

TRACE ANALYSIS LABORATORY
ORGANIC ANALYSIS DATA SHEET

Client: Blymyer Engineers, Inc. Date Sampled: 2/1/89
 Contact: Mike Lewis Date Received: 2/2/89
 Client Project: No. 88322, Encinal - Alameda Date Analyzed: 02/14/89
 Sample Point: _____ Date Reported: 02/14/89
 LAB Project: 6979 Dilution Factor: 1.00
 Sample ID: 01 Analysis Method: _____
 Analyst: Lee Do QA/QC Supervisor: Dan Farah
 Sample Type: Soil

Comment: U, J = Compounds are below Detection Limit
10 ug/kg = Detection Limit

TARGET COMPOUNDS

CAS NO.	COMPOUND	CONCENTRATION	UNITS:	
		UG/KG		Q
74-87-3	CHLOROMETHANE	10.00	U	
74-83-9	BROMOMETHANE	10.00	U	
75-01-4	VINYL CHLORIDE	10.00	U	
75-00-3	CHLOROETHANE	10.00	U	
75-09-2	METHYLENE CHLORIDE	10.00	U	
75-69-4	TRICHLOROFLOUROMETHANE	10.00	U	
75-35-4	1,1-DICHLOROETHENE	10.00	U	
107-6-2	2-DICHLOROETHANE	10.00	U	
75-34-3	1,1-DICHLOROETHANE	10.00	U	
156-60-5	TRANS-1,2-DICHLOROETHENE	10.00	U	
67-66-3	CHLOROFORM	10.00	U	
71-55-6	1,1,1-TRICHLOROETHANE	10.00	U	
56-23-5	CARBONTETRACHLORIDE	10.00	U	
75-27-4	BROMODICHLOROMETHANE	10.00	U	
78-87-5	2-DICHLOROPROPANE	10.00	U	
10061-02-6	TRANS-1,3-DICHLOROPROPENE	10.00	U	
79-01-6	TRICHLOROETHENE	10.00	U	
124-48-1	DIBROMOCHLOROMETHANE	10.00	U	
71-43-2	BENZENE	10.00	U	J
79-00-5	1,1,2-TRICHLOROETHANE	10.00	U	
10061-01-5	CIS-1,3-DICHLOROPROPENE	10.00	U	
110-75-8	2-CHLOROETHYLVINYLEETHER	10.00	U	
75-25-2	BROMOFORM	10.00	U	
79-34-5	1,1,2,2-TETRACHLOROETHANE	10.00	U	
127-18-4	TERTRACHLOROETHENE	10.00	U	
108-88-3	TOLUENE	10.00	U	J
108-90-7	CHLOROBENZENE	10.00	U	
100-41-4	ETHYLBENZENE	10.00	U	
541-73-1	1,3-DICHLOROBENZENE	10.00	U	
3588-82-1	1,4-DICHLOROBENZENE	10.00	U	
95-50-1	1,2-DICHLOROBENZENE	10.00	U	

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME				NO. OF CON TAINERS	REMARKS								
80322		Encinal - Alameda													
SAMPLERS: (Signature) Michael S. L.															
STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION										
1	2/1/89	12:30		X	Excavation - Center	1	X	X							10 day TAT
Relinquished by: (Signature) Michael S. L.		Date / Time 2-2-89 4:05 P.M.		Received by: (Signature) Carrie Deller		Relinquished by: (Signature)		Date / Time		Received by: (Signature)					
Relinquished by: (Signature)		Date / Time		Received by: (Signature)		Relinquished by: (Signature)		Date / Time		Received by: (Signature)					
Relinquished by: (Signature)		Date / Time		Received for Laboratory by: (Signature)		Date / Time		Remarks Invoice to: Blymyer Engineers							

OIL GREASE (SWP)
EPA 824-D

Distribution: Original Accompanying Report; Copy to Coordinator Field Files

100 Pine Street, 10th Floor
San Francisco, CA 94111
(415) 434-9400 • FAX (415) 434-1385

*All samples wet as per...
to indicate that results...
have been from actual...
concentrations.*



Transmittal

Date 4 April 1995

To Juliet Shin

ACHCSA

Project Number 2350.03

Project Name Encinal Terminals

*- Additional work, including placement of
3 borings, will begin this week*

Transmitted via

- Messenger
- U.S. Mail
- Overnight Mail
- Fax 337-9335
510/567-6763

Total Pages 14

Item Description

1. Figure 1, Location of Soil Borings
2. Table 1, Summary of Analytical Results
3. Analytical Laboratory Reports

Remarks

Juliet,

Attached for your review is summarized data for the Encinal Terminals site.

See you this afternoon at 2 p.m.

From Tom Graf

cc:

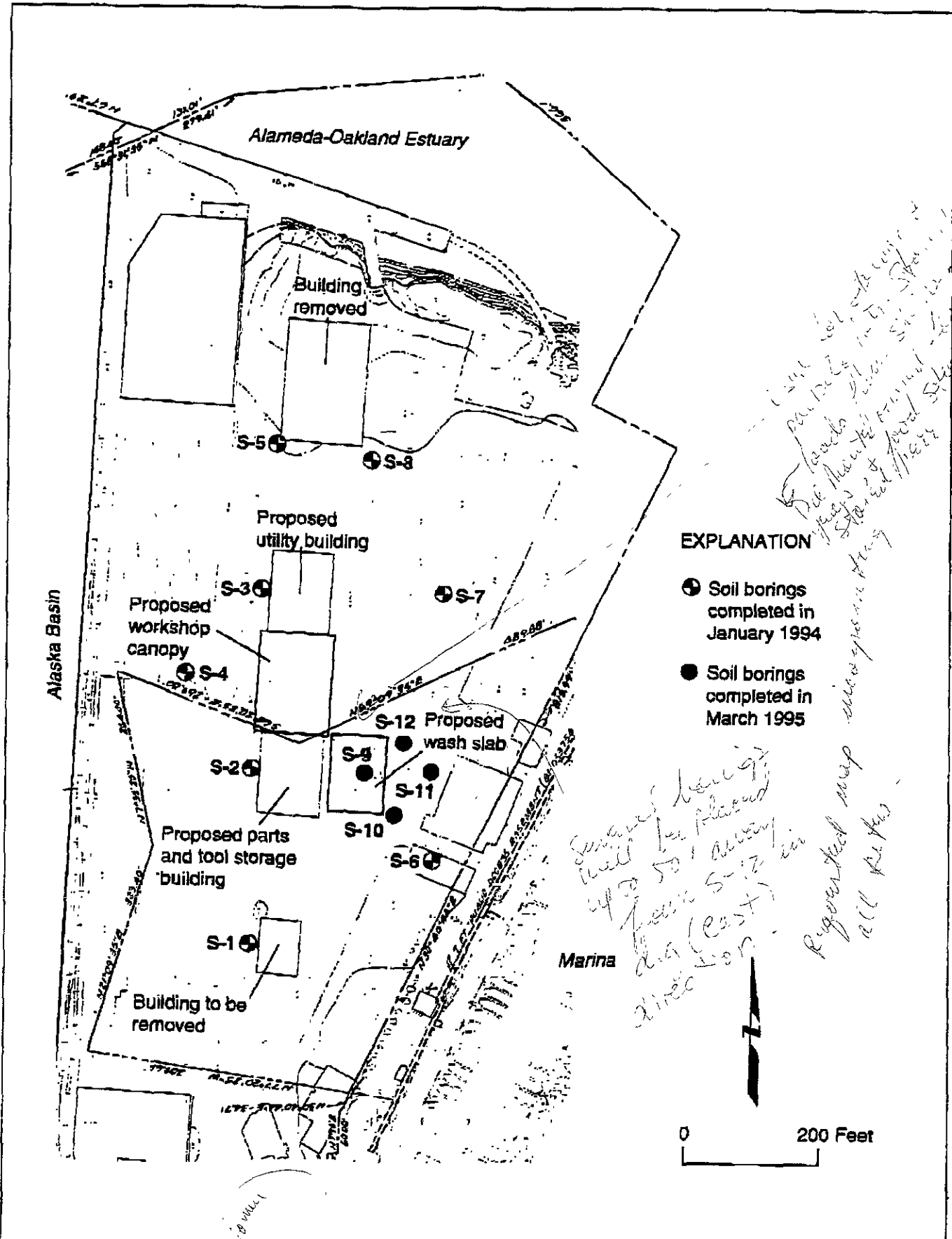


TABLE 1

**SUMMARY OF ANALYTICAL RESULTS FOR
SOIL AND GRAB GROUNDWATER SAMPLES¹**
Encinal Terminals-Container Care Lease
1521 Buena Vista Avenue
Alameda, California

Results reported in parts per million

Sample I.D.	Sample Media	Sample Depth	TPH as Gasoline	TPH as Diesel	TPH as Motor Oil	Benzene	Toluene	Ethyl-Benzene	Total Xylenes
S-9-6.0 ²	Soil	6.0	<1 ³	<10	<50	<0.02	<0.02	<0.02 ³	<0.02
S-9-8.5 ⁴	Soil	8.5	<1	<10	-- See Notes	--	--	--	--
S-10-4.5	Soil	4.5	--	<10	--	--	--	--	--
S-11	Water	--	<0.05	0.3 ⁵	--	<0.0005	<0.0005	<0.0005	<0.0005
S-12	Water	--	(see note #6)	--	--	--	--	--	--

Hand
order

¹ Samples collected 16 and 17 March 1995 by Geomatrix Consultants, Inc., and analyzed by Friedman & Bruya, Inc., of Seattle, Washington. Total petroleum hydrocarbons (TPH) as gasoline, diesel, and motor oil analyzed using modified Environmental Protection Agency (EPA) Method 8015. Benzene, toluene, ethylbenzene, and total xylenes (BTEX) analyzed using EPA Method 8020.

² Analysis of soil sample S-9-6.0 for lead and zinc per California LUFT Guidelines detected 3 ppm of lead and 5 ppm of zinc.

³ Results for duplicate analysis of soil sample S-9-6.0 was 1 ppm of TPH as gasoline and 0.03 ppm of ethylbenzene.

⁴ In addition to modified EPA Methods 8015, fingerprint characterization was performed on this sample. The results of soil sample S-9-8.5 showed an absence of volatile and semi-volatile compounds.

⁵ The pattern of peaks present in the gas chromatograph for grab groundwater sample S-11 was not indicative of diesel #2, and was similar to a biogenic material.

⁶ Fingerprint analysis of grab groundwater sample S-12 appeared indicative of low levels (near the detection limit of 0.1 ppm for gasoline) of gasoline and related compounds. Positive identification of the product was not possible due to its low concentration.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3012 16th Avenue West
Seattle, WA 98119-2029
FAX: (206) 283-5044

March 31, 1995

Cheri Page, Project Leader
Geomatrix Consultants, Inc.
100 Pine Street, Suite 1000
San Francisco, CA 94111-5112

Dear Ms. Page:

Enclosed are the results from the testing of material submitted on March 20, 1995 from your project #2530.03.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Beth Albertson
Chemist

jdp
Enclosures
FAX: (415) 434-1365

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 20, 1995

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
 FOR BENZENE, TOLUENE, ETHYLBENZENE,
 XYLENES AND GASOLINE
 USING EPA METHODS 8020 AND 8015
 Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl- benzene</u>	<u>Total Xylenes</u>	<u>Gasoline</u>	<u>Surrogate Standard % Recovery</u>
S-9-6.0	<0.02	<0.02	<0.02	<0.02	<1	91%
<u>Quality Assurance</u>						
Blank	<0.02	<0.02	<0.02	<0.02	<1	88%
S-9-6.0 (Duplicate)	<0.02	<0.02	0.03	<0.02	1	93%
S-9-6.0 (Matrix Spike) % Recovery	77%	74%	81%	81%	118%	99%
S-9-6.0 (Matrix Spike Duplicate) % Recovery	78%	77%	82%	83%	99%	97%
Spike Blank % Recovery	92%	89%	89%	92%	97%	93%
Spike Level	1	1	1	3	10	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 20, 1995

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
 FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL
 BY GC/FID (Modified 8015)
 per California LUFT Guidelines
 Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Diesel</u>	<u>Motor Oil</u>	<u>Surrogate Standard (% Recovery)</u>
S-9-6.0	<10	<50	120%
S-10-4.5	<10	nr	123%
<u>Quality Assurance</u>			
Blank	<10	<50	116%
S-10-4.5 (Duplicate)	<10	nr	119%
S-10-4.5 (Matrix Spike) % Recovery	105%	na	122%
S-10-4.5 (Matrix Spike Duplicate) % Recovery	113%	na	118%
Spike Blank % Recovery	98%	na	115%
Spike Level	250	500	

nr Analysis not requested by client.

na The analyte indicated was not added to the matrix spike samples.

FRIEDMAN & BRUYA, INC.**ENVIRONMENTAL CHEMISTS**

Date of Report: March 31, 1995
Date Received: March 20, 1995
Project: #2530.03
Date Samples Extracted: March 20, 1995

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR LEAD AND ZINC
per California LUFT Guidelines
Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Lead</u>	<u>Zinc</u>
S-9-6.0	3	5
<u>Quality Assurance</u>		
Blank	<1	<1
S-9-6.0 (Duplicate)	5	15
S-9-6.0 (Matrix Spike) % Recovery	107%	117%
S-9-6.0 (Matrix Spike Duplicate) % Recovery	104%	105%
Spike Blank % Recovery	107%	106%
Spike Level	100	50

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 28, 1995

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
 FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 BY GC/FID (Modified 8015)
 per California LUFT Guidelines
 Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample ID</u>	<u>Gasoline</u>	<u>Surrogate Standard</u> (% Recovery)
S-9-8.5	<1	97%
<u>Quality Assurance</u>		
Blank	<1	78%
S-9-8.5 (Duplicate)	<1	103%
S-9-8.5 (Matrix Spike) % Recovery	71%	104%
S-9-8.5 (Matrix Spike Duplicate) % Recovery	75%	106%
Spike Blank % Recovery	79%	83%
Spike Level	10	

FRIEDMAN & BRUYA, INC.**ENVIRONMENTAL CHEMISTS**

Date of Report: March 31, 1995
Date Received: March 20, 1995
Project: #2530.03
Date Samples Extracted: March 28, 1995

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
BY GC/FID (Modified 8015)
per California LUFT Guidelines
Results Reported as µg/g (ppm)**

<u>Sample ID</u>	<u>Diesel</u>	<u>Surrogate Standard</u> (% Recovery)
S-9-8.5	<10	122%
<u>Quality Assurance</u>		
Blank	<10	127%
S-9-8.5 (Duplicate)	<10	125%
S-9-8.5 (Matrix Spike) % Recovery	133%	89%
Spike Blank % Recovery	104%	126%
Spike Level	250	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 28, 1995

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
 FOR FINGERPRINT CHARACTERIZATION
 BY CAPILLARY GAS CHROMATOGRAPHY
 USING A FLAME IONIZATION DETECTOR (FID)
 AND ELECTRON CAPTURE DETECTOR (ECD)**

Sample ID

S-9-8.5

11

*Had soil in borings,
 being placed for
 baseline because
 work was planned
 for future by
 California Calce.*

GC Characterization

No peak identified.

The GC trace using the flame ionization detector (FID) and the GC electron capture detector (ECD) trace showed an absence of volatile and semi-volatile compounds.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second internal standard peak seen on the GC/ECD trace at about 26 minutes which is dibutyl chlorendate.

*This was done only in gas
 & diesel range (petroleum
 range).*

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 21, 1995

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
 FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL
 BY GC/FID (Modified 8015)
 per California LUFT Guidelines
 Results Reported as µg/L (ppb)**

<u>Sample ID</u>	<u>Diesel</u>	<u>Surrogate Standard (% Recovery)</u>
S-11	300 ^a	108%
<u>Quality Assurance</u>		
Blank	<50	63%
Spike Blank % Recovery	93%	73%
Spike Blank Duplicate % Recovery	91%	99%
Spike Level	2,500	

will submit chromatogram for S-11.

*4/14/95
David have it*

^a The pattern of peaks present is not indicative of Diesel #2.

*Lab. stated it was
biogenic.*

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
 Date Received: March 20, 1995
 Project: #2530.03
 Date Samples Extracted: March 20, 1995

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES
 FOR BENZENE, TOLUENE, ETHYLBENZENE,
 XYLENES AND GASOLINE
 USING EPA METHODS 8020 AND 8015
 per California LUFT Guidelines
 Results Reported as µg/L (ppb)**

<u>Sample ID</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl- benzene</u>	<u>Total Xylenes</u>	<u>Gasoline</u>	<u>Surrogate Standard % Recovery</u>
S-11	<0.5	<0.5	<0.5	<0.5	<50	101%
<u>Quality Assurance</u>						
Blank	<0.5	<0.5	<0.5	<0.5	<50	103%
S-11 (Duplicate)	<0.5	<0.5	<0.5	<0.5	<50	101%
Spike Blank % Recovery	103%	101%	99%	104%	100%	101%
Spike Blank Duplicate % Recovery	102%	102%	100%	104%	103%	100%
Spike Level	100	100	100	300	1,000	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: March 31, 1995
Date Received: March 20, 1995
Project: #2530.03
Date Samples Extracted: March 27, 1995

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR FINGERPRINT CHARACTERIZATION
BY CAPILLARY GAS CHROMATOGRAPHY
USING A FLAME IONIZATION DETECTOR (FID)
AND ELECTRON CAPTURE DETECTOR (ECD)**

Sample IDGC Characterization

S-12

The GC trace using the flame ionization detector (FID) showed the presence of low boiling compounds.

Don't look for 3 peak separately.

The low boiling compounds appeared as a ragged pattern of peaks eluting from $n-C_6$ to $n-C_{10}$ showing a maximum near $n-C_6$. The GC/FID trace showed the presence of peaks that appeared to be indicative of low levels of benzene, toluene and ethylbenzene and the xylenes. These compounds are characteristic of the constituents commonly found in gasoline. The material present was seen near the detection limit of 100 ppb for gasoline. Positive identification of the product is not possible due to its low concentration.

The large peak seen near 25 minutes on the GC/FID trace is pentacosane, added as a quality assurance check for this GC analysis. There is a second internal standard peak seen on the GC/ECD trace at about 26 minutes which is dibutyl chloroendate.

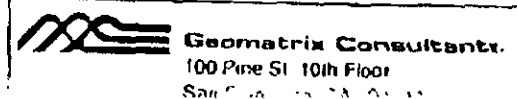
BA 80

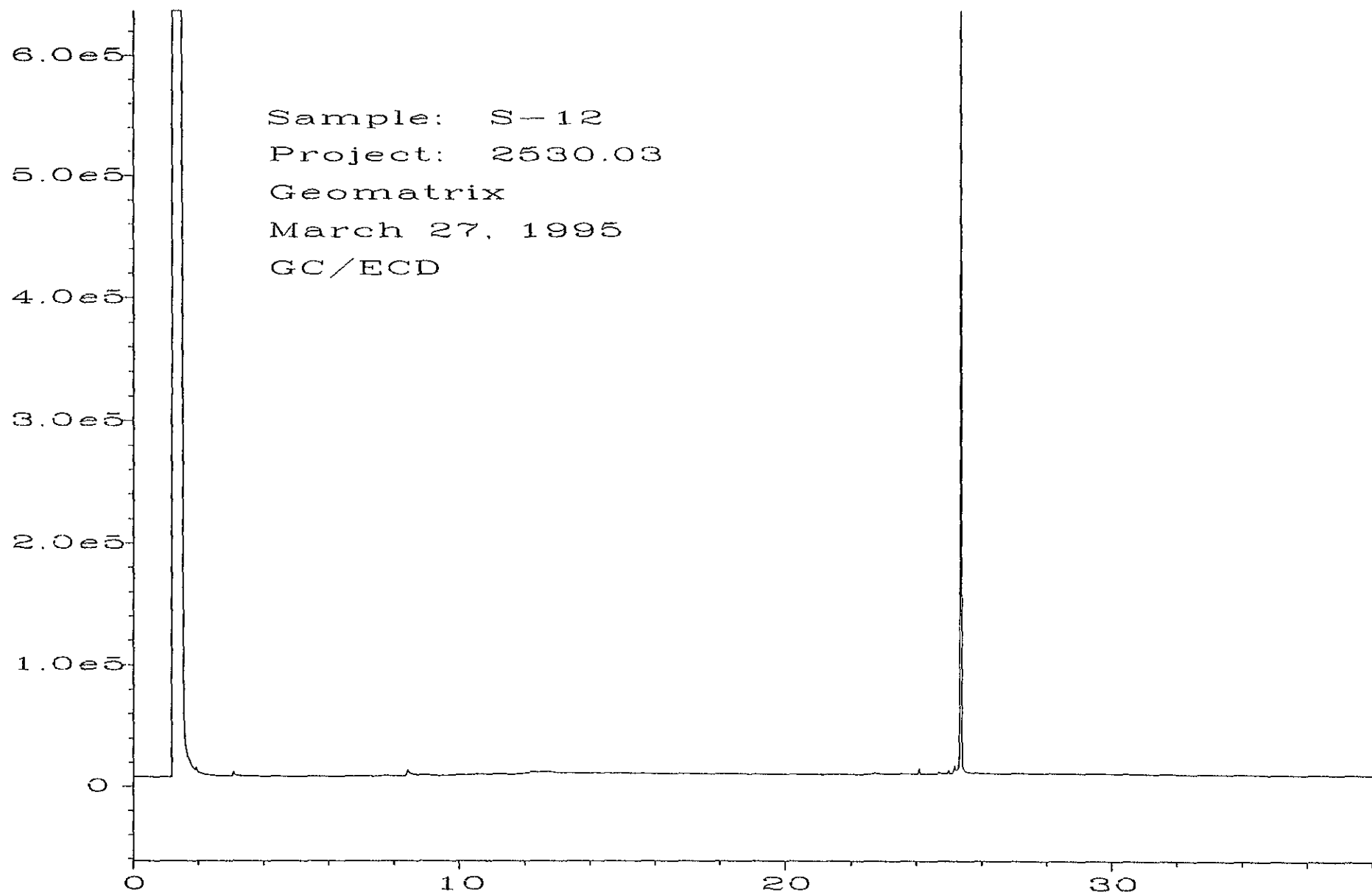
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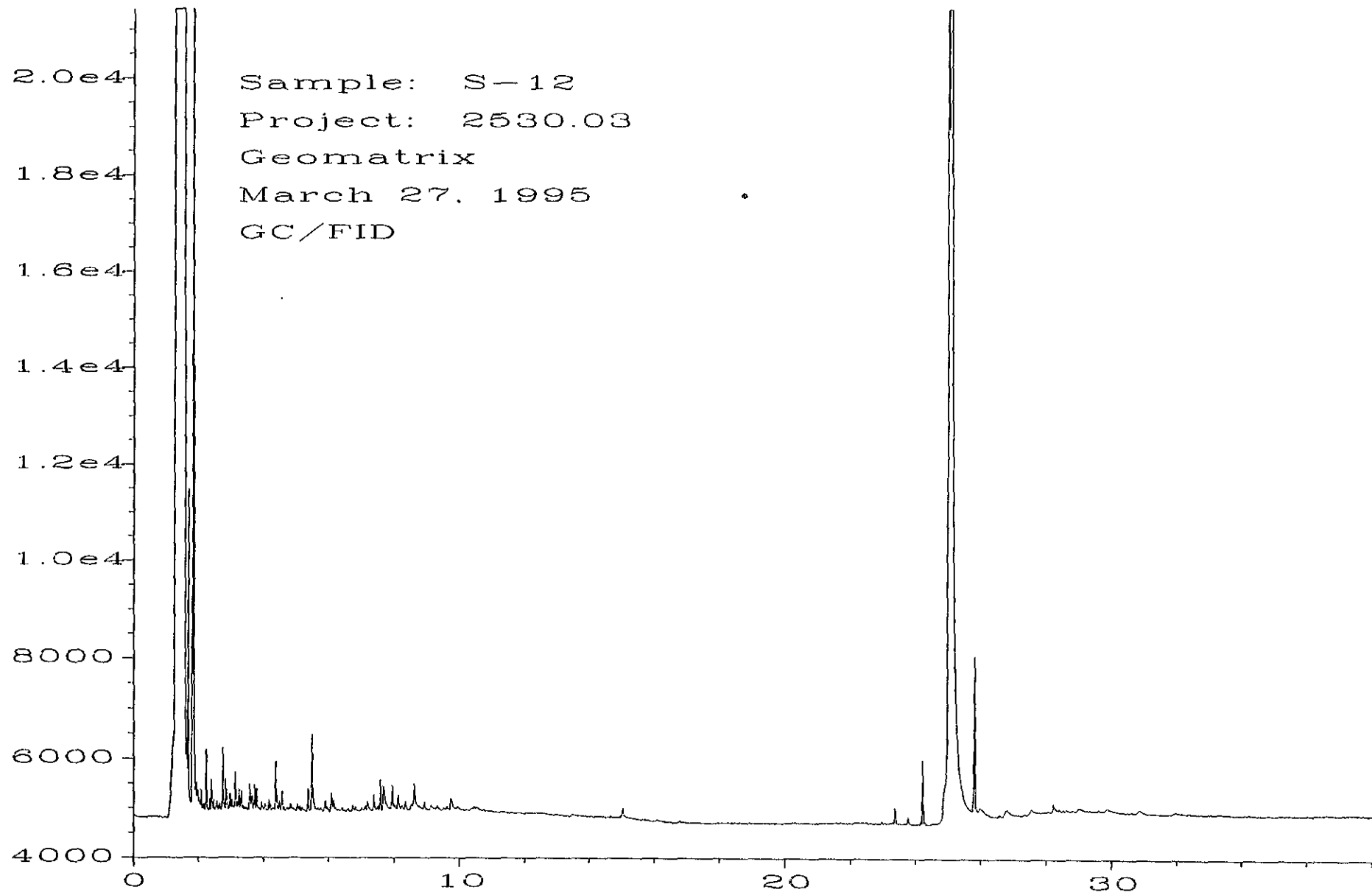
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Page 1 of 1

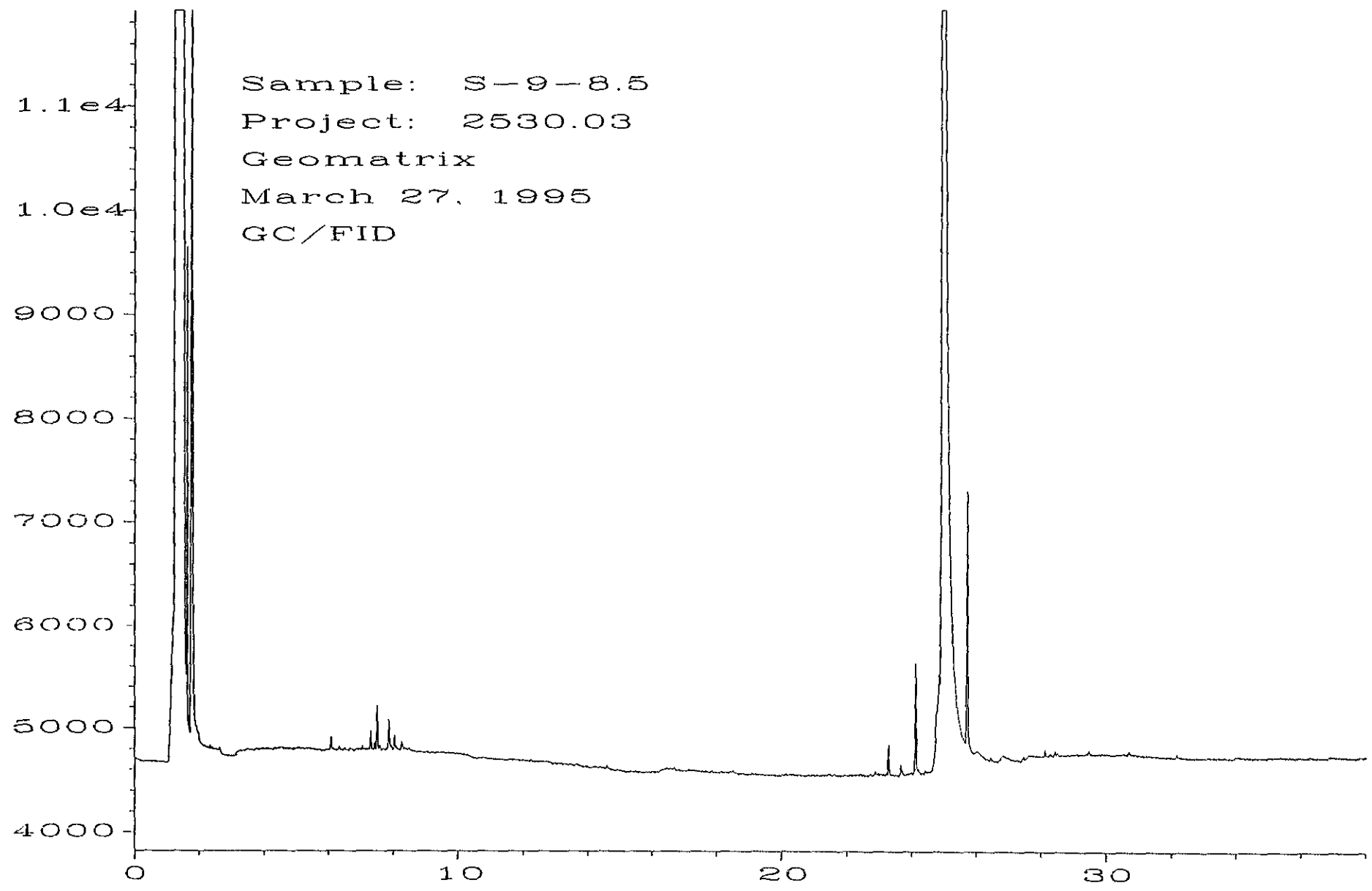
04/04/95 11:07 2A15 434 1365 GEOMETRIX SF 014/014

Chain-of-Custody Record			No. 6252		Date: 3/17/95		REMARKS							
Project No. 2530.03			ANALYSES					Additional comments						
Samplers (Signatures)			EPA Method 8010	EPA Method 8020	EPA Method 8240	EPA Method 8270	TPH as gasoline	TPH as diesel	TPH as BTEX SU20	Other	Cooled	Soil or water (W)	Acidified	Number of containers
Daniel DelGrade Richard A. Payne														
Date	Time	Sample Number												
3/16	12:05	S-9-6.0					X	X	X					1
	12:30	S-9-85							X					1
	1:45	S-10-4.5						X						1
3/17	1:45	S-11					X	X	X					5
3/17	3:00	S-12							X					5
<p>7 1 liter sample I.D. is GG-11 (57873)</p> <p>7 1 liter sample I.D. is SS-12 (57878)</p>														
Turnaround time: STD			Results to: CHERI PAGE			Total No. of containers: 13								
Relinquished by: Daniel DelGrade		Date: 3/17/95	Relinquished by:		Date:	Relinquished by:		Date:	Method of shipment: FED EX TO LAB					
Signature: Daniel DelGrade			Signature:			Signature:			Laboratory comments and Log No.:					
Printed name: DANIEL DELGRADE			Printed name:			Printed name:								
Company: CMX			Company:			Company:								
Received by: Cathy Riggs		Time: 5:00	Received by:		Time:	Received by:		Time:						
Signature: Cathy Riggs			Signature:			Signature:								
Printed name: CATHY RIGGS			Printed name:			Printed name:								
Company: F&B T			Company:			Company:								

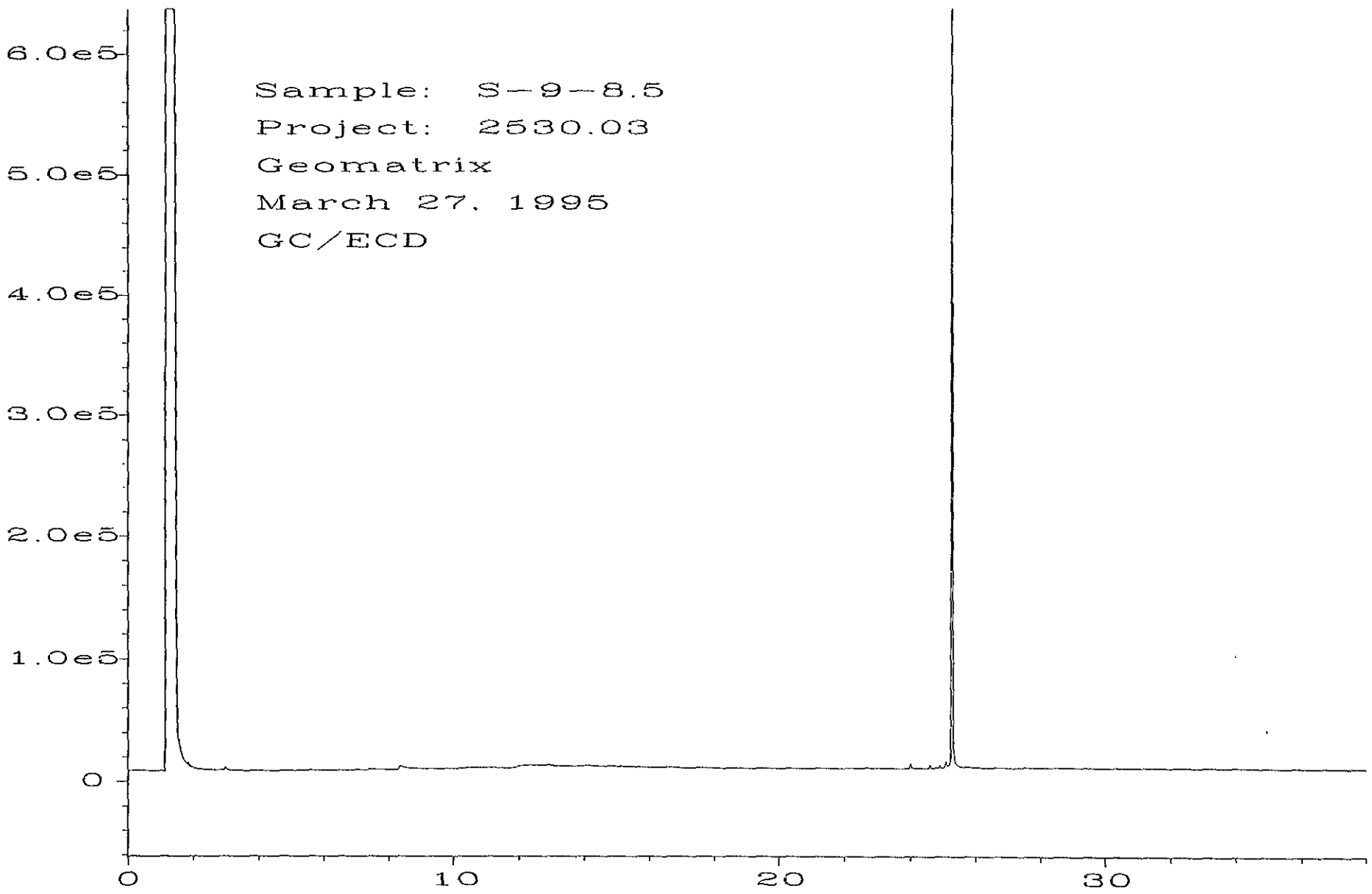


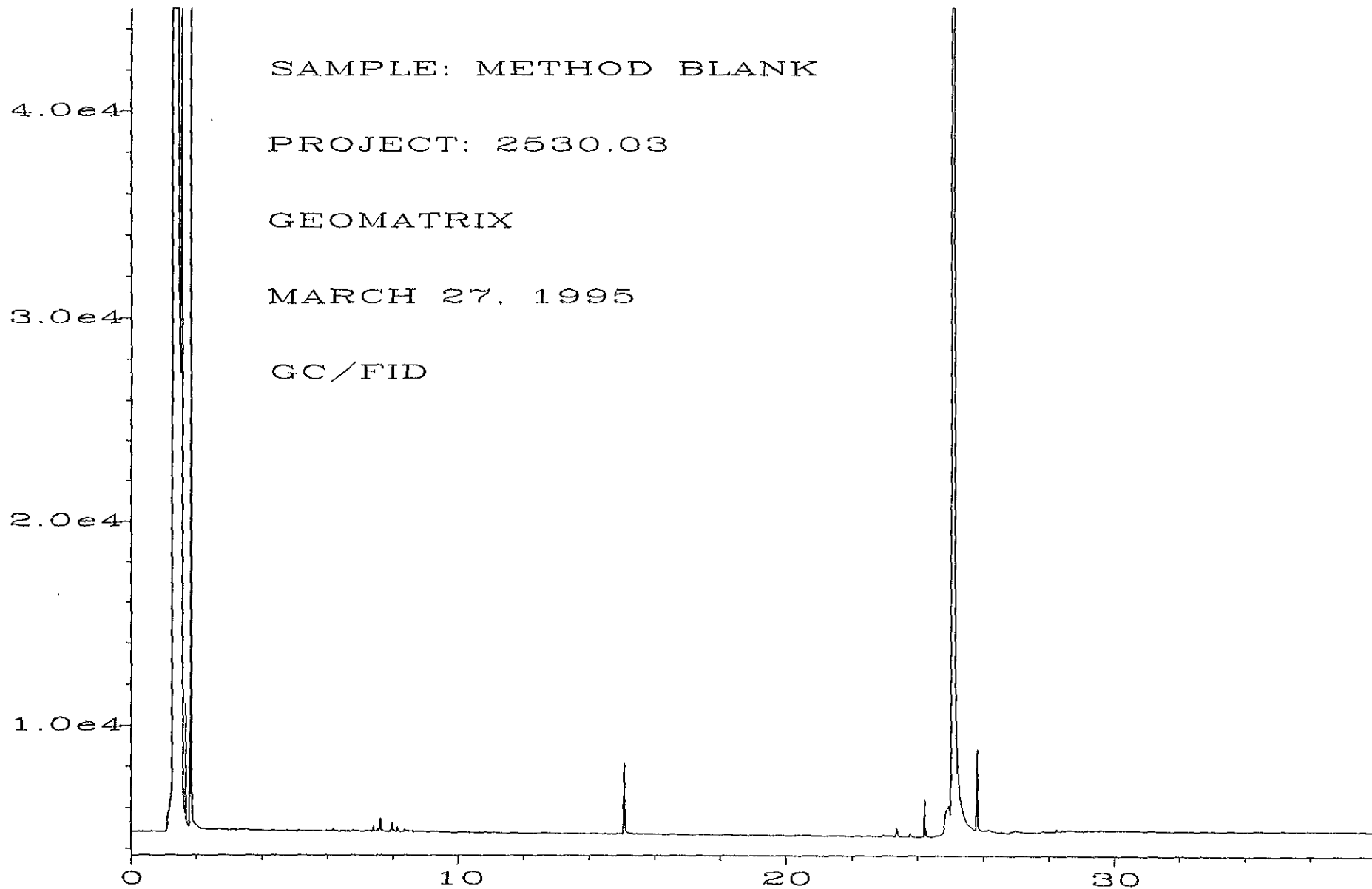


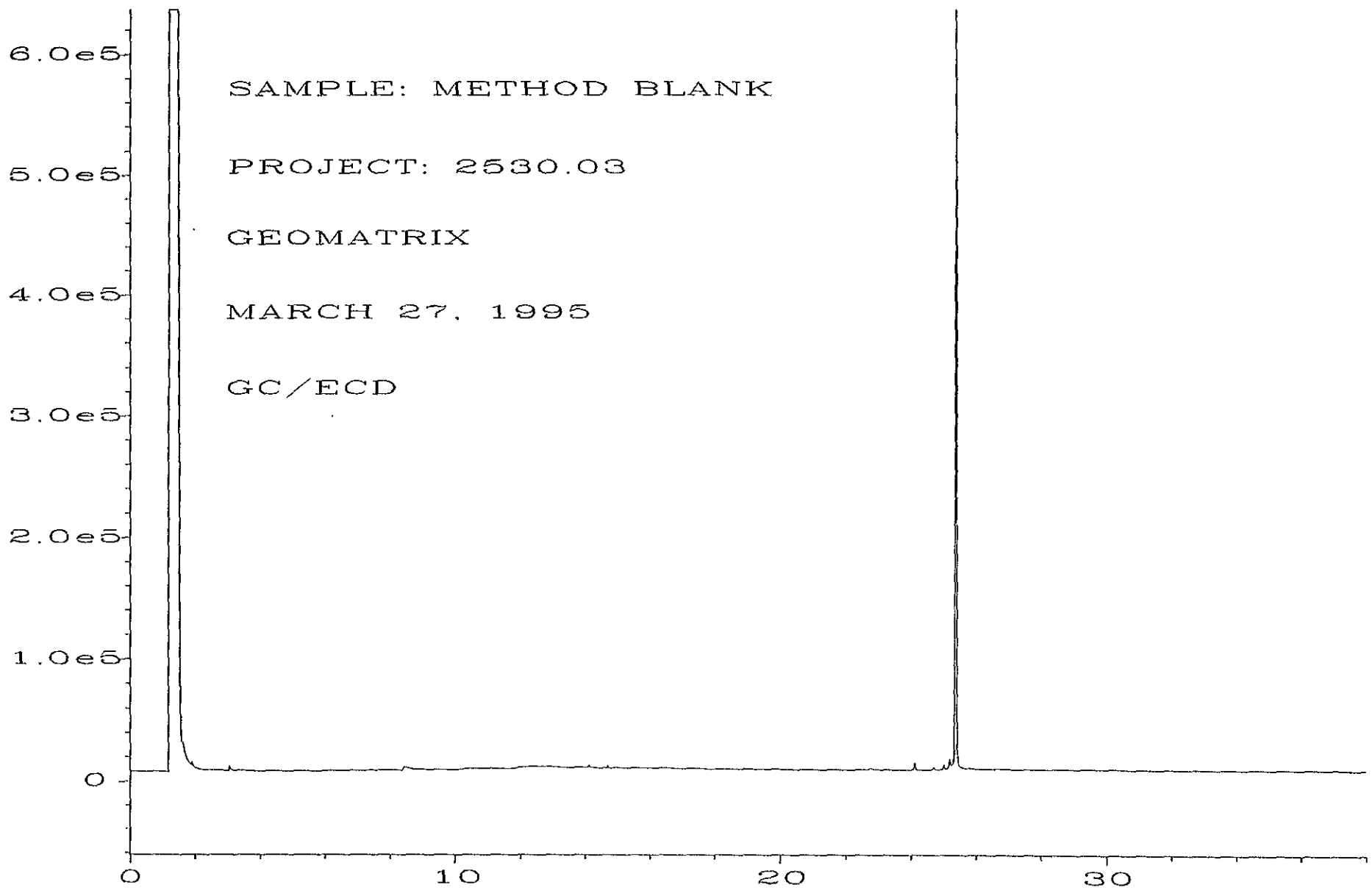




Sample: S-9-8.5
Project: 2530.03
Geomatrix
March 27, 1995
GC/FID







SAMPLE: METHOD BLANK

PROJECT: 2530.03

GEOMATRIX

MARCH 27, 1995

GC/ECD

