LST, FILE

MER WPW file

Rollins Environmental Services (FS) Inc.
2027 Battleground Road, P.O. Box 609, Deer Park, Texas 77536
(713) 479-6001

JUL 3 1984

L. W. P.
JUN 11 1984

Rollins

M. E. R.
JUL 23 1984

June 4, 1984

Mr. Jeff Webb
T.D.W.R.
P. O. Box 13087, Capitol Station
Austin, TX 78711

Dear Mr. Webb:

Enclosed is the Closure of Facilities letter with an original signature. Please call if there is any additional material requested.

Sincerely,

Dan Bridge

Dan Bridge, Ph.D.
Project Manager

DB/mcr

Enclosure

cc: Mr. Wayne Pepple
Southern Pacific Transportation Co.
One Market Plaza, Rm. 1007
San Francisco, CA 94105

ETC ENGINEERS, INC.
Engineering Technical Construction Services For Industry
510 COLLEGE SO. HOUSTON, TEXAS 77587 713/941-8420

April 18, 1984

Texas Department of Water Resources
P.O. Box 13087, Capitol Station
Austin, Texas 78711

CLOSURE OF FACILITIES

This is a statement of the closure of a creosote tank bottom surface impoundment (RCRA Facility #31547) at the Southern Pacific Transportation Company facility, 4910 Liberty Road, Houston, Texas.

The owner has removed all the impoundment materials in accordance with Texas Administrative Code Section 335.286a. The excavated area has been backfilled and compacted with clay soil. Four ground-water monitoring wells have been constructed. This system will be monitored for one year. If after one year it is determined that there is no affect on the ground-water, there is sufficient proof that the impoundment is clear of any contamination.

I hereby certify that I have examined the facility and being familiar with the provisions of the Texas Administrative Code Subchapter N, Surface Impoundment Sections 335.281-335.288 attest that this closure has been conducted in accordance with good engineering practices.

Henry T. Gramann
Printed Name
of

Henry T. Gramann
Signature of
Registered Professional Engineer
Regis. No. 28163 State Texas

Date April 18, 1984

June 4, 1984

0812/071-02(HO)

Mr. Jeff Webb
Texas Department of Water Resources
P. O. Box 13087
Capitol Station
Austin, TX 78711

Dear Mr. Webb:

SUBJECT: Closure of RCRA Hazardous Waste Facility
No. 31547 - HOUSTON

In accordance with your letter of February 28, 1984 we have completed the closure of above subject facility.

An independent registered professional engineer has certified closure of facility by letter addressed to Texas Department of Water Resources at Austin, Texas, and dated April 18, 1984.

Attached is an Affidavit of Exclusion indicating the facility meets the Accumulation Time requirement of the Texas Administrative Code. It is our understanding that this fulfills the requirements as outlined in your letter of February 28, 1984.

If you have any questions, please contact Mr. Wayne Pepple in this office at (415) 541-1490.

Yours very truly,

Original Signed
H. B. BERKSHIRE

Attach.

bc: Dr. Dan Bridge
Rollins Environmental
Services (FS) Inc.
P.O. Box 609
Deer Park, TX 77536

dbc: Mr. R. Byrne
Mr. D.W. Long
Mr. D.V. Clayton
Mr. G.F. Bozeman

AFFIDAVIT OF EXCLUSION FROM HAZARDOUS WASTE PERMITTING REQUIREMENT

Registration No. RCRA Facility 31547

Application No. ______
(Dept. Use Only)

Facility Name Southern Pacific Transportation Co.

County of Harris

H. B. Berkshire being duly sworn, deposes and says:

I am Asst. V.P. - MofW & Engineering of Southern Pacific Trans. Co.
Title (Owner or Principal Officer) Facility Owner
One Market Plaza, S.F. CA 94105
and Address.

This affidavit is being executed for the purpose of notifying the Executive Director of the Texas Department of Water Resources that the named facility does not require a hazardous waste permit because:

Check appropriate box(es):

[ ] No hazardous waste is stored, processed or disposed on-site

[XX] The facility qualifies for the "Accumulation Time" storage exclusion of Texas Administrative Code, Section 335.69
* SEE NOTE

[ ] The facility qualifies for the "Small Quantity Generator" exclusion of Texas Administrative Code, Section 335.2(e)

[ ] The facility qualifies for the "Elementary Neutralization Unit" exclusion of Texas Administrative Code, Section 335.2(f)

[ ] The facility qualifies for the "Wastewater Treatment Unit" exclusion of Texas Administrative Code, Section 335.2(f)

[ ] Other (Explain with an attachment and reference TDWR rule)
* Closure of RCRA Fac. 31547 in accordance with Closure Plan submitted Nov. 29, 1983 and Revised Dec. 23, 1983.

H B Berkshire
Signature

Sworn to before me this 5th day of May, 1984.

J. Jurgens
Notary Public in and for

San Francisco County, Calif.

My commission expires ______

J. E. JURGENS
NOTARY PUBLIC-CALIFORNIA
Principal Place of Business in
CITY AND COUNTY OF
SAN FRANCISCO
My Commission Expires Nov. 1, 1985

FINAL REPORT ON CLOSURE PLAN

OF RCRA FACILITY #31547

Prepared For: Southern Pacific Transportation Company
By: Rollins Environmental Services (FS) Inc.
April, 1984

TABLE OF CONTENTS

I. INTRODUCTION

In March of 1981 RES (FS) submitted a proposal to Southern Pacific for the excavation, transportation and disposal of creosote waste in a surface impoundment at 4910 Liberty Road. The pricing was revised January, 1982. In November, 1983 a formal contract was signed to cover specifics concerning the excavation, transportation and disposal of the creosote waste.

RES (FS) completed a formal Closure Plan for the surface impoundment (RCRA Facility #31547) that was submitted by Southern Pacific to the Texas Department of Water Resources. The Closure Plan was officially approved by letter dated February 28, 1984.

Southern Pacific had a public notice announcing the closure published in the Houston Chronicle on January 13, 1984. On-site operations to carry-out the closure plan began on March 15, 1984. The on-site work was inspected and certified by an

independent registered engineer. There were four major phases to the closure on-site work:

1. Waste Removal
2. Sampling Program
3. Clay Backfill
4. Groundwater Monitoring Well Installation

Pertinent documents and letters are included as Appendix A. A Project Calendar of on-site work is provided on the following page. Appendix B is a series of photographs pertaining to project phases.

PROJECT CALENDAR OF ON-SITE WORK

DATES	
March 15-16	Dewater Surface of Waste Impoundment
17	Heavy Equipment Move-On
18	Dewater Remaining Water On Top of Waste
19	6 Loads of Waste to Landfill
20	36 Loads of Waste to Landfill
21	41 Loads of Waste to Landfill
22	43 Loads of Waste to Landfill
23	2 Loads of Waste to Landfill
24	Dewatering
25	Dewatering
26	22 Loads of Waste to Landfill
27	53 Loads of Waste to Landfill, East Bank Clay Fill 32
28	17 Loads of Waste to Landfill, East Bank Clay Fill 184
29	Samples procurred
30-31	Sample Analysis
April 1	Sample Analysis
2	Rainout, All area clean except for Section C-1
3	Dewater
4	Dewater, Sample Procurred for Section C-1, Several Yards of Waste to Landfill
5-6	Dewater

7	1826 Truck Yards of Clayfill Emplaced
8	242 Truck Yards of Clayfill Emplaced
9	2622 Truck Yards of Clayfill Emplaced
10	1402 Truck Yards of Clayfill Emplaced
11	1230 Truck Yards of Clayfill Emplaced
12	Final Dressing
17-18	Well Installation

II. WASTE REMOVAL PHASE

Vacuum trucks were used to pump water off the surface of the impoundment. The water was then transported to a local deepwell. Dewatering continued from March 15 through March 18.

On Monday, March 19, the first loads of waste were transported to the Rollins Deer Park Landfill. All trucks were lined with visquine, tarped and placarded. The waste was loaded with a large backhoe. A small bulldozer was used to push material to the backhoe. From March 19 through March 28, a total of 220 loads of waste were transported to landfill.

Fourteen samples of waste were taken to determine an average weight per cubic yard. The weight per cubic yard varied from a low of 1345 pounds to a high of 2746 pounds. The average weight of 2177 pounds per cubic yard was agreed upon as representative of the waste.

The total waste poundage taken to landfill as of March 28, was 10,962,642 pounds moved by 220 loads. This amounted to 5,036 cubic yards.

The basic challenge during the waste removal phase was water control. Overnight approximately four to five inches of water

would build up in the bottom of the impoundment. This waste had to be pumped off by vacuum trucks each morning. During the latter stages of the waste removal the dozer could not operate on the wet bottom soil and a small backhoe had to be placed in the impoundment to move waste to the larger backhoe used for truck loading.

III. SAMPLING PHASE

On March 29, six samples were obtained according to the random sampling program outlined in the formal Closure Plan (see Appendix A). Henry Koster, Field Supervisor RES (FS), Dan Bridge, Project Manager RES (FS), and Karen Freibus of the T.D.W.R. were all present during the sample procurement. Samples were immediately taken to M.B.A. Labs for analysis. The results of the sample analyses are in Appendix A.

Concentrations of the six samples were compared against concentrations of two background samples obtained from clay about six feet deep 10 feet north of the north side of the impoundment area. All of the samples contained lower concentrations than background, except for the sample taken from area C-1 of the sample grid. The sample grid is on the last page of the Closure Plan in Appendix A. Sample analyses are also provided in Appendix A.

On April 4, 63,820 pounds of waste (29.32 cubic yards) were removed from Section C-1 and taken to landfill. A composite sample of the section was procurred and taken to M.B.A. Labs for analysis. On Friday, April 6, the lab analysis confirmed that

the concentrations of contaminants were lower than those of the background samples. The analytical results are attached in Appendix A. At 4 p.m., Friday, April 6, Mr. Tom Kearns, Head of the Solid Waste Department of the T.D.W.R., District 7 Office, confirmed that the waste had been removed and gave approval to begin the clay backfill phase.

Originally, according to the approved Closure Plan, the samples were to be analyzed for conentrations of contaminants associated with the waste K001. These contaminants were principally phenols. However, the actual sample analyses revealed poly-nuclear aromatics (PNA's) to be the primary contaminants in the waste. All samples were analyzed for both phenols and PNA's and both families of contaminants were used as criteria for determining acceptable limits.

IV. CLAY BACKFILL PHASE

Red Beaumont Clay from the local area was unloaded and compacted into the impoundment from April 7 through April 11. A total of 7,538 truck yards were brought to the project site. A compaction factor of 40% was used to estimate a total of 4,523 cubic yards of clay compacted inplace.

The completed clay surface was graded to provide water runoff. A drainage trench, lined with clay, was excavated along the railroad tracks running parallel to the east side of the backfilled area.

V. GROUNDWATER MONITORING WELL INSTALLATION

Four groundwater monitoring wells were installed -- One upstream on the south side of the backfill area and three downstream on the north side of the backfilled area. The exact locations are depicted on the last page of the Closure Plan in Appendix A.

A dry soil core revealed clay down to approximately 13 feet on the north side of the backfilled area, followed by 3 feet of a clayey sand and then clay beyond 16 feet. Drilling on the south side of the backfilled area revealed the same strata; however, the 3 feet thick clayey sand was found at 15 feet. PVC casing was installed with bottom screen extending 10' from the bottom clay strata, up through the clayey sand. All four wells were producing groundwater from the clayey sand strata. All wells were cased with sand surrounding the screen, then bentonite, and then grouted to the ground surface. All wells were developed and metal casing was installed to enable the use of pad locks. A concrete mound was built around each well to prevent surface water from ponding around the well pipe. A complete documentation of well borings and installation is included in Appendix A.

VI. SUMMARY

On-site operations for carrying out the Closure Plan began with the dewatering of surface water on March 15 and ended with monitoring well installation on April 17. The remaining work will be monitoring well sampling and analysis .

A total of 5064.98 cubic yards (11,026,462 pounds) of waste were removed, transported and disposed.

A random sampling program was carried out and sample results were compared to two background samples. The one section where sample results were higher than background was scraped and resampled. The analysis of the composite sample showed that concentrations were lower than background levels.

A total of 7,538 truck yards of clay were backfilled and compacted to total 4,523 cubic yards implace (based on a compaction factor of 40%).

Four groundwater monitoring wells, one upstream and three

downstream, were installed.

An official "Closure of Facilities" letter signed by an independent engineer is included in Appendix A. Appendix B includes a series of photographs pertaining to the project phases.

APPENDIX A

PERTINENT DOCUMENTS IN

CHRONOLOGICAL ORDER

1. Revised pricing and original proposal.

2. Contract between Rollins and Southern Pacific

3. Closure Plan

4. Executive Director (T.D.W.R.) Approval of Closure Plan

5. Public Notice of final facility closure.

6. Bulk Density Values

7. MBA Laboratories Analyses

8. Letter of Certification of Closure by independent Professional Engineer.

1. Proposal and Updates

Rollins Environmental Services (TX) Inc.
P. O. Box 609 Deer Park Texas 77536 (713) 479-6001

Rollins

June 14, 1983

Mr. G. F. (Frank) Bozeman
Senior Manager, E & M
Southern Pacific Railroad
Engineering Department
P. O. Box 1314
Houston, TX 77001

Dear Mr. Bozeman:

Our latest correspondence, dated January 15, 1982, is attached. In that correspondence I quoted a final "turn-key" price of $48.55 per cubic yard for excavation, transportation and disposal of approximately 1800 cubic yards of creosote sludge.

Clay backfill was quoted at $10.00 per yard.

These prices are still in effect. The contents of the attached proposal will remain the same except for the changes in pricing indicated in this letter. I might add that we do plan to use polyethylene liners in the dump trucks to insure against leakage of wetter materials. The truck beds will possess chained tailgates as a security measure against waste spillage on the highway. The contents of the original proposal dated March 23, 1981, will remain the same except for the price change indicated in this letter.

Please contact me if you desire further information.

Sincerely,

Dan Bridge

Dan Bridge, Ph.D.
Field Services Group

DB/vs
Attachment

Rollins Environmental Services (TX) Inc.
P. O. Box 609, Deer Park, Texas 77536 (713) 479 6001

Rollins

January 15, 1982

Mr. G. F. (Frank) Bozeman
Senior Manager, E & M
Southern Pacific Railroad
Engineering Department
P. O. Box 1314
Houston, Texas 77001

Dear Mr. Bozeman:

In March 1981 I sent the attached proposal for clean-out and backfill of the creosote sludge lagoon at the Liberty Plant in Houston.

Several developments have occurred since March 1981, that have allowed us to reduce our pricing in excavation and transportation. Our corporate headquarters has given us considerable leeway in our pricing policy and we find that excavation rental equipment and trucking have become more competitive, reducing our costs in these areas as well.

Our new price per yard is $48.55, which is $7.02 less per yard than the March 1981 price of $55.57 per yard. Price breakdown is below:

Excavation	$14,290
Transportation	$7,700
Disposal	$64,663
TOTAL	$86,653

or $48.55 per cubic yard.

Clay backfill remains at $10.00 per yard and it is our understanding that Empak is currently deep-welling the standing water.

The contents of the attached proposal will remain the same, except for the changes in pricing indicated in this letter.

We look forward to visiting with Bob Kilpatrick and yourself. If you require any further information, please call.

Sincerely,

ROLLINS ENVIRONMENTAL SERVICES (TX) INC.

Dan Bridge

Dan Bridge, Ph. D.
Field Services Group

DB:csw

Rollins Environmental Services (TX) Inc.
P. O. Box 609, Deer Park, Texas 77536 (713) 479 6091

Rollins

PROJECT PROPOSAL

LIBERTY PLANT, HOUSTON

Prepared For

Southern Pacific Transportation Company
1 Market Plaza
San Francisco, CA. 94105

By

ROLLINS ENVIRONMENTAL SERVICES

March 23, 1981

TABLE OF CONTENTS

Attention: Mr. K. S. Kilpatrick - Room 1100
Southern Pacific Transportation Company
1 Market Plaza
San Francisco, CA. 94105

Dear Mr. Kilpatrick:

This proposal contains strategies and pricing schedules for excavation, transport, and disposal of waste sludge from a waste storage pond at the 4910 Liberty Road site. Pricing is also included for backfilling the excavated area with clay material. The proposal rational is founded on data gathered by our sampling team and results of independent laboratory chemical analysis. A diagram of the waste pond and the independent laboratory analysis are attached. For internal record keeping purposes at Rollins, the waste sludge will be designated as #HO-6242.

I. Site and Material Description

The clay-lined sludge pond is four-sided: 106' x 180' x 72' x 177'. The sludge is approximately 3' thick, with a volume of 1562 cubic yards. The levees or berms account for an additional 223 cubic yards. Total waste volume is 1785 cubic yards. The sludge bulk density is 2392 pounds per square yard. The solids content is 71%.

Chemical analyses of samples of water and sludge taken from the pond show relatively high concentrations of phenols (11 p.p.m. and 120 p.p.m., respectively) and other chemicals. Copies of the analyses are attached.

II. Plan of Action

Initially, a wide-track dozer will be used to flatten the berms to facilitate access for a backhoe. The dozer and backhoe will work in conjunction to provide surface drainage trenches for the accumulation and removal of surface water. The water will be pumped into vacuum trucks and deep-welled at EMPAK, Inc. We anticipate 2 to 3 truckloads of waste liquid, or roughly 7,000 to 10,000 gallons.

After the surface water has been removed, the backhoe will load the sludge directly into tandem dump trucks. The sludge will be transported to Rollins Chemically Secure Landfill in Deer Park. The waste will be solidified with flue dust prior to landfilling. Approximately 128 truck loads will be transported.

After the sludge and contaminated berm material have been removed, the pond will be backfilled with clay material.

The entire project will require a minimum of 3 days.

III. Access Problems and Costs

No access problem is anticipated concerning the site ground conditions. However, it is requested that the railroad tracks near the waste pond be clear of rail cars so as not to impede the movement of heavy equipment. If road stabilization did become necessary due to heavy rains, flue dust can be used at a cost of $3.00 per running foot 20 feet wide.

IV. General Considerations

A Rollins' supervisor will be continuously at the job site. Rollins' employees will perform excavation. Rollins may use subcontractors for transport. Rollins assumes responsibility for its subcontractors and for all operations contractually under its control.

Rollins indemnifies and holds Southern Pacific harmless from liability or claims arising out of the operations caused by Rollins or its subcontractors.

Rollins plans to work a 10 hour day, seven day week unless otherwise directed by Southern Pacific. Certain circumstances, beyond Rollins control, such as mechanical failure, transport traffic problems and excessive rainfall may necessitate a longer period for completion

V. Customer Provisions

A. It is requested that Southern Pacific provide a representative available during working hours with authority to make operation decisions.

B. It is requested that Southern Pacific provide access so as not to impede normal plant traffic and maintain freedom from unnecessary protocol.

C. It is requested that Southern Pacific notify Rollins of any hidden pipes, cables, or obstructions.

VI. Paperwork

Rollins will provide copies of Bills of Lading, weigh tickets, and summary sheets. The summary sheet will list information pertinent to each truck load--a sample copy is attached. Rollins will also provide the Texas Department of Water Resources (T.D.W.R.) Manifests.

VII. Pricing Schedule

Prices below are subject to change within 90 days of this proposal. Pricing will be done on a volume basis (i.e., per cubic yard, per gallon). Material transported in bulk will be weighed and net weights will be divided by bulk densities (pounds per cubic yard) to convert to cubic yards.

Waste Pond - - Sludge and Berm Material

	Price/Yd	Estimated Volume(YD^3)	Estimated Total Price
Excavation	$ 14.32	1785	$ 25,563
Transportation	5.02	1785	8,960
Disposal	36.23	1785	64,663
TOTAL	$ 55.57	1785	$ 99,186

Waste Pond - - Liquid Waste

	Price/Gal	Estimated Volume(Gal)	Estimated Total Price
Excavation	-	10,300	-
Transportation	$0.0277	10,300	$ 286
Disposal	0.1428	10,300	1,471
TOTAL	$0.17	10,300	$ 1,757

Waste Pond - - Clay Fill

	Price/Yd	Estimated Volume(YD^3)	Estimated Total Price
Clay Delivered, Placed, and Compacted	$ 10.00	1,562	$ 15,620

We appreciate the opportunity to quote this project. If you need clarification on any matter above, please contact me.

Sincerely,

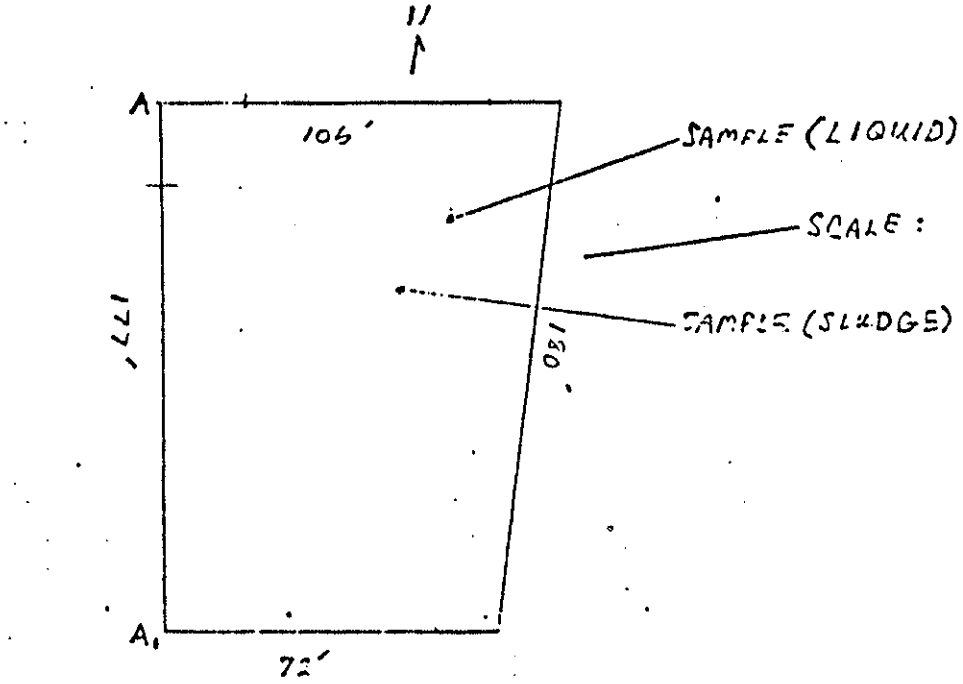
ROLLINS ENVIRONMENTAL SERVICES (TX) INC.

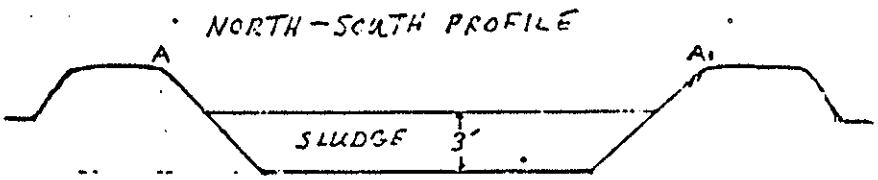
Daniel W. Bridge

Daniel W. Bridge
Project Manager
Field Service Group

DWB/pag

Attachments





VERTICAL SCALE: 1 inch = 10 feet

SLUDGE VOLUME: 1562 cubic yards

BERM VOLUME: 223 cubic yards

Exhibit A

COMPANY ______________ LOCATION ______________ DATE ______________

te	Truck No.	B/L No.	TDWR No.	Gross wt.	Light wt.	Net wt.	Bulk Dens.	Cubic Yards

NUS CORPORATION

ANALYTICAL SERVICES LABORATORY
SOUTH CENTRAL OPERATIONS
900 GEMINI AVENUE • HOUSTON, TEXAS 77058
713-488 1810

Rollins Environmental Services, Inc.
P.O. Box 609
Deer Park, TX 77536

Attn: E. Hillier

WATER ANALYSIS

Client No. Q
Date Sampled 3-3-81
Date Received 3-3-81
Date Reported 4-3-81

le Source Liberty St. Water — NUS Sample No. 21030030

Client Sample No. P.O.# 81-2208-I

Test Results reported in mg/liter unless otherwise noted.

DETERMINATION*	DATE	NUS	
Acidity Free ($CaCO_3$)			
Acidity Total ($CaCO_3$)			
Alkalinity M.O. ($CaCO_3$)			
Alkalinity Pht. ($CaCO_3$)			
Aluminum (Al)			
Ammonia ( )			
Antimony (Sb)			
Arsenic (As)		0.03	
Barium (Ba)			
Beryllium (Be)			
Bicarbonate (HCO_3)			
Bio Oxygen Demand (O_2)			
Boron (B)			
Cadmium (Cd)			
Calcium (Ca)			
Carbon Inorganic (C)			
Carbon Organic (C)		1100	
Carbon Total (C)			
Carbonate (CO_3)			
Chem. Oxygen Dem. (O_2)			
Chloride (Cl)			
Chromate (CrO_4)			
Chromium (Cr^{+6})			
Chromium (Cr^{+3})			
Chromium Total (Cr).		0.10	
Color (APHA)			
Copper (Cu)		0.08	
Cyanide Free (CN)			
Cyanide Total (CN)		<0.01	
Fluoride (F)			
Hardness ($CaCO_3$)			
Hydroxide (OH)			
Iron ( ) (Fe)			
Iron Total (Fe)			
Lead (Pb)			
Magnesium (Mg)			
Manganese (Mn)			

DETERMINATION*	DATE	NUS	
Mercury (Hg), µg/l		<0.2	
Molybdenum (Mo)			
Nickel (Ni)			
Nitrate ( )			
Nitrite ( )			
Nitrogen, Kjeldahl (N)			
Odor, Method:			
pH			
Phenolic Cpds. (Phenol)		11	
Phosphorus Ortho ( )			
Phosphorus Total ( )			
Potassium (K)			
Selenium (Se)			
Silica Soluble ( )			
Silica Total ( )			
Silver (Ag)			
Sodium (Na)			
Solids Dissolved			
Solids Suspended			
Solids Total			
Solids Non-Settleable			
Solids Settleable			
Solids Volatile			
Solvent Extract (Oil) Method:		68	
Sp. Cond., 25°C µmhos			
Sulfate ( )			
Sulfide (S)			
Surfactants (MBAS)			
Thallium (Tl)			
Tin (Sn)			
Turbidity (NTU)			
Vanadium (V)			
Zinc (Zn)			

ecial Instructions (Methods, Etc.)

Project Manager

NUS CORPORATION

ANALYTICAL SERVICES LABORATORY
SOUTH CENTRAL OPERATIONS
900 GEMINI AVENUE • HOUSTON, TEXAS 77058
713-488 1810

Rollins Environmental Services, Inc.
P.O. Box 609
Deer Park, TX 77536

Attn: E. Hillier

Client No. 0
Date Sampled 3-3-81
Date Received 3-3-81
Date Reported 4-3-81

Liberty St. Water P.O.# 81-2208-I

NUS Sample No.	
21030030	Total PCB <1 µg/l

Special Instructions

Test results reported in mg/liter unless otherwise noted

NUS CORPORATION

ANALYTICAL SERVICES LABORATORY
SOUTH CENTRAL OPERATIONS
900 GEMINI AVENUE • HOUSTON, TEXAS 77058
713-488-1810

Rollins Environmental Services, Inc.
P.O. Box 609
Deer Park, TX 77536

Attn: E. Hillier

WATER ANALYSIS

Client No. Q
Date Sampled 3-3-81
Date Received 3-3-81
Date Reported 4-3-81

Source Liberty St. Sludge
NUS Sample No. 21030031
Client Sample No.

Test Results reported in mg/liter unless otherwise noted.

DETERMINATION*	DATE	NUS	
cidity Free (CaCO3)			
cidity Total (CaCO3)			
lkalinity M.O. (CaCO3)			
lkalinity Pht. (CaCO3)			
luminum (Al)			
mmonia ( )			
Antimony (Sb)			
rsenic (As)		<2 mg/kg	
arium (Ba)			
Beryllium (Be)			
carbonate (HCO3)			
o Oxygen Demand (O2)			
oron (B)			
admium (Cd)			
alcium (Ca)			
arbon Inorganic (C)			
Carbon Organic (C)		100,000	mg/kg
arbon Total (C)			
arbonate (CO3)			
Chem. Oxygen Dem. (O2)			
hloride (Cl)			
hromate (CrO4)			
Chromium (Cr+6)			
hromium (Cr+3)			
hromium Total (Cr)		12 mg/kg	
Color (APHA)			
Copper (Cu)		16 mg/kg	
yanide Free (CN)			
yanide Total (CN)		<1 mg/kg	
Fluoride (F)			
Hardness (CaCO3)			
Hydroxide (OH)			
Iron ( ) (Fe)			
ron Total (Fe)			
Lead (Pb)			
Magnesium (Mg)			
Manganese (Mn)			

DETERMINATION*	DATE	NUS	
Mercury (Hg), ~~XXX~~ mg/kg		<0.2	
Molybdenum (Mo)			
Nickel (Ni)			
Nitrate ( )			
Nitrite ( )			
Nitrogen, Kjeldahl (N)			
Odor, Method:			
pH			
Phenolic Cpds. (Phenol)		120 mg/kg	
Phosphorus Ortho ( )			
Phosphorus Total ( )			
Potassium (K)			
Selenium (Se)			
Silica Soluble ( )			
Silica Total ( )			
Silver (Ag)			
Sodium (Na)			
Solids Dissolved			
Solids Suspended			
Solids Total			
Solids Non-Settleable			
Solids Settleable			
Solids Volatile			
Solvent Extract (Oil) Method:		43,000	mg/kg
Sp. Cond., 25°C µmhos			
Sulfate ( )			
Sulfide (S)			
Surfactants (MBAS)			
Thallium (Tl)			
Tin (Sn)			
Turbidity (NTU)			
Vanadium (V)			
Zinc (Zn)			

cial Instructions (Methods, Etc.) Analysis performed on an "as received" sample.

[signature]

NUS CORPORATION

ANALYTICAL SERVICES LABORATORY
SOUTH CENTRAL OPERATIONS
900 GEMINI AVENUE • HOUSTON, TEXAS 77058
713-488-1810

Rollins Environmental Services, Inc.
P.O. Box 609
Deer Park, TX 77536

Attn: E. Hillier

Client No. Q
Date Sampled 3-3-81
Date Received 3-3-81
Date Reported 4-3-81

Liberty St. Sludge P.O.# 81-2208-I

NUS Sample No.	
21030031	Total PCB (Soxhlet) <1 mg/kg

Special Instructions

Jerry Bright

Test results reported in mg/liter unless otherwise noted

2. Contract

Southern Pacific Transportation Company

Southern Pacific Building • One Market Plaza • San Francisco, California 94105

H. B. BERKSHIRE
ASST. VICE PRESIDENT—MAINTENANCE OF WAY AND ENGINEERING

M. J. KARLOVIC
ENGINEER OF STANDARDS
J. F. LYNCH
ENGINEER, DESIGN AND CONSTRUCTION

G. L. MURDOCK
ENGINEER, MAINTENANCE OF WAY
G. D. WILSON
ENGINEER OF SIGNALS

November 30, 1983

IN REPLY PLEASE REFER TO

0812/071-02(HO)-C

Rollins Environmental Services, Inc.
P. O. Box 609
Deer Park, Texas 77536

Gentlemen:

Pursuant to our letter of August 26, 1983, attached for your records is a fully executed counterpart of our agreement with you, dated November 29, 1983, covering the following work:

> Remove hazardous waste, clean up clay lining in pond and backfill with clean material at the Wood Preserving Works Hazardous Waste Storage, Houston, Texas.

Please submit statement of charges on this project, making reference to Billing Order No. H800-94-48121, GMO 65769 directly to:

> Mr. L. W. Pepple, Engineer,
> Environmental & Utilities
> Southern Pacific Transportation Company
> One Market Plaza
> Southern Pacific Building - Room 1007
> San Francisco, California 94105

Very truly yours,

J. F. Lynch

Attach.

Approved as to form by General Counsel.
January 1979

5 7360
SHEET 1 of 4

This Agreement, made and entered into this 25th day of November, 19 85
by and between SOUTHERN PACIFIC TRANSPORTATION COMPANY, hereinafter called "RAILROAD," and ROLLINS ENVIRONMENTAL SERVICES, INC., P. O. Box 609
Deer Park, Texas 77536,

hereinafter called "CONTRACTOR,"

Witnesseth:

(1) WORK TO BE PERFORMED:

CONTRACTOR agrees to specifically perform at or near Houston,
County of Harris, State of Texas, the work of removing hazardous waste, cleaning up clay lining in pond and back-filling with clean material at the Wood Preserving Works Hazardous Waste Storage,

and as provided for herein, in strict conformance with the plans and/or specifications hereto attached and made a part of this agreement. (Exhibit "A")

CONTRACTOR, in performing the work provided for in this agreement, shall be an independent contractor, it being specifically agreed that CONTRACTOR, any subcontractor, or the employes of the CONTRACTOR or subcontractor, in performing said work shall not be in any way employes or agents of the RAILROAD.

(2) MATERIALS TO BE FURNISHED BY CONTRACTOR:

CONTRACTOR agrees to furnish at the location where said work is to be performed, with no extra charge, all labor, tools, implements and materials necessary for the complete performance of this agreement, unless otherwise provided for herein.

(3) PERMITS, MUNICIPAL FEES AND DEPOSITS:

CONTRACTOR agrees to secure all necessary permits in connection with the performance of said work and to pay all engineer's, municipal and other fees in connection therewith, and agrees to make any and all cash or other deposits, and furnish at its expense all bonds required by law or required by any lawful body having the right to make demand therefor.

(4) PLANS AND SPECIFICATIONS:

CONTRACTOR agrees to fully perform this agreement to the entire satisfaction of RAILROAD and in strict conformance with the plans and/or specifications attached hereto, and also in conformance with any plans and/or specifications in effect at the date of this agreement, required by any lawful body having the right to demand that said work should be performed in the manner specified by such body.

(5) COMMENCEMENT AND COMPLETION OF WORK:

CONTRACTOR agrees to begin said work ~~within~~ upon execution of this ~~days after the date of this~~ agreement and to proceed diligently with said work to completion and fully complete same two (2) weeks ~~days~~ from the date work is commenced. Time is of the essence of this agreement.

(6) INVESTIGATION OF FACTS BY CONTRACTOR:

It is distinctly understood and declared by the CONTRACTOR that this agreement is made for the consideration herein named and that the CONTRACTOR has, by careful examination, satisfied CONTRACTOR as to the nature and location of the work, the conformation of the ground, the character, quality and quantity of the materials to be encountered, the character of equipment and facilities needed preliminary to and during the prosecution of the work, the general and local conditions, and all other matters which can in any way affect the work under this agreement. No verbal agreement or conversation with any officer, agent or employe of the RAILROAD, either before or after the execution of this agreement, shall affect or modify any of the terms or obligations herein contained.

(7) DELAYS AND EXTENSIONS:

The time during which CONTRACTOR is delayed in said work by the acts of omission or commission of RAILROAD, or the employes or agents of RAILROAD, or by the acts of God or the elements, which CONTRACTOR could not reasonably foresee and provide against, or other causes beyond CONTRACTOR'S control, including strikes, boycotts, or like obstructive action by employes or labor organizations, or lockouts or other defensive action by other employers, whether general or individual, or by organizations of other employes, shall be added to the aforesaid time of completion of said work.

CONTRACTOR shall not be entitled to and hereby waives any and all damages which it may suffer by reason of RAILROAD hindering or delaying CONTRACTOR in the progress of said work, or any portion thereof or from any cause whatsoever.

(8) EXTRA WORK:

CONTRACTOR shall not be entitled to any payment for extra work performed in connection with the work provided for herein, unless such work shall have been previously authorized in writing by RAILROAD.

(9) DEVIATION FROM PLANS AND SPECIFICATIONS:

CONTRACTOR expressly agrees that RAILROAD may make any alterations RAILROAD deems proper by adding to, omitting or deviating from the aforesaid plans and/or specifications, and in all such cases RAILROAD and CONTRACTOR shall value or appraise such alterations in a fair and reasonable manner, and add to or deduct from the amount herein agreed to be paid to CONTRACTOR at pro rata rates, but in no case shall such alteration be made unless notice in writing is given to CONTRACTOR by RAILROAD.

(10) ADDITIONAL DRAWINGS:

RAILROAD will furnish to CONTRACTOR such further drawings and explanations as may be necessary to illustrate the work to be done, and CONTRACTOR agrees to conform to such drawings and explanations.

(11) INSPECTION:

CONTRACTOR agrees that RAILROAD, or any person appointed by RAILROAD, will be permitted to visit and inspect said work, or any part thereof, at all times and places during the progress of the work, and CONTRACTOR agrees to provide sufficient, safe and proper facilities for such inspection.

(12) PERFORMANCE OF WORK:

CONTRACTOR agrees to proceed with said work, and each and every part and detail thereof, in a prompt and diligent manner, and agrees to do the several parts thereof at such time and in such order as RAILROAD may designate, and agrees to finish such work in strict conformance to said plans and/or specifications, or any modifications or amplifications thereof made by RAILROAD.

(13) CONDEMNATION OF WORK:

CONTRACTOR agrees, within twenty-four (24) hours after receiving written notice from RAILROAD, to proceed to remove from the above mentioned premises all materials condemned by RAILROAD, whether worked or unworked, and to remove all portions of said work which RAILROAD shall, by like written notice, condemn as unsound or defective, or as in any way failing to conform with said plans and/or specifications, or any modifications or amplifications thereof made by RAILROAD.

(14) SUPERINTENDENCE:

CONTRACTOR agrees to keep a competent man in the immediate vicinity of the premises above described at all times during working hours with whom RAILROAD may communicate, and to supervise said work.

(15) TAKING OVER OR STOPPING OF WORK:

Should CONTRACTOR at any time during the progress of the work fail, or refuse or neglect to supply a sufficiency of material, tools, labor or properly skilled workmen to complete same with reasonable diligence and dispatch, except when due to circumstances which CONTRACTOR cannot be reasonably expected to control, and should such failure, neglect or refusal continue for five (5) days after written notice shall have been served by RAILROAD on CONTRACTOR, RAILROAD is hereby given the right to take over the said work and complete it. The cost to RAILROAD of doing such work shall be deducted from any moneys due CONTRACTOR under this agreement and if such cost exceeds any such moneys due CONTRACTOR, CONTRACTOR agrees to reimburse RAILROAD for all costs in excess of any moneys due CONTRACTOR hereunder.

RAILROAD hereby reserves the right to stop at any time the said work, it being understood, however, that in any such event, except as provided in the next preceding paragraph of this Section 15, RAILROAD shall pay CONTRACTOR for all work done in conformity with said plans and/or specifications, plus a reasonable amount, if any, to be determined by RAILROAD, representing loss CONTRACTOR would in such event sustain through money expended or necessary to be expended by CONTRACTOR through inhibition to complete the work contemplated. In the event of such stoppage of work or termination of agreement the consideration provided in this paragraph shall be paid days after such stoppage of work or termination of agreement, except where work is performed in the State of California or Nevada. Where work is performed in the State of California or Nevada, said consideration shall be paid thirty-five (35) days after notice of cessation of labor has been recorded in the Office of the County Recorder in the county in which said work is performed, as provided by law, such notice to be recorded within ten (10) days after there has been a cessation of labor thereon for a period of thirty (30) days; provided, however, in any event, final payment shall not be made until no liens remain undischarged of record or stop notices or attachments remain unsatisfied in connection with the work provided for herein.

(16) COMPENSATION:

RAILROAD agrees to pay CONTRACTOR for the entire work in conformance with said plans and/or specifications as follows:

Not to exceed the sum of One Hundred Five Thousand Dollars ($105,000.00) without RAILROAD'S prior written approval.

(17) TERMS OF PAYMENT:

RAILROAD, at the close of each month, through duly authorized representatives, shall estimate value of work done and materials furnished by CONTRACTOR during such month and RAILROAD shall pay to CONTRACTOR, in accordance with RAILROAD'S usual practice of vouchering accounts, -90- per cent of the amount estimated to be due CONTRACTOR for that month, the remaining -10- per cent of such amount shall be paid CONTRACTOR by RAILROAD (provided no liens remain undischarged of record, or stop notices or attachments remain unsatisified in connection with the work provided for herein), ninety (90) days after the completion and final acceptance of said work; except where work is performed in the State of California or Nevada, in which event, final payment shall be made CONTRACTOR by RAILROAD (provided no liens remain undischarged of record or stop notices or attachments remain unsatisfied) thirty-five (35) days after the recording by RAILROAD of Notice of Completion in the Office of the County Recorder of the county in which such work is performed, as provided by law, such notice to be recorded within ten (10) days after the completion of said work.

All estimates herein provided for shall be made by RAILROAD'S engineer, whose measurements and calculations as to the quantities and amounts of work performed shall be final, conclusive and binding upon the parties hereto.

(18) ACCEPTANCE OF WORK:

It is mutually agreed that no payment made under this agreement, except the final payment, shall be evidence of the performance of this agreement, either wholly or in part, and that no payment shall be construed to be an acceptance of defective work or improper materials.

(19) PATENT RIGHTS:

It is mutually agreed that CONTRACTOR shall pay all claims growing out of any patent rights covering work under this agreement, or any part thereof, or any tools, implements or appliances used on or in connection with said work, and CONTRACTOR agrees to fully reimburse RAILROAD for any royalties, damages or other payments that RAILROAD shall be called upon or be obligated to pay by virtue of any patent rights, originating or growing out of said work or any part thereof, or any tools, implements or appliances used on or in connection therewith.

(20) BOND: WAIVED

~~CONTRACTOR agrees to furnish RAILROAD with a good and sufficient bond from a surety company satisfactory to RAILROAD, in the full amount of the contract price at the time of award, before beginning work hereunder, to bind CONTRACTOR to carry out this agreement.~~

(21) LIABILITY:

CONTRACTOR expressly agrees to indemnify and save RAILROAD harmless from and against any and all claims, loss, damage, injury and liability, however caused, resulting from, arising out of or in any way connected with the work to be performed under this agreement, whether or not caused or contributed to by the operation of trains on RAILROAD'S adjacent track or by any negligence or alleged negligence on the part of any of RAILROAD'S agents or employees, except that the provisions of this Paragraph 21 shall not apply to loss or liability caused by the sole negligence of RAILROAD.

(22) LIENS:

CONTRACTOR expressly agrees to discharge at once all liens which may be filed in connection with said work and hold RAILROAD and the owner of the premises upon which the work is to be performed harmless therefrom.

(23) CONTRACTOR TO REMOVE DEBRIS AND MATERIAL:

Upon termination or completion of said work, CONTRACTOR shall remove all debris and waste material and leave the premises in a neat and clean condition, all to the satisfaction of RAILROAD.

(24) ASSIGNMENT:

This agreement shall not be assigned, sublet or transferred in whole or in part by CONTRACTOR, except with the previous written consent of RAILROAD.

In case said work consists of the construction, alteration, repair or improvement of any structure, CONTRACTOR will, at the expense of CONTRACTOR, place and maintain Builder's Fire Insurance on any such structure jointly in the names of RAILROAD and CONTRACTOR, payable as the several interests of RAILROAD and CONTRACTOR may appear, such insurance at all times to be of sufficient amount to fully cover all loss or damage to the work under this agreement, resulting from fire; such fire insurance policy shall be delivered to and held by RAILROAD.

(26) ATTORNEY'S FEES:

In case RAILROAD shall bring suit to compel performance of or to recover for breach of any covenant, agreement or condition herein written, CONTRACTOR shall and will pay to RAILROAD reasonable attorney fees in addition to the amount of judgment and costs.

(27) EMPLOYERS' LIABILITY, WORKMEN'S COMPENSATION AND INSURANCE:

The CONTRACTOR shall perform the work herein specified in strict conformance with the provisions of all applicable Federal and State enactments with reference to Employers' Liability, Workmen's Compensation, and Workmen's Insurance, and shall indemnify and hold harmless the RAILROAD from and against any and all liability, damages, claims, demands, costs and expenses of whatsoever nature, resulting from such enactments, or from any claim of subrogation provided in such enactments, or otherwise.

(28) CONTRACTOR warrants that CONTRACTOR has not employed any officer or employee of RAILROAD or of any subsidiary of RAILROAD or any member of their immediate families or near relatives to solicit or secure this contract under any agreement for a commission, percentage, brokerage, or compensation of any nature. Breach of this warranty shall give RAILROAD the right to cancel this contract and/or recover from CONTRACTOR amount of commission, percentage, brokerage, or other compensation without waiver of any legal right which RAILROAD may have under applicable statutes.

(29) CONTRACTOR agrees to provide insurance coverage as set forth in the attached insert captioned "Insurance".

(30) In the event of any conflict between the said Exhibit "A" and specifications and this agreement, the terms of this agreement shall govern.

*(except for the negligence of RAILROAD)

IN WITNESS WHEREOF, the parties hereto have executed these presents the day and year first above written.

WITNESSED BY:

Joni Dupree
SUPERVISOR OF CONTRACTS

SOUTHERN PACIFIC TRANSPORTATION COMPANY

By H Hynes
(Title) Engr., Design & Constr.

WITNESSED BY:

Deborah L Person

ROLLINS ENVIRONMENTAL SERVICES, INC.,
(See Note) Contractor.

By Darryl Neel
(Title) Sr. Vice President

Form Approved:

J K Wyma
General Attorney

11
3-83

NOTE: — If an incorporated company, agreement should be executed by an authorized officer thereof and his title indicated; otherwise signature should be witness by an employe of Railroad if practicable, if not, by a disinterested party.

EXHIBIT "A"

COST BREAKDOWN

1. Excavate, Transport & Dispose of Slude:

   Approximately 1,800 cu yds @ $48.55/cu yd.

2. Backfill:

   Approximately 1,600 cu yds @ $10.00/cu yd.

3. Soil Analyses:

   Not to exceed Lump Sum of $1,000.00

4. Road Stabilization:

   Stabilize 20 ft. wide roadway @ $3.00/run. ft.

GENERAL CONDITIONS

Article 1 - PROJECT DESCRIPTION:

These specifications provide for the removal and disposal of waste from a waste storage pond and to finally backfill the pond located on Southern Pacific Transportation Company property at 4910 Liberty Road, Houston, Texas. The pond contains waste constituents generated by the adjacent wood preserving works.

Article 2 - DEFINITION OF TERMS:

a. Railroad - The Southern Pacific Transportation Co.

b. Engineer - Person acting through properly authorized representative of the Railroad to supervise within the scope of the particular duties delegated to him.

c. Contractor - Rollins Environmental Services (TX) Inc.

Article 3 - DRAWINGS

CE Drawing No. 39180, Sheet 1 of 1 is annexed to and made a part of these specifications. The area included in this project is outlined in red.

Article 4 - SUBCONTRACTORS:

The Contractor agrees that he is fully responsible to the Railroad for the acts and omissions of his subcontractor and of persons either directly or indirectly employed by them, as he is for the acts and omissions of persons directly employed by him. Nothing contained in the Contract Documents shall create any contractual obligation to any subcontractor from the Railroad.

SECTION 1.06 - [illegible]

Prior to backfillings contractor shall take at least two surface samples of remaining soil in the pond area and analyze for the waste constituents that were found in the removed sludge. Certified Laboratories shall be used to analyze soil and shall furnish the Railroad with copies of the laboratory report. Additional sampling and analyses shall be performed if it is determined necessary to find the limits of contamination.

SECTION 1.07 - NEGOTIATIONS

Contractor shall coordinate his work with the appropriate agencies to assure their concurrence before proceeding with work. The Contractor shall assist the Railroad in acquiring a statement from the Texas Department of Water Resources (TDWR) that the pond contaminates have been satisfactorily removed and that any contaminates remaining in the soil are below the hazardous limits.

SECTION 1.08 - ADDITIONAL WORK

In the event more material than provided for in this contract must be removed to meet regulations, the contractor shall submit an estimate of cost and shall not proceed without written approval from the Railroad.

SECTION 1.09 - WORK CONDITIONS & SUPERVISION

Railroad will coordinate yard traffic to minimize interference with Contractor's work. The Engineer will be available each day and will make every effort to keep clear access between the work site and Liberty Road. The Contractor will comply with yard traffic regulations. The Contractor will have a supervisor on the job any time he is progressing work. Unfinished work or exposed hazards shall be protected while work is not in progress with barricades, lights, etc. as necessary to avoid injury to Railroad's employees and the public.

SECTION 1.10 - ROAD STABILIZATION

If the yard roadway becomes unstable due to heavy rains the Contractor will furnish and place flue dust as necessary to carry the weight of the transport trucks. This work will be kept at an absolute minimum and will be done only after alternate routes or other solutions have been eliminated.

SPECIAL PROVISIONS

SECTION 1-01 - SCOPE

Furnish labor and material to complete the following work:

1. Excavate approximately 1800 cu.yds. of Pond Sludge.
2. Transport and dispose of all excavated waste material at an off site disposal facility approved by State Agencies to receive such waste.
3. Backfill excavated area with clean clay fill (approximately 1500 cu.yd.
4. Sample and test underlying soil to determine that all waste material has been removed.
5. Following sludge removal, assist Railroad in negotiating with the State Agencies to have the pond area declared clean.

SECTION 1-02 - WATER REMOVAL

The Railroad will make necessary arrangements and pay for removing ponded water prior to excavation work by the Contractor. Contractor will at his expense ditch and otherwise direct standing water to a depressed area for convenient removal.

SECTION 1-03 - EXCAVATION

Contractor shall remove all sludge from the pond and shall include underlying clay liner or other soil as necessary to comply with State and Federal regulations.

SECTION 1-04 - TRANSPORT AND DISPOSE

Contractor shall transport all sludge to an approved dump site and shall prepare manifest for each load as required by law. Contractor shall be responsible for all charges associated with the transportation and disposal of material.

SECTION 1-05 - BACKFILL

Contractor shall furnish and place clean clay fill material. The entire pond area shall be filled and graded to slope away from the Railroad's tracks. Fill shall be leveled and wheel rolled as necessary to provide a firm level finish surface.

COMPREHENSIVE GENERAL AND AUTOMOBILE LIABILITY ENDORSEMENT

Attached to certificate of insurance for and hereby certified to be part of the following policy or policies having the following expiration dates:

Policy No.	Company Providing Policy	Expiration Date

The scope of the insurance afforded by the policy(ies) designated in the attached certificate is not less than that which is afforded by the Insurance Service Organizations or other "Standard Provisions" forms in use by the insurance company in the territory in which coverage is afforded.

Such Policy(ies) provide for or are hereby amended to provide for the following:

1. The named insured is _____

2. _____ ("Railroad")* is included as an additional insured with respect to liability arising out of the hazards or operations under ALL AGREEMENTS entered into between the named insured and Railroad, whether or not liability is attributable to negligence of the named insured or Railroad. In the event it is intended that this endorsement is applicable to only one agreement, the agreement is described as follows:

The insurance provided hereunder applies as though separate policies are in effect for both the named insured and Railroad.

3. The limits of liability under the policy(ies) are not less than those shown on the certificate to which this endorsement is attached.

4. Cancellation or material reduction of this coverage will not be effective until thirty (30) days following written notice to:

Address

By registered or certified mail

5. Contractual liability coverage for liability assumed by this insured under said agreement or agreements with Railroad.

6. This insurance is primary and insurer is not entitled to any contribution from insurance in effect for Railroad.

7. All policy or endorsement limitations relating specifically to operations on or near railroad property are eliminated.

8. Broad Form Property Damage endorsement.

9. So-called X, C and U (or similar) limitations are not effective as respects operations by or for the named insured on or adjacent to Railroad's property.

10. In the event of reduction or exhaustion of the applicable aggregate limit or limits of liability under the primary policy or policies referred to in the attached certificate of insurance solely by reason of losses paid thereunder on account of occurrences during the policy period, the excess policy, if any, referred to herein shall (i) in the event of reduction, apply as excess of the reduced limit of liability thereunder; and (ii) in the event of exhaustion, continue in force as though it were primary insurance.

The term "Railroad" includes successors, assigns and affiliated companies of Railroad and affiliates thereof, and other railroad company operating upon or over Railroad's tracks with Railroad's permission, and the officers, employees and agents of any of the foregoing.

_____
Insurance Company

Date: _____, 19____ By _____
Signature of Authorized Representative

INSURANCE

(1) CONTRACTOR agrees to carry and/or furnish the following at CONTRACTOR'S sole cost and expense:

(a) Workmen's Compensation and Employer's Liability Insurance covering all employees of CONTRACTOR and any subcontractors wherever they may be in the United States so long as they are engaged in the work covered by this contract. The policy or policies shall cover the entire liability of CONTRACTOR and any subcontractors as determined by the compensation laws of the state or states under which such liability arises, and shall contain, so far as it is lawful to obtain the same, a waiver of insurer's right of subrogation against RAILROAD for payments made to or on behalf of employees of CONTRACTOR or subcontractors.

(b) Contractor's Public Liability Insurance (Bodily Injury and Property Damage) which shall provide a combined single limit of not less than $2,000,000 for bodily injury and/or property damage resulting from any one occurrence. They will protect CONTRACTOR and any subcontractors from liability arising out of the contract work for: (a) bodily injury, sickness or disease, including death at any time resulting therefrom, sustained by any person, and (b) damage to or destruction of property, including loss of use thereof.

(c) Insurance referred to in item (b) above shall include RAILROAD and any person or entity requiring RAILROAD to provide insurance in connection with the work to be performed hereunder as an additional insured and shall contain a so-called "cross liability" endorsement (the effect of which shall be to cause the insurance to apply as though separate policies were written for both CONTRACTOR and RAILROAD). The insurance shall protect RAILROAD from liability arising out of the contract work, whether caused or contributed to by any act or omission, negligent or otherwise, of RAILROAD, its agents or employees.

(2) In case CONTRACTOR and/or subcontractors, in carrying on the contract operations, should use and operate automobiles or other vehicles elsewhere than upon the contract premises, they shall carry, at their expense, Automobile Liability Insurance (Bodily Injury and Property Damage) with a combined single limit of not less than $2,000,000.

(3) CONTRACTOR further agrees to furnish RAILROAD with a certificate or certificates of insurance to which will be attached an endorsement in the form attached and made a part hereof, or certified copy of insurance policy or policies.

3. Closure Plan

Rollins Environmental Services (TX) Inc.
P. O. Box 609, Deer Park, Texas 77536 (713) 479-6031

Rollins

December 15, 1983

Mr. L. W. Pepple
Southern Pacific Transportation Company
One Market Plaza, Room 1007
San Francisco, California 94105

Dear Mr. Pepple:

Mr. Jeff Webb of T.D.W.R. has requested that a sampling program be added to the closure document to validate the complete removal of contaminants from your facility. We have, therefore, revised the closure plan to reflect Mr. Webb's comments regarding the sampling program and its analytical requirements.

The cost associated with implementing this sampling program will be billed as labor, materials, and analytical costs plus 15 per cent.

Please review the revised closure document and send it to Mr. Webb with a cover letter stating that, per your consultant, a sampling program section and more specific information concerning the analytical requirements for the sampling program have been added.

Please call me if you have any questions.

Sincerely yours,

ROLLINS ENVIRONMENTAL SERVICES (TX) INC.

Dan Bridge

Dan Bridge, Ph. D.
Project Manager
Field Services Group

DB/jml

Attachments

CLOSURE PLAN FOR SOUTHERN PACIFIC

TRANSPORTATION COMPANY

HOUSTON, TEXAS

INTRODUCTION

Southern Pacific Transportation Company will close a creosote tank bottom surface impoundment (RCRA Facility #31547) on their 4910 Liberty Road site in Houston, Texas in accordance with the following plan. This closure plan will comply with the provisions of Texas Administrative Code Sections 335.211-335.220, 335.1-335.15 and 335.281-335.288 and will minimize the post closure escape of hazardous constituents to the environment.

Facility Description

The impoundment, originally constructed in 1979 to contain creosote tank bottoms (K001), is located on the west side of the Liberty Road site; It is a rectangular shaped facility with the following dimensions: 106' x 180' x 72' x 177'. The impoundment which contains approximately 3' of creosote sludge has a total surface area of 18,762 ft.2 and an approximate volume of 1600 cubic yards. Earthen berms surrounding the impoundment are two to three feet above ground level and account for an additional 200 cubic yards of soil. The maximum waste inventory is estimated at approximately 1800 cubic yards. (335.213,(a),(2))

During the life of this impoundment, rainwater collecting on the surface of the creosote sludge has been repeatedly pumped into vacuum trucks and taken to a nearby Class I Disposal site.

CLOSURE PLAN

This closure plan involves 3 phases:

Phase 1. - Excavation of the creosote sludge and all contaminated portions of the walls and bottom. The material will be transported to Rollins Class I Landfill in Deer Park, where it will be solidified with flue dust prior to compaction in place. Site background samples will be analyzed for benzene, benz(a)anthracene, benzo(a)pyrene, chrysene, 4-nitrophenol, toluene, naphthalene phenol, 2-chlorophenol, 2,4-dimethylphenol, 2,4,6-trichlorophenol, pentachlorophenol, 4,6-dinitro-o-cresol and tetrachlorophenol. The contaminated zones will be considered sufficiently cleaned when the concentration of remaining materials is statistically equal to a "clean" background level (within the 95% confidence interval). See attached sampling plan.

All equipment will be decontaminated (335.213(a)(3) and 335.215) over a water collection pad. Decontamination will be accomplished with a mild detergent and hot water sprayed from a portable high pressure sprayer. The residue will be collected and disposed at a Class I disposal site.

Phase 2. - The excavated area will be backfilled with clay soil and the soil will be compacted with heavy equipment to accommodate further site expansion. No continued maintainance (with the exception of the ground-water study) will be required on the facility, since the waste material will be removed. (335.212(1))

Phase 3. - A ground-water monitoring system will be installed within the compliance zone to demonstrate the containment integrity of the facility. Four ground-water monitoring wells (4) will be constructed according to TAC 335.192 specifications. This system will be monitored for 1 year for the same chemical components listed in Phase 1 for soil contamination. If it is determined, after 1 year, that the active facility has no impact on the subsurface/ground water the monitoring program will be discontinued.

ESTIMATED CLOSURE SCHEDULE

Southern Pacific will implement this closure plan within 1 month after its approval by TDWR(335.214(a)), with an anticipated final closure date of January,1984.(335.212(a)(4))

7 working days: Excavation, transportation, disposal of all contaminated material.

3 working days: Backfill, compaction.

5 working days: Ground water monitoring well installation, surveying and initial sampling.

Weather permitting, the entire closure plan will be accomplished within 12 working days, allowing for sampling and sample analysis.

POST CLOSURE CARE

Being that this closure plan follows TAC 335.286(b) to remove all waste residues and contaminated subsoils, post closure care is not required.

CERTIFICATION OF CLOSURE

A registered professional engineer will inspect the closure project and, if the facility has been closed in accordance with the closure plan, the engineer will endorse a letter stating this fact to TDWR.

ESTIMATED CLOSURE COST

Excavation, Transportation, Disposal of Waste at $48.55/yd x 1800 yds	$87,390.00
Clay backfill and compaction at $10/yd x 1800 yds	$18,000.00
Ground-water Monitoring System	$10,000.00
Certification by Registered Professional	- 0 -
TOTAL	$115,390.00

Addendum to Closure Plan for Southern Pacific

RCRA Facility #31547

SAMPLING PROGRAM

A sampling program will be incorporated into the closure procedure to insure complete removal of the hazardous material. The program, based on a non-bias grid selection method, will minimize the analytical burden without jeopardizing the reliability of the sampling program.

Specifically, the visual hazardous material and apparent contaminated soil will be removed from the facility. Prior to sampling, an additional 3" of material below the visual endpoint will be removed as an added insurance buffer.

As shown in Figure 1., the facility will be surveyed and divided into 50' grids, which will be randomly selected and sampled. Within each grid 10 to 15 grab samples will be combined, homogenized and subsampled as representative samples of that particular grid area. The individual grab samples will not exceed 6" in depth from the excavated surface.

These samples will be analyzed for: benzene, benz(a)anthracene, benzo(a)pyrene, chrysene, 4-nitrophenol, toluene, napthalene phenol, 2

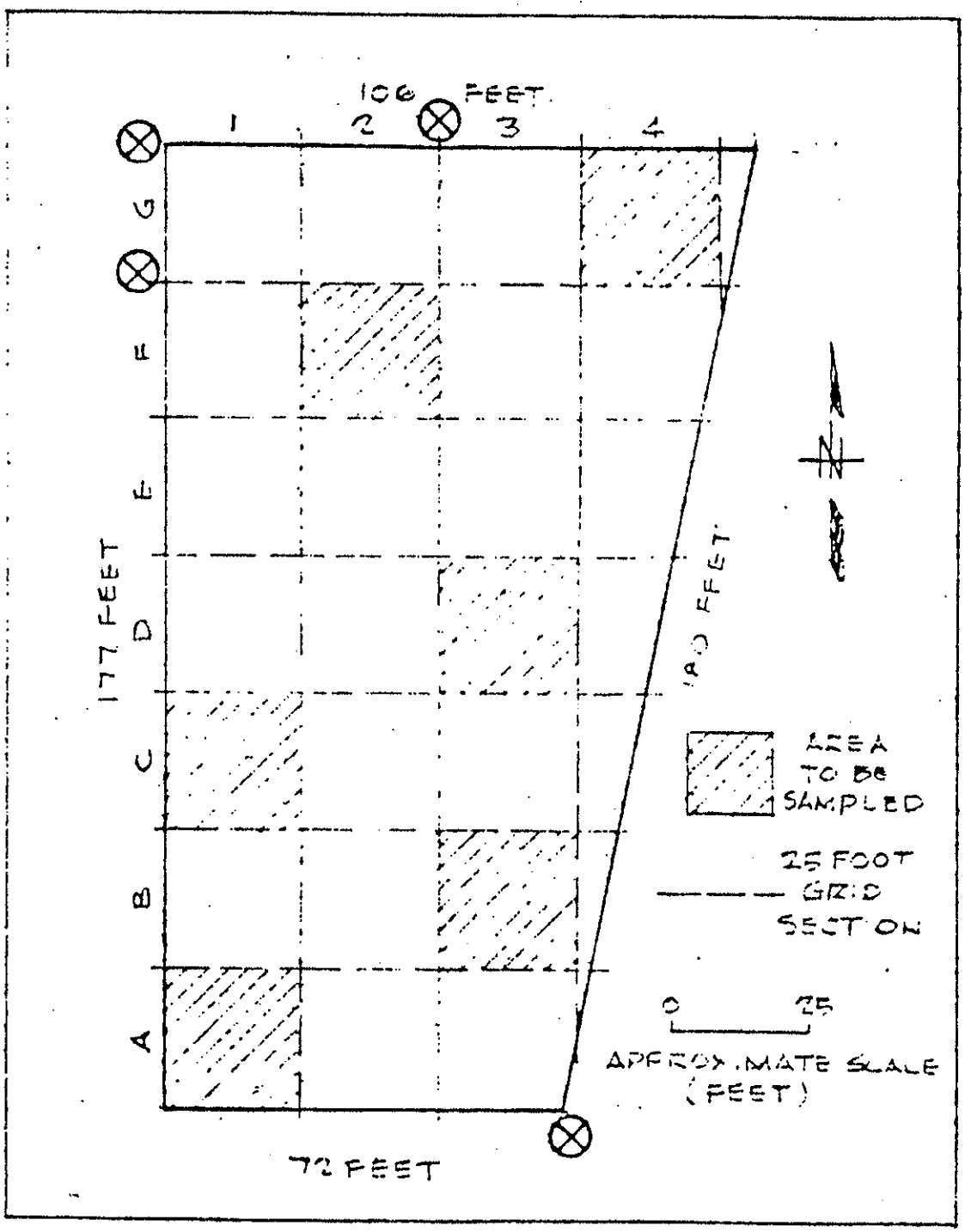


FIGURE 1
CREOSOTE IMPOUNDMENT AT
SOUTHERN PACIFIC TRANSPORTATION CO.
HOUSTON, TEXAS

⊗ - MONITORING WELLS

4. T.D.W.R. Approval of Closure Plan

TEXAS DEPARTMENT OF WATER RESOURCES
1700 N. Congress Avenue
Austin, Texas

TEXAS WATER DEVELOPMENT BOARD
Louis A. Beecherl, Jr., Chairman
George W. McCleskey, Vice Chairman
Glen E. Roney
W. O. Bankston
Lonnie A. "Bo" Pilgrim
Louie Welch

Charles E. Nemir
Executive Director

TEXAS WATER COMMISSION
Paul Hopkins, Chairman
Lee B. M. Biggart
Ralph Roming

February 28, 1984

Mr. H. B. Berkshire
Southern Pacific Transportation Company
Southern Pacific Building
One Market Plaza
San Francisco, CA 94105

Dear Mr. Berkshire:

Re: Industrial Solid Waste Registration No. 31547
Closure of On-Site Hazardous Waste Landfill
Harris County, Texas

We have completed a review of the closure plan, submitted by your letter of November 29, 1983 and as amended by your letter of December 23, 1983. This closure represents full facility closure and was accordingly reviewed under 31 Texas Administrative Code (TAC) Sections 335.212-.216 and 31 TAC Section 335.286(b).

This letter constitutes approval by the Executive Director of the closure plan contained in the referenced letters, provided that all analytical results shall be submitted to the Central Office and the District 7 Office of the Department within 15 days of receipt by the company.

Upon completion of the closure, certification shall be submitted by the owner or operator of the subject facility and by an independent Registered Professional Engineer that the facility has been closed in accordance with the approved closure plan. Also, an Affidavit of Exclusion (see enclosed form) indicating that this facility meets the "Accumulation Time" requirements of 31 TAC Section 335.69 should be submitted along with the closure certification, if applicable.

If you have any questions, please contact our Solid Waste Section at AC512/475-2041.

Sincerely,

Charles E. Nemir
Executive Director

Enclosure
cc: TDWR District 7 Office - Deer Park
Frank Bozeman, Southern Pacific Transportation Company
Dr. Daniel W. Bridge, Rollins Environmental Services (TX) Inc.

1836-1986

5. Public Notification of Closure

Southern Pacific
Transportation Company
913 Franklin Ave., P. O. Box 1319, Houston, Texas 77251

MAINTENANCE OF WAY

T. P. REILLY
Asst. Engineer MofW
Eastern Lines

January 30, 1984

File 071.1

Mr. Dan Bridge, Ph.D.
Rollings Environmental Services, Ltd.
P. O. Box 609
Deer Park, TX 77536

Dear Mr. Bridge:

Reference to previous correspondence concerning disposal of creosote contaminated soil at Wood Preserving Works, Houston.

Enclosed for your information is copy of notice published in the Houston Chronicle concerning final facility closure, along with copy of Publisher's Affidavit and copy of letter of transmittal to the Texas Department of Water Resources.

Yours truly,

G. F. Bozeman

G. F. Bozeman
E&M Manager

cc: Mr. L. W. Pepple - with
copies of enclosures

GFB/css

Encls.

Southern Pacific
Transportation Company
913 Franklin Ave., P. O. Box 1319, Houston, Texas 77251
MAINTENANCE OF WAY

L. P. REILLY
Asst. Engineer MofW
Eastern Lines

January 27, 1984

071.1

Mr. Jeff Webb
Texas Department of Water Resources
1700 N. Congress Avenue
Austin, TX

Dear Sir:

Reference Mr. Messenger's letter of December 12, 1983, subject: Southern Pacific Transportation Company, Industrial Solid Waste Registration No. 31547, Publication of Notice of the Receipt of Closure Plan concerning Hazardous Waste Management Facilities.

Enclosed is the original sworn affidavit from the Houston Chronicle, showing notice published on January 13, 1984. Also enclosed is copy of said notice.

Yours truly,

G. F. Bozeman
E&M Manager

Enclosure

GFB/css

PUBLISHER'S AFFIDAVIT

STATE OF TEXAS

COUNTY OF Harris

Before me on this day personally appeared Lee Benton, the Supervisor-Accts Rec of the Houston Chronicle, a newspaper which is regularly published or circulated in Harris County, Texas, who being by me duly sworn deposes and says:

That the foregoing notice was published in said newspaper on January 13, 1984

Lee Benton

Subscribed and sworn to before me this the 26th day of January ~~1983~~ 1984

Carol Hanson

Notary Public in and for Harris County, Texas

CAROL HANSON
Notary Public State of Texas
My Commission Expires November 25, 1985
Bonded by L. Alexander Loven, Lawyers Surety Corp.

Notice of Final Facility Closure

31 Texas Administrative Code (TAC) Section 335.213(d), the Director of the Texas Department of Water Resources notice of the receipt on December 2, 1983 of a closure plan hazardous waste management facility associated with Southern Transportation Company located at 4910 Liberty Road, Houston County. Pursuant to the closure plan submitted, Southern Transportation Company intends to close a 0.43-acre surface impoundment used to receive wastewater treatment sludge from refining operations.

The purpose of this notice is to give members of the public the opportunity to submit written comments on the closure plan and request a public meeting on the plan. Any comments must be submitted within 30 days of the date of publication of this notice to Allen Messenger, Solid Waste Section, Texas Department of Water Resources, P.O. Box 13087, Capitol Station, Austin, Texas 78711. Pursuant to 31 TAC Section 335.213(d), the Executive Director is required to approve, modify, or disapprove the plan within 90 days of receipt. Copies of the closure plan are available for public inspection at the central office of the Texas Department of Water Resources, 1700 North Congress Avenue, Austin, Texas and at the Department's District 7 Office, 4301 Center Street, Deer Park, Texas 77536.

Pursuant to 31 TAC Section 335.213(d), the Executive Director will respond to a request or at his own discretion, hold a public meeting on the closure plan whenever such a hearing might clarify one or more issues concerning the plan. Any request for a public hearing must be submitted within 30 days of the date of publication of this notice. Allen Messenger, Solid Waste Section, Texas Department of Water Resources, P.O. Box 13087, Capitol Station, Austin, Texas 78711, (512) 475-3041.

Issued in Austin, Texas on December 13, 1983.

C. H. Mortischin
Assistant Executive Director

6. Bulk Density Values, Sampling Analyses

Rollins Environmental Services (FS) Inc.
2027 Battleground Road, P.O Box 609, Dee Park, Texas 77536
(713) 479-6001

Rollins

March 30, 1984

TO WHOM IT MAY CONCERN:

Bulk Density Values for Waste From 4910 Liberty Rd.

1. 1345
2. 1821.2
3. 2181.3
4. 1885.2
5. 2337.6
6. 1835.3
7. 1973.1
8. 1650.1
9. 2760.9
10. 2647.1
11. 2746.4
12. 2370
13. 2709.2
14. 2215.9

30478.3 ÷ 14 = 2177 Pounds Per Cubic Yard

Sincerely,

ROLLINS ENVIRONMENTAL SERVICES INC.

Dan Bridge

Dan Bridge, Ph. D.
Project Manager

DB/jml

MBA LABORATORIES
P.O. Box 9461 340 S. 66th St.
Houston, Texas 77261
(713)928-2701

LABORATORY REPORT #: H-6914

SAMPLE SUBMITTED BY: ROLLINS

DATE RECEIVED: 4-4-84

DATE COMPLETED: 4-4-84

SAMPLE IDENTIFICATION: ONE SOIL SAMPLE

THE SAMPLE WAS ANALYZED BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY, USING A HEWLETT-PACKARD MODEL #5985 GC/MS SYSTEM.

SAMPLE PREPARATION

1. BASE NEUTRALS, ACID EXTRACTABLES
   50 GMS OF SAMPLE WAS PLACED INTO A STAINLESS STEEL BLENDER ALONG WITH 50 GMS. OF SODIUM SULFATE. 150 MLS. OF METHYLENE CHLORIDE WAS ADDED, AND THE SAMPLE WAS BLENDED FOR 5 MINUTES AT HIGH SPEED. THE EXTRACT WAS FILTERED THROUGH GLASS WOOL INTO A KJDERNA-DANISH CONCENTRATOR. TWO MORE EXTRACTIONS WERE MADE USING 50 MLS. OF MECL2, AND THESE WERE ADDED TO THE ORIGINAL EXTRACT. THE SAMPLE EXTRACT WAS THEN CONCENTRATED TO 0.25 MLS. FOR GC/MS ANALYSIS. NEXT, THE SOIL WAS ACIDIFIED, AND AGAIN 3 EXTRACTIONS WERE PERFORMED JUST LIKE THE NEUTRAL FRACTION. THIS EXTRACT WAS ALSO CONCENTRATED TO 0.25 MLS., AND THIS WAS COMBINED WITH THE NEUTRAL EXTRACT AND ANALYZED.
2. BENZENE AND TOLUENE
   2 GMS OF SOIL WAS PLACED INTO A VIAL ALONG WITH 5 MLS. OF MECL2. THIS WAS SONICATED FOR 10 MINUTES, AND SHAKEN FOR 1 HOUR ON A SHAKER TABLE. THIS EXTRACT WAS THEN INJECTED DIRECTLY INTO THE GC/MS.

THE SAMPLE WAS ANALYZED FOR THE FOLLOWING SUBSTANCES:

SPECIFIC ORGANICS

Joe Kraus

THE GC/MS PARAMETERS WERE AS FOLLOWS:

COLUMN - 30 METER FUSED SILICA CAPILLARY COATED WITH SPB-5
CARRIER GAS - HELIUM @ 30 CM/SEC (0.9 ML/MIN)
INJECTOR TEMP - 260 DEGREES
COLUMN TEMP - 3 MIN @ 50 DEGREES, THEN 8 DEGREES PER MINUTE TO 280 DEGREES, HOLD @ 280 DEGREES
INJECTION MODE - SPLIT
SPLIT RATIO - 15:1

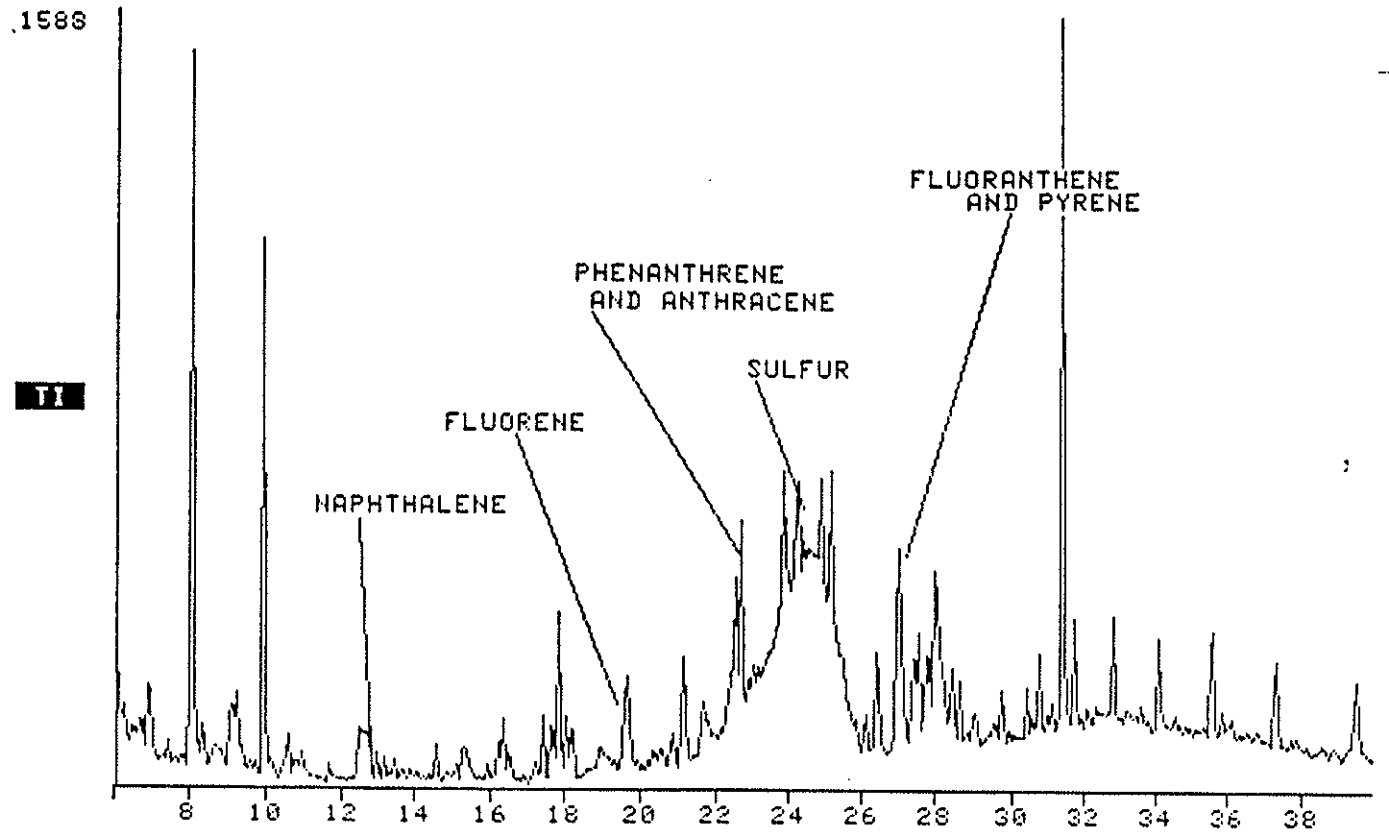
GC/MS INTERFACE - DIRECT
IONIZATION MODE - ELECTRON IMPACT
ELECTRON ENERGY - 70 V
MASS RANGE SCANNED - 40 TO 360 AMU
SCAN TIME - 0.4 SEC

COPIES OF THE TOTAL ION CHROMATOGRAMS ARE INCLUDED WITH THIS REPORT. ALL GC/MS DATA IS PERMANENTLY STORED AT MBA LABORATORIES ON MAGNETIC TAPE.

Joel Kreps

NAME H-6914,50 GMS:0.5 ML MECL2,6 ULS,15:1 SPLIT
MISC 4-4-84,JK

FRN 11805



COMPOUNDS FOUND

NAME	*RETENTION TIME (MINUTES)*	*CONCENTRATION*
Naphthalene	*12.6*	*4.0 ugs/kg*
Fluorene	*19.7*	*2.4 ugs/kg*
Phenanthrone	*22.7*	*31.8 ug/kg*
Anthracene	*22.9*	*5.3 ug/kg*
Fluoranthene	*26.5*	*13.00 ug/kg*
Pyrene	*27.1*	*2.2 ug/kg*
Chrysene	*31.0*	*9.1 ug/kg*

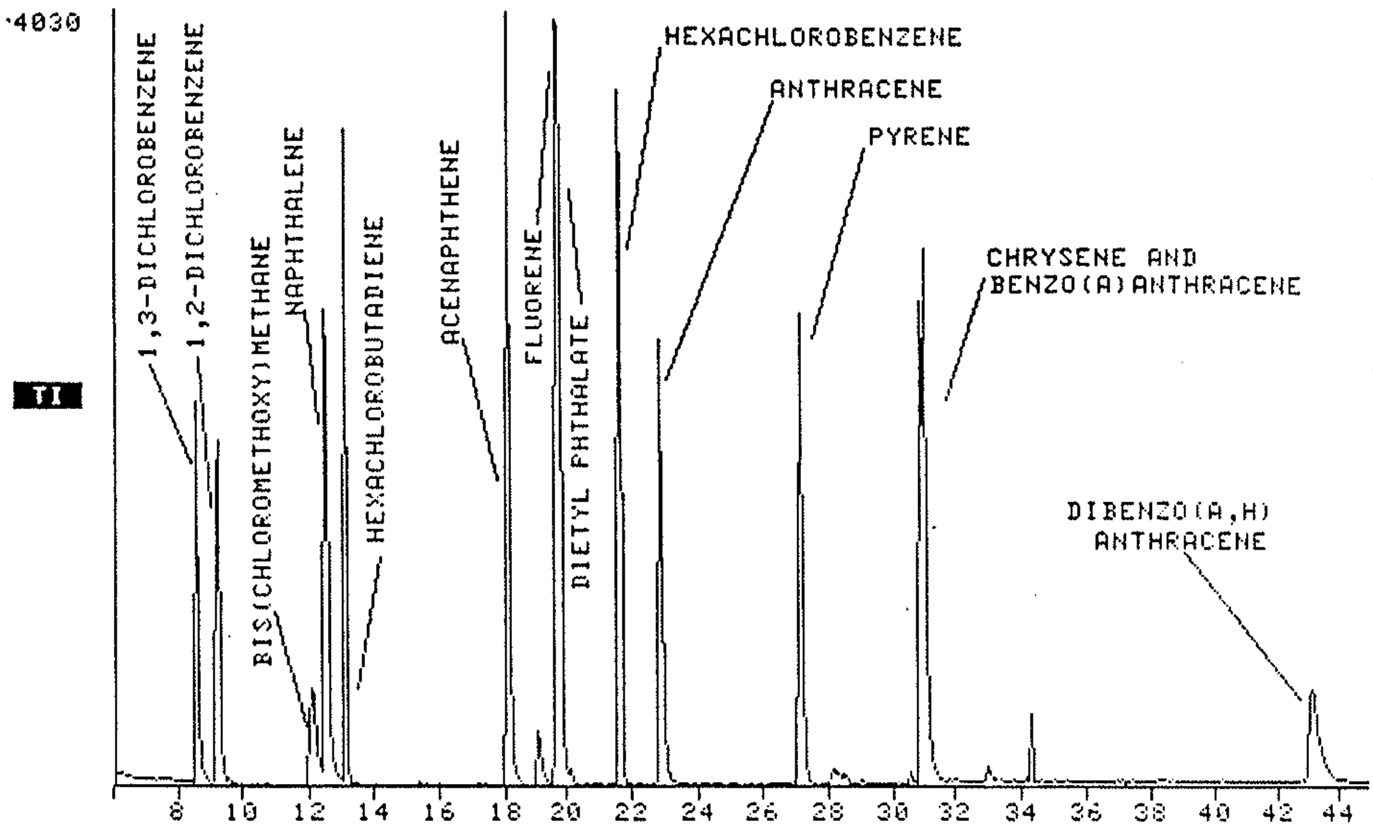
COMPOUNDS NOT FOUND

NAME	*CONCENTRATION*
Benzene	*<100 ug/kg*
Toluene	*<100 ug/kg*
Phenol	*< 2.4 ug/kg*
4-Nitrophenol	*< 18.0 ug/kg*
2-Chlorophenol	*< 3.6 ug/kg*
2,4-dimethyl phenol	*< 3.6 ug/kg*
2,4,6-trichlorophenol	*< 5.4 ug/ig*
pentachlorophenol	*< 13.8 ug/kg*
2-methyl, 4,6-dinitrophenol	*< 24.0 ug/kg*
tetrachlorophenol	*< 9.6 ug/kg*
benzo(a)anthracene	*< 1.0 ug/kg*
benzo(a)pyrene	*< 1.0 ug/kg*

Joe Kreny

NAME BN#2 STD,1:10,20 PPM EA.,6 ULS,15:1 SPLIT
MISC 4-4-84,JK

FRN 11806



Joe Kresz

MBA LABORATORIES
P.O. Box 9461 340 S. 66th St.
Houston, Texas 77261
(713)938-2701

LABORATORY REPORT #: *H-6870*

SAMPLE SUBMITTED BY: ROLLINS

DATE RECEIVED: *3-29-84*

DATE COMPLETED: 4-2-84

SAMPLE IDENTIFICATION: *SIX* SOIL SAMPLES

THE SAMPLE WAS ANALYZED BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY, USING A HEWLETT-PACKARD MODEL #5985 GC/MS SYSTEM.

SAMPLE PREPARATION

1. BASE NEUTRALS, ACID EXTRACTABLES
   50 GMS OF SAMPLE WAS PLACED INTO A STAINLESS STEEL BLENDER ALONG WITH 50 GMS OF SODIUM SULFATE. 150 MLS OF METHYLENE CHLORIDE WAS ADDED, AND THE SAMPLE WAS BLENDED FOR 5 MINUTES AT HIGH SPEED. THE EXTRACT WAS FILTERED THROUGH GLASS WOOL INTO A KJERNA-DANISH CONCENTRATOR. TWO MORE EXTRACTIONS WERE MADE, USING 50 MLS. OF METHYLENE CHLORIDE, AND THESE WERE ADDED TO THE ORIGINAL EXTRACT. THE SAMPLE EXTRACT WAS THEN CONCENTRATED TO 0.25 MLS. FOR GC/MS ANALYSIS. NEXT, THE SOIL WAS ACIDFIED, AND AGAIN 3 EXTRACTIONS WERE PERFORMED JUST LIKE THE NEUTRAL FRACTION. THIS EXTRACT WAS ALSO CONCENTRATED TO 0.25 MLS, AND THIS WAS COMBINED WITH THE NEUTRAL EXTRACT AND ANALYZED.
2. BENZENE AND TOLUENE
   2 GMS OF SOIL WAS PLACED INTO A VIAL ALONG WITH 5 MLS. OF METHYLENE CHLORIDE. THESE WERE SONICATED FOR 10 MINUTES, AND SHAKEN FOR 1 HOUR ON A SHAKER TABLE. THIS EXTRACT WAS THEN INJECTED DIRECTLY INTO THE GC/MS FOR ANALYSIS.
3. SOIL SAMPLES HEAVILY CONTAMINATED
   TWO OF THE SAMPLES WERE OBVIOUSLY OILY. 1 GM. OF EACH WAS PLACED INTO A VIAL, THE SOIL WAS ACIDIFIED, AND 10 MLS. OF METHYLENE CHLORIDE WAS ADDED. THE SAMPLES WERE SONICATED FOR 10 MINUTES, AND SHAKEN FOR 1 HOUR ON A SHAKER TABLE.

THE SAMPLE WAS ANALYZED FOR THE FOLLOWING SUBSTANCES: *SPECIFIC ORGANICS*

Joe Krenek

THE GC/MS PARAMETERS WERE AS FOLLOWS:

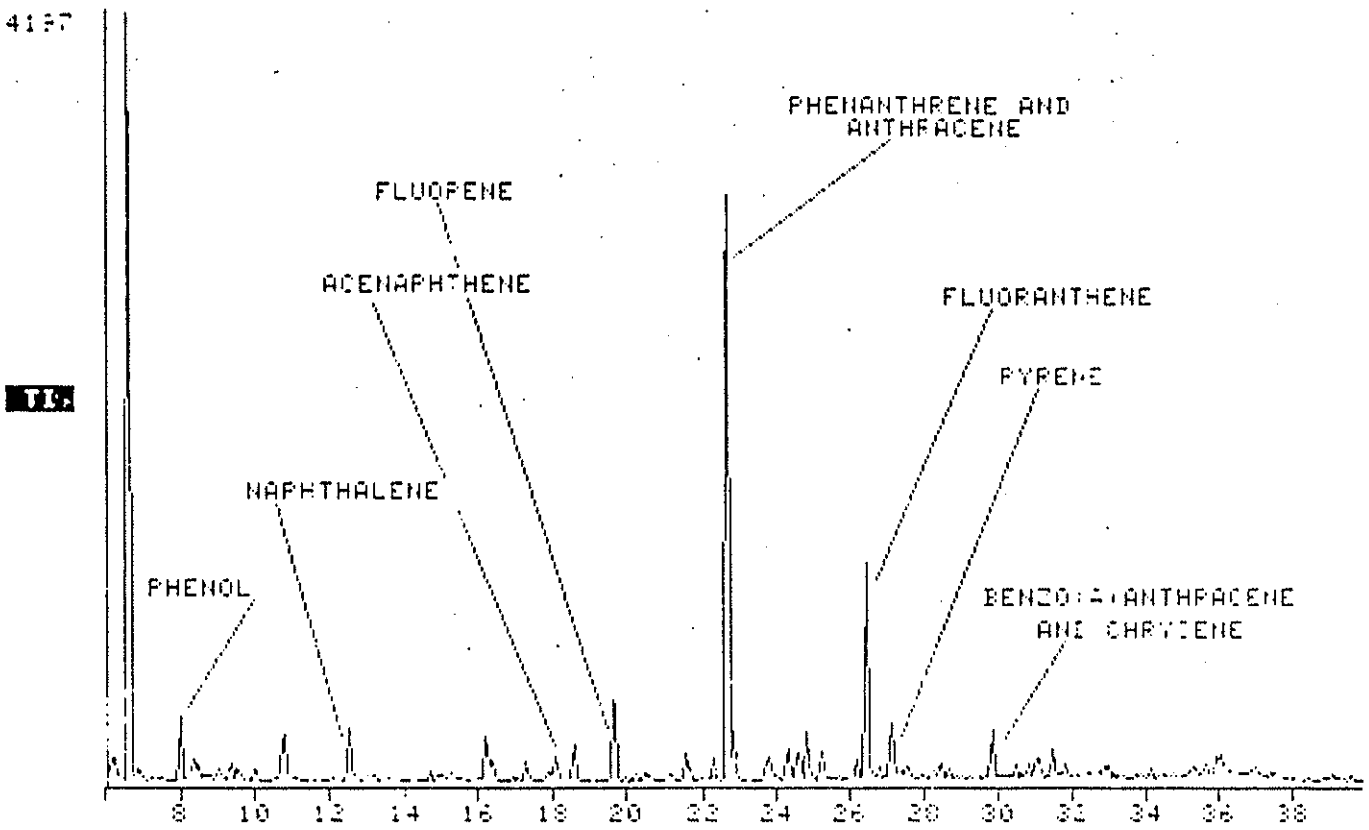
COLUMN - 30 METER FUSED SILICA CAPILLARY COATED WITH SPB-5
CARRIER GAS - HELIUM @ 30 CM/SEC (0.9 ML/MIN)
INJECTOR TEMP - 260 DEGREES
COLUMN TEMP - 3 MIN @ 50 DEGREES, THEN 8 DEGREES PER MINUTE TO 280 DEGREES, HOLD @ 280 DEGREES
INJECTION MODE - SPLIT
SPLIT RATIO - 15:1

GC/MS INTERFACE - DIRECT
IONIZATION MODE - ELECTRON IMPACT
ELECTPON ENERGY - 70 V
MASS RANGE SCANNED - 33 TO 360 AMU
SCAN TIME - 0.4 SEC

COPIES OF THE TOTAL ION CHROMATOGRAMS ARE INCLUDED WITH THIS REPORT. ALL GC/MS DATA IS PERMANENTLY STORED AT MBA LABORATORIES ON MAGNETIC TAPE.

Joy Kruse

NAME 4-8870,A-1,100 GMS:0.5 ML,6 UL:3,15:1 SPLIT FRN 11614
MISC 3-29-84,JK



COMPOUNDS FOUND

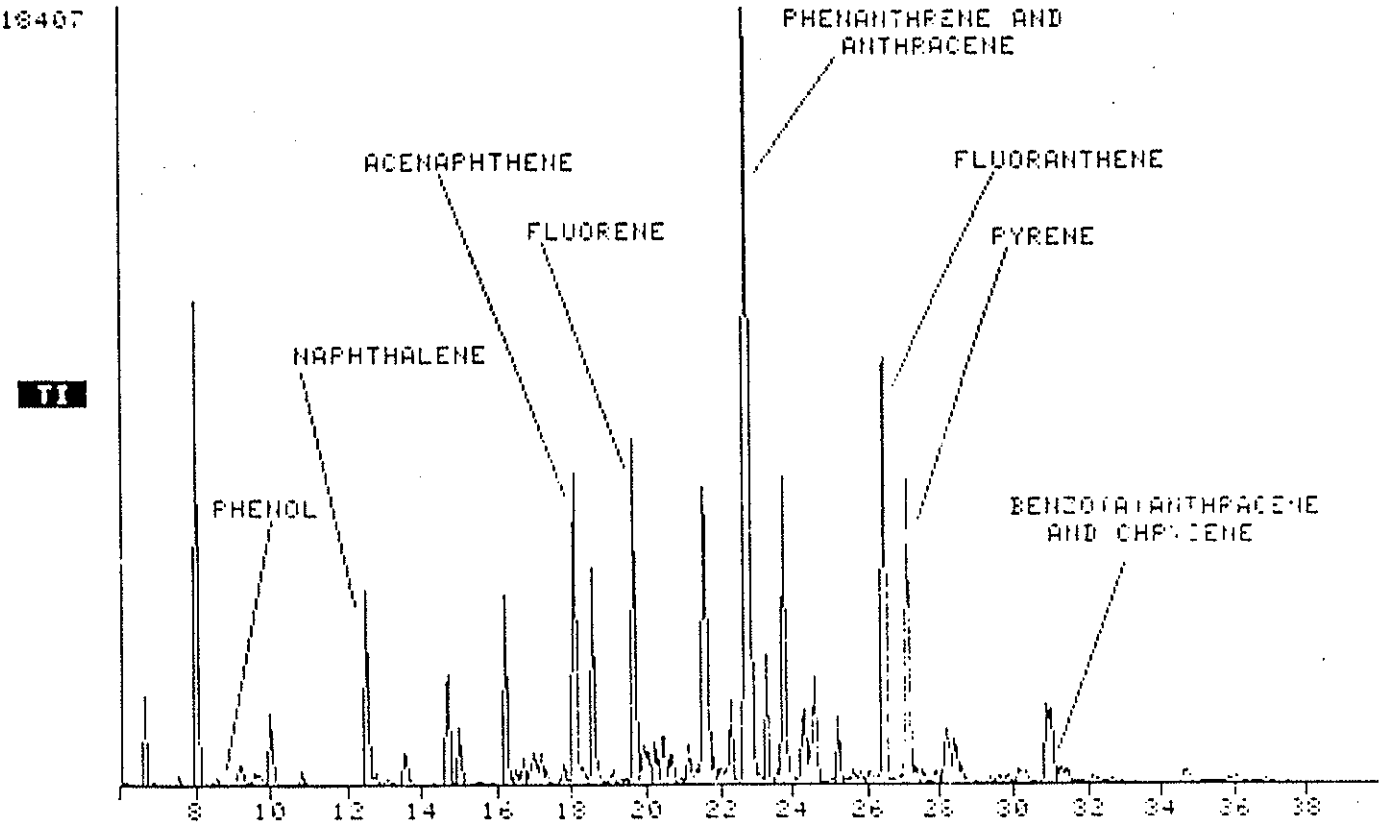
NAME	RETENTION TIME (minutes)	CONCENTRATION
Phenol	8.7	4.5 ugs/kg
Naphthalene	12.5	23.0 ug/kg
Acenaphtene	18.1	6.0 ug/kg
Fluorene	19.7	25.0 ug/kg
Phenanthreen	22.7	206.0 ug/kg
Anthracene	22.8	19.0 ug/kg
Fluoranthene	26.5	89.0 ug/kg
Pyrene	27.1	27.0 ug/kg
Benzo(a)anthracene	30.9	11.0 ug/kg
Chrysene	31.1	15.3 ug/kg

COMPOUNDS NOT FOUND

NAME	DETECTION LIMIT
Benzene	< 100.0 ug/kg
Toluene	< 100.0 ug/kg
Benzo(a)pyrene	< 0.4 ug/kg
4-Nitrophenol	< .6.0 ug/kg
2-Chlorophenol	< 1.2 ug/kg
2,4-dimethyl phenol	< 1.2 ug/kg
2,4,6-trichlorophenol	< 1.8 ug/kg
Pentachlorophenol	< 4.6 ug/kg
2-methyl,4,6,-dinitrophenol	< 8.0 ug/kg
tetrachlorophenol	< 3.2 ug/kg

Joe Kresse

NAME 4-6870, ,B-3,100 GM3:0.5 ML,6 UL3,15:1 SPLIT FRN 11615
MISC 3-29-84,JK



COMPOUNDS FOUND

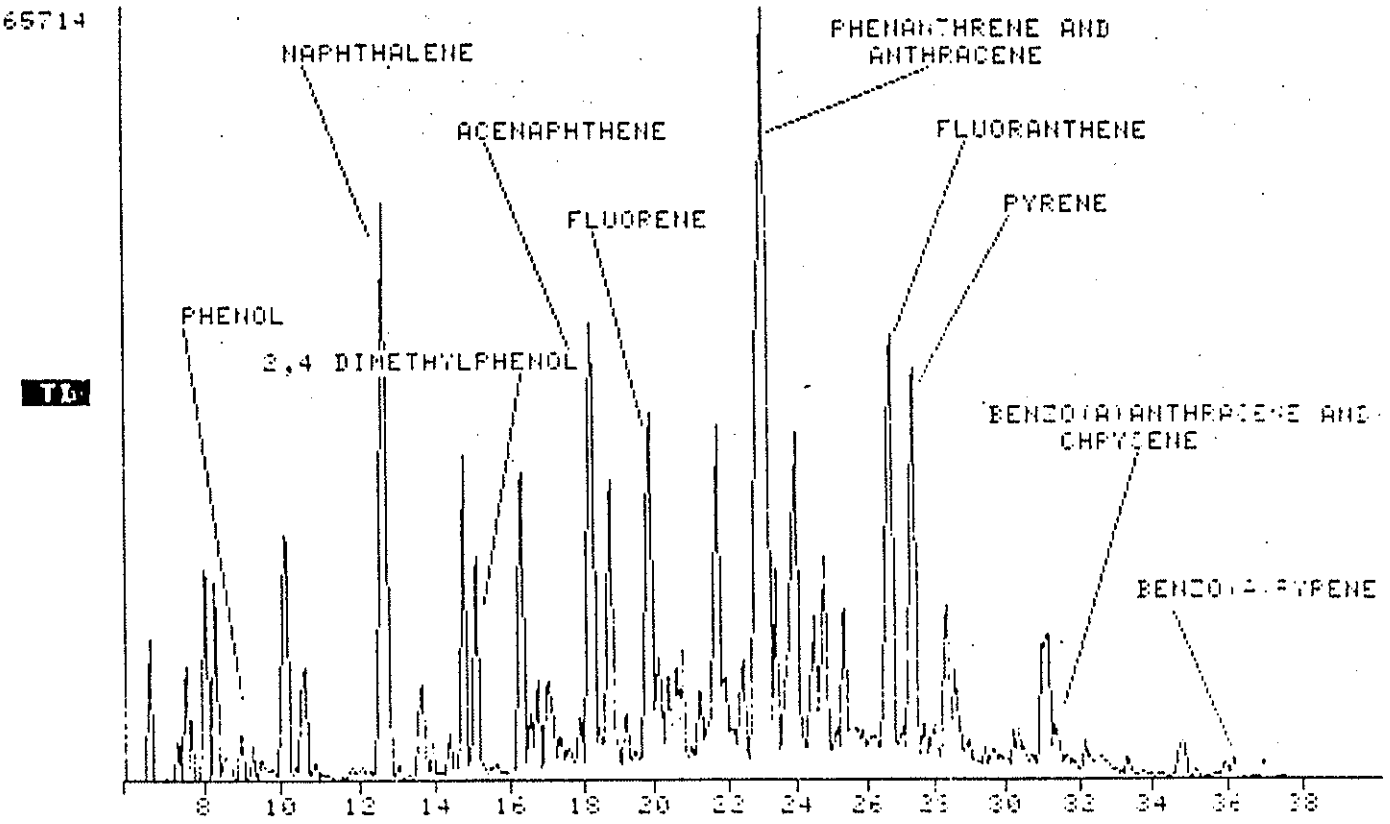
NAME	*RETENTION TIME (minutes)*	*CONCENTRATION*
Pehnol	*8.6*	*28 ug/kg*
Naphthalene	*12.5*	*135 ug/kg*
Acenaphtene	*18.1*	*121 ug/kg*
Fluorene	*19.7*	*180 ug/kg*
Phenanthrene	*22.7*	*749 ug/kg*
Anthracene	*22.8*	*119 ug/kg*
Fluoranthene	*26.5*	*381 ug/kg*
Pyrene	*27.1*	*225 ug/kg*
Benzo(a)anthracene	*30.9*	*70 ug/kg*
Chrysene	*31.0*	*49 ug/kg*
Benzo(a)pyrene	*36.1*	*12 ug/kg*

COMPOUNDS NOT FOUND

NAME		*DETECTION LIMIT*
Benzene	<	*100 ug/kg*
Toluene	<	*100 ug/kg*
2-chlorophenol	<	*0 ug/kg*
4-nitrophenol	<	*3 ug/kg*
2,4-dimethylphenol	<	*0.6 ug/kg*
2,4,6-trichlorophenol	<	*0.9 ug/kg*
Pentachlorophenol	<	*2.3 ug/kg*
2-methyl,4,6-dinitrophenol	<	*0.9 ug/kg*
tetrachlorophenol	<	*1.6 ug/kg*

Joe Kreml

NAME H-6870,C-1,100 GM:0.5 ML,1 UL.15:1 SPLIT FRN :170:
INJ SCH 3-29-84,JK



COMPOUNDS FOUND

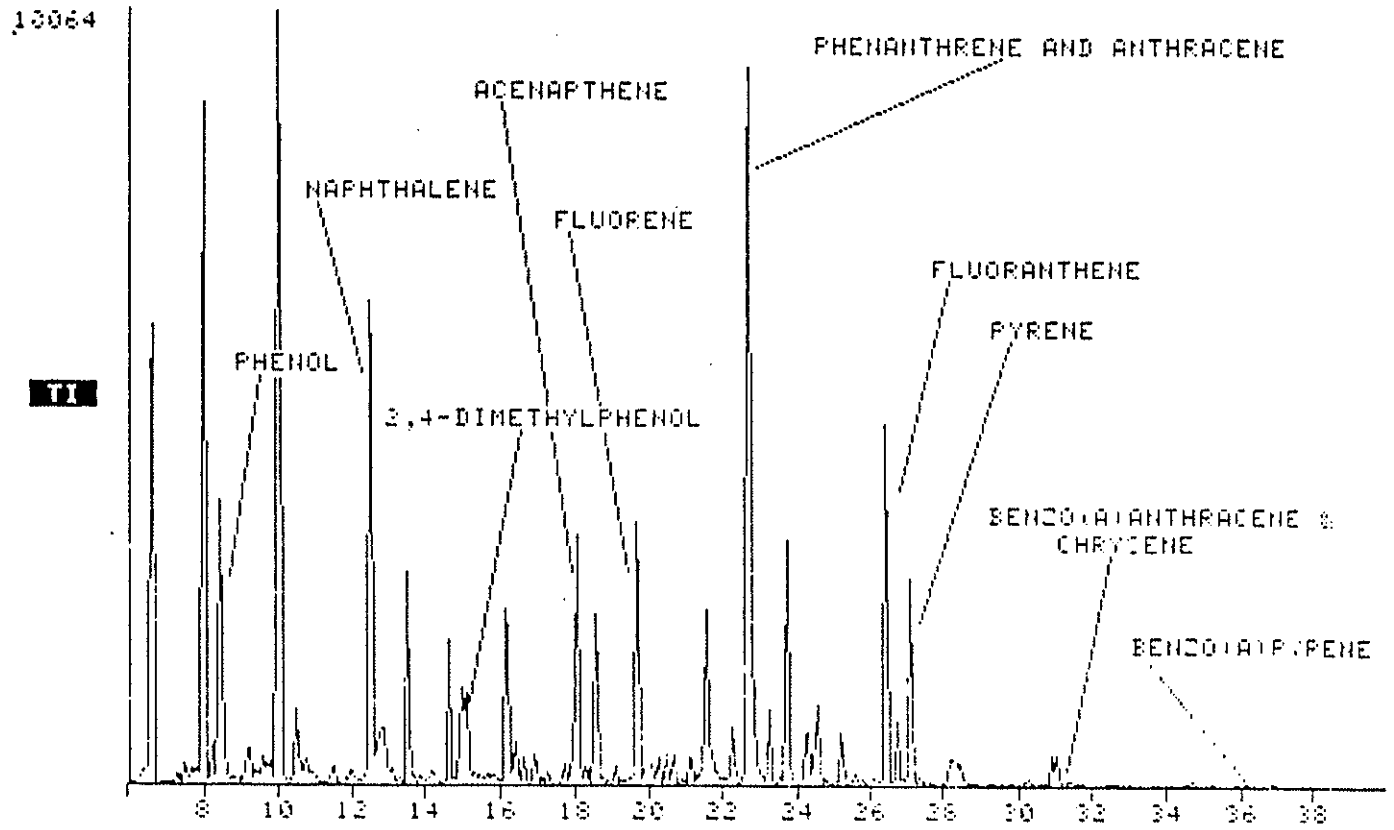
NAME	*RETENTION TIME*	*CONCENTRATION*
Phenol	*8.6*	*4.07 mg/kg*
2,4,-Dimethylphenol	*12.0*	*0.387 mg/kg*
Naphthalene	*12.6*	*29.840 mg/kg*
Fluorene	*19.8*	*11.1 mg/kg*
Phenanthrene	*22.9*	*44.9 mg/kg*
Anthracene	*23.2*	*5.4 mg/kg*
Fluoranthene	*26.6*	*20.5 mg/kg*
Pyrene	*27.2*	*12.1 mg/kg*
Benzo(a)anthracene	*31.0*	*3.1 mg/kg*
Chrysene	*31.1*	*2.0 mg/kg*
Benzo)a)pyrene	*36.1*	*0.6 mg/kg*

COMPOUNDS NOT FOUND

NAME	*DETECTION LIMIT*
Benzene	*< 100.0 ug/kg ppb*
Toluene	*< 100.0 ug/kg*
4-Nitrophenol	*< 18.0 ug/kg*
2-Chlorophenol	*< 3.6 ug/kg*
2,4,6-trichlorophenol	*< 5.4 ug/kg*
Pentachlorophenol	*< 14.0 ug/kg*
2-methyl,4,6-dinitrophenol	*< 24.0 ug/kg*
tetrachlorophenol	*< 9.6 ug/kg*

Joe Kress

NAME A-6870,D-3,100 GMS:0.5 ML,1 ULC,15:1 SPLIT FRN :1702
MISC 3-29-84,JK



COMPOUNDS FOUND

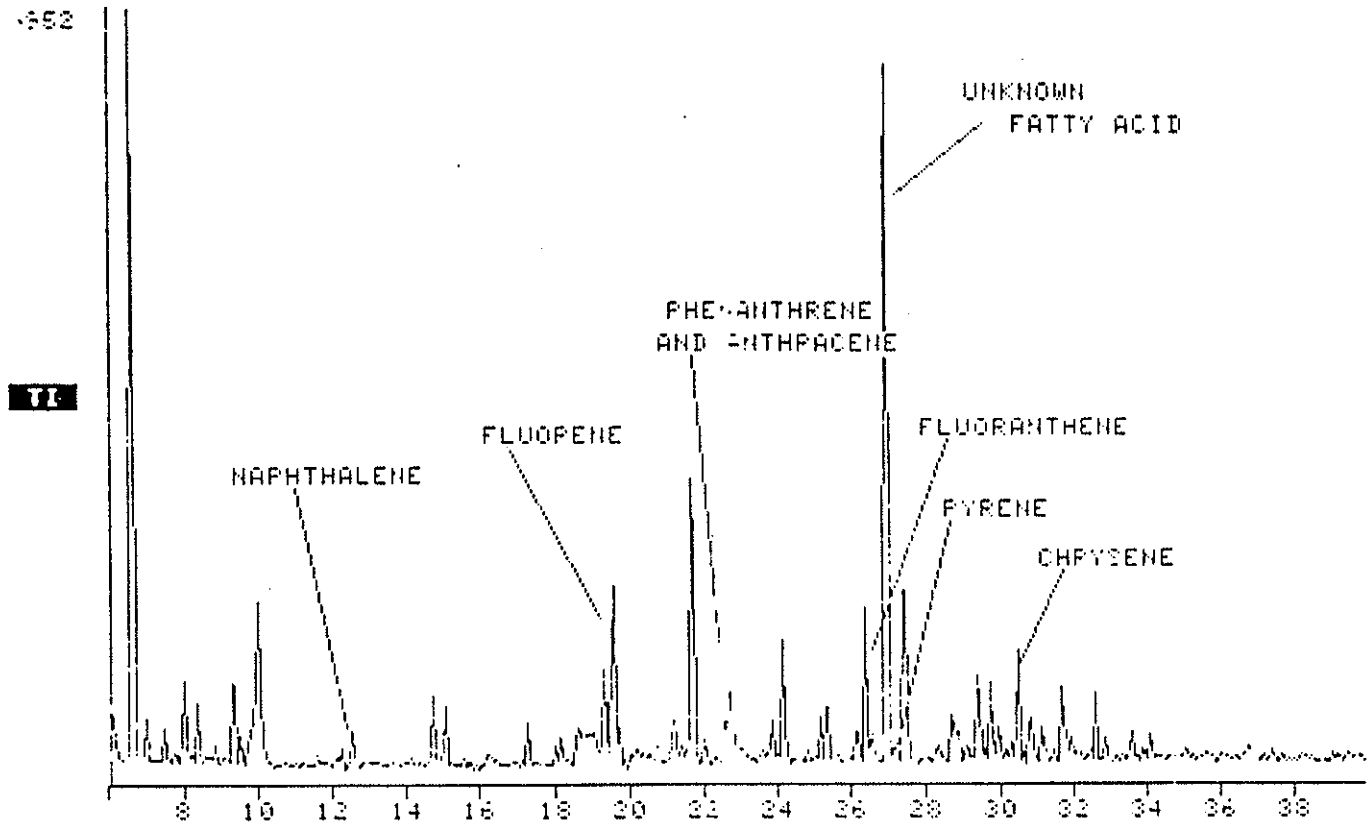
NAME	*RETENTION TIME (minutes)*	*CONCENTRATION*
Phenol	*8.5*	*3.0 mg/kg*
2,4-dimethylphenol	*15.0*	*0.3 mg/kg*
Naphthalene	*12.5*	*1.1 mg/kg*
Acenaphthene	*18.0*	*0.3 mg/kg*
Fluorene	*19.7*	*0.4 mg/kg*
Phenanthrene	*22.7*	*1.8 mg/kg*
Anthracene	*22.8*	*0.3 mg/kg*
Fluoranthene	*26.4*	*0.8 mg/kg*
Pyrene	*27.1*	*0.5 mg/kg*
Benzo(a)anthracene	*30.9*	*0.1 mg/kg*
Chrysene	*31.0*	*0.1 mg/kg*
Benzo(a)pyrene	*36.1*	*0.02 mg/kg*

COMPOUNDS NOT FOUND

NAME	*DETECTION LIMIT*
Benzene	*< 100.0 ug/kg ppb*
Toluene	*< 100.0 ug/kg ppb*
4-Nitrophenol	*< 3.0 ug/kg ppb*
2-chlorophenol	*< 0.6 ug/kg ppb*
2,46-trichlorophenol	*< 0.9 ug/kg ppb*
Pentachlorophenol	*< 2.3 ug/kg ppb*
2-methyl,4,6-dinitrophenol	*< 4.0 ug/kg ppb*
tetrachlorophenol	*< 1.6 ug/kg ppb*

Joe Kuzo

NAME: F-6870,F-2,100 GMC:0.5 ML,3 ULC,15:1 .-LIT FRN 11-03
MISC: 3-29-84, JK



COMPOUNDS FOUND

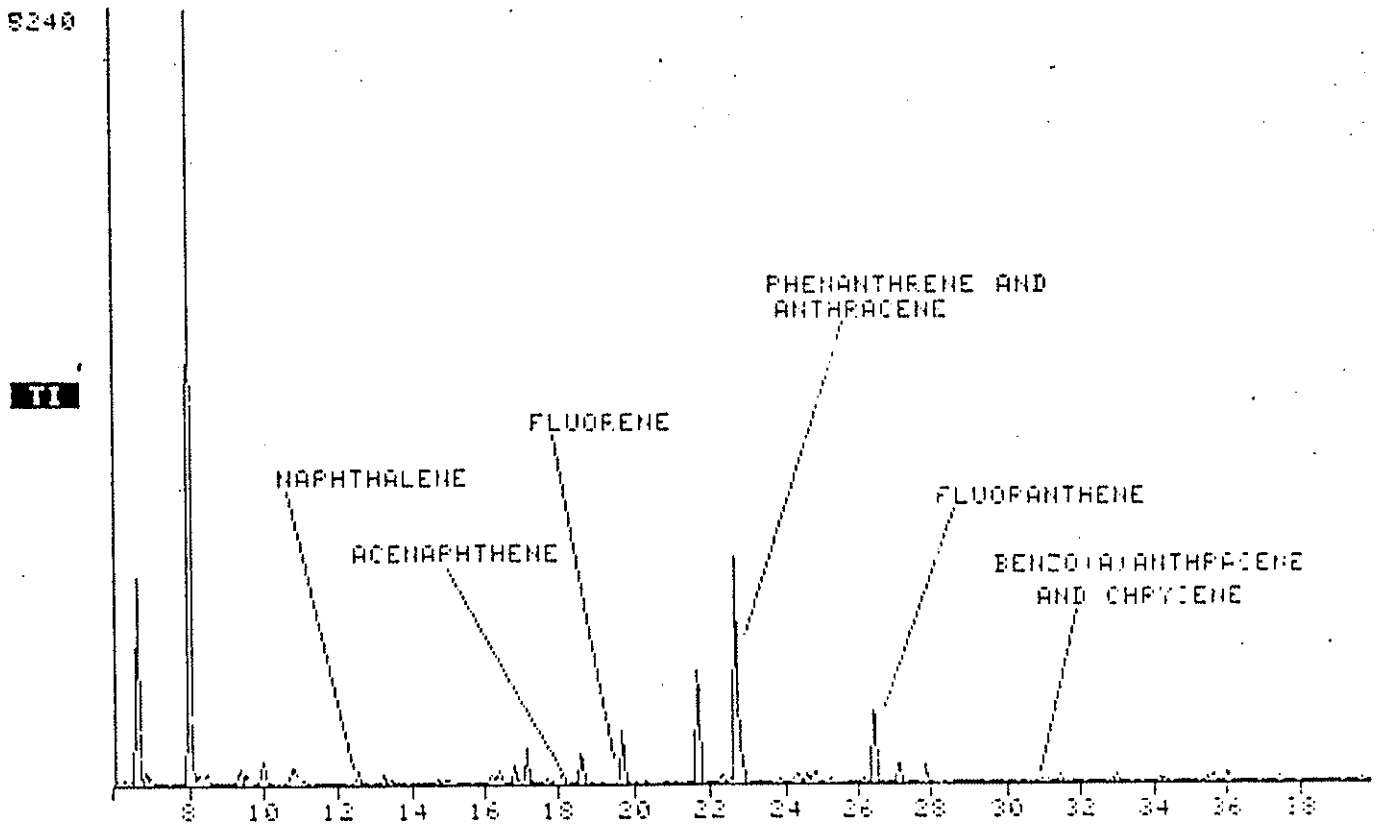
NAME	*RETENTION TIME(minutes)*	*CONCENTRATION*
Naphthalene	*12.5*	*12 ug/kg*
Fluorene	*19.7*	*1.1 ug/kg*
Phenanthrene	*22.7*	*14.6 ug/kg*
Anthracene	*22.9*	*2.2 ug/kg*
Fluoranthene	*26.5*	*4.8 ug/kg*
Pyrene	*27.1*	*2.5 ug/kg*

COMPOUNDS NOT FOUND

NAME		*DETECTION LIMIT*
Benzene	<	*100.0 ug/kg ppb*
Toluene	<	*100.0 ug/kg ppb*
Benzo(a)pyrene	<	*0.2 ug/kg ppb*
4-Nitrophenol	<	*3.0 ug/kg ppb*
Phenol	<	*0.4 ug/kg ppb*
2-chlorophenol	<	*0.6 ug/kg ppb*
2,4-dimethylphenol	<	*0.6 ug/kg ppb*
2,4,6-trichlorophenol	<	*0.9 ug/kg ppb*
Pentachlorophenol	<	*2.3 ug/kg ppb*
2-methyl,4,6-dinitrophenol	<	*0.9 ug/kg ppb*
tetrachlorophenol	<	*1.6 ug/kg ppb*

Joe Kuzd

NAME 4-6870,6-4,100 GMS:0.5 ML,6 UL:,15:1 SPLIT FRN :1704
MISC 3-29-84,JK



COMPOUNDS FOUND

NAME	*RETENTION TIME (minutes)*	*CONCENTRATION*
Naphthalene	*12.5*	*4.0 ug/kg*
Acenaphthene	*18.1*	*2.4 ug/kg*
Fluorene	*19.7*	*9.2 ug/kg*
Phenanthrene	*22.7*	*49.0 ug/kg*
Anthracene	*22.8*	*9.8 ug/kg*
Fluoranthene	*26.5*	*19.2 ug/kg*
Pyrene	*27.1*	*6.4 ug/kg*
Benzo(a)Anthracene	*30.9*	*3.0 ug/kg*
Chrysene	*31.1*	*3.5 ug/kg*

COMPOUNDS NOT FOUND

NAME	*DETECTION LIMIT*
Benzene	*< 100.0 ug/kg ppb*
Benzo(a)pyrene	*< .0.2 ug/kg ppb*
Toluene	*< 100.0 ug/kg ppb*
4-Nitrophenol	*< 3.0 ug/kg ppb*
Phenol	*< 0.4 ug/kg ppb*
2-chlorophenol	*< 0.6 ug/kg ppb*
2,4-dimethylphenol	*< 0.6 ug/kg ppb*
2,4,6-trichlorophenol	*< 0.9 ug/kg ppb*
Pentachlorophenol	*< 2.3 ug/kg ppb*
2-methyl,4,6-dinitrophenol	*< 4.0 ug/kg ppb*
Tetrachlorophenol	*< 1.6 ug/kg ppb*

Joe Kuss

MBA LABORATORIES
P.O. Box 9461 340 S. 66th St.
Houston, Texas 77261
(713)928-2701

LABORATORY REPORT #: H-6855

SAMPLE SUBMITTED BY: ROLLINS

DATE RECEIVED: 3-28-84

DATE COMPLETED: 4-2-84

SAMPLE IDENTIFICATION: FIVE SOIL SAMPLES

THE SAMPLE WAS ANALYZED BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY, USING A HEWLETT-PACKARD MODEL #5985 GC/MS SYSTEM.

SAMPLE PREPARATION

1. BASE NEUTRALS, ACID EXTRACTABLES
   50 GMS OF SAMPLE WAS PLACED INTO A STAINLESS STEEL BLENDER ALONG WITH 50 GMS OF SODIUM SULFATE. 150 MLS OF METHYLENE CHLORIDE WAS ADDED, AND THE SAMPLE WAS BLENDED FOR 5 MINUTES AT HIGH SPEED. THE EXTRACT WAS FILTERED THROUGH GLASS WOOL INTO A KJERNA-DANISH CONCENTRATOR. TWO MORE EXTRACTIONS WERE MADE, USING 50 MLS. OF METHYLENE CHLORIDE, AND THESE WERE ADDED TO THE ORIGINAL EXTRACT. THE SAMPLE EXTRACT WAS THEN CONCENTRATED TO 0.25 MLS. FOR GC/MS ANALYSIS. NEXT, THE SOIL WAS ACIDFIED, AND AGAIN 3 EXTRACTIONS WERE PERFORMED JUST LIKE THE NEUTRAL FRACTION. THIS EXTRACT WAS ALSO CONCENTRATED TO 0.25 MLS, AND THIS WAS COMBINED WITH THE NEUTRAL EXTRACT AND ANALYZED.
2. BENZENE AND TOLUENE
   2 GMS OF SOIL WAS PLACED INTO A VIAL ALONG WITH 5 MLS. OF METHYLENE CHLORIDE. THESE WERE SONICATED FOR 10 MINUTES, AND SHAKEN FOR 1 HOUR ON A SHAKER TABLE. THIS EXTRACT WAS THEN INJECTED DIRECTLY INTO THE GC/MS FOR ANALYSIS.
3. SOIL SAMPLES HEAVILY CONTAMINATED
   TWO OF THE SAMPLES WERE OBVIOUSLY OILY. 1 GM. OF EACH WAS PLACED INTO A VIAL, THE SOIL WAS ACIDIFIED, AND 10 MLS. OF METHYLENE CHLORIDE WAS ADDED. THE SAMPLES WERE SONICATED FOR 10 MINUTES, AND SHAKEN FOR 1 HOUR ON A SHAKER TABLE.

THE SAMPLE WAS ANALYZED FOR THE FOLLOWING SUBSTANCES: *SPECIFIC ORGANICS*

Joe Krenz

THE GC/MS PARAMETERS WERE AS FOLLOWS:

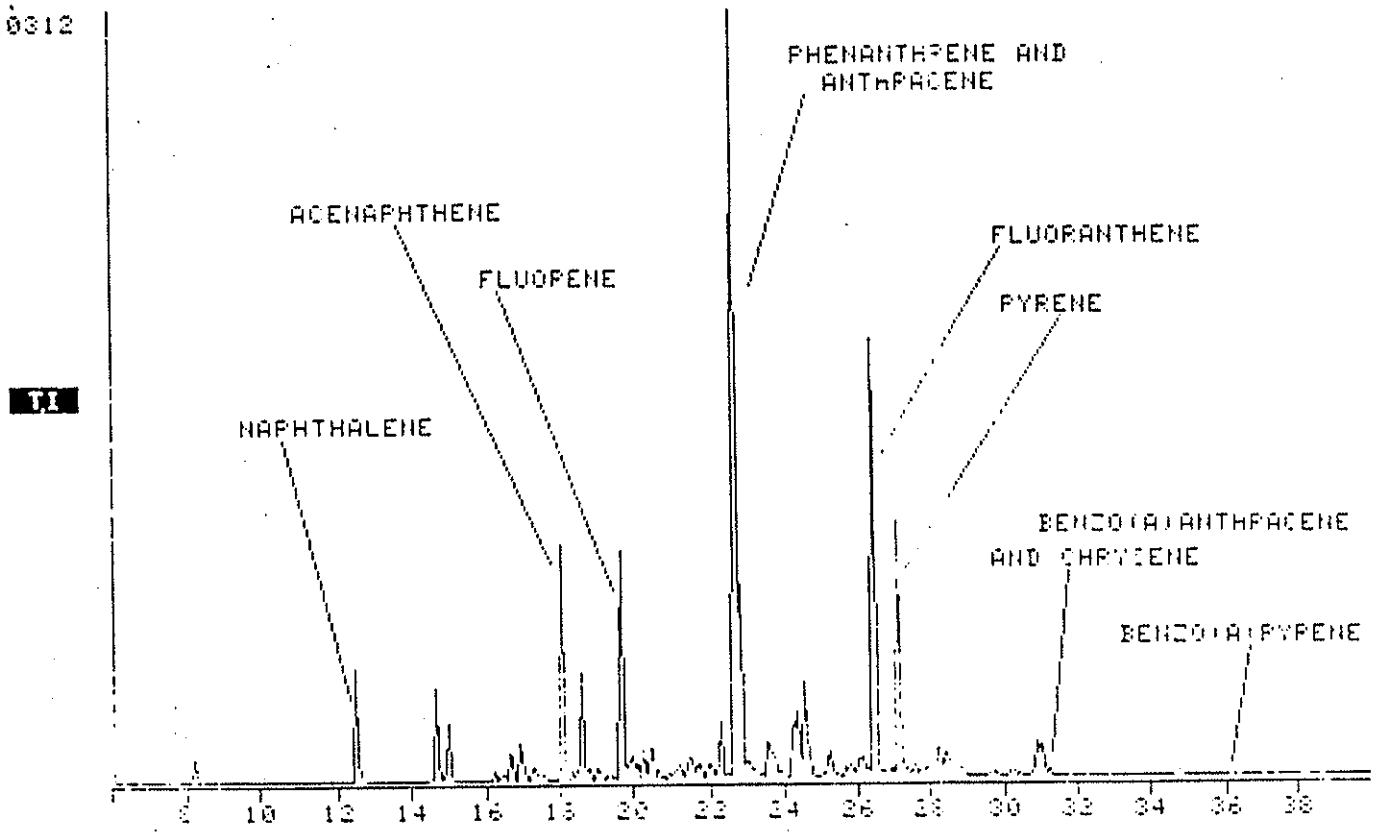
COLUMN - 30 METER FUSED SILICA CAPILLARY COATED WITH SPB-5
CARRIER GAS - HELIUM @ 30 CM/SEC (0.9 ML/MIN)
INJECTOR TEMP - 260 DEGREES
COLUMN TEMP - 3 MIN @ 50 DEGREES, THEN 8 DEGREES PER MINUTE TO 280 DEGREES, HOLD @ 280 DEGREES
INJECTION MODE - SPLIT
SPLIT RATIO - 15:1

GC/MS INTERFACE - DIRECT
IONIZATION MODE - ELECTRON IMPACT
ELECTRON ENERGY - 70 V
MASS RANGE SCANNED - 33 TO 360 AMU
SCAN TIME - 0.4 SEC

COPIES OF THE TOTAL ION CHROMATOGRAMS ARE INCLUDED WITH THIS REPORT. ALL GC/MS DATA IS PERMANENTLY STORED AT MBA LABORATORIES ON MAGNETIC TAPE.

Joe Kerr

NAME --8SST,HIGH CONC.,1GM:10ML.MECL2,1 UL,15:1 SPLIT FRN 11609
DISC 3-2?-84,JK



COMPOUNDS FOUND

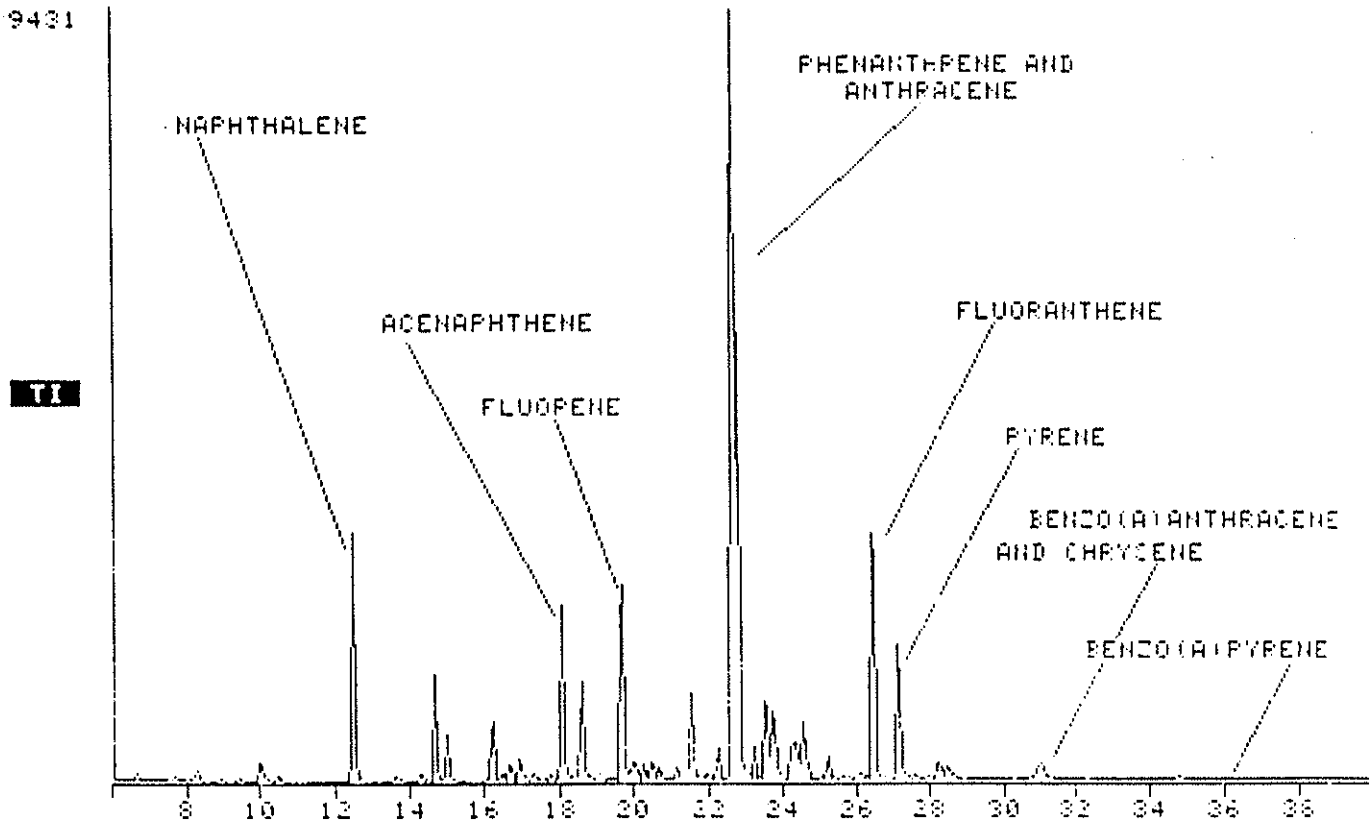
	NAME	RETENTION TIME (minutes)		CONCENTRATION (mg/kg, ppm)		
1.	Benzo(a)anthracene	30.9	mins.	280	mg/kg	(ppm)
2.	Chrysene	31.1	"	231	"	"
3.	Benzo(a)pyrene	36.1	"	231	"	"
4.	Phenanthrene	22.7	"	3329	"	"
5.	Fluoranthene	26.5	"	2438	"	"
6.	Anthracene	22.8	"	697	"	"
7.	Pyrene	27.1	"	1497	"	"
8.	Benzo(a)anthracene	30.9	"	280	"	"
9.	Chrysene	31.1	"	231	"	"
10.	Benzo(a)Pyrene	36.1	"	60	"	"

COMPOUNDS NOT FOUND

	NAME	DETECTION LIMIT
1.	Benzene	< 0.10 mg/kg
2.	Toluene	< 0.10 mg/kg
3.	Phenol	< 0.4 mg/kg
4.	4-Nitrophenol	< 3.4 mg/kg
5.	2-Chlorophenol	< 0.6 mg/kg
6.	2,4 - dimethylphenol	< 0.6 mg/kg
7.	2,4,6,-trichlorophenol	< 1.1 mg/kg
8.	Pentachlorophenol	< 2.7 mg/kg
9.	2-methyl, 4,6 - dinitrophenol	<24.0 mg/kg
10.	Tetrachlorophenol	< 1.6 mg/kg

Joe Kreml

NAME H-6855,INTERMEDIATE,1GM:10 ML,2 ULS,15:1 SPLIT FRN 1:210
MISC 3-29-84,JK



COMPOUNDS FOUND

	NAME	*RETENTION TIME(minutes)*	*CONCENTRATION (mg/kg, ppm)*
1.	*Naphthalene*	*12.5 minutes*	*620 mg/kg (ppm)*
2.	*Acenaphthene*	*18.1 minutes*	*228 mg/kg (ppm)*
3.	*Fluorene*	*19.7 minutes*	*328 mg/kg (ppm)*
4.	*Phenanthrene*	*22.7 minutes*	*1350 mg/kg (ppm)*
5.	*Anthrocene*	*22.8 minutes*	*951 mg/kg (ppm)*
6.	*Fluoranthene*	*26.4 minutes*	*636 mg/kg (ppm)*
7.	*Pyrene*	*27.1 minutes*	*383 mg/kg (ppm)*
8.	*Benzo(a) Anthracene*	*30.9 minutes*	*58 mg/kg (ppm)*
9.	*Chrysene*	*31.1 minutes*	*69.2 mg/kg (ppm)*
10.	*Benzo(a)pyrene*	*36.2 minutes*	*11 mg/kg (ppm)*

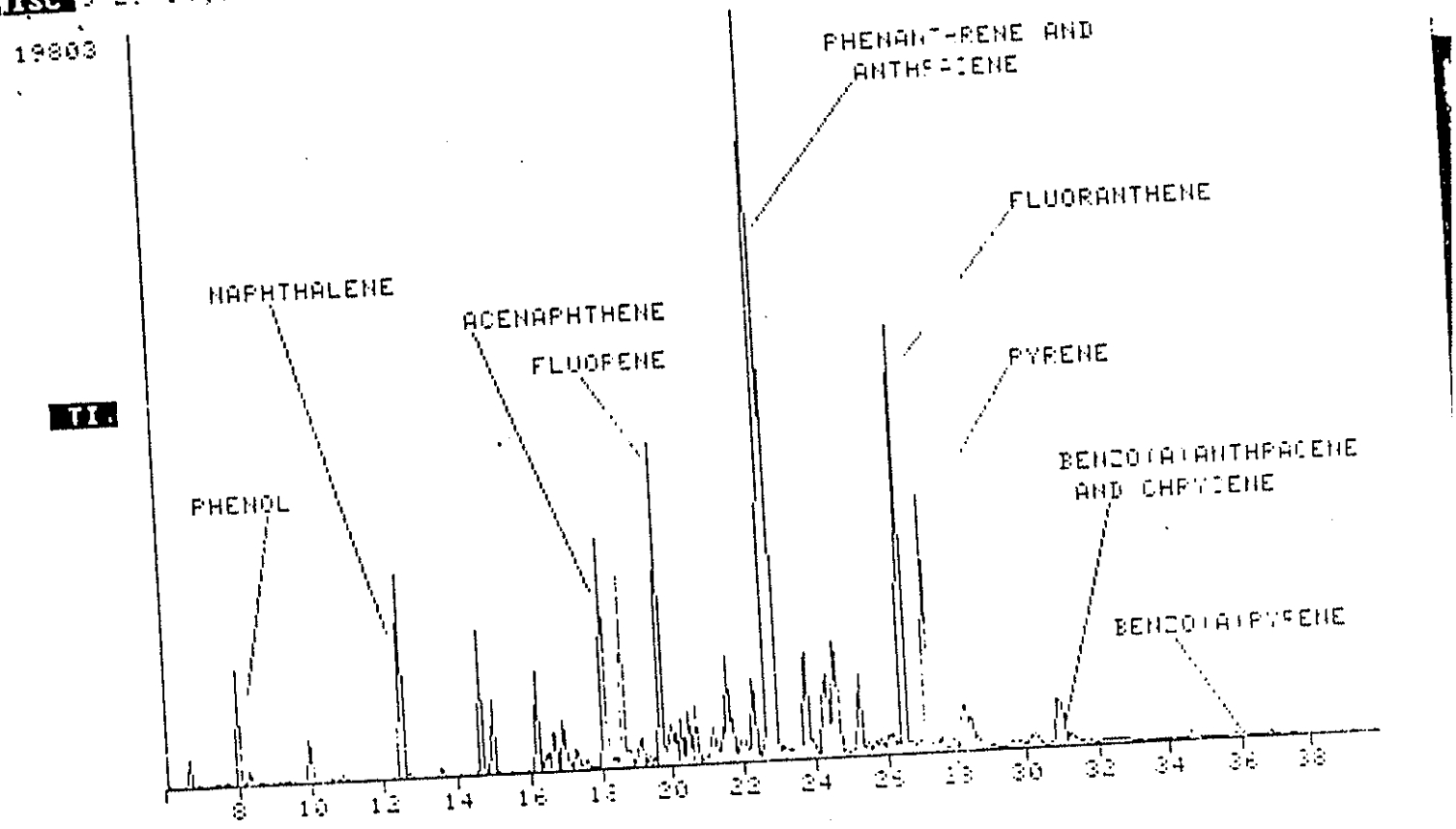
Joe Krenz

COMPOUNDS NOT FOUND

NAME	DETECTION LIMIT
1). Benzene	< 0.10 mg/kg
2). Toluene	< 0.10 mg/kg
3). Phenol	< 0.2 mg/kg
4). 4-Nitrophenol	< 1.7 mg/kg
5). 2-Chlorophenol	< 0.3 mg/kg
6). 2,4 - dimethyl phenol	< 0.3 mg/kg
7). 2,4,6 - trichlorophenol	< 0.5 mg/kg
8). Pentachlorophenol	< 1.4 mg/kg
9). 2-methyl, 4,6 - dinitrophenol	<12.0 mg/kg
10). Tetrachlorophenol	< 0.8 mg/kg

Joe Krese

NAME H-6855,LOW CON:,100 GM:0.5 ML,1 UL,15:1 SPLIT
MISC 3-29-84,JH



COMPOUNDS FOUND

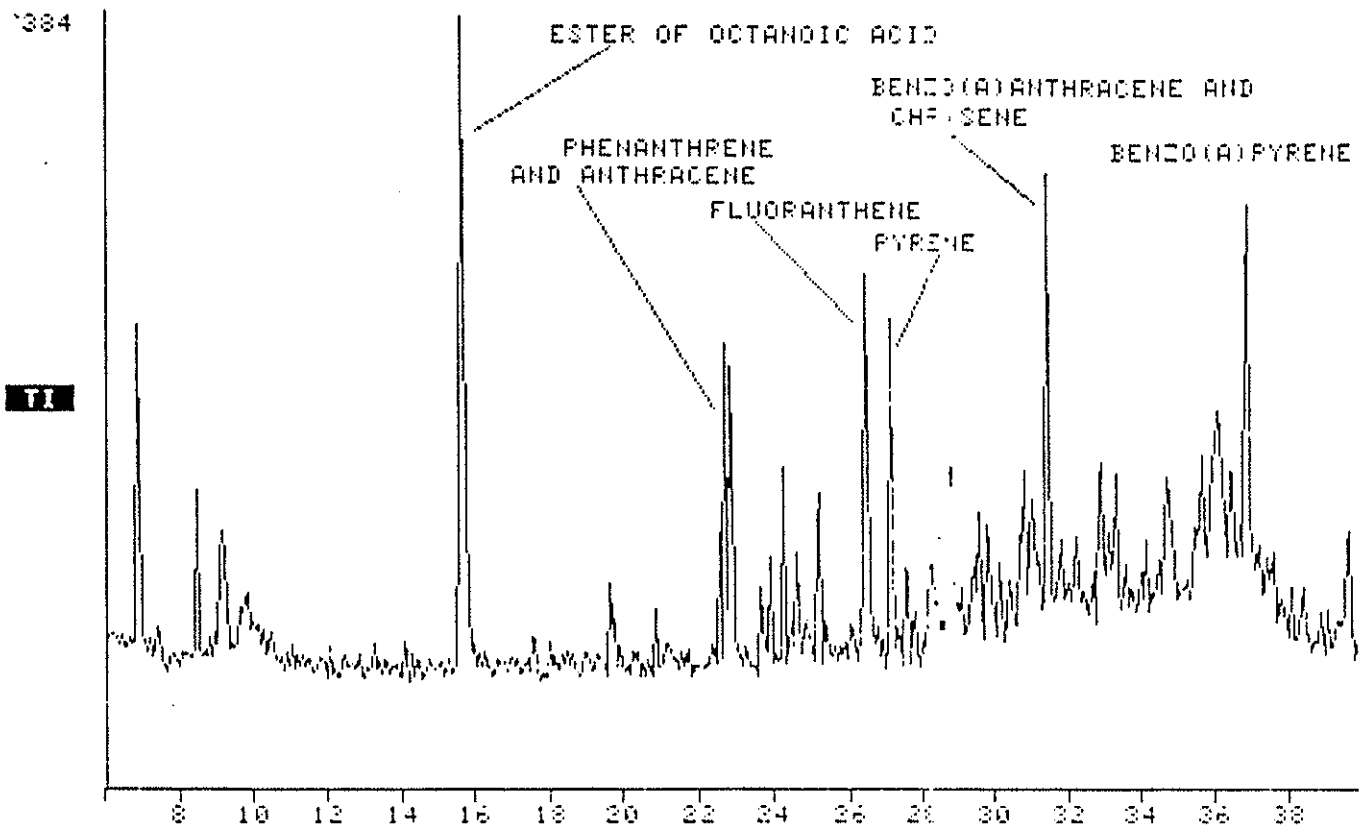
	NAME	RETENTION TIME (minutes)	CONCENTRATION
1).	Phenol	8.6	0.203 mg/kg
2).	Naphthalene	12.5	1.05 mg/kg
3).	Acenaphthene	18.1	0.630 mg/kg
4).	Fluorone	19.7	1.159 mg/kg
5).	Phenanthrene	22.7	10.3 mg/kg
6).	Anthracene	22.8	3.4 mg/kg
7).	Pyrene	27.1	2.7 mg/kg
8).	Fluoranthene	26.4	5.0 mg/kg
9).	Pyrene	27.1	2.7 mg/kg
10).	Fluoranthene	26.4	5.0 mg/kg
11).	Benzo(a)anthracene	30.9	0.6 mg/kg
12).	Chrysene	31.1	0.5 mg/kg
13).	Benzo(a)pyrene	36.2	0.1 mg/kg

COMPOUNDS NOT FOUND

	NAME	DETECTION LIMIT
1).	Benzene	< 0.100 mg/kg
2).	Toluene	< 0.100 mg/kg
3).	4-Nitrophenol	< 0.018 mg/kg
4).	2-Chlorophenol	< 0.004 mg/kg
5).	2,4-dimethylphenol	< 0.004 mg/kg
6).	2,4,6-Trichlorophenol	< 0.005 mg/kg
7).	Pentachlorophenol	< 0.014 mg/kg
8).	Tetrachlorophenol	< 0.096 mg/kg
9).	2-methyl,4,6-deinitrophenol	< 0.024 mg/kg

Joel Kressel

NAME H-6855,BACK GD-1,100 GMS:0.5 ML,1 UL,15:1 SPLIT FRN 11612
MISC 3-29-84,JK



COMPOUNDS FOUND

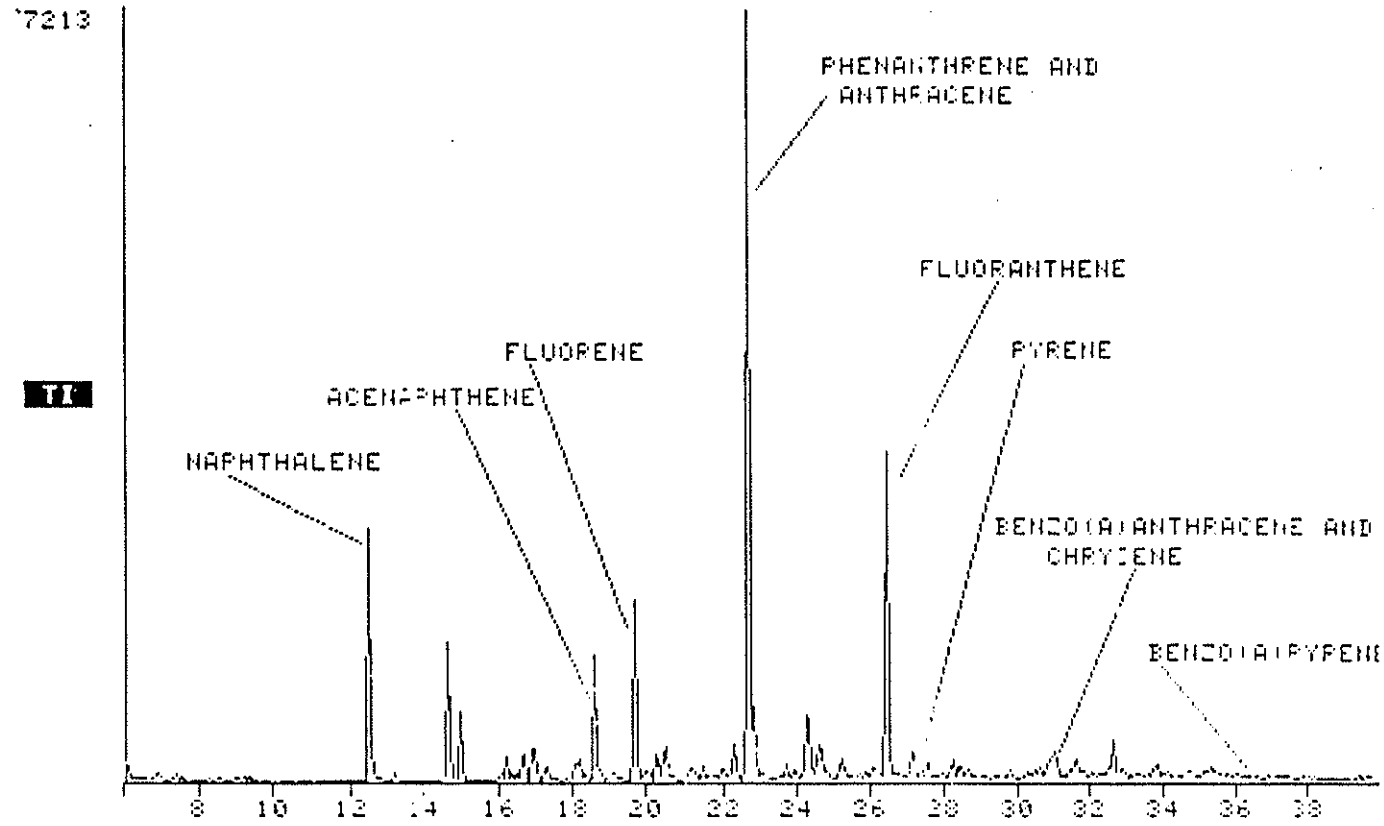
NAME	*RETENTION TIME (minutes)*	*CONCENTRATION*
Fluorene	*19.7*	*5.0 ug/kg=ppb*
Phenanthrene	*22.7*	*41.0 ug/kg=ppb*
Anthracene	*22.9*	*56.0 ug/kg=ppb*
Fluoranthene	*26.5*	*55.0 ug/kg=ppb*
Pyrene	*27.2*	*47.0 ug/kg=ppb*
Benzo(a)antracene	*30.9*	*22.0 ug/kg=ppb*
Chrysene	*31.0*	*22.0 ug/kg=ppb*
Benzo(a)pyrene	*36.1*	*14.0 ug/kg=ppb*

COMPOUNDS NOT FOUND

NAME	*DETECTION LIMIT*
Benzene	*< 100.0 ug/kg*
Toluene	*< 100.0 ug/kg*
4-Nitrophenol	*< 18.0 ug/kg*
Phenol	*< 2.4 ug/kg*
2-Chlorophenol	*< 3.6 ug/kg*
2,4-dimethylphenol	*< 3.6 ug/kg*
2,4,6-trichlorophenol	*< 5.4 ug/kg*
Pentachlorophenol	*< 13.8 ug/kg*
2-methyl, 4,6-dinitrophenol	*< 24.0 ug/kg*
Tetrachlorophenol	*< 9.6 ug/kg*

Joe Krend

NAME 4-6855,GD-2,BACK,100 GMS:0.5 ML,2 ULS,15:1 SPLIT FRN 11613
MISC 3-29-84,JK



COMPOUNDS FOUND

NAME	*RETENTION TIME*	*CONCENTRACTION*
Naphthalene	*12.5*	*240.0 ug/kg=ppm*
Acenapthene	*18.1*	*5.0 ug/kg=ppm*
Fluorene	*19.7*	*119.0 ug/kg=ppm*
Phenanthrene	*22.7*	*627.0 ug/kg=ppm*
Anthracene	*22.8*	*62.0 ug/kg=ppm*
Fluoranthene	*26.5*	*303.0 ug/kg=ppm*
Pyrene	*27.1*	*13.0 ug/kg=ppm*
Benzo(a)antracene	*30.9*	*36.0 ug/kg=ppm*
Chrysene	*31.1*	*37.0 ug/kg=ppm*
Benzo(a)pyrene	*35.9*	*5.0 ug/kg=ppm*

COMPOUNDS NOT FOUND

NAME	*DETECTION LIMIT*
Benzene	*< 100.0 ug/kg*
Toluene	*< 100.0 ug/kg*
4-Nitrophenol	*< 9.0 ug/kg*
Phenol	*< 1.2 ug/kg*
2-chlorophenol	*< .1.8 ug/kg*
2,4-dimethylphenol	*< 1.8 ug/kg*
2,4,6-trichlorophenol	*< 2.7 ug/kg*
Pentachlorophenol	*< 6.9 ug/kg*
2-methyl,4,6-dinitrophenol	*< 12.0 ug/kg*
Tetrachlorophenol	*< 4.8 ug/kg*

Joe Krezel

7. Monitoring Well Installation Report

Professional Service Industries, Inc.
National Soil Services Division

Report No. 286-45062
April 25, 1984

Rollins Environmental Services, Inc.
P. O. Box 609
Deer Park, Texas 77536

Attention: Mr. Daniel W. Bridge
Project Manager

MONITOR WELL INSTALLATIONS
CREOSOTE FACILITY
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

Gentlemen:

Submitted here is our report relative to the installation of monitor wells at the above referenced facility. This work was verbally authorized during the latter part of March, 1984.

Monitor wells were installed at locations staked by Rollins and as shown on the plan, Plate 1. Descriptions of the soils encountered, together with installation details for the wells, are shown on the logs of borings, Plates 2 through 6.

Drilling was done with a truck mounted rotary rig. The initial location, SP-1, was wash bored to a completion depth of 50 feet and the cuttings were visually classified by a geotechnician, in order to determine the soils stratigraphy. Boring SP-2, located within five feet of SP-1, was dry augered into the sand stratum at a depth of 14 feet and water level measurements were made to verify the presence of groundwater. The borehole was then advanced to completion depth by the rotary

wash method. The screen and pipe were inserted in the borehole and sand, bentonite pellets and grout were placed in the annulus. A well protector, consisting of a section of four inch steel pipe with a locking cap, was grouted in place at the surface. Boreholes at locations SP-3 through SP-5 were made using the rotary wash method, and the wells were installed as at SP-2. On completion of the installations, an air compressor was used to surge and pump each well.

We appreciate the opportunity to perform this work for you. Should you have any questions or need additional information, please feel free to call.

Very truly yours,

NATIONAL SOIL SERVICES DIVISION

Darryl E. Carlson,
Chief Geologist

DEC:ig
Copies submitted: 3

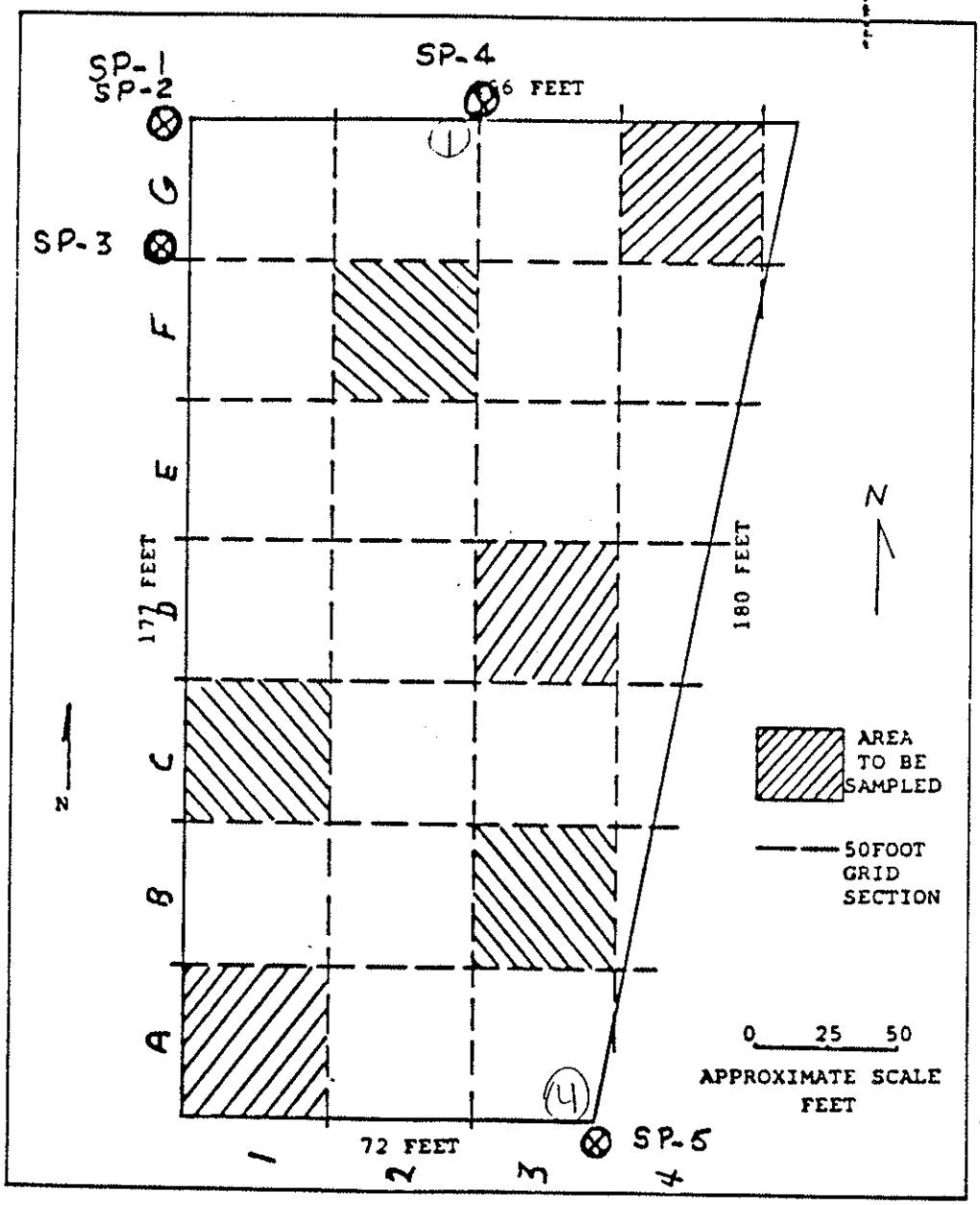


Figure 1.
Creosote facility at
Southern Pacific Transportation Company
Houston, Texas

⊗ MONITORING WELLS

JOB No. 286-45062

LOG OF BORING No. SP-1 (2)

MONITOR WELL INSTALLATIONS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

TYPE BORING: Wash

LOCATION: See Plate 1

DEPTH, FT.	SAMPLE No.	SAMPLE	SOIL DESCRIPTION	MONITOR WELL INSTALLATION
			SUR. ELEV.:	
0			Black sandy clay	NOTE: This boring was made to determine soil stratigraphy, and therefore a well was not installed. A well was installed in SP-2, located within five feet of SP-1.
5			- tan and light gray below 3' - light gray and tan below 5'	
10			- tan and light gray below 12'	
15			Tan sand	
20			Tan and light gray clay	
25				
30			Tan and light gray clay w/sand seams	
35				
40			Red clay	
45			Tan and light gray clay w/sand seams	
50			Note: Backfilled with cuttings on completion.	

COMPLETION DEPTH: 50'
DATE: April 17, 1984

DEPTH TO WATER:
DATE:

NATIONAL SOIL SERVICES
CONSULTING ENGINEERS

PLATE 2

JOB No. 286-45062

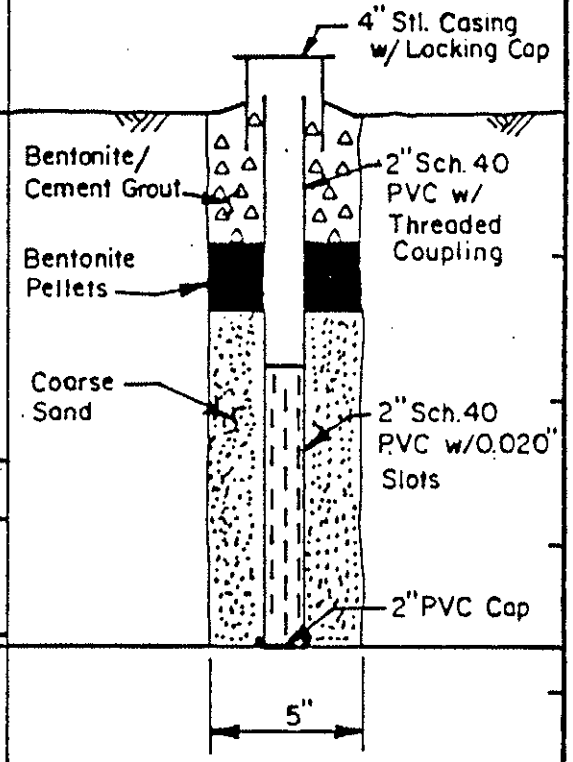
LOG OF BORING No. SP-2 (2)

MONITOR WELL INSTALLATIONS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

TYPE BORING: Auger & Wash

LOCATION: See Plate 1

DEPTH, FT.	SAMPLE No.	SAMPLE	SOIL DESCRIPTION	MONITOR WELL INSTALLATION
			SUR. ELEV.:	
0			Dark gray clay - light gray and tan w/calcareous nodules below 7' - tan and light gray w/silt pockets 10' - 11'	
5				
10				
			Light gray silty clay	
15			Tan and light gray sand w/chemical odor - free water at 14'	
			Light gray clay	
20				
25				
30				
35				
40				
45				



COMPLETION DEPTH: 18.5'
DATE: April 17, 1984

DEPTH TO WATER:
DATE:

NATIONAL SOIL SERVICES CONSULTING ENGINEERS

PLATE 3

JOB No. 286-45062

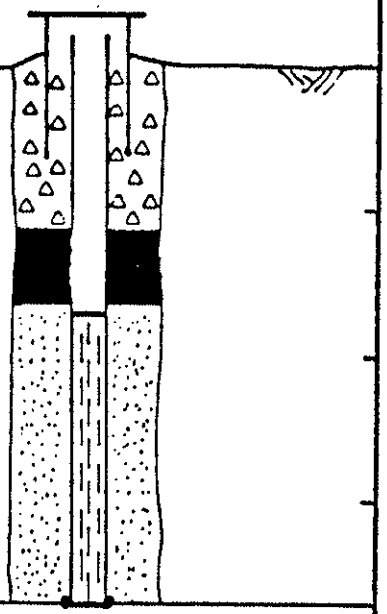
LOG OF BORING No. SP-3 (3)

MONITOR WELL INSTALLATIONS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

TYPE BORING: Wash

LOCATION: See Plate 1

DEPTH, FT.	SAMPLE No.	SAMPLE	SOIL DESCRIPTION	MONITOR WELL INSTALLATION
			SUR. ELEV.:	
0			Black sandy clay	
5			- tan and light gray below 3'	
			- light gray and tan below 7'	
10			- tan and light gray w/sand seams below 9'	
15			Tan and light gray sand	
20				
25				
30				
35				
40				
45				



Note:
For Description Of Material Used, See Plate 3.

COMPLETION DEPTH: 18.5'
DATE: April 17, 1984

DEPTH TO WATER:
DATE:

JOB No. 286-45062

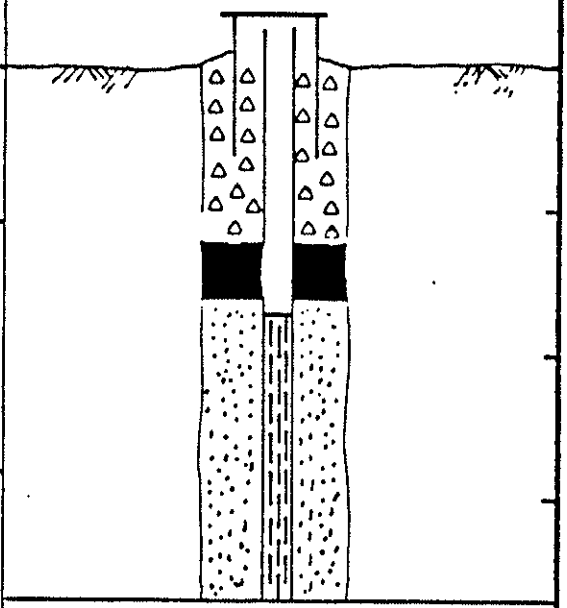
LOG OF BORING No. SP-4 (1)

MONITOR WELL INSTALLATIONS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

TYPE BORING: Wash

LOCATION: See Plate 1

DEPTH, FT.	SAMPLE No.	SAMPLE	SOIL DESCRIPTION	MONITOR WELL INSTALLATION
			SUR. ELEV.:	
0			Red clay - black below 3'	
5			Light gray and tan sandy clay - tan and light gray below 9'	
10				
15			Light gray and tan sand	
20				
25				
30				
35				
40				
45				



Note:
For Description Of Material Used, See Plate 3.

COMPLETION DEPTH: 18.5'
DATE: April 17, 1984

DEPTH TO WATER:
DATE:

NES / NATIONAL SOIL SERVICES
CONSULTING ENGINEERS

JOB No. 286-45062

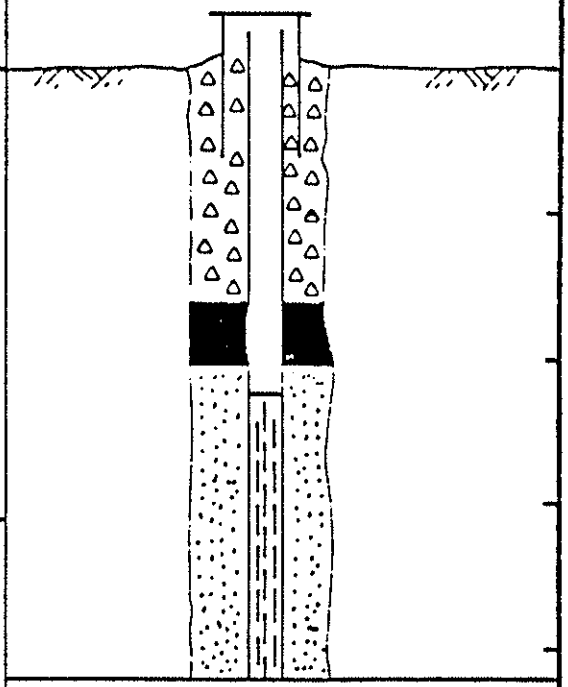
LOG OF BORING No. SP-5 (4)

MONITOR WELL INSTALLATIONS
SOUTHERN PACIFIC TRANSPORTATION COMPANY
HOUSTON, TEXAS

TYPE BORING: Wash

LOCATION: See Plate 1

DEPTH, FT.	SAMPLE No.	SAMPLE	SOIL DESCRIPTION	MONITOR WELL INSTALLATION
			SUR. ELEV.:	
0			Tan and dark gray sandy clay	
			- dark gray below 3'	
5			- light gray and tan below 7'	
10			- tan and light gray w/calcareous nodules below 12'	
15			Light gray sand	
20				
25				
30				
35				
40				
45				



Note:
For Description Of Material Used, See Plate 3.

COMPLETION DEPTH: 21'
DATE: April 18, 1984

DEPTH TO WATER:
DATE:

NL - NATIONAL SOIL SERVICES CONSULTING ENGINEERS

PLATE 6

8. "Closure of Facilities" Letter by
Independent Registered Engineer

ETC ENGINEERS, INC.
Engineering Technical Construction Services For Industry
510 COLLEGE SO. HOUSTON, TEXAS 77587 713/941-8420

April 18, 1984

Texas Department of Water Resources
P.O. Box 13087, Capitol Station
Austin, Texas 78711

CLOSURE OF FACILITIES

This is a statement of the closure of a creosote tank bottom surface impoundment (RCRA Facility #31547) at the Southern Pacific Transportation Company facility, 4910 Liberty Road, Houston, Texas.

The owner has removed all the impoundment materials in accordance with Texas Administrative Code Section 335.286a. The excavated area has been backfilled and compacted with clay soil. Four ground-water monitoring wells have been constructed. This system will be monitored for one year. If after one year it is determined that there is no affect on the ground-water, there is sufficient proof that the impoundment is clear of any contamination.

I hereby certify that I have examined the facility and being familiar with the provisions of the Texas Administrative Code Subchapter N, Surface Impoundment Sections 335.281-335.288 attest that this closure has been conducted in accordance with good engineering practices.

Henry T. Gramann

Printed Name
of

Henry T. Gramann

Signature of
Registered Professional Engineer
Regis. No. 28163 State Texas

Date April 18, 1984

APPENDIX B

PROJECT PHOTOGRAPHS