	01A	170
PHFSP-3,4 composite	02A	230
PHFSP-5	03A	85
PHFSP-6,7 composite	04A	320
PHFSP-8,9 composite	05A	300
PHFSP-10,11 composite	06A	170
PHFSP-12,13 composite	07A	87
Detection Limit		50

received  
JUN - 24 1988

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Sample Identification Client	Lab No.	Total Petroleum Hydrocarbons As Diesel (mg/kg)
PHFSP-14,15 composite	08A	150
PHFSP-16,17 composite	09A	98
PHFSP-18,19 composite	10A	280
PHFSP-20,21 composite	11A	190
PHFSP-22,23 composite	12A	160
PHFSP-24,25 composite	13A	150
PHFSP-26,27 composite	14A	370
Detection Limit		50

  
\_\_\_\_\_  
Michael J. Jaeger, Manager  
Organic Laboratory

Results FAXed to Elizabeth Nixon 07/05/88.

Levine-Fricke Consulting

CLIENT ID: PHFSP-10  
CLIENT JOB NO: 1245MED-TOX LAB NO: 8807042-01A  
MED-TOX JOB NO: 8807042DATE SAMPLED: 06/24/88  
DATE RECEIVED: 07/08/88DATE ANALYZED: 07/09/88  
REPORT DATE: 07/15/88

## EPA METHOD 8020

## PURGEABLE AROMATICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Chlorobenzene	108-90-7	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Ethylbenzene	100-41-4	ND	5
Toluene	108-88-3	14	5
Xylenes, Total	-----	ND	15

ND = Not Detected

Levine-Fricke Consulting

CLIENT ID: PHFSP-11  
CLIENT JOB NO: 1245MED-TOX LAB NO: 8807042-02A  
MED-TOX JOB NO: 8807042DATE SAMPLED: 06/24/88  
DATE RECEIVED: 07/08/88DATE ANALYZED: 07/09/88  
REPORT DATE: 07/15/88

## EPA METHOD 8020

## PURGEABLE AROMATICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Chlorobenzene	108-90-7	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Ethylbenzene	100-41-4	ND	5
Toluene	108-88-3	18	5
Xylenes, Total	-----	ND	15

ND = Not Detected

Levine-Fricke Consulting

CLIENT ID: PHFSP-26  
CLIENT JOB NO: 1245MED-TOX LAB NO: 8807042-03A  
MED-TOX JOB NO: 8807042DATE SAMPLED: 06/24/88  
DATE RECEIVED: 07/08/88DATE ANALYZED: 07/09/88  
REPORT DATE: 07/15/88

EPA METHOD 8020

PURGEABLE AROMATICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Chlorobenzene	108-90-7	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Ethylbenzene	100-41-4	ND	5
Toluene	108-88-3	13	5
Xylenes, Total	-----	NO	15

ND = Not Detected



Levine-Fricke Consulting

CLIENT ID: PHFSP-27  
CLIENT JOB NO: 1245

MED-TOX LAB NO: 8807042-04A

MED-TOX JOB NO: 8807042

DATE SAMPLED: 06/24/88  
DATE RECEIVED: 07/08/88DATE ANALYZED: 07/09/88  
REPORT DATE: 07/15/88EPA METHOD 8020  
PURGEABLE AROMATICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Benzene	71-43-2	ND	5
Chlorobenzene	108-90-7	ND	5
1,2-Dichlorobenzene	95-50-1	ND	5
1,3-Dichlorobenzene	541-73-1	ND	5
1,4-Dichlorobenzene	106-46-7	ND	5
Ethylbenzene	100-41-4	ND	5
Toluene	108-88-3	14	5
Xylenes, Total	-----	ND	15

ND = Not Detected

10/90  
stockpile

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
ANAMETRIX, INC. (408) 432-8192

Anamatrix W.O.: 9010111  
Matrix : SOIL  
Date Sampled : 10/08/90  
Date Extracted: 10/20/90

Project Number : 1736.01  
Date released : 10/26/90  
Instrument I.D.: HP19

Anamatrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9010111-01	B1,2	10/24/90	10	200
9010111-02	B3,4	10/23/90	10	140
9010111-03	B5,6	10/23/90	10	320
9010111-04	B7,8	10/24/90	10	1200
DSBL102090	METHOD BLANK	10/23/90	10	ND

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Inna Shor 10/29/90  
Analyst Date

Paul Fisher 10-29-90  
Supervisor Date

ANALYSIS DATA SHEET - TOTAL OIL AND GREASE  
ANAMETRIX, INC. (408) 432-8192

Project # : 1736.01  
 Matrix : SOIL  
 Date sampled : 10/08/90  
 Date ext. TOG: 10/25/90  
 Date anl. TOG: 10/25/90

Anamatrix I.D. : 9010111  
 Analyst : PD  
 Supervisor : CP  
 Date released : 10/26/90

Workorder #	Sample I.D.	Reporting Limit (mg/Kg)	Amount Found (mg/Kg)
9010111-01	B1,2	30	1500
9010111-02	B3,4	30	1400
9010111-03	B5,6	30	1700
9010111-04	B7,8	30	2000

ND - Not detected at or above the practical quantitation limit for the method.

TOG - Total Oil & Grease is determined by Standard Method 5520EF.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Date of Report: February 11, 1991  
 Date Submitted: February 7, 1991  
 Project: 1736.05

RESULTS OF ANALYSES OF THE SOIL SAMPLES  
 FOR NONHALOGENATED ORGANICS  
 BY EPA METHOD 8015  
 (DIESEL AND MOTOR OIL)  
 Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample #</u>	<u>Diesel</u> (ppm)	<u>Motor Oil</u> (ppm)
3A	<10	290
4B	<10	23
<u>Quality Assurance</u>		
Method Blank	<10	<10
4B (Duplicate)	<10	12
4B (Matrix Spike) Spiked @ 5,000 ppm Percent Recovery	a	77%
4B (Matrix Spike Duplicate) Spiked @ 5,000 ppm Percent Recovery	a	91%

<sup>a</sup> - The analyte indicated was not added to the matrix spike sample.

## ENVIRONMENTAL CHEMISTS

Date of Report: February 11, 1991  
Date Submitted: February 7, 1991  
Project: 1736.05

RESULTS OF ANALYSES OF THE SOIL SAMPLES  
FOR FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY

Sample #GC Characterization

3A

The gas chromatographic trace was indicative of a high boiling petroleum product, such as heavy crude oil or landfill leachate. This characterization is based on the presence of a relatively broad envelope of peaks present from ca  $n$ -C<sub>12</sub> to beyond  $n$ -C<sub>35</sub> with a maximum near  $n$ -C<sub>29</sub>.

4B

The gas chromatographic trace showed the presence of very low levels of contamination. The levels were so low that attempts to characterize this material could be misleading.

3.0e4

Sample: 3A

Project: 1836.05

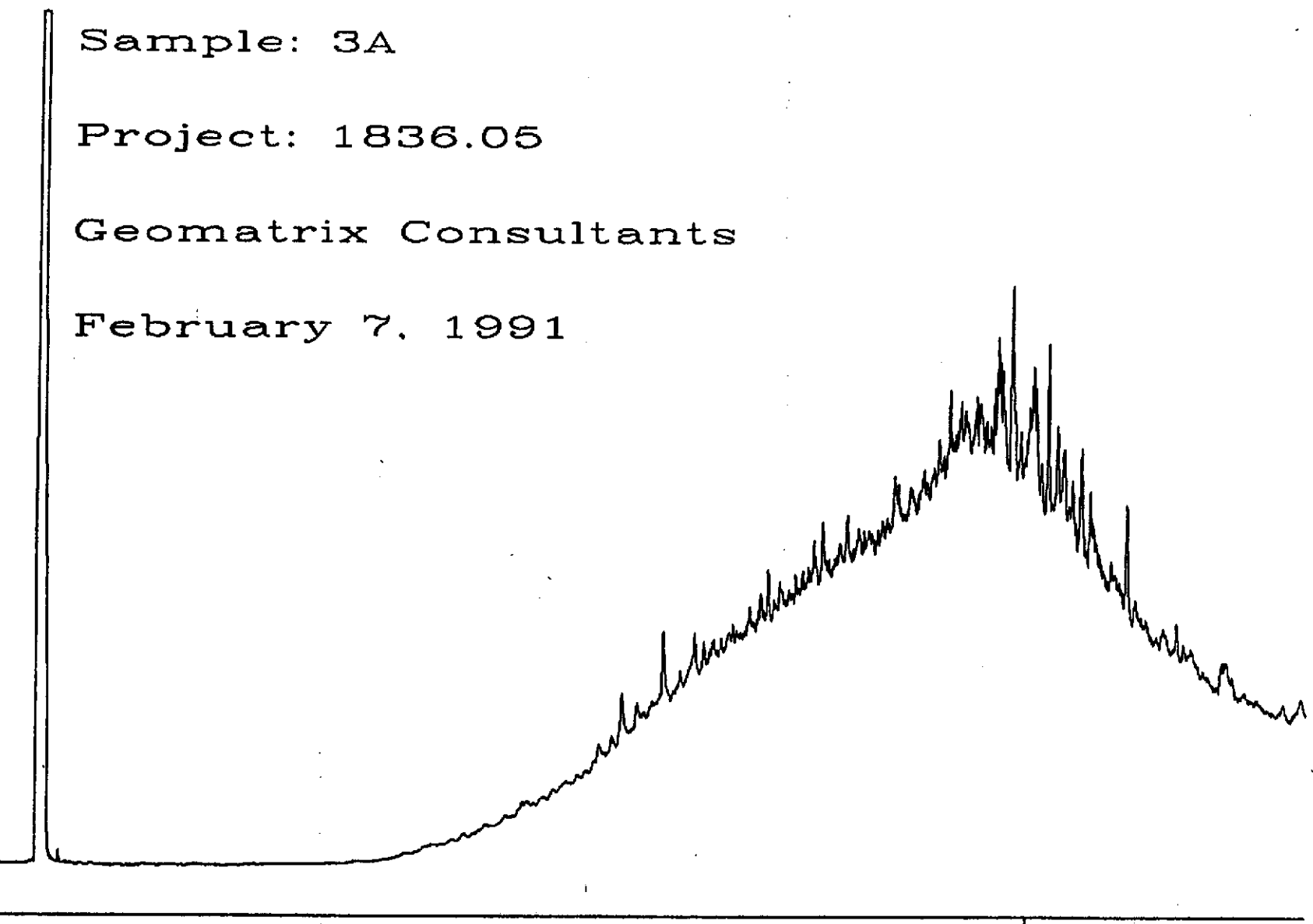
Geomatrix Consultants

February 7, 1991

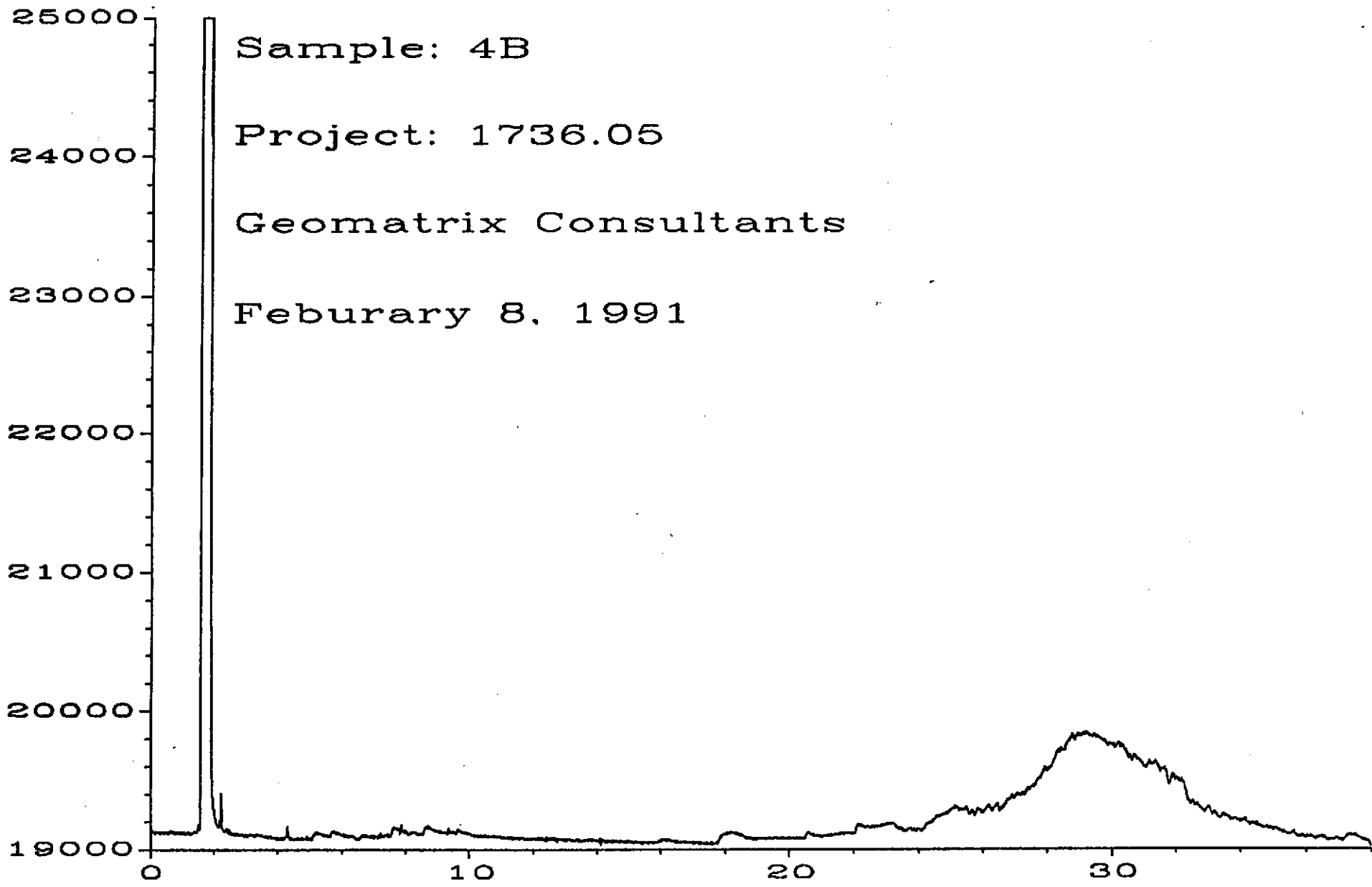
8000

0

30



C:\MSDCHEM\INDIANA\NOV07\AT-C\014\F0501.D



U:\PROJECTS\1736\1736\_05\1736\_05\_01\1736\_05\_01\_01.D

1/91  
stockpile

Final Update: Biotreatability evaluation for Geomatrix; Alameda Site

**Table 1**

TPH (ppm) by modified 8015 and {m418.1} in Treatment Soil over Time

<b>Sample</b>	<b>T<sub>0</sub> Days*</b>	<b>T<sub>10</sub> Days</b>	<b>T<sub>32</sub> Days</b>	<b>T<sub>69</sub> Days</b>	<b>pH T<sub>69</sub></b>
Control	2050 {3530}	1930	1970	1970	7.1
Nutrients	2050 {3530}	1900	1850	1870	7.2
Nutrients + MSB	2050 {3530}	1990	1920	2050	7.0
+ Surfactant @	2050 {3530}	1950	1940	2000	7.1
Experimental #	2050 {3530}	1930	1970	2050	7.6
Archive	2050 {3530}	2430 [2060]	NT	2450	NT

\* m8015 number is an average of 5 measurements

NT: Not Tested

@ surfactant added at day 20

# Experimental treatment started at day 50 by splitting control pan  
[concentration adjusted downward by 18% assuming zero moisture]



6/91  
Fill  
Soil

GEOMATRIX CONSULTANTS

DATE SAMPLED: 06/19/91  
DATE RECEIVED: 06/19/91  
CLIENT PROJ. ID: 1736.05

REPORT DATE: 06/24/91  
MED-TOX JOB NO: 9106138

Sample Identification Client Id.	Lab No.	Extractable Hydrocarbons as Diesel (mg/kg)	Extractable Hydrocarbons as Oil (mg/kg)
A1-A4 (COMP)	01A	ND	480
B1-B4 (COMP)	02A	ND	980
C1-C4 (COMP)	03A	ND	150
D1-D4 (COMP)	04A	ND	80
E1-E2 (COMP)	05A	ND	30
F1-F2 (COMP)	06A	ND (50)	4,100
E-FS-1-4 (COMP)	07A	ND	690
F-FS-1-4 (COMP)	08A	ND	600
G-FS-1-4 (COMP)	09A	ND	360
G1-G2 (COMP)	10A	ND	170
Detection Limit (Unless otherwise indicated by parentheses)		10	20

Method: 3550 GCFID

Instrument: C

Date Extracted: 06/19/91

Date Analyzed: 06/19/91

ND = Not Detected

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ENVIRONMENTAL CHEMISTS

Date of Report: July 9, 1991  
Date Submitted: June 26, 1991  
Project: 1736.05

RESULTS OF ANALYSES OF THE SOIL SAMPLES  
FOR FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY

Sample #

GC Characterization

Composite  
B1, B2, B3, B4

The gas chromatographic trace showed an absence of significant levels of volatile or semi-volatile compounds. The thin layer chromatographic trace showed the presence of moderately polar and polar compounds, such as those found in asphalt. A band of material was seen at Rf 0.0 to 1.0 (methylene chloride). This band is visible under both short and long wave UV light, as well as iodine staining and is indicative of the high boiling aromatic hydrocarbons present in asphalt.

## ENVIRONMENTAL CHEMISTS

Date of Report: July 9, 1991  
Date Submitted: June 26, 1991  
Project: 1736.05

RESULTS OF ANALYSES OF THE SOIL SAMPLES  
FOR FINGERPRINT CHARACTERIZATION  
BY CAPILLARY GAS CHROMATOGRAPHY

Sample #GC Characterization

Composite  
F1, F2

The gas chromatographic trace showed the presence of very high boiling compounds, such as those found in motor oil or biogenic material. This characterization is based on the presence of a relatively smooth envelope of peaks present from ca  $n$ -C<sub>18</sub> to beyond  $n$ -C<sub>34</sub> with a maximum near  $n$ -C<sub>28</sub>. This composite was cleaned with silica gel and then separated into three fractions: saturated hydrocarbons, aromatic hydrocarbons, and the more polar compounds such as alcohols, phenols, and carboxylic acids. These fractions were then analyzed by GC. The compounds seen earlier in the first GC analysis were highly reactive and were lost during the silica clean up. This behavior suggests that the compounds are biogenic in nature.

The thin layer chromatographic trace showed the presence of moderately polar and polar compounds, such as those found in asphalt. A band of material was seen at Rf 0.0 to 1.0 (methylene chloride). This band is visible under both short and long wave UV light, as well as iodine staining and is indicative of the high boiling aromatic hydrocarbons present in asphalt. Both asphalt as well as biogenic material appear to be present in this composite sample.

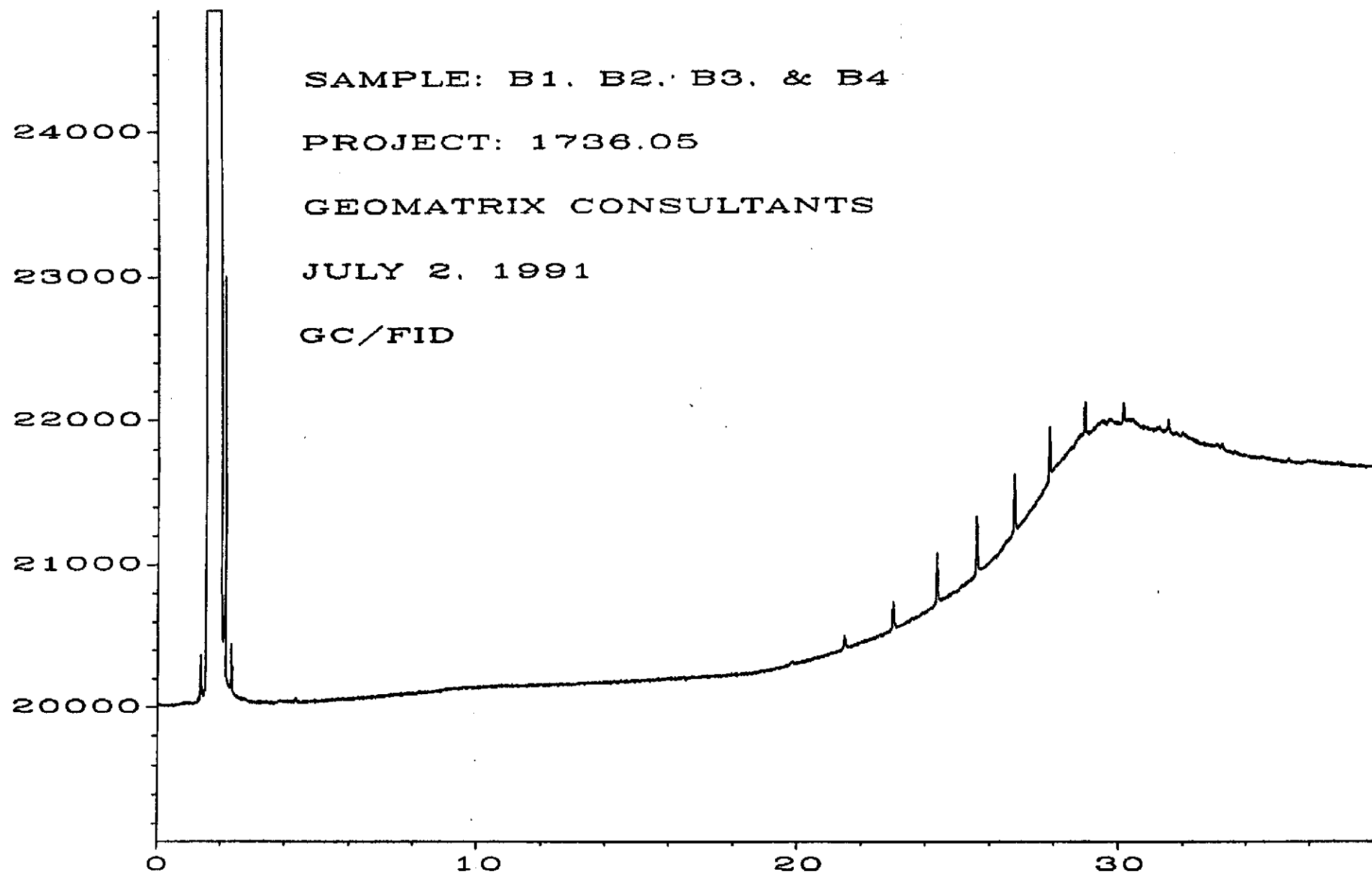
## ENVIRONMENTAL CHEMISTS

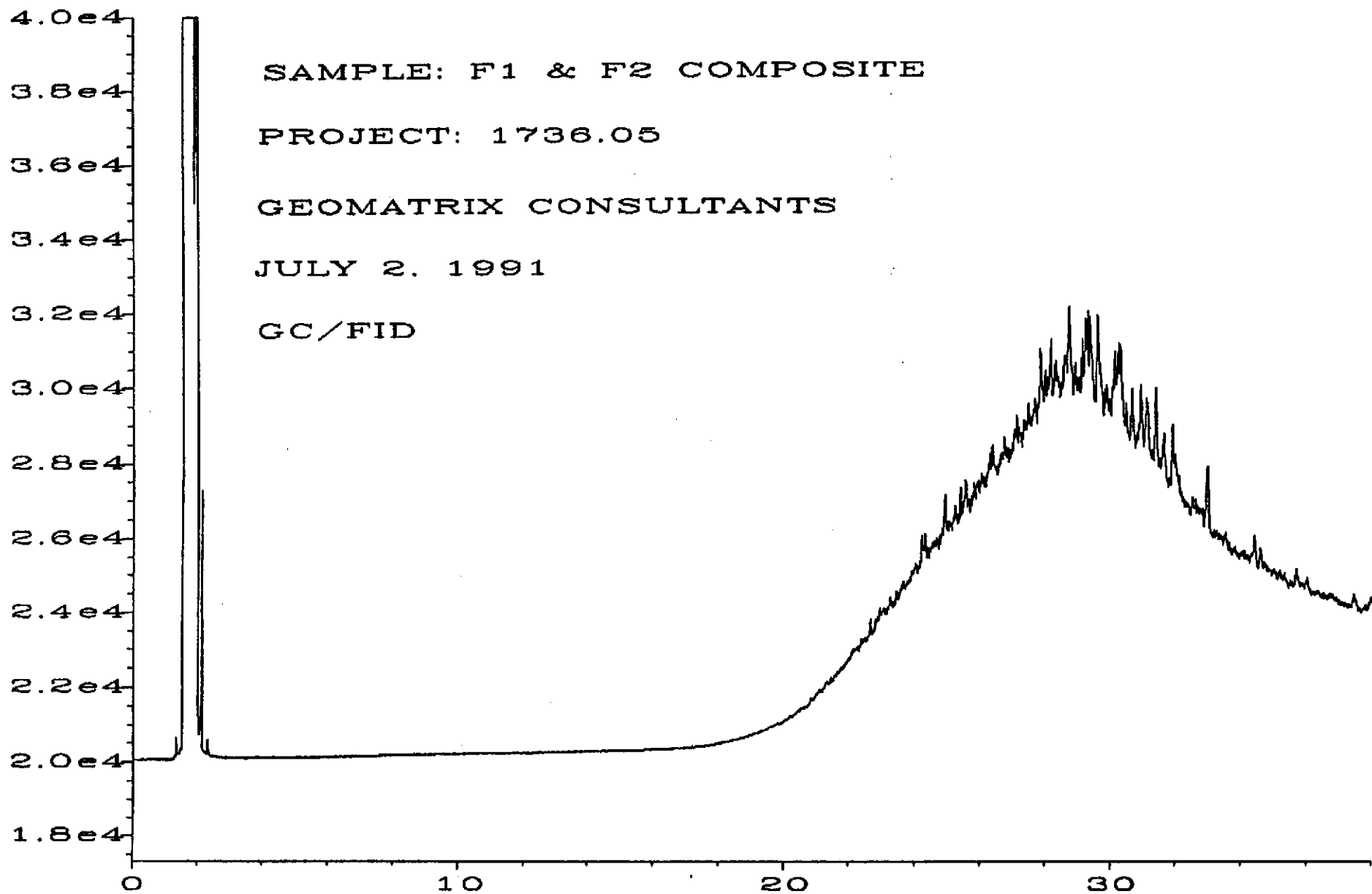
Date of Report: July 9, 1991  
 Date Submitted: June 26, 1991  
 Project: 1736.05

RESULTS OF ANALYSES OF THE SOIL SAMPLES  
 FOR TOTAL HIGH BOILING COMPOUNDS  
 BY GC/FID (MODIFIED 8015)  
 Results Reported as  $\mu\text{g/g}$  (ppm)

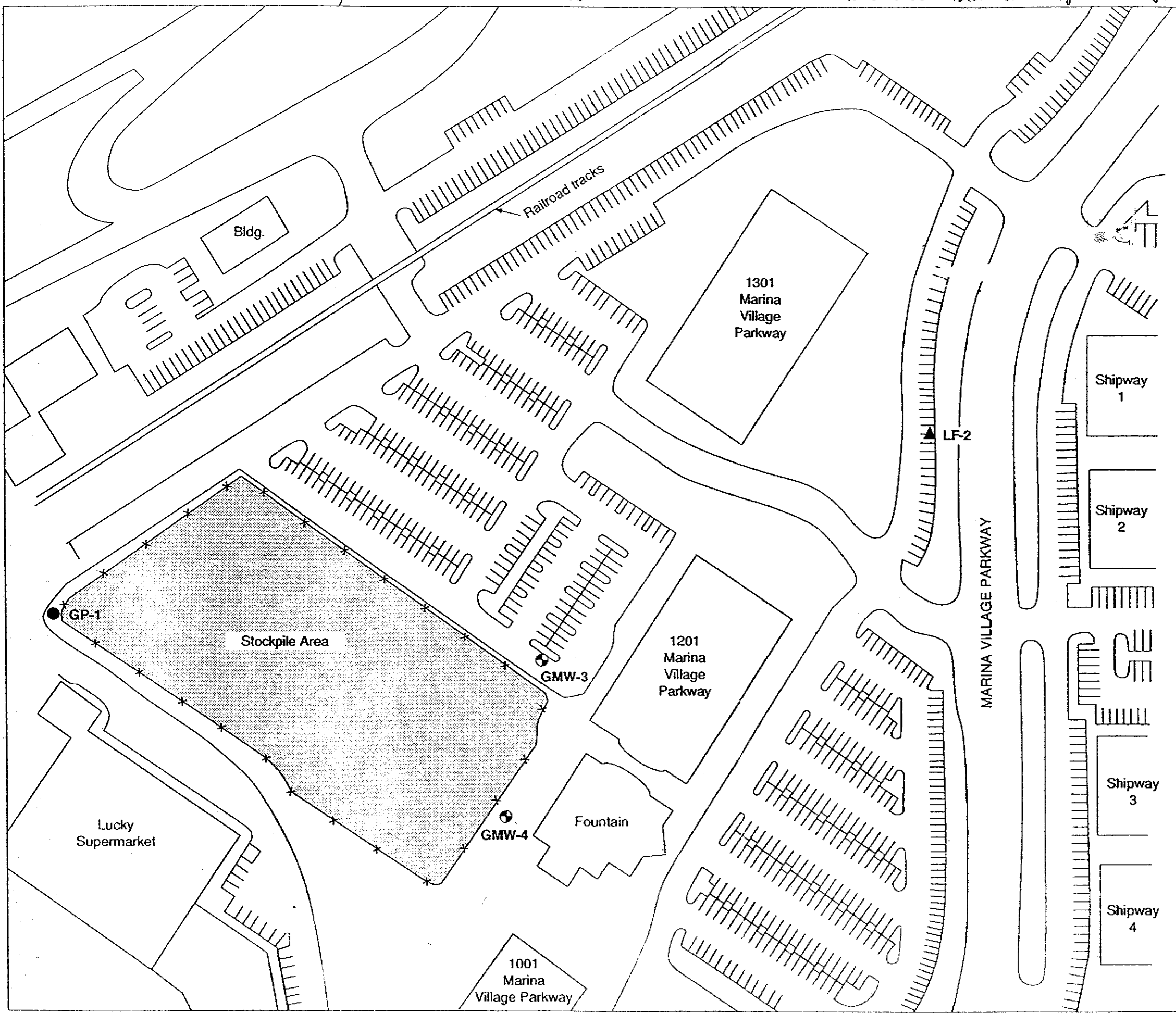
<u>Sample #</u>	<u>Total High Boiling Compounds</u> (ppm)
Composite B1, B2, B3, B4	410
Composite F1, F2	2,500
<u>Quality Assurance</u>	
Method Blank	<50
Composite F1, F2 (Duplicate)	1,800
Composite F1, F2 (Matrix Spike) Percent Recovery	a
Composite F1, F2 (Matrix Spike Duplicate) Percent Recovery	a
Sample Spiked at	1,000

a - The amount spiked was insufficient to give meaningful recovery data.






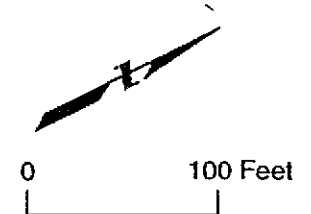



900 Tynon St (2 tanks) and (1 Tank) 1150 Marina Village Parkway.



EXPLANATION

- GMW-4  Geomatrix monitoring well, 4/92
- GP-1  Geomatrix piezometer, 4/92
- LF-2  Levine-Fricke monitoring well, 1988



SITE PLAN Marina Village Alameda, California		
	Project No. 1736.10	Figure 1