SITE INVESTIGATION REPORT FOR IRP SITES NO. 25 AND NO. 26

VOLUME III

148th FIGHTER WING
MINNESOTA AIR NATIONAL GUARD
DULUTH AIR NATIONAL GUARD BASE
DULUTH, MINNESOTA

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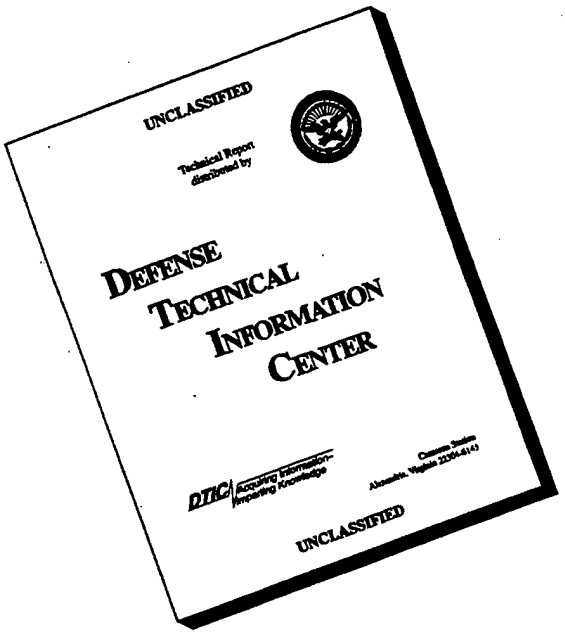
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Prepared For

HQ ANG/CEVR
ANDREWS AFB, MARYLAND

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SITE INVESTIGATION REPORT FOR IRP SITES NO. 25 AND NO. 26

VOLUME III

148th FIGHTER WING
MINNESOTA AIR NATIONAL GUARD
DULUTH AIR NATIONAL GUARD BASE
DULUTH, MINNESOTA

JUNE 1996

Prepared For

HQ ANG/CEVR
ANDREWS AFB, MARYLAND

Prepared By

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1315-197

REPORT DOCUMENTATION PAGE

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	July, 1996	Site Investigation Report

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Site Investigation Report for IRP Sites No. 25 and No. 26, 148th Fighter Wing, Duluth Air National Guard Base, Duluth, MN. Volume III

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12a. DISTRIBUTION/AVAILABILITY STATEMENT
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13. ABSTRACT (Maximum 200 words)
Site Investigation Report for IRP Sites No. 25 and No. 26, 148th Fighter Wing, Duluth Air National Guard Base, Duluth, MN, Volume II, Appendix M. This is the third volume of a four volume site investigation report. This investigation involves two sites; site 25 -- Old Motor Pool area, and site 26 -- Ramp Disposal Area. Soil and groundwater contamination above state action levels were found at site 25; no significant contamination was found at site 26. Site 25 cleanup will be included in the scheduled cleanup of site 21.

14. SUBJECT TERMS
Installation Restoration Program; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); Air National Guard; Site Investigation; Minnesota Air National Guard; Duluth, MN.

15. NUMBER OF PAGES
976

16. PRICE CODE

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Unclassified	Unclassified	Unclassified	None

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G	- Grant	TA	- Task
PE	- Program Element	WU	- Work Unit Accession No.

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APPENDIX M

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

INTRODUCTION

This appendix contains laboratory reports and chain-of-custody forms for analytical samples taken from Sites No. 25 and No. 26.

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CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9505714 Page 1 of 2

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
13/5-197	DANGB / Duluth SI	Sites 26 & 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
026-002 MW-GW01	5/16/95 1130	✓		(3) 40-ml Vial	Water	HCl	VOC (8260)	
↓	↓			(1) 1 L amber		None	SVOC (8270)	
026-003A MW-GW01	5/16/95 1345			(3) 40-ml Vial		HCl	VOC (8260)	
↓	↓			(1) 1 L amber		None	SVOC (8270)	
026-001 MW-GW01	5/16/95 1012			(3) 40-ml Vial		HCl	VOC (8260)	
↓	↓			(1) 1 L amber		None	SVOC (8270)	
026-003 MW-GW01	5/16/95 1334			(3) 40-ml Vial		HCl	VOC (8260)	
↓	↓			(1) 1 L amber		None	SVOC (8270)	
SI-001 FB	5/16/95 0953			(3) 40 ml Vial		HCl	VOC (8260)	
↓	↓	↓		↓	↓	None	SVOC (8270)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 18 May	Received by: (Signature)	Date: 5/18	Intact
		Time: 1735		Time: 1735	
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill # 453073578 6			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal # 4679			Data Results to:		

9505714

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	DANGB / Duluth SI	Sites 25 & 26

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
SI-001 FB	5/16/95 0952	✓		(1) 1 l Poly	water	HNO_3	Pb (7421) Cr (7196) Hg (7470) Cd (6010) Ni (6010)	KP
SI-001 TB	5/16/95			~~(3) 40-ml (2) 40-ml~~ Vial		HCl	VOC (8260)	Trip Blank
026-003 RB	5/16/95 1212			(3) 40-ml Vial		HCl	VOC (8260)	
↓	↓			(1) 1 l amber		none	SVOC ~~(8260)~~ (8270)	
025-002 MW-6W01	5/16/95 1700			(3) 40-ml Vial		HCl	VOC (8010/8020)	
↓	↓			(1) 1 l amber		none	SVOC (8270)	
↓	↓	↓		(1) 1 l Poly	↓	HNO_3	Pb (7421) Cr (7196) Hg (~~7470~~ 7470) Cd (6010) Ni (6010)	IP
							KP	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 18 May	Received by: (Signature)	Date: 5/17/95	Intact
		Time: 1735		Time: 1735	
Affiliation	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Intact
		Time:		Time:	
	Relinquished by: (Signature)	Date:	Received by: (Signature)	Date:	Intact
		Time:		Time:	

SAMPLER REMARKS: Airbill # 453073578 6

Seal # 4674

Received for laboratory: (Signature) — Date: / Time:

Data Results to:

Laboratory No.

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/19/95 TIME: 1000 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9505714

		YES	NO
1.	Is a Chain-of-Custody form present?	✓	
2.	Is the COC properly completed?	✓	
	If no, describe what is incomplete:		
	If no, has the client been contacted about it?		
	(Attach subsequent documentation from client about the situation)		
3.	Is airbill/packing list/bill of lading with shipment?	✓	
	If yes, ID#: BY FED EX		
4.	Is a USEPA Traffic Report present?		✓
5.	Is a USEPA SAS Packing List present?		✓
6.	Are custody seals present on the package?	✓	
	If yes, were they intact upon receipt?	✓	
7.	Are all samples tagged or labeled?	✓	
	Do the sample tags/labels match the COC?	✓	
	If no, has the client been contacted about it?		
	(Attach subsequent documentation from client about the situation)		
8.	Do all shipping documents agree?	✓	
	If no, describe what is in nonconformity:		
9.	Condition/temperature of shipping container: 3°C INTACT		
10.	Condition/temperature of sample bottles: GOOD		
11.	Sample Disposal?: SPL disposal ✓ Return to client		

NOTES (reference item number if applicable): _____

ATTEST: R Barnard DATE: 5/19/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

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Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANGB / Duluth SI	IRP Site 26

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
026-001BH 2-2.5	MAY3 1540	✓		Brass Sleeves	SOIL	None	SW8240; SW8270; SW7421; SW6010; SW7196	SW 7421 (Lead)
026-001BH 9.5-10	MAY3 1535							SW6010 (Cadmium)
026-004BH 2-2.5	MAY3 1432							SW7196 (Chromium)
026-004BH 9.5-10	MAY3 1447							
026-005BH 1.5-2.5	MAY3 1345							
026-005BH 9.5-10	MAY3 1400							
026-006BH 11.5-12	MAY3 1320							
026-006BH 2-2.5	MAY3 1245							
[illegible]								
026-005BH .5-1.5	MAY3 1348							

Samplers: (Signature)	Relinquished by: (Signature)	Date: MAY3 Time: 1740	Received by: (Signature) # 01855	Date: 5/3 Time: 17:40	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill # 453073523			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

9505164 Page 2 of 2

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANGB/Duluth SI	IRP Site 26

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
026-00 1BH 9-9.5 MS/MSD	MAY3 1335	✓		Brass Sleeve	Soil	none	SW8240; SW8270; SW7421; SW6010; SW7196	SW7421 (Pb)
Equip Blank	MAY3 1650			3 VOA	Water	HCl	SW8240	SW6010 (Cd)
Equip Blank	MAY3 1650			1L Amber	Water	none	SW8270	SW7196 (Cr)
Equip Blank	MAY3 1650	✓		.5L Plas	Water	HNO_3	SW7421; SW6010; SW7196	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 5/4/94 Time: 1740	Received by: (Signature) #21835	Date: 5/3 Time: 17:40	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill # 453073512 3			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/4/95 TIME: 10:5 CLIENT NO.
LOT NO. CONTRACT NO.

CLIENT SAMPLE NOS.

SPL SAMPLE NOS.: 9505164

		YES	NO
1.	Is a Chain-of-Custody form present?	✓	
2.	Is the COC properly completed?	✓	
	If no, describe what is incomplete:		
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
3.	Is airbill/packing list/bill of lading with shipment? If yes, ID#: 4530735123	✓	
4.	Is a USEPA Traffic Report present?		
5.	Is a USEPA SAS Packing List present?		
6.	Are custody seals present on the package?		
	If yes, were they intact upon receipt?		
7.	Are all samples tagged or labeled?	✓	
	Do the sample tags/labels match the COC?	✓	
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
8.	Do all shipping documents agree?	✓	
	If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: Wet 3°C
10. Condition/temperature of sample bottles: good 3°C
11. Sample Disposal?: SPL disposal ✓ Return to client

NOTES (reference item number if applicable):

ATTEST: E. Brown DATE: 5/4/95
DELIVERED FOR RESOLUTION: REC'D DATE:
RESOLVED: DATE:

Page 1 of 1

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANG-B / Duluth SI	IRP Site 26

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
026-003BH 0.5-1.5	MAY4 1440	X		Brass Sleeves	SOIL	none	SW8240; SW8270; SW7421 & SW6010; SW7196	SW7421 (Pb)
026-003BH 2-2.5	MAY4 1435	X		↓	↓	↓	↓	SW6010 (Cd)
026-003BH 6.5-7.0	MAY4 1125	X						SW7196 (Cr)
026-002BH 2-2.5	MAY4 1007	X						
026-002BH 6.5-7	MAY4 0945	X		↓	↓	↓	↓	
026-002-RB	MAY4 1515			3 VOA	Water	HCl	SW8240	
026-002-RB	MAY4 1515			1L Amber	↓	none	SW8270	
026-002RB	MAY4 1515			1L Plas	↓	HNO3	SW7421, SW6010, SW7196	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 4 MAY 95 Time: 1705	Received by: (Signature)	Date: May 4 Time: 1712	Intact
A. Kathleen Merino	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
Affiliation: OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
			Received for laboratory: (Signature)	Date: Time:	Laboratory No.

SAMPLER REMARKS: TRIP BLANK

Seal # 4676 Airbill # 234666836

Data Results to:

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/5/95 TIME: 1030 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9505209

	YES	NO
1. Is a Chain-of-Custody form present?	✓	
2. Is the COC properly completed?		
If no, describe what is incomplete:		
If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
3. Is airbill/packing list/bill of lading with shipment? If yes, ID#: BY FED EX	✓	
4. Is a USEPA Traffic Report present?		✓
5. Is a USEPA SAS Packing List present?		✓
6. Are custody seals present on the package?		
If yes, were they intact upon receipt?	✓	
7. Are all samples tagged or labeled?	✓	
Do the sample tags/labels match the COC?	✓	
If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
8. Do all shipping documents agree?	✓	
If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: 3°C INTACT
10. Condition/temperature of sample bottles: GOOD
11. Sample Disposal?: SPL disposal ✓ Return to client _____

NOTES (reference item number if applicable): _____

ATTEST: R Rinsch DATE: 5/5/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANGB / Duluth SI	IRP Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-001-RB		X		3, 40ml VIALS	Water	HCl	SW 8240 VOCs	
025-001-RB		X		1, 1L Amber	↓	None	SW 8270 SVOCs	
025-001-RB		X		1, L Plas	↓	HNO_3	~~SW82~~ SW 7421-Pb SW 6010-Cd SW 7196-Cr SW 6010-Ni SW 7470-Hg	
025-008BH 10.5-11.0	12MAY95 1046	X		Brass Sleeve	SOIL	none	SW8240 VOC; 8270 SVOC; 7421-Pb; 6010-Cd 7196-Cr; 6010-Ni; 7470-Hg	
025-008 BH 14.5-15.0	12MAY95 1100	X						
025-010BH 2-2.5	12 MAY95 1340	X						
025-010BH 6-6.5	12 MAY95 1330	X						
025-011 BH 2-2.5	12 MAY95 ~~1350~~ 1750	X						
025-011BH 6.5-7	12 MAY95 ~~1301~~ 340	X						
025-006BH 21.5-22	12MAY95 1545	X						

Samplers: (Signature)	Relinquished by: (Signature)	Date: 5/11/95 Time: 1733	Received by: (Signature)	Date: 5/12 Time: 1730	Intact
A. Kathleen Mann	Kathy Puttett				
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: airbill # 23466710 95

Seal # 4677

Received for laboratory: (Signature) Date: Time:

Data Results to:

Laboratory No.

9505512

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANGB/Duluth SI	IRP Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-009B1H 10-12	12MAY95 1440	X		Brass Sleeve	Soil	None	SW8240 VOC; SW8270 SVOC; 7421-Pb; 6010-Cd 7196-Cr; SW6010N.; 7470-Hg	025-009B1H-14.5-15 MS/MSD
025-009B1H 11-12	12MAY95 1430	X						
025-009B1H 14-14.5	12MAY95 1435	X						
025-009B1H 14.5-15 MS/MSD	12MAY95 1435	X						

QLM

Samplers: (Signature)	Relinquished by: (Signature)	Date: 5/11/95 Time: 1733	Received by: (Signature)	Date: Time:	Intact
A. Kathleen Moore	Kathy Luttrell				
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OPTECH	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: airbill # 234667 1095			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal # 4677			Data Results to:		

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/13/95 TIME: 10:30 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 965512

		YES	NO
1.	Is a Chain-of-Custody form present?	✓	
2.	Is the COC properly completed?	✓	
	If no, describe what is incomplete:		
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
3.	Is airbill/packing list/bill of lading with shipment? If yes, ID#: 2346671095	✓	
4.	Is a USEPA Traffic Report present?		✓
5.	Is a USEPA SAS Packing List present?		✓
6.	Are custody seals present on the package?	✓	
	If yes, were they intact upon receipt?	✓	
7.	Are all samples tagged or labeled?	✓	
	Do the sample tags/labels match the COC?	✓	
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)		
8.	Do all shipping documents agree?	✓	
	If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: intact 3C
10. Condition/temperature of sample bottles: good 3C
11. Sample Disposal?: SPL disposal ✓ Return to client _____

NOTES (reference item number if applicable): _____

ATTEST: C. Brown DATE: 5/13/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

9505556

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANG / Duluth SI	IRP Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-001TB	15 MAY			40ml vial	water	HCl	SW8240 VOC	
025-001BH 6.5-7.0	15 MAY 1542	X		Brass Sleeve	Soil	none	SW8240 VOC SW8270SVOC SW6010 Cadium SW7421-Lead SW7196-Chromium SW6010 Nickel SW7470 Mercury	
025-002BH 11.5-12	15 MAY 1305	X		↓	↓	↓	↓	
025-003BH 11-12	15 MAY 1000	X						
025-003BH 10-11	15 MAY 1005	X						

Samplers: (Signature)	Relinquished by: (Signature)	Date: 15 MAY 15 Time: 1545	Received by: (Signature)	Date: 5/15/95 Time: 1743	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OpTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill # 4530735753			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal #			Data Results to:		

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/16/95 TIME: 1000 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9505556

		YES	NO
1.	Is a Chain-of-Custody form present?	✓	
2.	Is the COC properly completed?	✓	
	If no, describe what is incomplete:		
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)	N/A	
3.	Is airbill/packing list/bill of lading with shipment? If yes, ID#: Fed. Ex.	✓	
4.	Is a USEPA Traffic Report present?		✓
5.	Is a USEPA SAS Packing List present?		✓
6.	Are custody seals present on the package?	✓	
	If yes, were they intact upon receipt?	✓	
7.	Are all samples tagged or labeled?	✓	
	Do the sample tags/labels match the COC?	✓	
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)	N/A	
8.	Do all shipping documents agree?	✓	
	If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: 2°C Intact
10. Condition/temperature of sample bottles: 2°C Good
11. Sample Disposal?: SPL disposal ✓ Return to client ____

NOTES (reference item number if applicable): _____

ATTEST: S. West DATE: 5/16/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

9505767

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANGB / Duluth SI	Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-003 RB	5/19/95 1532	✓		1 l Poly	Water	HNO_3	Pb (7421) Cu (7196) Hg (7470) Cd (6010) Ni (6010)	Equipment Rinsate
↓	↓	↓		(3) 40-ml VOA		HCl	VOC (8010/8020)	↓
↓	↓	↓		1 l amber		None	SVOC (8270)	↓
SI-002FB	5/19/95 1425			(3) 40-ml VOA		HCl	VOC (8260)	Field Blank
↓	↓	↓		(1) 1-l amber		none	SVOC (8270)	↓
↓	↓	↓		(1) 1-l Poly		HNO_3	Pb (7421) Cu (7196) Hg (7470) Cd (6010) Ni (6010)	↓
025-001MW-6W01	5/19/95 1500			(3) 40-ml Vial		HCl	VOC (8010/8020)	↓
↓	↓	↓		(1) 1-l Amber		None	SVOC (8270)	↓
↓	↓	↓		(1) 1-l Poly		~~HNO~~ HNO_3	Pb (7421) Cu (7196) Hg (7470) Cd (6010) Ni (6010)	↓
025-TB	5/19/95	↓		~~(3)~~ (2) 40-ml Vial	↓	HCl	VOC ~~(8260)~~ (8010/8020)	Trip Blank

Samplers: (Signature)	Relinquished by: (Signature)	Date: May 19 Time: 1745	Received by: (Signature)	Date: 5/19 Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OpTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill # 234667 4514			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal # 4024			Data Results to:		

9505760

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
13/5-197	Duluth ANGB / Duluth SI	Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-003 MW-GW04	5/19/95 1705	✓		(3) 40-ml VOA	Water	HCl	VOC (8010/8020)	
				(1) 1-l amber		None	SVOC (8270)	
				(1) 1-l poly		HNO_3	Pb (7421) Cr (7196) Hg (7470) Cd (6010) Ni (6010)	
025-003A MW-GW01	5/19/95 1715			(3) 40-ml VOA		HCl	VOC (8010/8020)	
				(1) 1-l amber		None	SVOC (8270)	
				(1) 1-l Poly		HNO_3	Pb (7421) Cr (7196) Hg (7470) Cd (6010) Ni (6010)	

Samplers: (Signature)	Relinquished by: (Signature)	Date: 19 May Time: 1745	Received by: (Signature)	Date: 5/19 Time:	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OpTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
SAMPLER REMARKS: Airbill #234667451 4			Received for laboratory: (Signature)	Date: Time:	Laboratory No.
Seal # 4028			Data Results to:		

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/20/95 TIME: 0930 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9505767

	YES	NO
1. Is a Chain-of-Custody form present?	✓	
2. Is the COC properly completed?	✓	
If no, describe what is incomplete:		
If no, has the client been contacted about it?		
(Attach subsequent documentation from client about the situation)		
3. Is airbill/packing list/bill of lading with shipment?	✓	
If yes, ID#: 234667451C/		
4. Is a USEPA Traffic Report present?		
5. Is a USEPA SAS Packing List present?		✓
6. Are custody seals present on the package?	✓	
If yes, were they intact upon receipt?	✓	
7. Are all samples tagged or labeled?	✓	
Do the sample tags/labels match the COC?	✓	
If no, has the client been contacted about it?		
(Attach subsequent documentation from client about the situation)		
8. Do all shipping documents agree?	✓	
If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: intact 4°C
10. Condition/temperature of sample bottles: Good 4°C
11. Sample Disposal?: SPL disposal ✓ Return to client ____

NOTES (reference item number if applicable): _____

ATTEST: E. Brown DATE: 5/20/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

Page ____ of ____

Environmental Laboratory
8880 Interchange Drive
Houston, Texas 77054
713/660-0901

Analysis Request and Chain of Custody Record

Project No.	Client/Project Name	Project Location
1315-197	Duluth ANG / Duluth SI	IRP Site 25

Field Sample No./ Identification	Date and Time	Grab	Comp.	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
025-003-TB	16 MAY 95			3, 40ml, vials	water	HCl	SW 8240	
025-002-RB	16 MAY 95	X		3, 40ml vials	water	HCl	SW 8240	
025-002-RB	16 MAY 95	X		1 L Amber	water	none	SW 8270	
025-002-RB	16 MAY 95	X		1 L Poly	water	HNO_3	7421-Lead 6010-~~Chromium~~ Cadium 7196-~~Cadium~~ Chromium 6010-Nickel 7470-Mercury	
025-007 BH 11.5-12	16 MAY 95 0835	X		Brass Sleeves	Soil	none	B240-VOCs 8270-SVOC 7196-~~Cadium~~ Chromium 7421-Pb (Lead) 6010-~~Cadium~~ Chromium 6010-Nickel 7470-Mercury	
025-005 BH 11.5-12	16 MAY 95 0950	X						
025-004 BH 11.5-12	16 MAY 95 1140	X						
025-004 BH 19.5-20.0	16 MAY 95 1150	X						

Samplers: (Signature)	Relinquished by: (Signature)	Date: 16 MAY 95 Time: 1655	Received by: (Signature)	Date: 5-16 Time: 1655	Intact
Affiliation	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact
OpTech	Relinquished by: (Signature)	Date: Time:	Received by: (Signature)	Date: Time:	Intact

SAMPLER REMARKS: Air bill #4530735790

Seal #

Received for laboratory: (Signature) Date: Time:

Data Results to:

Laboratory No.

SPL HOUSTON ENVIRONMENTAL LABORATORY

SAMPLE LOGIN CHECKLIST

DATE: 5/17/95 TIME: 1000 CLIENT NO. _____
LOT NO. _____ CONTRACT NO. _____

CLIENT SAMPLE NOS. _____

SPL SAMPLE NOS.: 9505612

		YES	NO
1.	Is a Chain-of-Custody form present?	✓	
2.	Is the COC properly completed?	✓	
	If no, describe what is incomplete:		
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)	N/A	
3.	Is airbill/packing list/bill of lading with shipment? If yes, ID#: By Fed. Ex	✓	
4.	Is a USEPA Traffic Report present?		✓
5.	Is a USEPA SAS Packing List present?		✓
6.	Are custody seals present on the package?	✓	
	If yes, were they intact upon receipt?	✓	
7.	Are all samples tagged or labeled?	✓	
	Do the sample tags/labels match the COC?	✓	
	If no, has the client been contacted about it? (Attach subsequent documentation from client about the situation)	N/A	
8.	Do all shipping documents agree?	✓	
	If no, describe what is in nonconformity:		

9. Condition/temperature of shipping container: 2°C Intact
10. Condition/temperature of sample bottles: 2°C good
11. Sample Disposal?: SPL disposal ✓ Return to client _____

NOTES (reference item number if applicable): _____

ATTEST: S. West DATE: 5/17/95
DELIVERED FOR RESOLUTION: REC'D _____ DATE: _____
RESOLVED: _____ DATE: _____

HOUSTON LABORATORY
[illegible] INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-TB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/16/95
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
total-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methylene Chloride	ND	5	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L

METHOD: 8240, Volatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-01

Operational Tech

SAMPLE ID: 025-003-TB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	94	76	114
Toluene-d8	50 ug/L	100	88	110
4-Bromofluorobenzene	50 ug/L	94	86	115

ANALYZED BY: JC
DATE/TIME: 05/18/95 10:49:00
METHOD: 8240, Volatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950518.b/l138s02.d
Lab Smp Id:
Inj Date : 18-MAY-95 10:49
Operator : JC Inst ID: 1.i
Smp Info : 9505612-01A-8240W/1X
Misc Info : L138W1/L138B01/L138CW1
Comment :
Method : /chem/1.i/1950518.b/lvoclpw.m
Meth Date : 19-May-1995 11:04 jimmy Quant Type: ISTD
Cal Date : 18-MAY-1995 07:51 Cal File: l138cw1.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	23 Bromochloromethane	128.00	5.245	5.245	(1.000)	70671	250	
*	32 1,4-Difluorobenzene	114.00	6.948	6.947	(1.000)	399371	250	
	50 Chlorobenzene-d5	117.00	11.120	11.119	(1.000)	305569	250	
	26 1,2-Dichloroethane-d4	102.00	6.012	6.020	(1.146)	28599	240	47
$	43 Toluene-d8	98.00	9.176	9.176	(0.825)	404192	250	50
	61 Bromofluorobenzene	95.00	12.795	12.795	(1.151)	143453	240	47

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 1.i
Lab File ID: l138s02.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/1.i/1950518.b/1voc1pw.m
Misc Info: L138W1/L138B01/L138CW1

Calibration Date: 05/18/95
Calibration Time: 0751

Level: LOW
Sample Type: WATER

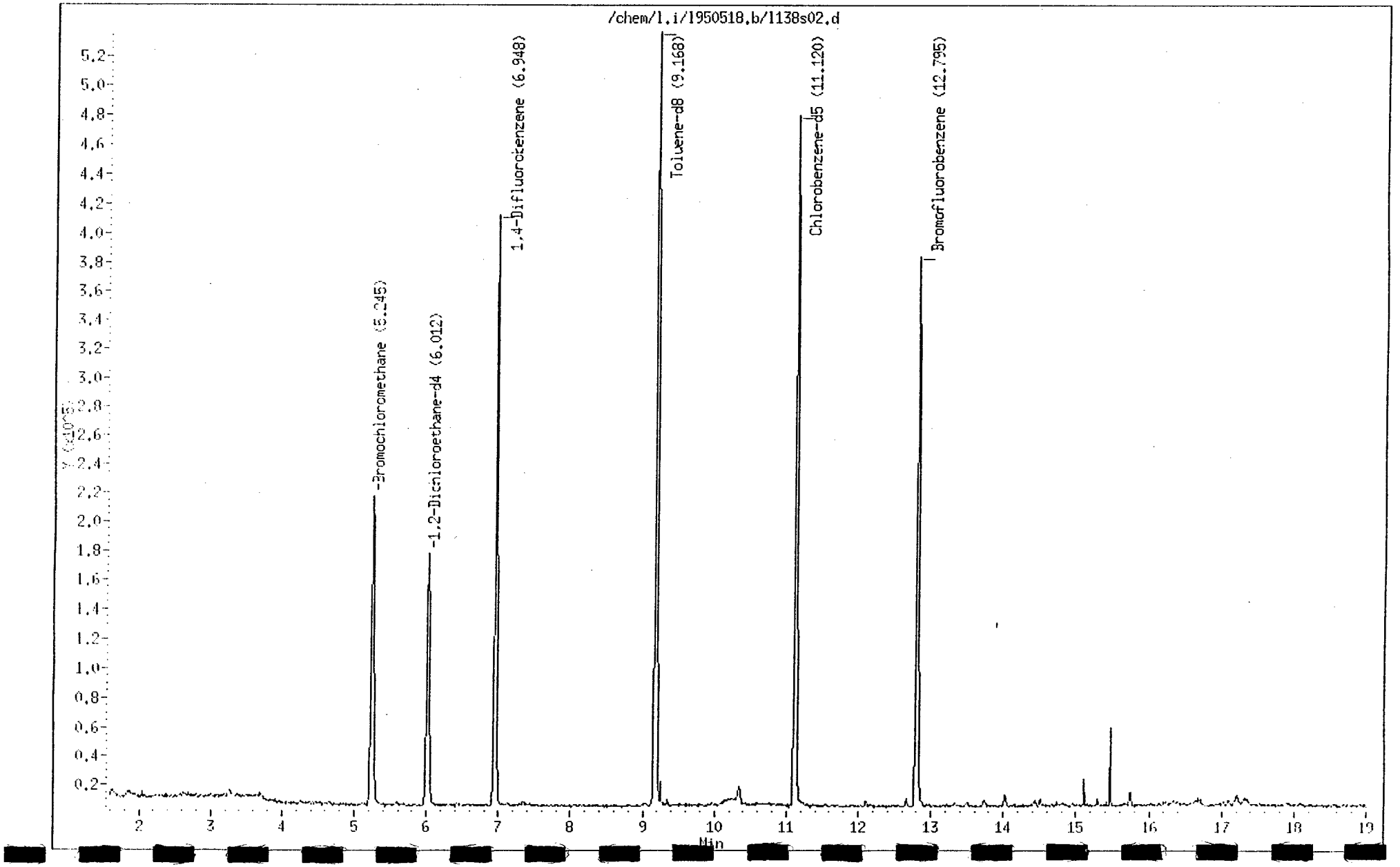
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	74479	37240	148958	70671	-5.11
32 1,4-Difluorobenzene	412556	206278	825112	399371	-3.20
50 Chlorobenzene-d5	322864	161432	645728	305569	-5.36

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.25	0.01
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.95	0.01
50 Chlorobenzene-d5	11.12	10.62	11.62	11.12	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950518.b/l138s02.d
Date : 18-MAY-95 10:49
Client ID:
Sample Info: 9505612-01A-8240M/1X
Purge Volume: 5.0
Column phase: 30m.hp5ms,0.25u df

Instrument: l.i
Operator: JC
Column diameter: 0.25



HOUSTON LABORATORY
[illegible] INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/[illegible]

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-RB

PROJECT NO: 1313-197
MATRIX: WATER
DATE SAMPLED: 05/16/95
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/18/95	ND	0.004	mg/L
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/22/95	ND	0.002	mg/L
Mercury, Total METHOD 7470 *** Analyzed by: PB Date: 05/25/95	ND	0.0004	mg/L
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/18/95	ND	0.02	mg/L
Acid Digestion-Aqueous, ICP METHOD 3010 *** Analyzed by: AM Date: 05/17/95	05/17/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No: H9-9505612-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/16/95
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion-Aqueous, GF METHOD 3020 *** Analyzed by: AM Date: 05/18/95	05/18/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/20/95	0.006	0.004	mg/L

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/16/95
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Chloroform	5	5	ug/L
Chloromethane	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
total-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methylene Chloride	ND	5	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L

METHOD: 8240, Volatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech

SAMPLE ID: 025-002-RB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	96	76	114
Toluene-d8	50 ug/L	100	88	110
4-Bromofluorobenzene	50 ug/L	96	86	115

ANALYZED BY: JC DATE/TIME: 05/18/95 11:17:00
METHOD: 8240, Volatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/16/95
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	5	ug/L
Acenaphthylene	ND	5	ug/L
Aniline	ND	5	ug/L
Anthracene	ND	5	ug/L
Benzo(a)Anthracene	ND	5	ug/L
Benzo(b)Fluoranthene	ND	5	ug/L
Benzo(k)Fluoranthene	ND	5	ug/L
Benzo(a)Pyrene	ND	5	ug/L
Benzoic Acid	ND	25	ug/L
Benzo(g,h,i)Perylene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
4-Bromophenylphenyl ether	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
di-n-Butyl phthalate	5	5	ug/L
Carbazole	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
bis(2-Chloroethoxy)Methane	ND	5	ug/L
bis(2-Chloroethyl)Ether	ND	5	ug/L
bis(2-Chloroisopropyl)Ether	ND	5	ug/L
4-Chloro-3-Methylphenol	ND	5	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
4-Chlorophenylphenyl ether	ND	5	ug/L
Chrysene	ND	5	ug/L
Dibenz(a,h)Anthracene	ND	5	ug/L
Dibenzofuran	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	5	ug/L
2,4-Dichlorophenol	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Dimethyl Phthalate	ND	5	ug/L
4,6-Dinitro-2-Methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

METHOD: 8270, Semivolatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8580 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech

SAMPLE ID: 025-002-RB

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	5	ug/L
bis(2-Ethylhexyl)Phthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Fluorene	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
Indeno(1,2,3-cd)Pyrene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
Naphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	5	ug/L
2-Nitrophenol	ND	25	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodiphenylamine (1)	ND	5	ug/L
N-Nitroso-Di-n-Propylamine	ND	5	ug/L
Di-n-Octyl Phthalate	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Phenol	ND	5	ug/L
Pyrene	ND	5	ug/L
Pyridine	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L

METHOD: 8270, Semivolatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-02

Operational Tech

SAMPLE ID: 025-002-RB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	50 ug/L	75	35	114
2-Fluorobiphenyl	50 ug/L	84	43	116
Terphenyl-d14	50 ug/L	94	33	141
Phenol-d5	75 ug/L	68	10	110
2-Fluorophenol	75 ug/L	38	21	110
2,4,6-Tribromophenol	75 ug/L	89	10	123

ANALYZED BY: PC
DATE/TIME: 05/22/95 15:20:00
EXTRACTED BY: VM
DATE/TIME: 05/18/95
METHOD: 8270, Semivolatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950518.b/l138s03.d
Lab Smp Id:
Inj Date : 18-MAY-95 11:17
Operator : JC Inst ID: 1.i
Smp Info : 9505612-02A-8240W/1X
Misc Info : L138W1/L138B01/L138CW1
Comment :
Method : /chem/1.i/1950518.b/lvoc1pw.m
Meth Date : 19-May-1995 11:04 jimmy Quant Type: ISTD
Cal Date : 18-MAY-1995 07:51 Cal File: l138cw1.d
Als bottle: 10
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
13 Methylene Chloride	84.00	3.257	3.257	(0.621)	8143	20	4(a)
24 Chloroform	83.00	5.262	5.263	(1.003)	20027	24	5
* 23 Bromochloromethane	128.00	5.244	5.245	(1.000)	70039	250	
* 32 1,4-Difluorobenzene	114.00	6.947	6.947	(1.000)	389327	250	
* 50 Chlorobenzene-d5	117.00	11.119	11.119	(1.000)	299783	250	
$ 26 1,2-Dichloroethane-d4	102.00	6.020	6.020	(1.148)	28589	240	48
$ 43 Toluene-d8	98.00	9.175	9.176	(0.825)	393849	250	50
$ 61 Bromofluorobenzene	95.00	12.795	12.795	(1.151)	143381	240	48

Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 1.i
Lab File ID: 1138s03.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/1.i/1950518.b/1voc1pw.m
Misc Info: L138W1/L138B01/L138CW1

Calibration Date: 05/18/95
Calibration Time: 0751

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	74479	37240	148958	70039	-5.96
32 1,4-Difluorobenzene	412556	206278	825112	389327	-5.63
50 Chlorobenzene-d5	322864	161432	645728	299083	-7.37

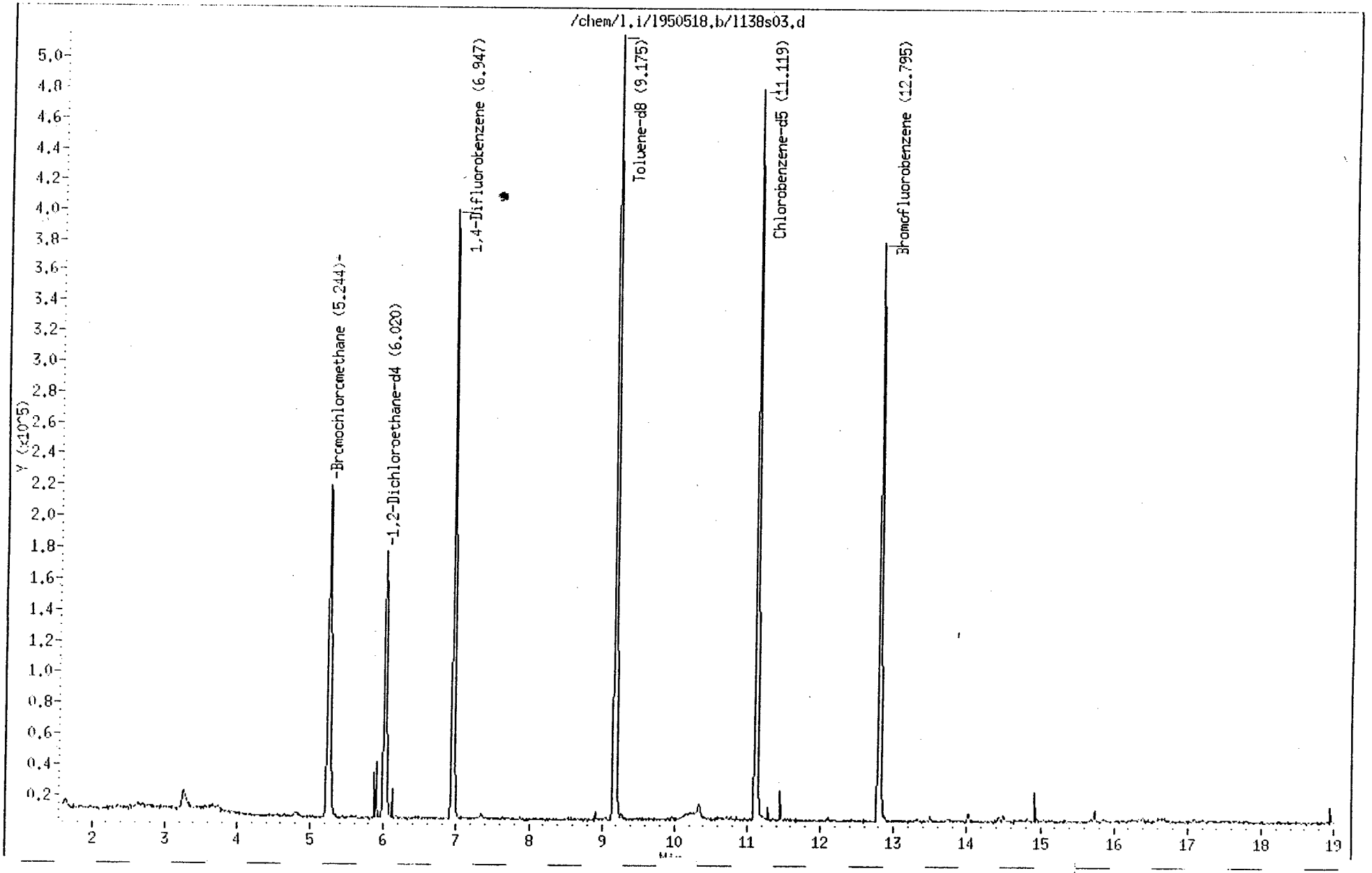
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	-0.01
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.95	-0.01
50 Chlorobenzene-d5	11.12	10.62	11.62	11.12	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950518.b/1138s03.d
Date : 18-MAY-95 11:17
Client ID:
Sample Info: 9505612-02A-8240W/1X
Purge Volume: 5.0
Column phase: 30m.hp5ms.0.25u df

Instrument: 1.i

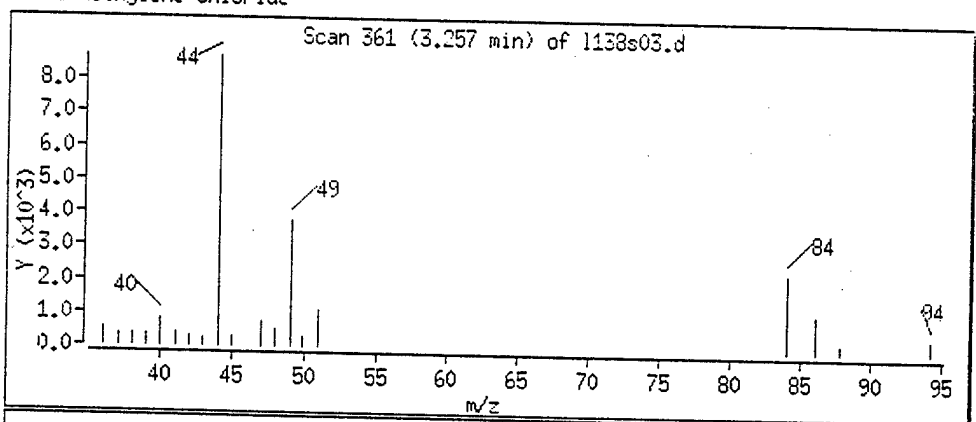
Operator: JC
Column diameter: 0.25

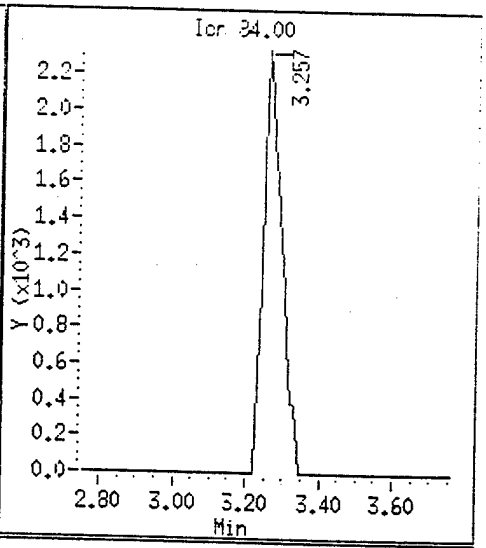


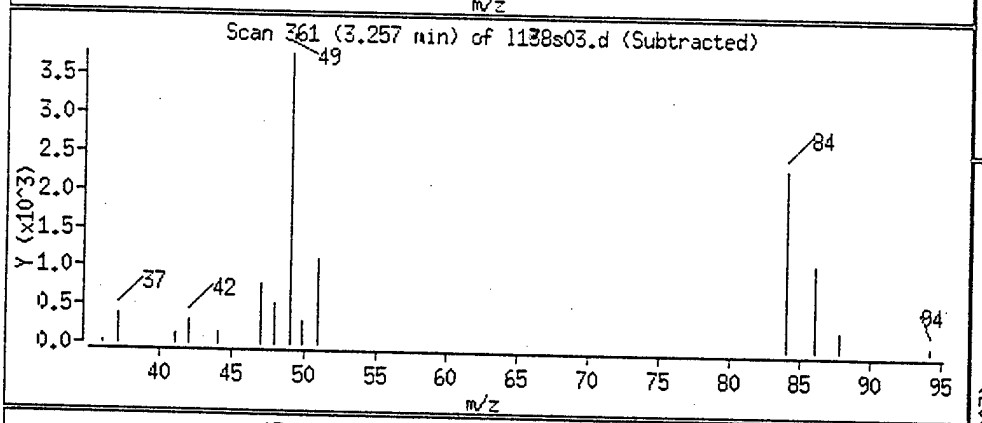
Data File: /chem/1.i/1950518.b/1138s03.d
Date : 18-MAY-95 11:17
Client ID:
Sample Info: 9505612-02A-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

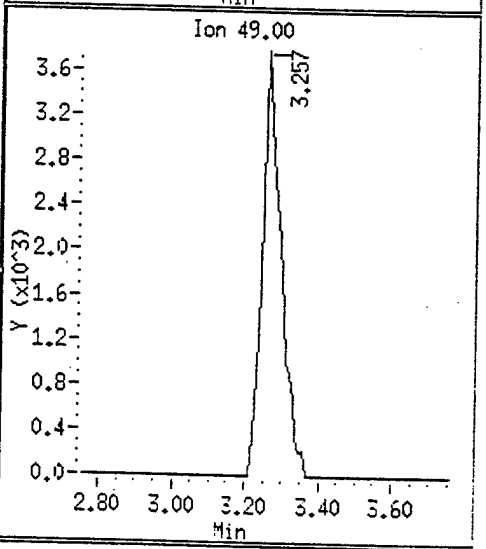
Instrument: 1.i
Operator: JC
Column diameter: 0.25

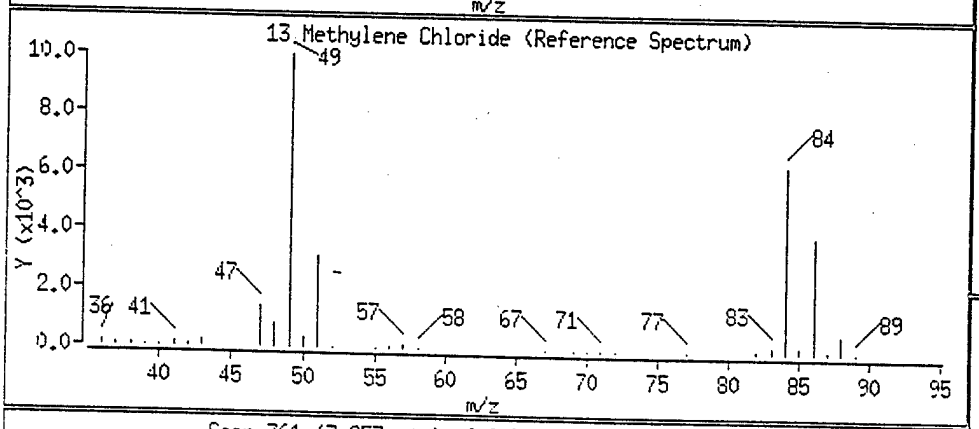
13 Methylene Chloride

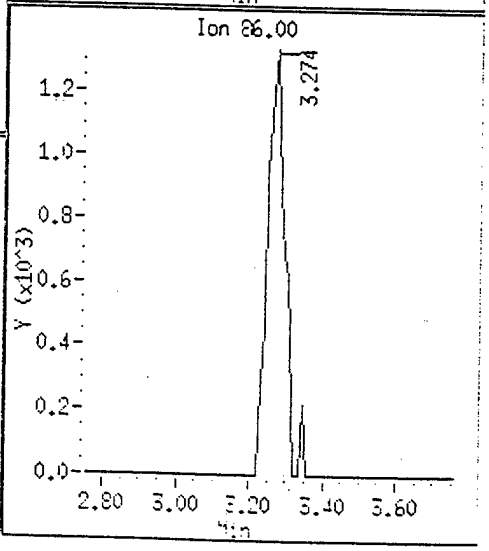


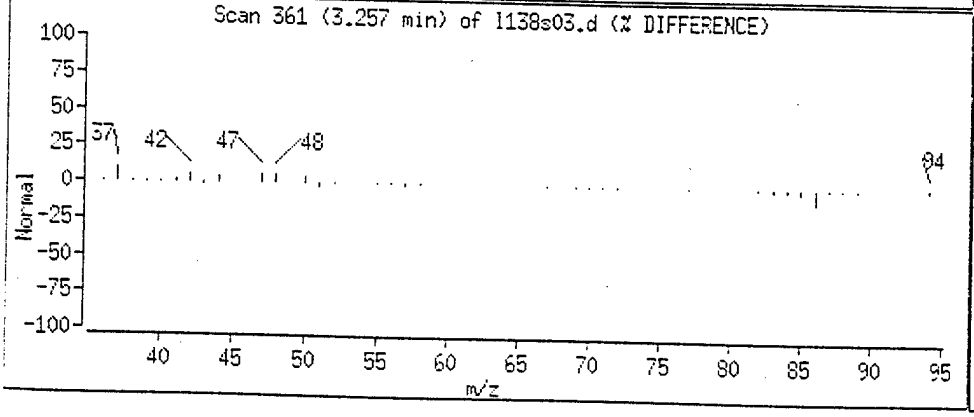












Data File: /chem/1.i/1950518.b/1138s03.d

Date : 18-MAY-95 11:17

Client ID:

Instrument: 1.i

Sample Info: 9505612-02A-8240W/1X

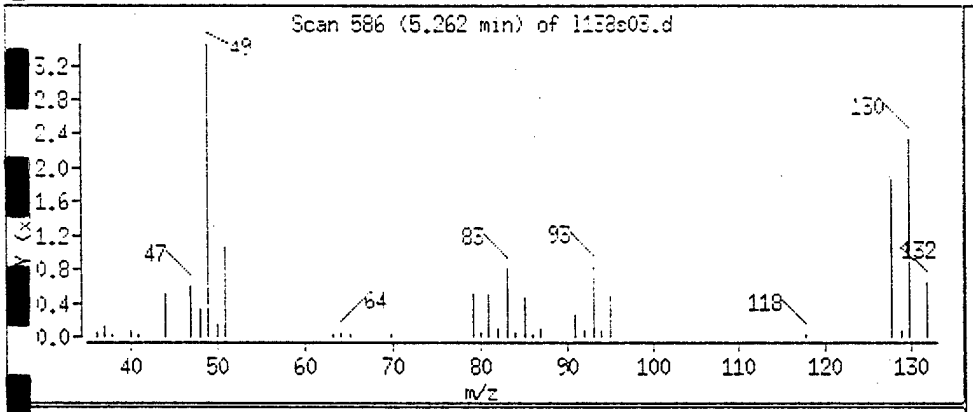
Purge Volume: 5.0

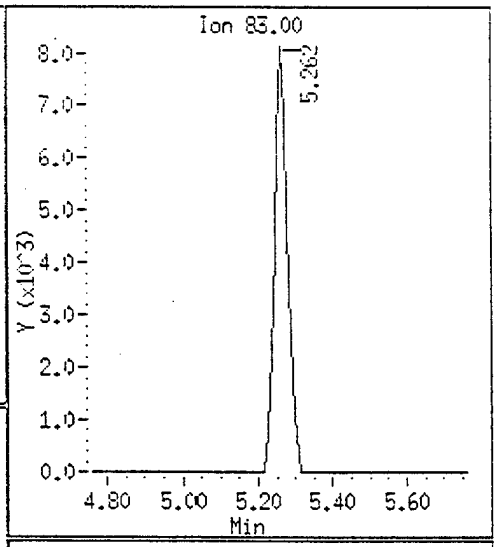
Operator: JC

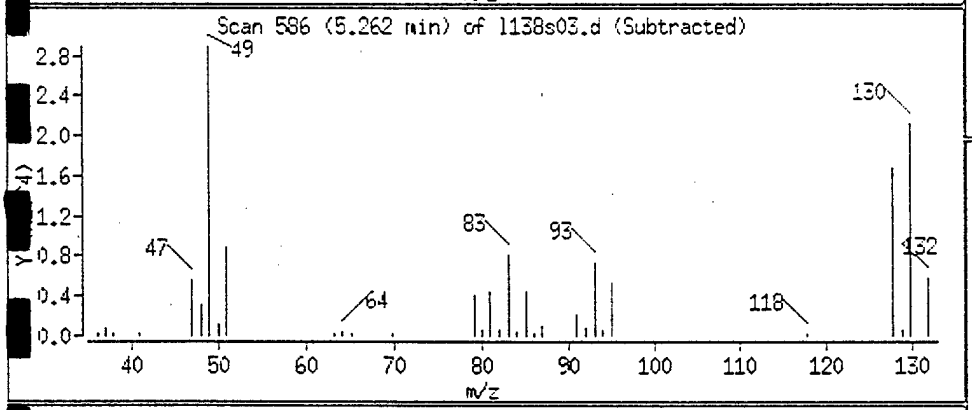
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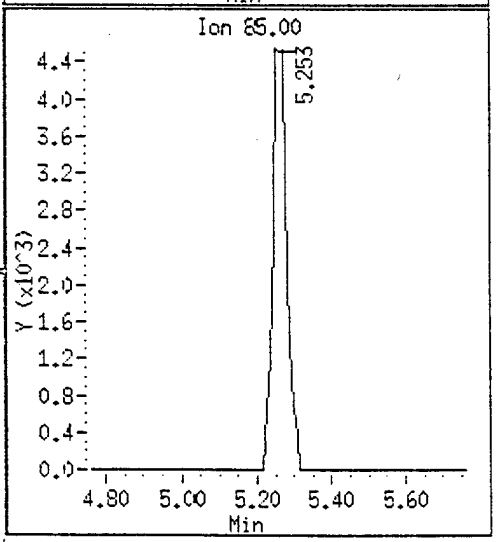
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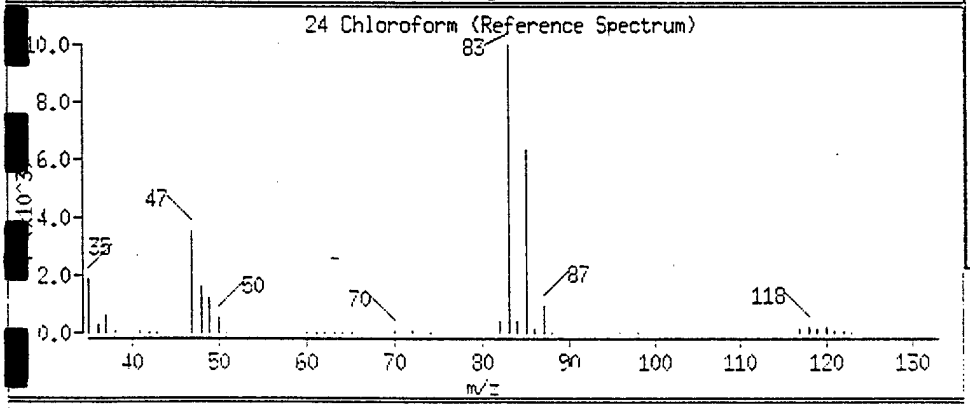
24 Chloroform

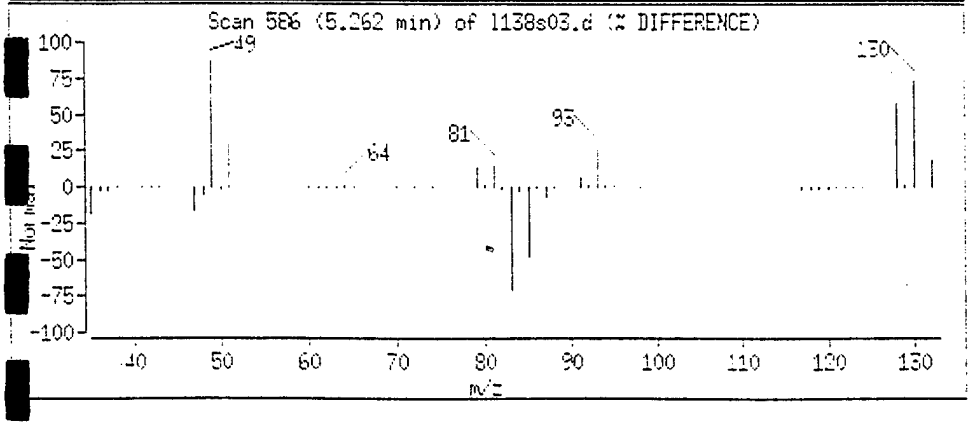












ata File: /chem/j.i/j950522.b/j142s06.d
eport Date: 22-May-1995 16:09

SPL Houston Labs

ata file : /chem/j.i/j950522.b/j142s06.d
ab Smp Id: 9505612-02B
nj Date : 22-MAY-1995 15:20
perator : PC PC
mp Info : 9505612-02B-8270W/1X
isc Info : E138C1/H138B01/J142CC1
omment :
ethod : /chem/j.i/j950522.b/jclpw.m
e-h Date : 22-May-1995 15:58 patti
a. Date : 22-MAY-1995 10:47
ls bottle: 6
il Factor: 1.000
ntegrator: HP RTE
arget Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j142cc1.d

Compound Sublist: 8270.sub

npounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
69 Di-n-butylphthalate	149.00	20.199	20.189	(1.086)	353988	10	5
11 1,4-Dichlorobenzene-d4	152.00	7.948	7.936	(1.000)	302481	40	
32 Naphthalene-d8	136.00	10.735	10.719	(1.000)	1055152	40	
48 Acenaphthene-d10	164.00	14.987	14.976	(1.000)	639604	40	
65 Phenanthrene-d10	188.00	18.600	18.594	(1.000)	996309	40	
76 Chrysene-d12	240.00	25.259	25.247	(1.000)	806810	40	
83 Perylene-d12	264.00	29.711	29.698	(1.000)	511434	40	
23 Nitrobenzene-d5	82.00	9.157	9.148	(0.853)	749866	75	37
41 2-Fluorobiphenyl	172.00	13.366	13.360	(0.892)	1757626	84	42
72 Terphenyl-d14	244.00	22.570	22.555	(0.894)	1828152	94	47
4 Phenol-d5	99.00	7.337	7.335	(0.923)	1131853	100	51
3 2-Fluorophenol	112.00	5.737	5.736	(0.722)	350871	58	29
61 2,4,6-Tribromophenol	329.70	16.956	16.955	(0.912)	407372	130	67

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j142s06.d
Lab Smp Id: 9505612-02B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950522.b/jclpw.m
Misc Info: E138C1/H138B01/J142CC1

Calibration Date: 05/22/95
Calibration Time: 1047

Level: LOW
Sample Type: WATER

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	336862	168431	673724	302481	-10.21
32 Naphthalene-d8	1268035	634018	2536070	1055152	-16.79
48 Acenaphthene-d10	679432	339716	1358864	639604	-5.86
65 Phenanthrene-d10	946155	473078	1892310	996309	5.30
76 Chrysene-d12	813677	406838	1627354	806810	-0.84
83 Perylene-d12	478967	239484	957934	511434	6.78

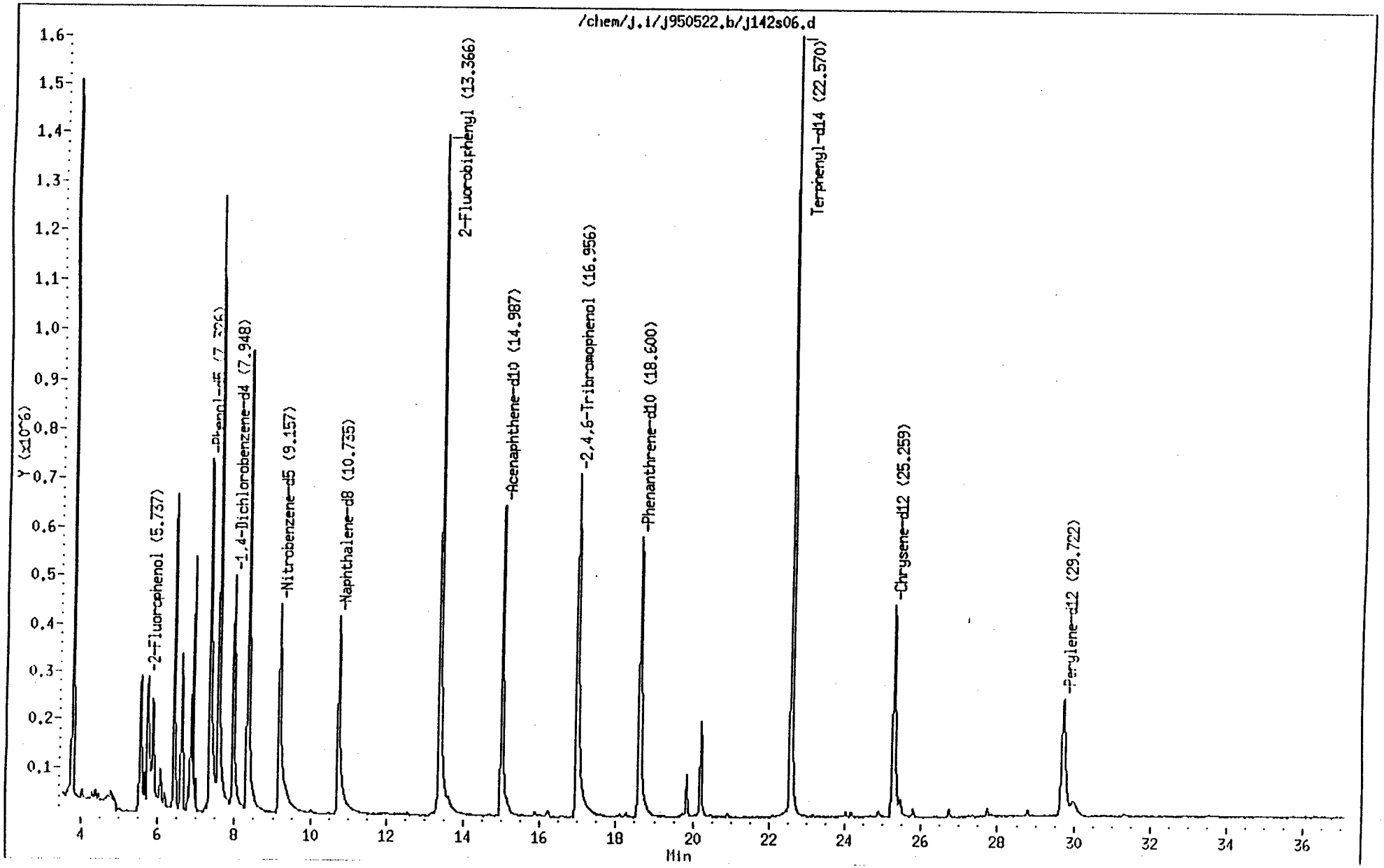
		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.95	0.16
32 Naphthalene-d8	10.72	10.22	11.22	10.73	0.15
48 Acenaphthene-d10	14.98	14.48	15.48	14.99	0.08
65 Phenanthrene-d10	18.59	18.09	19.09	18.60	0.03
76 Chrysene-d12	25.25	24.75	25.75	25.26	0.05
83 Perylene-d12	29.70	29.20	30.20	29.71	0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950522.b/j142s06.d
Date : 22-MAY-1995 15:20
Client ID:
Sample Info: 9505612-02B-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

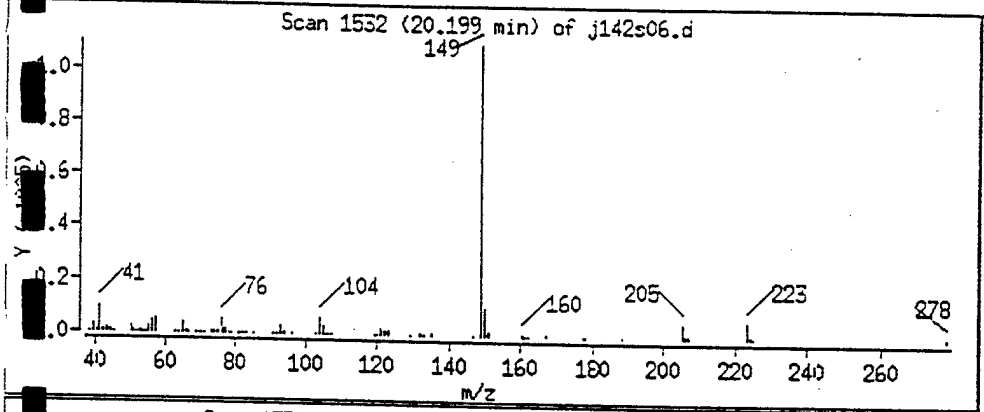
Operator: PC
Column diameter: 0.25

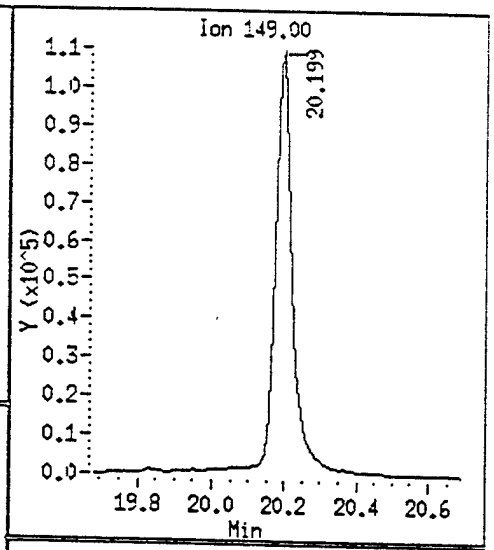


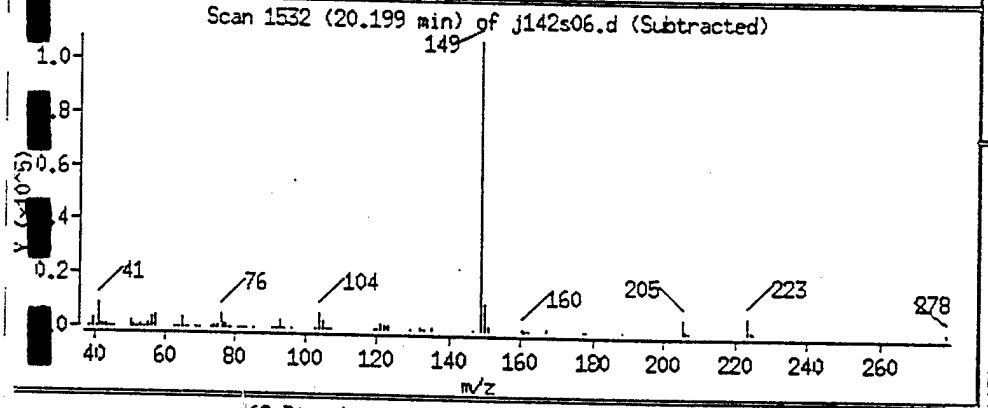
Data File: /chem/j.i/j950522.b/j142s06.d
Date : 22-MAY-1995 15:20
Client ID:
Sample Info: 9505612-02B-8270W/1X
Volume Injected (uL): 2.0
Column phase:

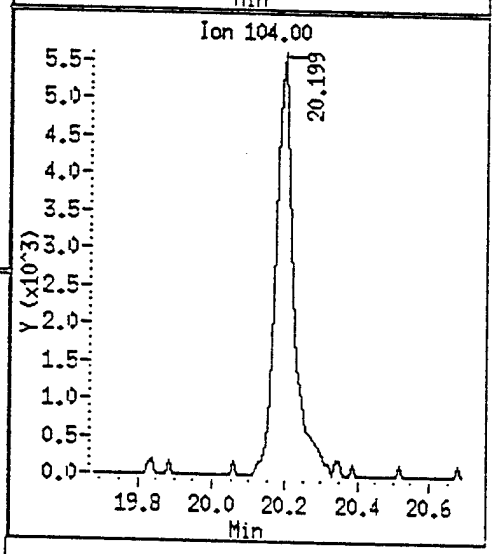
Instrument: j.i
Operator: PC
Column diameter: 0.25

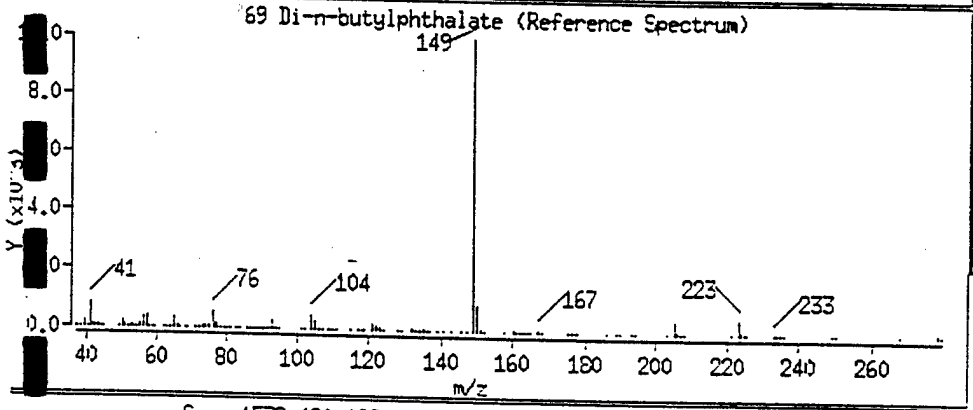
69 Di-n-butylphthalate

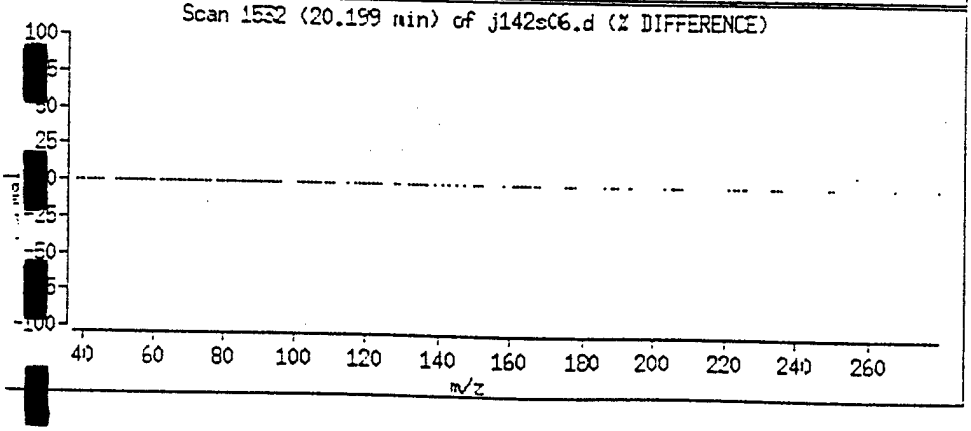












HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-007-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 08:35:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	ND	0.5	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/27/95	6	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/18/95	12	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	16	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-007-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 08:35:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/25/95	05/25/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/25/95	05/25/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/30/95	6.1	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-007-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 08:35:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713/660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech

SAMPLE ID: 025-007-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	96	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/18/95 11:31:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
[illegible] INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-007-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 08:35:
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	800	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713/660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech

SAMPLE ID: 023-007-BH 11.5-12'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-03

Operational Tech

SAMPLE ID: 025-007-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	78	23	120
2-Fluorobiphenyl	1600 ug/Kg	78	30	115
Terphenyl-d14	1600 ug/Kg	64	18	137
Phenol-d5	2500 ug/Kg	62	24	113
2-Fluorophenol	2500 ug/Kg	47	25	121
2,4,6-Tribromophenol	2500 ug/Kg	62	19	122

ANALYZED BY: LH
EXTRACTED BY: JK
METHOD: 8270, Semivolatile Organics - Soil
DATE/TIME: 05/26/95 18:17:00
DATE/TIME: 05/22/95
NOTES: * - Practical Quantitation Limit
NA - Not Analyzed
ND - Not Detected

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138s01.d
Lab Smp Id: 9505612-03A-8240S/1X
Inj Date : 18-MAY-95 11:31
Operator : HLW Inst ID: k.i
Smp Info : 9505612-03A-8240S/1X
Misc Info : K138S1/K138B02/K138CS2
Comment :
Method : /chem/k.i/k950518.b/kvoclps.m
Meth Date : 18-May-1995 11:45 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 14
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	11 Methylene Chloride	84.00	1.680	1.664	(0.793)	10242	17	3(a)
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	69110	250	
*	31 1,4-Difluorobenzene	114.00	2.801	2.801	(1.000)	407192	250	
*	51 Chlorobenzene-d5	117.00	6.771	6.771	(1.000)	303248	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.122)	30134	240	48
$	40 Toluene-d8	98.00	4.544	4.543	(0.671)	463243	260	51
$	61 Bromofluorobenzene	95.00	8.877	8.862	(1.311)	169524	240	48

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138s01.d
Lab Smp Id: 9505612-03A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info: K138S1/K138B02/K138CS2

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	69110	1.28
31 1,4-Difluorobenzene	425497	212748	850994	407192	-4.30
51 Chlorobenzene-d5	323411	161706	646822	303248	-6.23

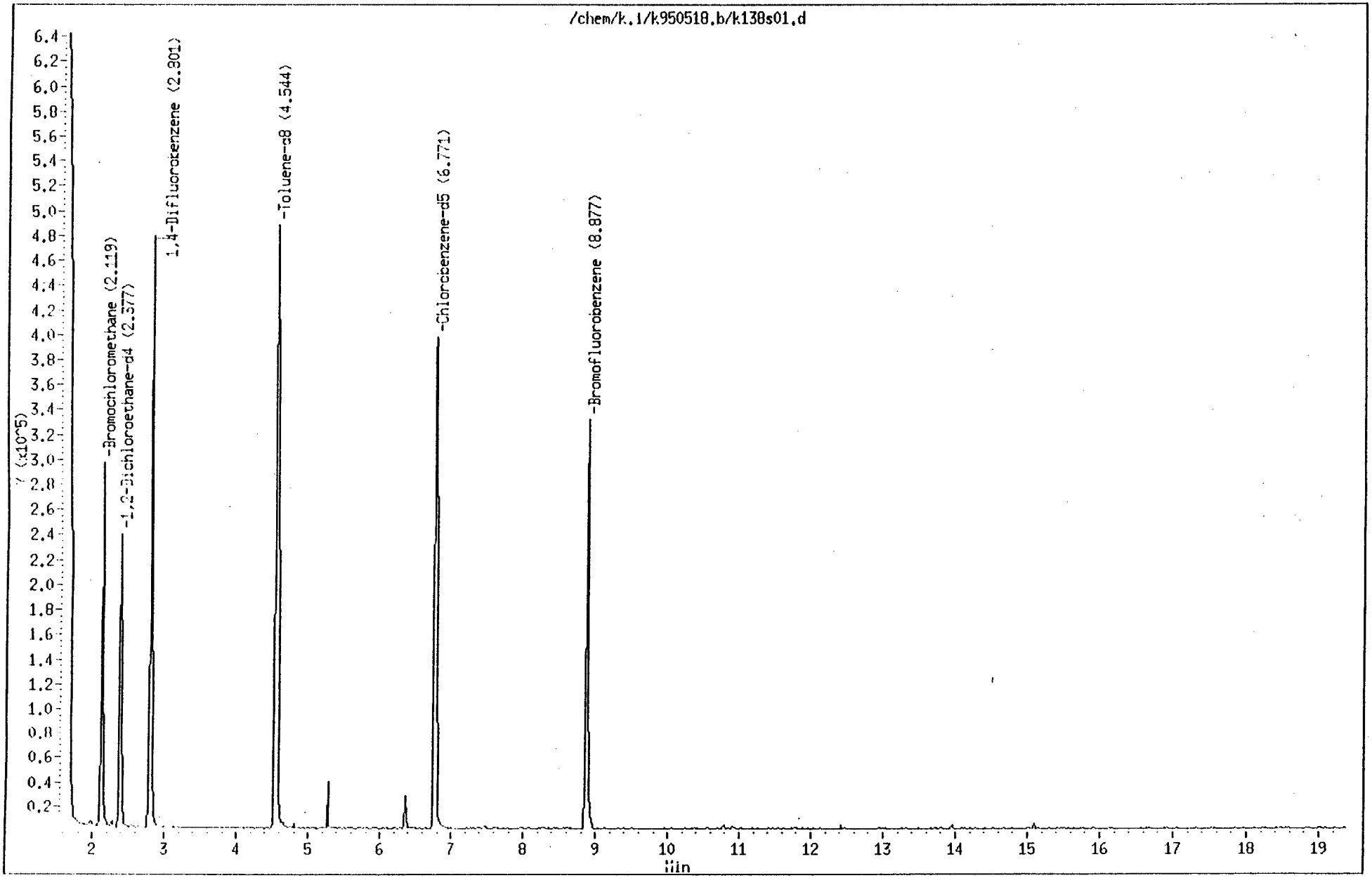
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.02
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.01
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138s01.d
Date : 18-MAY-95 11:31
Client ID:
Sample Info: 9505612-030-8240S/1X

Instrument: k.i

Operator: MLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25



Data File: /chem/k.i/k950518.b/k138s01.d

Date : 18-MAY-95 11:31

Client ID:

Instrument: k.i

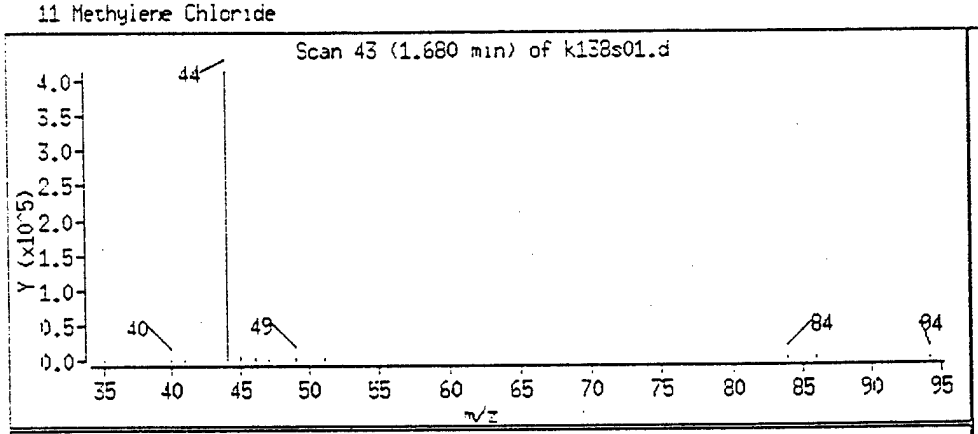
Sample Info: 9505612-03A-8240S/1X

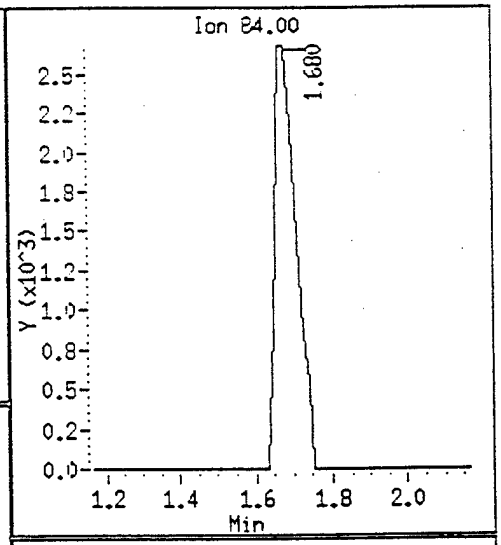
Operator: HLW

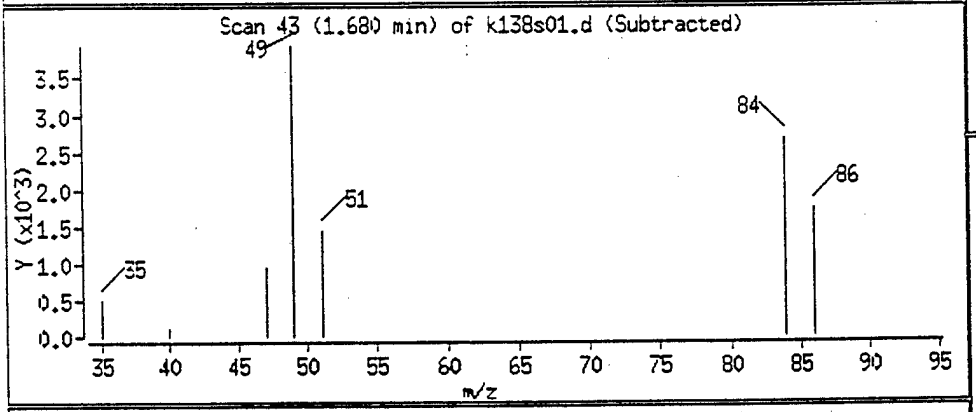
Column phase: 30m,hp5ms,0.25u df

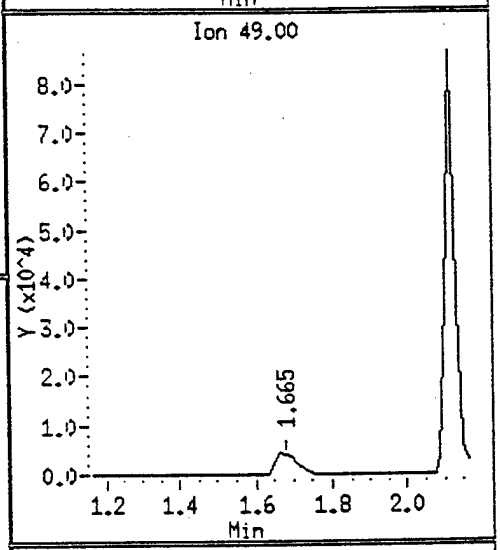
Column diameter: 0.25

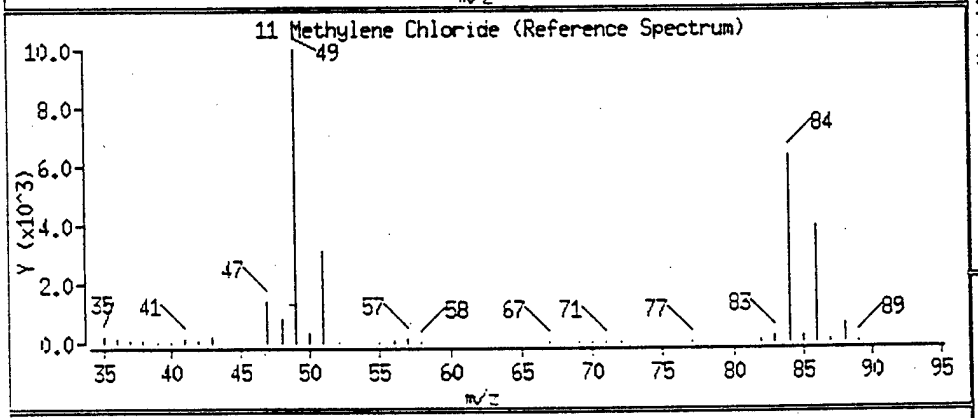
11 Methylene Chloride

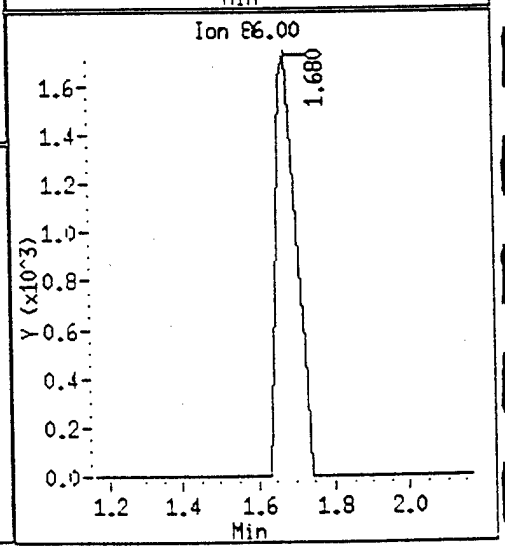


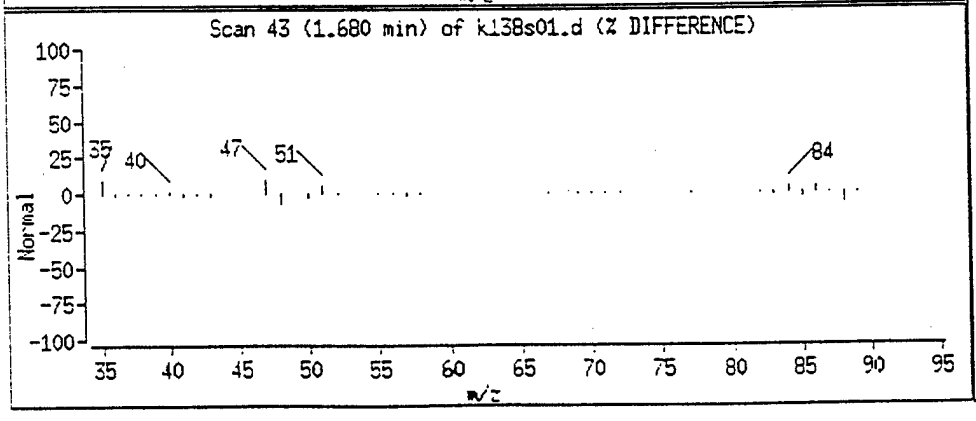












Data File: /chem/h.i/h950526.b/h146s04.d
Report Date: 30-May-1995 10:31

SPL Houston Labs

Data file : /chem/h.i/h950526.b/h146s04.d
Lab Smp Id:
Inj Date : 26-MAY-95 18:17 Inst ID: h.i
Operator : LH
Smp Info : 9505612-03B-8270S/1X
Misc Info : E142S1/H142B02/H146CC1
Comment :
Method : /chem/h.i/h950526.b/hclps.m Quant Type: ISTD
Meth Date : 26-May-1995 14:09 liping Cal File: h146cc1.d
Cal Date : 26-MAY-1995 13:43
Als bottle: 6
Dil Factor: 1.000 Compound Sublist: 8270.sub
Integrator: HP RTE
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 11 1,4-Dichlorobenzene-d4	152.00	4.080	4.080	(1.000)	147308	40	
* 32 Naphthalene-d8	136.00	5.265	5.265	(1.000)	504041	40	
* 48 Acenaphthene-d10	164.00	7.030	7.019	(1.000)	194720	40	
* 65 Phenanthrene-d10	188.00	8.524	8.512	(1.000)	226962	40	
* 76 Chrysene-d12	240.00	11.285	11.273	(1.000)	128493	40	
* 83 Perylene-d12	264.00	13.335	13.323	(1.000)	74940	40	
$ 23 Nitrobenzene-d5	82.00	4.589	4.590	(0.872)	366696	75	1200
$ 41 2-Fluorobiphenyl	172.00	6.355	6.343	(0.904)	506829	74	1200
$ 72 Terphenyl-d14	244.00	10.159	10.147	(0.900)	222469	62	1000
$ 4 Phenol-d5	99.00	3.807	3.807	(0.933)	631350	92	1500
$ 3 2-Fluorophenol	112.00	3.120	3.085	(0.765)	469898	71	1200
$ 61 2,4,6-Tribromophenol	329.70	7.848	7.837	(0.921)	50019	92	1500

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h146s04.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950526.b/hclps.m
Misc Info: E142S1/H142B02/H146CC1

Calibration Date: 05/26/95
Calibration Time: 1343

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	248407	124204	496814	147308	-40.70
32 Naphthalene-d8	844661	422330	1689322	504041	-40.33
48 Acenaphthene-d10	317019	158510	634038	194720	-38.58
65 Phenanthrene-d10	323627	161814	647254	226962	-29.87
76 Chrysene-d12	135631	67816	271262	128493	-5.26
83 Perylene-d12	74718	37359	149436	74940	0.30

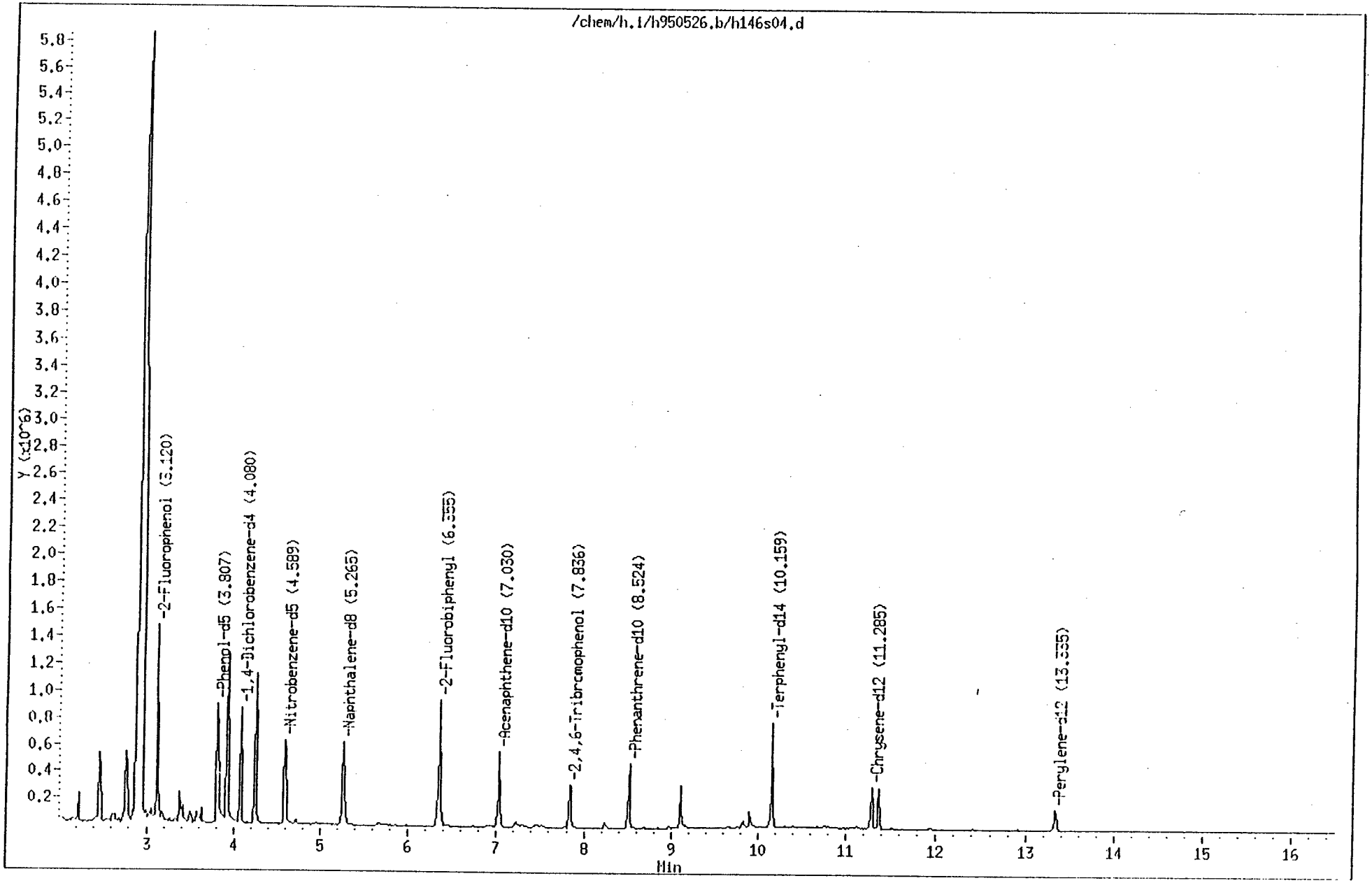
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.08	3.58	4.58	4.08	-0.01
32 Naphthalene-d8	5.27	4.77	5.77	5.26	-0.01
48 Acenaphthene-d10	7.02	6.52	7.52	7.03	0.16
65 Phenanthrene-d10	8.51	8.01	9.01	8.52	0.14
76 Chrysene-d12	11.27	10.77	11.77	11.28	0.10
83 Perylene-d12	13.32	12.82	13.82	13.33	0.09

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950526.b/h146s04.d
Date : 26-MAY-95 18:17
Client ID:
Sample Info: 9505612-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-005-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 09:50:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	ND	0.5	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/27/95	6	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/18/95	9	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	17	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-005-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 09:50:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/25/95	05/25/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/25/95	05/25/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/30/95	1.9	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-005-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 09:50:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

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SAMPLE ID: 025-005-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	98	70	121
Toluene-d8	50 ug/Kg	104	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/18/95 11:58:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
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HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505612-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-005-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 09:50:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	330	ug/Kg
Benzo(g,h,i)Perylene	ND	1600	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	800	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)

HOUSTON LABORATORY
[illegible] INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE [illegible] 660-0901

Certificate of Analysis No. H9-9505612-04

Operational Tech

SAMPLE ID: 025-005-BH 11.5-12'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-04

Operational Tech

SAMPLE ID: 025-005-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	82	23	120
2-Fluorobiphenyl	1600 ug/Kg	71	30	115
Terphenyl-d14	1600 ug/Kg	73	18	137
Phenol-d5	2500 ug/Kg	69	24	113
2-Fluorophenol	2500 ug/Kg	49	25	121
2,4,6-Tribromophenol	2500 ug/Kg	68	19	122

ANALYZED BY: LH
DATE/TIME: 05/26/95 17:54:00
EXTRACTED BY: JK
DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit
ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138s02.d
Lab Smp Id: 9505612-04A-8240S/1X
Inj Date : 18-MAY-95 11:58
Operator : HLW Inst ID: k.i
Smp Info : 9505612-04A-8240S/1X
Misc Info : K138S1/K138B02/K138CS2
Comment :
Method : /chem/k.i/k950518.b/kvoclps.m
Meth Date : 18-May-1995 11:45 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 15
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	11 Methylene Chloride	84.00	1.666	1.664	(0.786)	11268	18	4(a)
*	20 Bromochloromethane	128.00	2.120	2.119	(1.000)	69695	250	
*	31 1,4-Difluorobenzene	114.00	2.802	2.801	(1.000)	409732	250	
*	51 Chlorobenzene-d5	117.00	6.757	6.771	(1.000)	300334	250	
$	23 1,2-Dichloroethane-d4	102.00	2.378	2.377	(1.121)	30620	240	49
$	40 Toluene-d8	98.00	4.545	4.543	(0.673)	463948	260	52
$	61 Bromofluorobenzene	95.00	8.863	8.862	(1.312)	165803	240	48

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138s02.d
Lab Smp Id: 9505612-04A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info: K138S1/K138B02/K138CS2

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	69595	2.14
31 1,4-Difluorobenzene	425497	212748	850994	409732	-3.71
51 Chlorobenzene-d5	323411	161706	646822	300334	-7.14

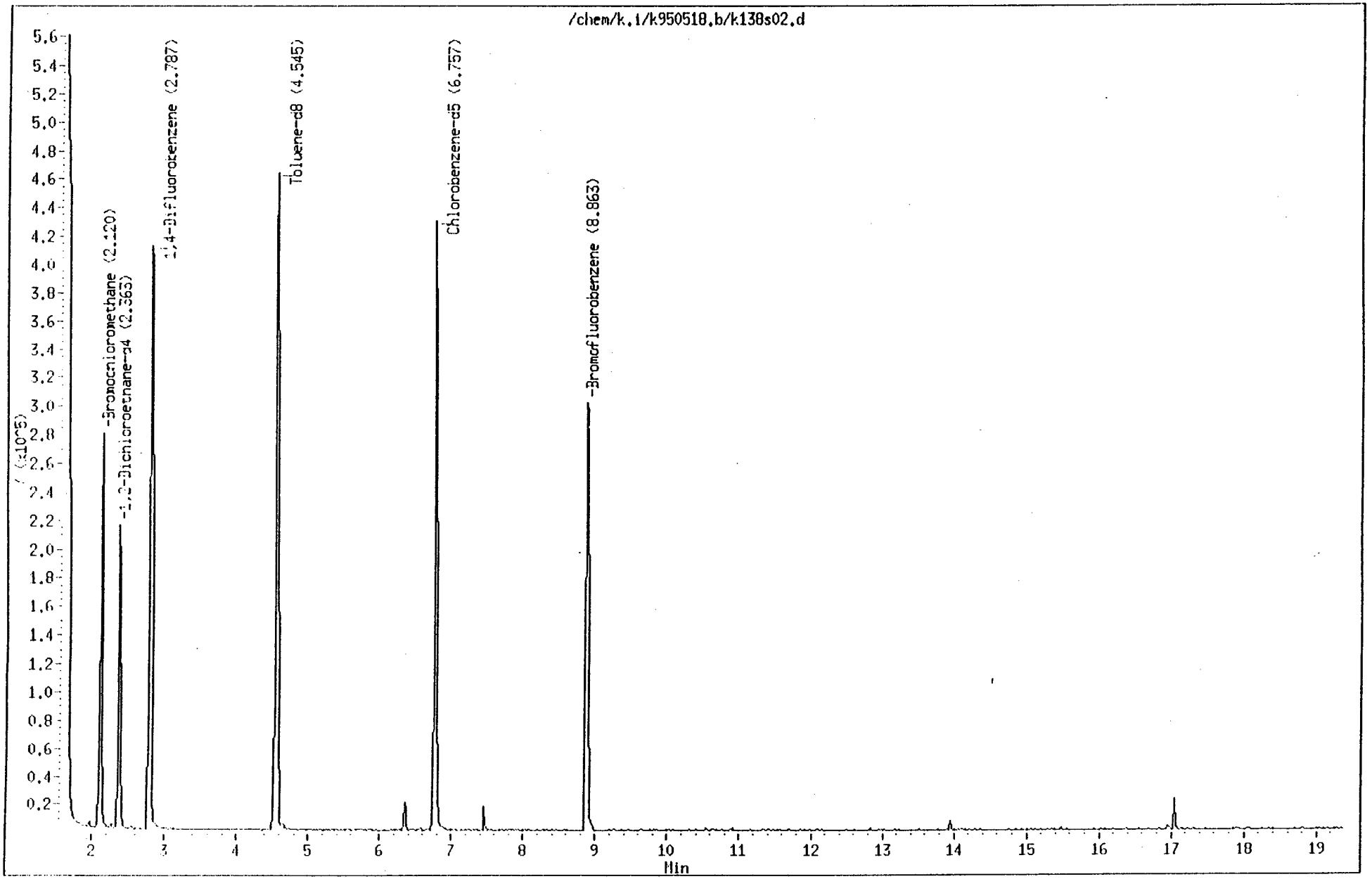
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.07
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.05
51 Chlorobenzene-d5	6.77	6.27	7.27	6.76	-0.20

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138s02.d
Date : 18-MAY-95 11:58
Client ID:
Sample Info: 9505612-04A-8240S/1X

Instrument: k.i

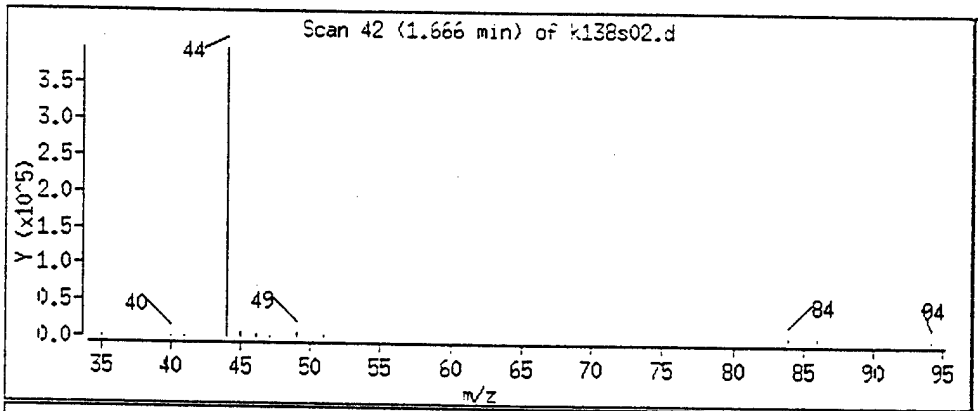
Operator: MLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

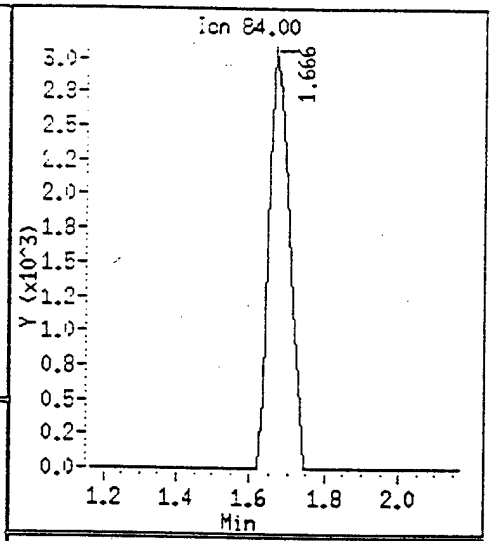


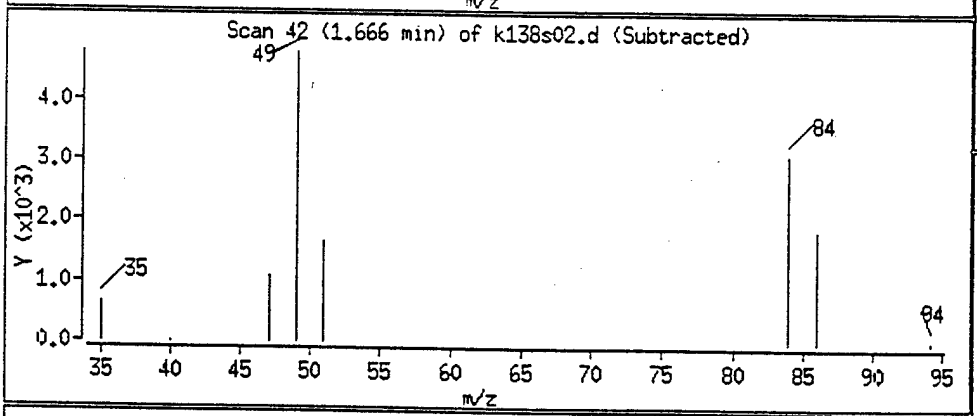
Data File: /chem/k.i/k950518.b/k138s02.d
Date : 18-MAY-95 11:58
Client ID:
Sample Info: 9505612-04A-8240S/1X

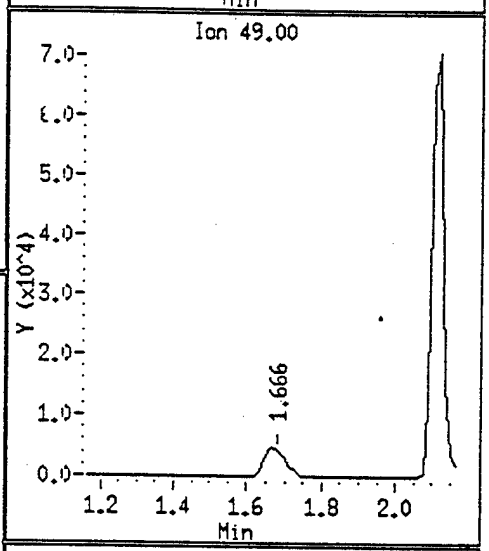
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

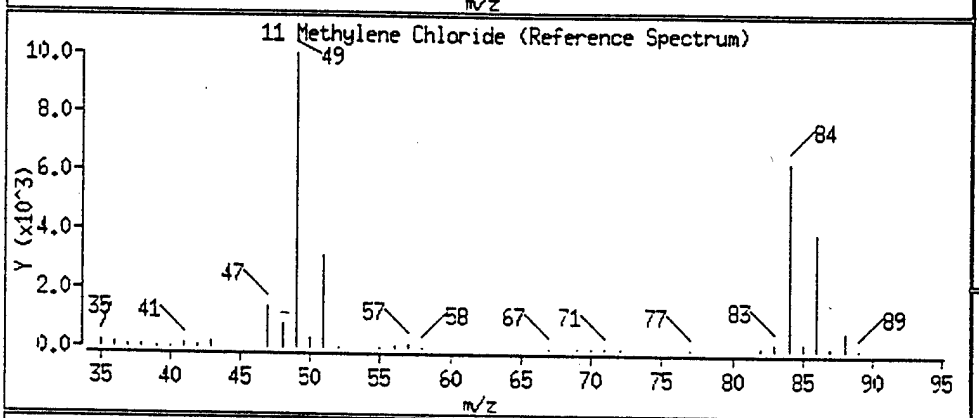
11 Methylene Chloride

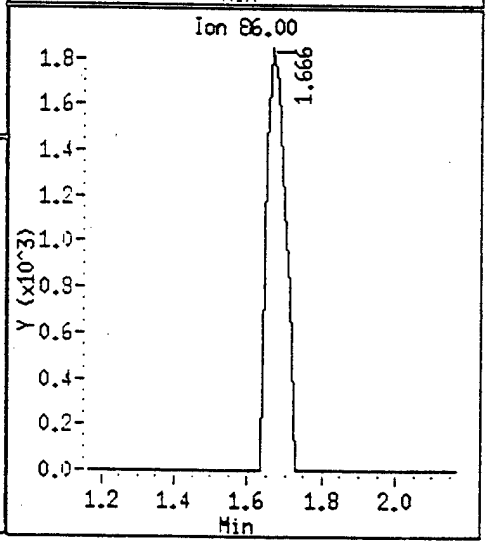


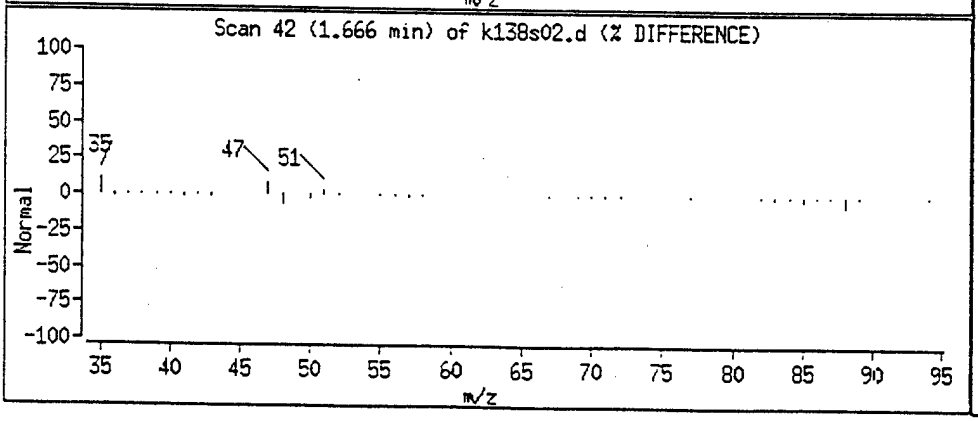












SPL Houston Labs

Data file : /chem/h.i/h950526.b/h146s05.d
Lab Smp Id:
Inj Date : 26-MAY-95 17:54
Operator : LH
Inst ID: h.i
Smp Info : 9505612-04B-8270S/1X
Misc Info : E142S1/H142B02/H146CC1
Comment :
Method : /chem/h.i/h950526.b/hclps.m
Meth Date : 26-May-1995 14:09 liping
Quant Type: ISTD
Cal Date : 26-MAY-1995 13:43
Cal File: h146cc1.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 11 1,4-Dichlorobenzene-d4	152.00	4.079	4.080	(1.000)	261677	40	
* 32 Naphthalene-d8	136.00	5.264	5.265	(1.000)	1024277	40	
* 48 Acenaphthene-d10	164.00	7.029	7.019	(1.000)	410511	40	
* 65 Phenanthrene-d10	188.00	8.522	8.512	(1.000)	453062	40	
* 76 Chrysene-d12	240.00	11.295	11.273	(1.000)	193700	40	
* 83 Perylene-d12	264.00	13.345	13.323	(1.000)	105567	40	
$ 23 Nitrobenzene-d5	82.00	4.600	4.590	(0.874)	785524	79	1300
$ 41 2-Fluorobiphenyl	172.00	6.354	6.343	(0.904)	983054	69	1100
$ 72 Terphenyl-d14	244.00	10.158	10.147	(0.899)	382746	70	1200
$ 4 Phenol-d5	99.00	3.818	3.807	(0.936)	1262172	100	1700
$ 3 2-Fluorophenol	112.00	3.142	3.085	(0.770)	863193	73	1200
$ 61 2,4,6-Tribromophenol	329.70	7.847	7.837	(0.921)	111277	100	1700(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h146s05.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950526.b/hclps.m
Misc Info: E142S1/H142B02/H146CC1

Calibration Date: 05/26/95
Calibration Time: 1343

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	248407	124204	496814	261677	5.34
32 Naphthalene-d8	844661	422330	1689322	1024277	21.26
48 Acenaphthene-d10	317019	158510	634038	410511	29.49
65 Phenanthrene-d10	323627	161814	647254	453062	40.00
76 Chrysene-d12	135631	67816	271262	193700	42.81
83 Perylene-d12	74718	37359	149436	105567	41.29

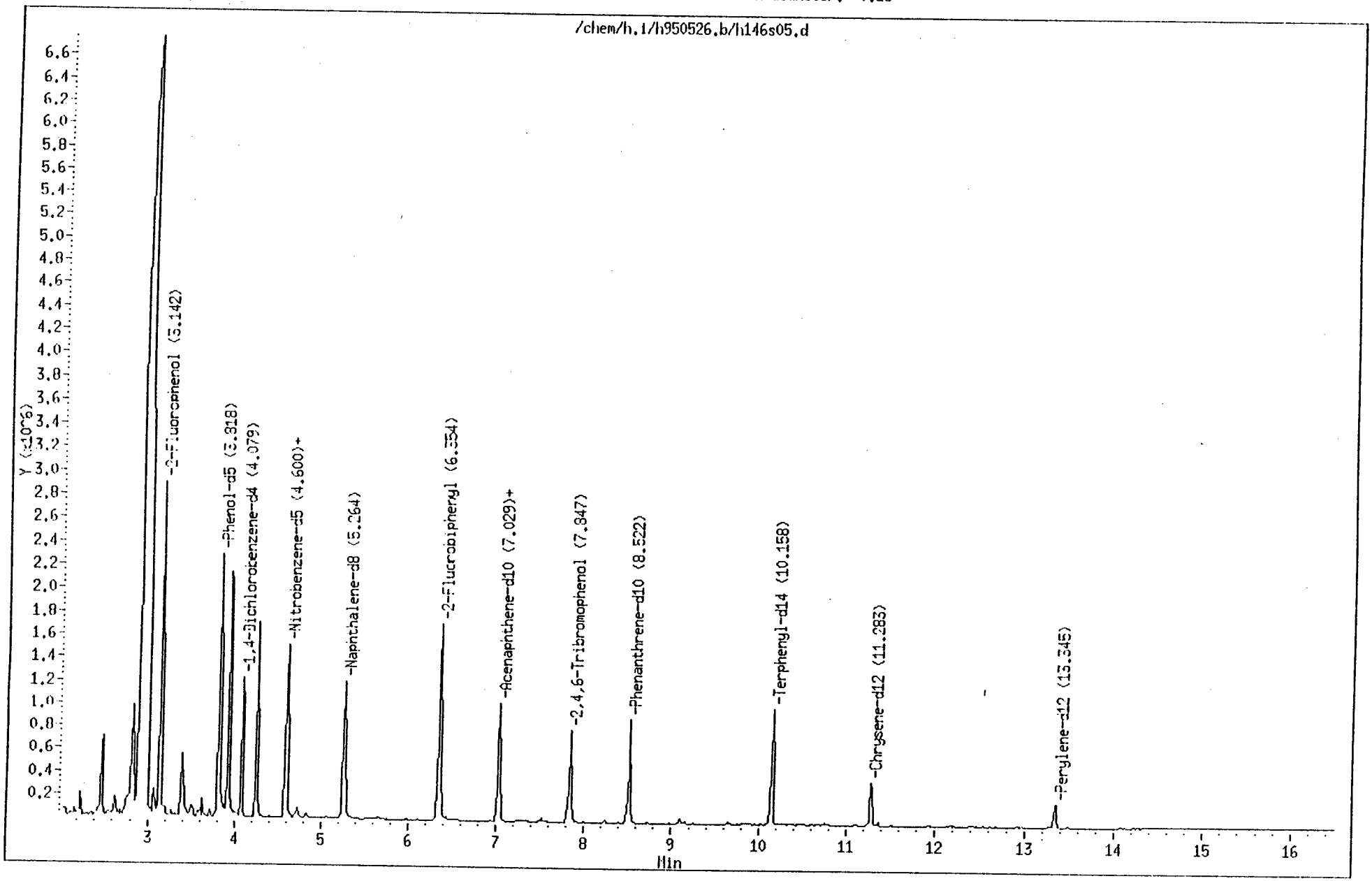
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.08	3.58	4.58	4.08	-0.04
32 Naphthalene-d8	5.27	4.77	5.77	5.26	-0.03
48 Acenaphthene-d10	7.02	6.52	7.52	7.03	0.15
65 Phenanthrene-d10	8.51	8.01	9.01	8.52	0.12
76 Chrysene-d12	11.27	10.77	11.77	11.30	0.20
83 Perylene-d12	13.32	12.82	13.82	13.35	0.17

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950526.b/h146s05.d
Date : 26-MAY-95 17:54
Client ID:
Sample Info: 9505612-04B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
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Operational Tech
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San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:40:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	ND	0.5	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/27/95	9	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/18/95	16	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	17	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
[illegible] INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713-660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:40:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/25/95	05/25/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/25/95	05/25/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/30/95	2.0	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:40:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech

SAMPLE ID: 025-004-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	98	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	100	59	113

ANALYZED BY: HLW
DATE/TIME: 05/18/95 12:24:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:40:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	330	ug/Kg
Benzo(g,h,i)Perylene	ND	1600	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	800	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)

HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713/660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech

SAMPLE ID: 025-004-BH 11.5-12'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
6880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-05

Operational Tech

SAMPLE ID: 025-004-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	77	23	120
2-Fluorobiphenyl	1600 ug/Kg	75	30	115
Terphenyl-d14	1600 ug/Kg	89	18	137
Phenol-d5	2500 ug/Kg	72	24	113
2-Fluorophenol	2500 ug/Kg	60	25	121
2,4,6-Tribromophenol	2500 ug/Kg	84	19	122

ANALYZED BY: LH
EXTRACTED BY: JK
METHOD: 8270, Semivolatile Organics - Soil
DATE/TIME: 05/26/95 00:57:00
DATE/TIME: 05/22/95
NOTES: * - Practical Quantitation Limit
NA - Not Analyzed
ND - Not Detected

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138s03.d
Lab Smp Id: 9505612-05A-8240S/1X
Inj Date : 18-MAY-95 12:24
Operator : HLW Inst ID: k.i
Smp Info : 9505612-05A-8240S/1X
Misc Info : K138S1/K138B02/K138CS2
Comment :
Method : /chem/k.i/k950518.b/kvcclps.m
Meth Date : 18-May-1995 11:45 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 16
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	11 Methylene Chloride	84.00	1.682	1.664	(0.793)	10677	17	3(a)
*	20 Bromochloromethane	128.00	2.121	2.119	(1.000)	71972	250	
*	31 1,4-Difluorobenzene	114.00	2.803	2.801	(1.000)	414792	250	
*	51 Chlorobenzene-d5	117.00	6.773	6.771	(1.000)	309533	250	
$	23 1,2-Dichloroethane-d4	102.00	2.379	2.377	(1.121)	31648	240	49
$	40 Toluene-d8	98.00	4.546	4.543	(0.671)	470532	260	51
$	61 Bromofluorobenzene	95.00	8.879	8.862	(1.311)	178419	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138s03.d
Lab Smp Id: 9505612-05A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info: K138S1/K138B02/K138CS2

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	71972	5.47
31 1,4-Difluorobenzene	425497	212748	850994	414792	-2.52
51 Chlorobenzene-d5	323411	161706	646822	309533	-4.29

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.10
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.08
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.03

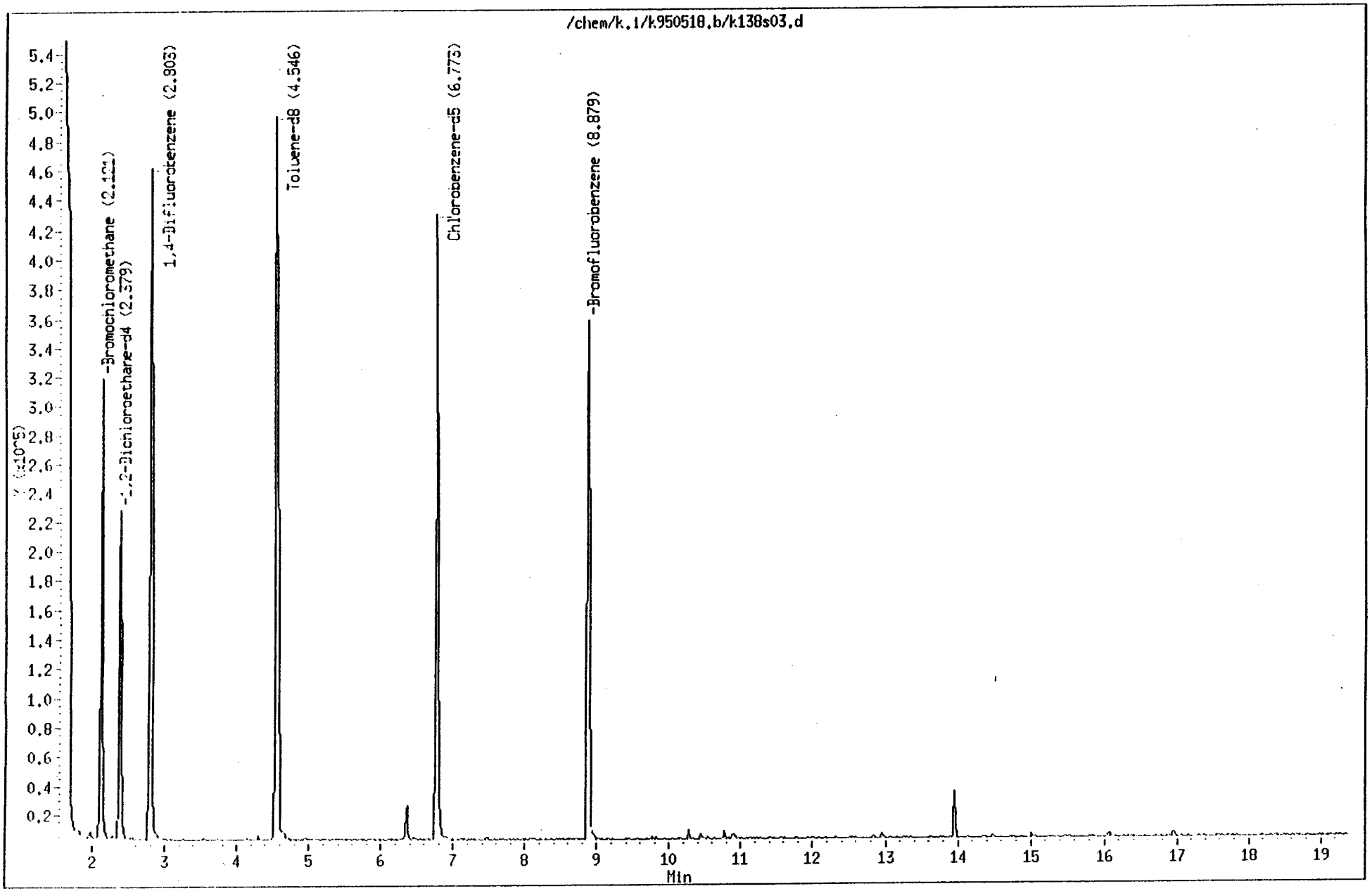
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138s03.d
Date : 18-MAY-95 12:24
Client ID:
Sample Info: 9505612-050-8240S/1X

Instrument: k.i

Operator: MLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



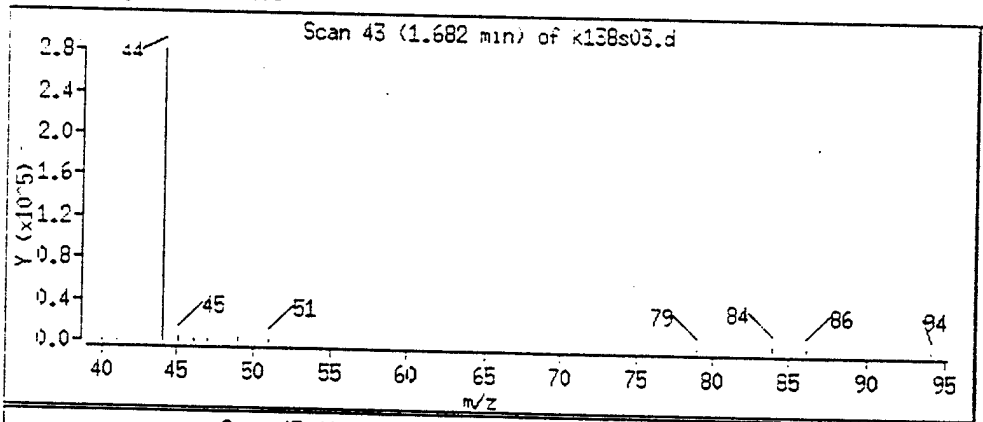
Data File: /chem/k.i/k950518.b/k138s03.d
Date : 18-MAY-95 12:24
Client ID:
Sample Info: 9505612-05A-8240S/1X

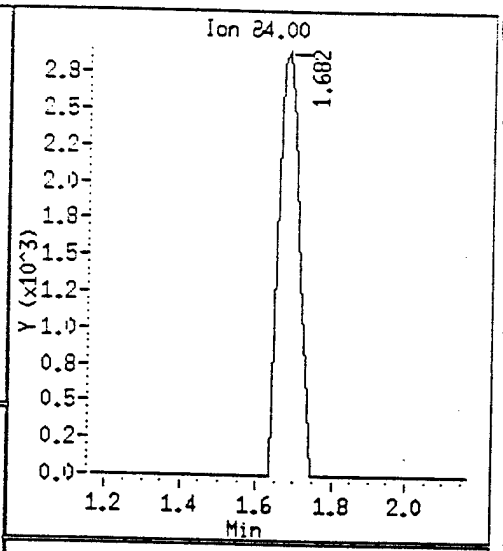
Instrument: k.i

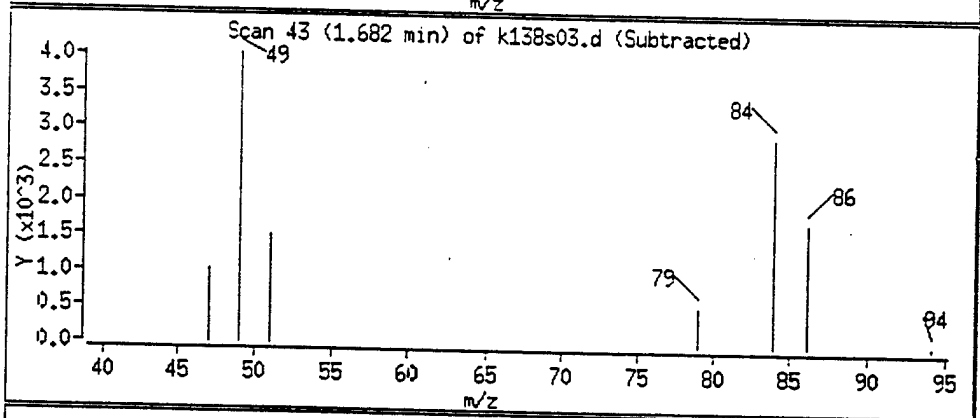
Operator: HLW
Column diameter: 0.25

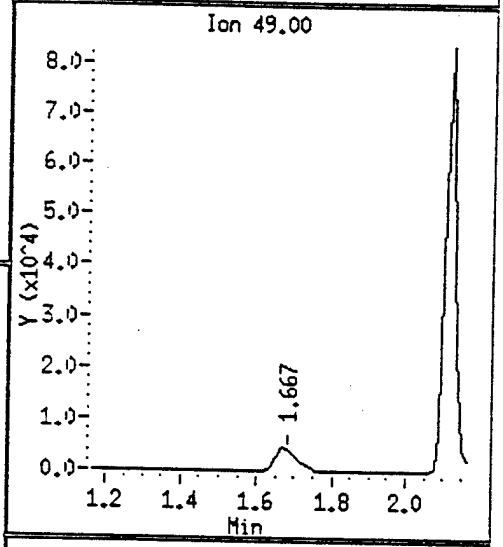
Column phase: 30m,hp5ms,0.25u df

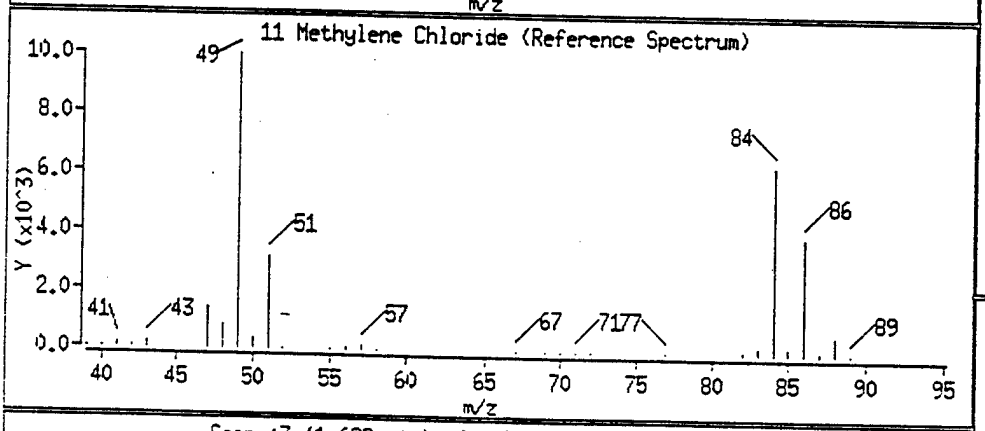
11 Methylene Chloride

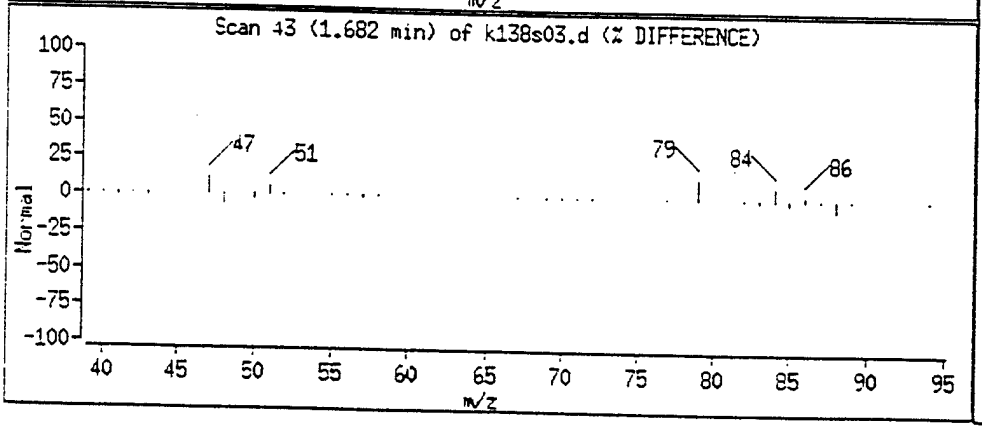


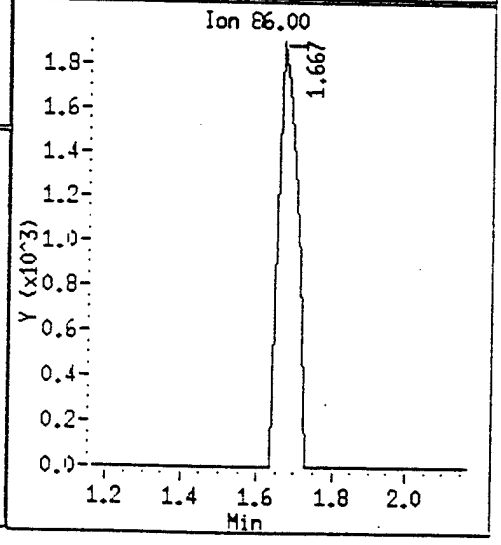








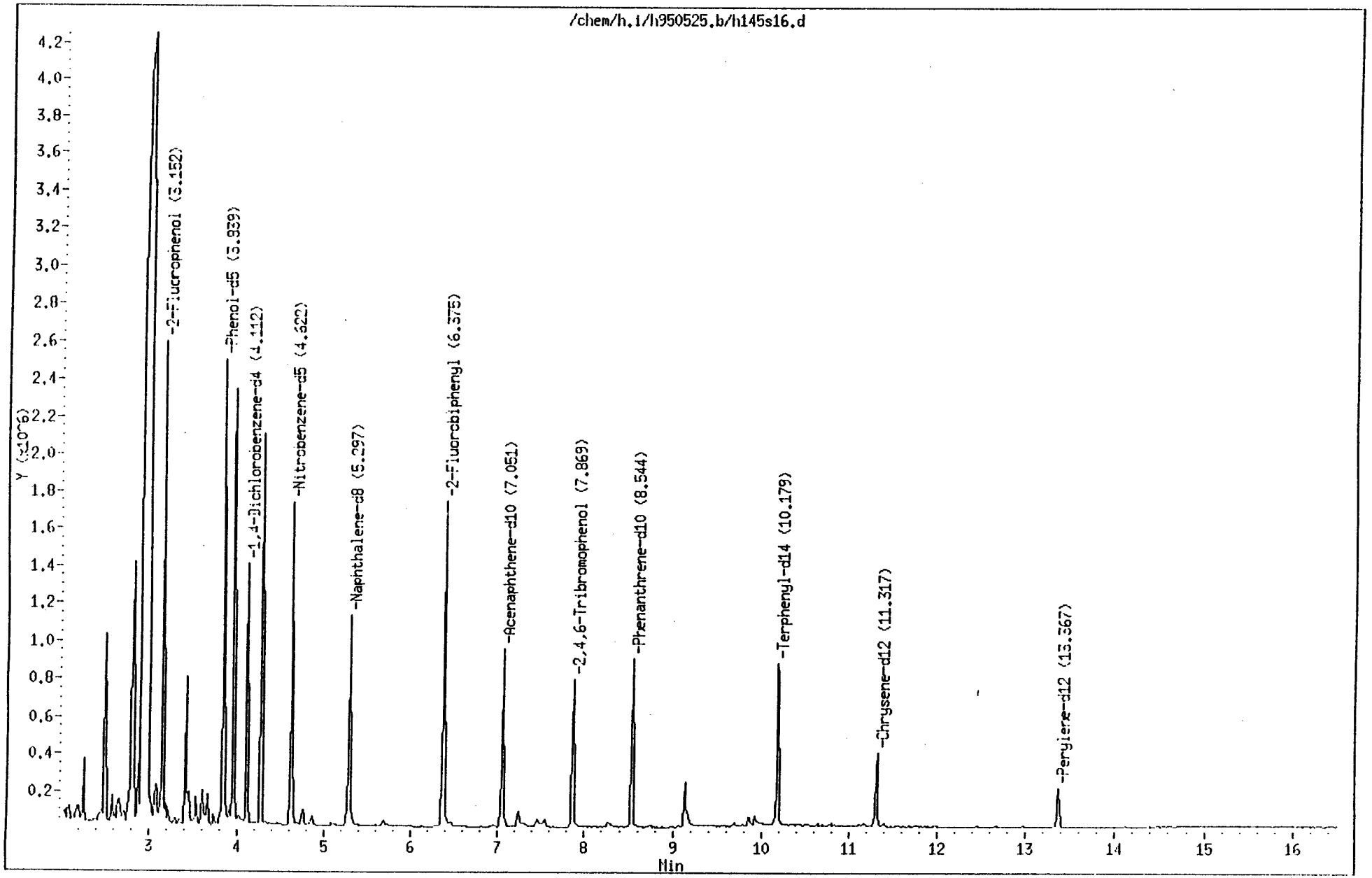




Data File: /chem/h.i/h950525.b/h145s16.d
Date : 26-MAY-95 00:57
Client ID:
Sample Info: 9505612-05B-8270S/1X
Volume Injected (ul.): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 19.5-20'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:50:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	ND	0.5	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/27/95	18	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/18/95	10	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: RSC Date: 05/30/95	23	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Houston Labs

Data file : /chem/h.i/h950525.b/h145s16.d
Lab Smp Id:
Inj Date : 26-MAY-95 00:57
Operator : LH Inst ID: h.i
Smp Info : 9505612-05B-8270S/1X
Misc Info : E142S1/H142B02/H145CC1
Comment :
Method : /chem/h.i/h950525.b/hclps.m
Meth Date : 25-May-1995 17:33 liping Quant Type: ISTD
Cal Date : 25-MAY-1995 14:51 Cal File: h145cc1.d
Als bottle: 20
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: 8270.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
*	11 1,4-Dichlorobenzene-d4	152.00	4.112	4.115	(1.000)	247883	40	
*	32 Naphthalene-d8	136.00	5.297	5.300	(1.000)	888983	40	
*	48 Acenaphthene-d10	164.00	7.051	7.066	(1.000)	345621	40	
*	65 Phenanthrene-d10	188.00	8.544	8.559	(1.000)	356411	40	
*	76 Chrysene-d12	240.00	11.317	11.320	(1.000)	154844	40	
*	83 Perylene-d12	264.00	13.367	13.382	(1.000)	77284	40	
$	23 Nitrobenzene-d5	82.00	4.622	4.636	(0.872)	788168	74	1200
$	41 2-Fluorobiphenyl	172.00	6.375	6.390	(0.904)	883888	72	1200
$	72 Terphenyl-d14	244.00	10.191	10.194	(0.901)	354159	85	1400
$	4 Phenol-d5	99.00	3.839	3.854	(0.934)	1312224	110	1800
$	3 2-Fluorophenol	112.00	3.152	3.131	(0.767)	1023141	89	1500
$	61 2,4,6-Tribromophenol	329.70	7.869	7.871	(0.921)	76951	120	2100(Q)

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h145s16.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950525.b/hclps.m
Misc Info: E142S1/H142B02/H145CC1

Calibration Date: 05/25/95
Calibration Time: 1451

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	213376	106688	426752	247883	16.17
32 Naphthalene-d8	590600	295300	1181200	888983	50.52
48 Acenaphthene-d10	186159	93080	372318	345621	85.66
65 Phenanthrene-d10	197293	98646	394586	356411	80.65
76 Chrysene-d12	94767	47384	189534	154844	63.39
83 Perylene-d12	48855	24428	97710	77284	58.19

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.11	3.61	4.61	4.11	-0.07
32 Naphthalene-d8	5.30	4.80	5.80	5.30	-0.05
48 Acenaphthene-d10	7.07	6.57	7.57	7.05	-0.21
65 Phenanthrene-d10	8.56	8.06	9.06	8.54	-0.17
76 Chrysene-d12	11.32	10.82	11.82	11.32	-0.02
83 Perylene-d12	13.38	12.88	13.88	13.37	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

DATE: 06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 19.5-20'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:50:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/25/95	05/25/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/25/95	05/25/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/30/95	4.5	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 19.5-20'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:50:0
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE 713/660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech

SAMPLE ID: 025-004-BH 19.5-20'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	104	84	138
4-Bromofluorobenzene	50 ug/Kg	94	59	113

ANALYZED BY: HLW DATE/TIME: 05/18/95 12:50:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathyrn Pritchett

06/01/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: OpTech
SAMPLE ID: 025-004-BH 19.5-20'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/16/95 11:50:00
DATE RECEIVED: 05/17/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	330	ug/Kg
Benzo(g,h,i)Perylene	ND	1600	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	800	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil
(continued on next page)

HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech

SAMPLE ID: 025-004-EH 19.5-20'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Flucranthene	ND	330	ug/Kg
Flucrene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505612-06

Operational Tech

SAMPLE ID: 025-004-BH 19.5-20'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	78	23	120
2-Fluorobiphenyl	1600 ug/Kg	81	30	115
Terphenyl-d14	1600 ug/Kg	102	18	137
Phenol-d5	2500 ug/Kg	75	24	113
2-Fluorophenol	2500 ug/Kg	60	25	121
2,4,6-Tribromophenol	2500 ug/Kg	74	19	122

ANALYZED BY: LH DATE/TIME: 05/26/95 01:21:00
EXTRACTED BY: JK DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138s04.d
Lab Smp Id: 9505612-06A-8240S/1X
Inj Date : 18-MAY-95 12:50
Operator : HLW Inst ID: k.i
Smp Info : 9505612-06A-8240S/1X
Misc Info : K138S1/K138B02/K138CS2
Comment :
Method : /chem/k.i/k950518.b/kvoclps.m
Meth Date : 18-May-1995 11:45 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 17
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	8 Acetone	58.00	1.514	1.513	(0.714)	16306	240	48(a)
	11 Methylene Chloride	84.00	1.681	1.664	(0.793)	10796	18	4(a)
	17 2-Butanone	43.00	1.969	1.967	(0.929)	31629	60	12(a)
*	20 Bromochloromethane	128.00	2.120	2.119	(1.000)	67637	250	
*	31 1,4-Difluorobenzene	114.00	2.802	2.801	(1.000)	388552	250	
*	51 Chlorobenzene-d5	117.00	6.772	6.771	(1.000)	284288	250	
$	23 1,2-Dichloroethane-d4	102.00	2.378	2.377	(1.121)	28086	230	46
$	40 Toluene-d8	98.00	4.545	4.543	(0.671)	440483	260	52
$	61 Bromofluorobenzene	95.00	8.878	8.862	(1.311)	153561	230	47

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138s04.d
Lab Smp Id: 9505612-06A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info: K138S1/K138B02/K138CS2

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	67637	-0.88
31 1,4-Difluorobenzene	425497	212748	850994	388552	-8.68
51 Chlorobenzene-d5	323411	161706	646822	284288	-12.10

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.07
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.05
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.02

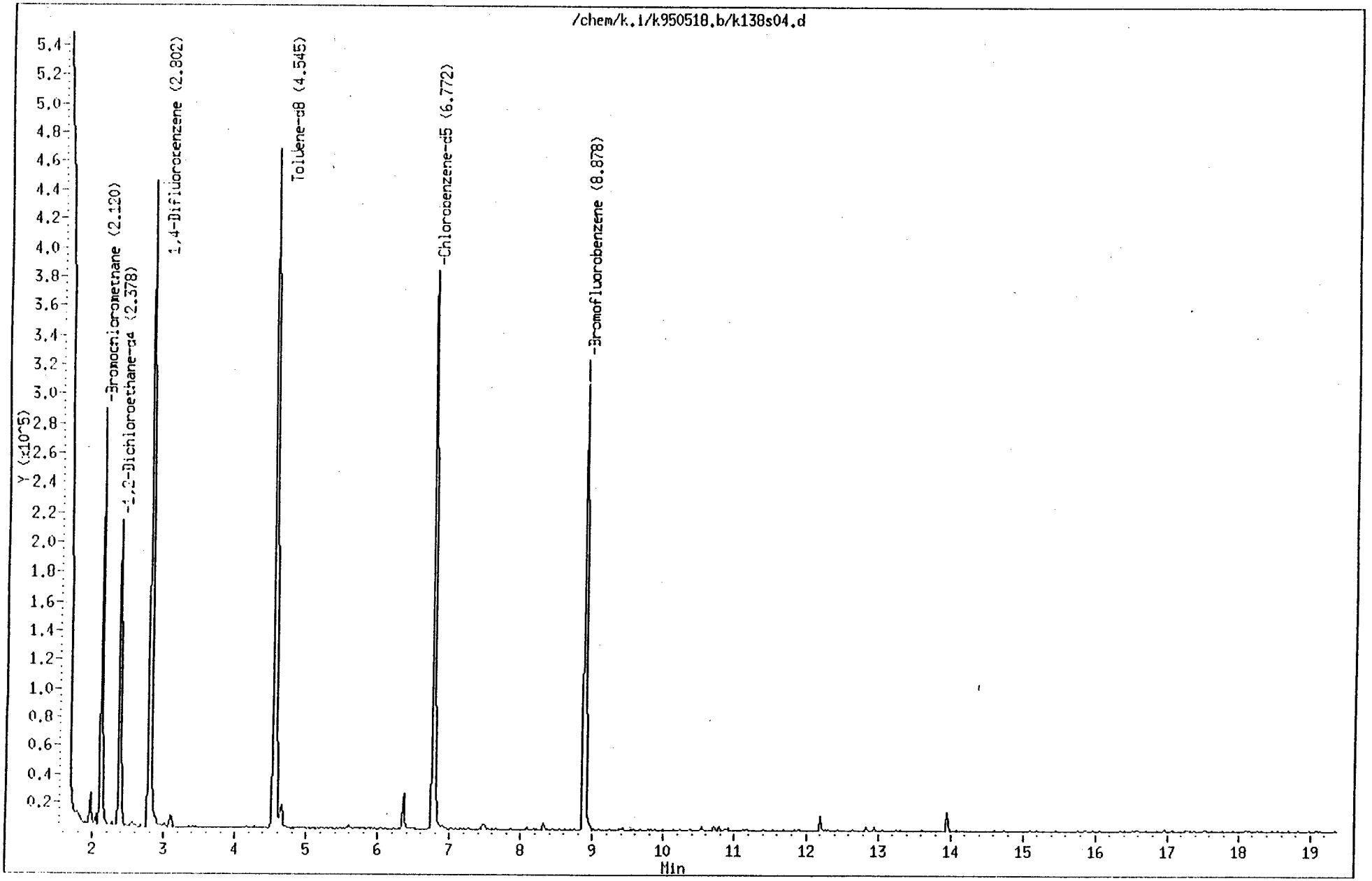
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138s04.d
Date : 18-MAY-95 12:50
Client ID:
Sample Info: 9505612-060-8240S/1X

Instrument: k.i

Operator: MLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/k.i/k950518.b/k138s04.d

Date : 18-MAY-95 12:50

Client ID:

Sample Info: 9505612-06A-8240S/1X

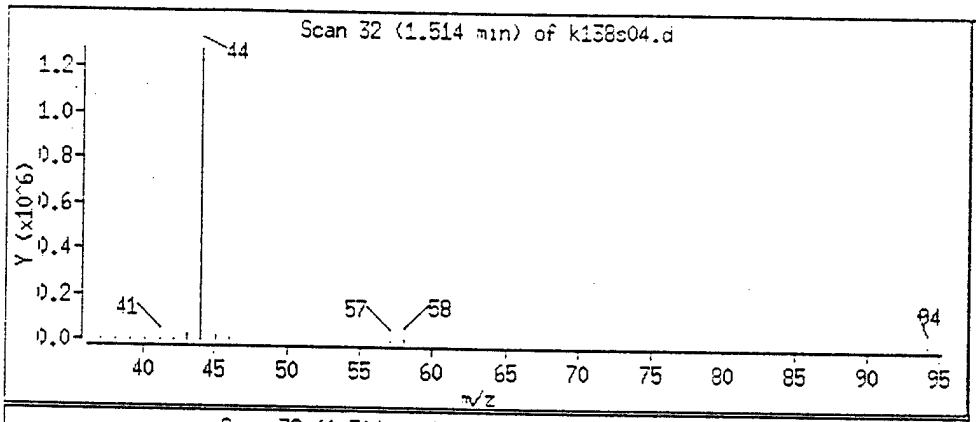
Instrument: k.i

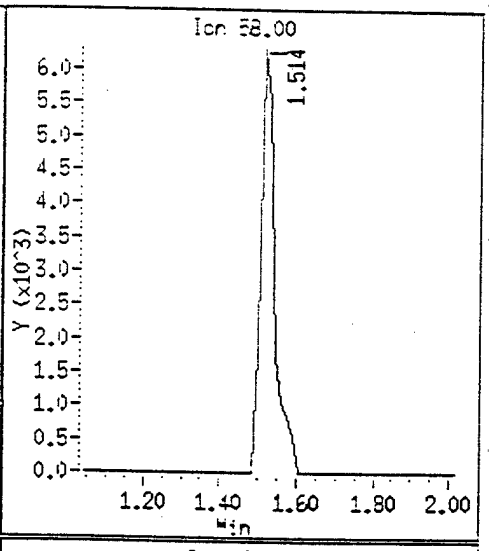
Operator: HLW

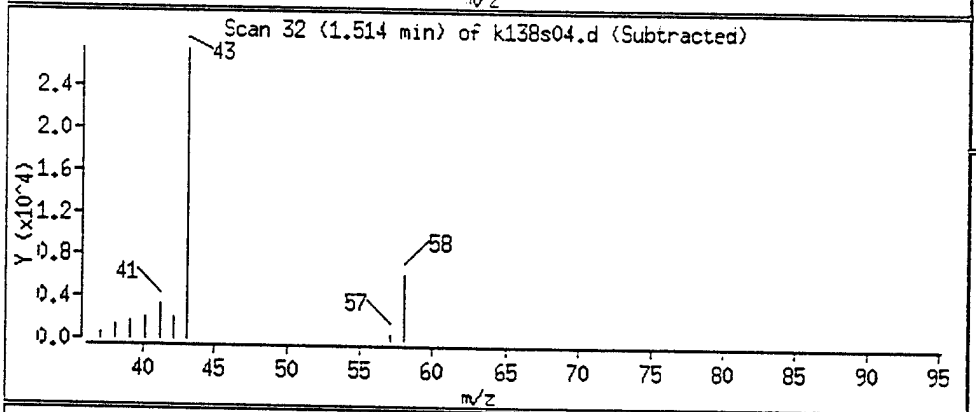
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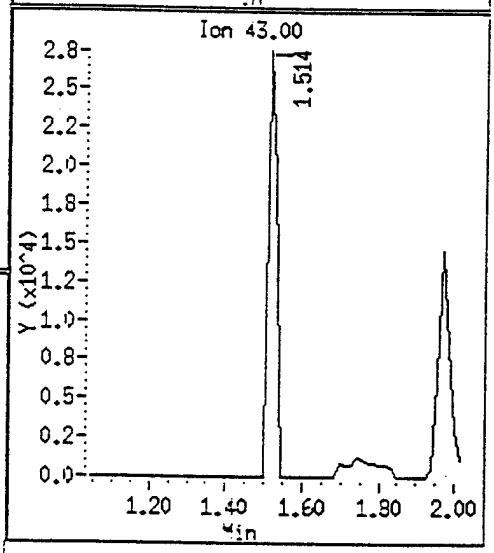
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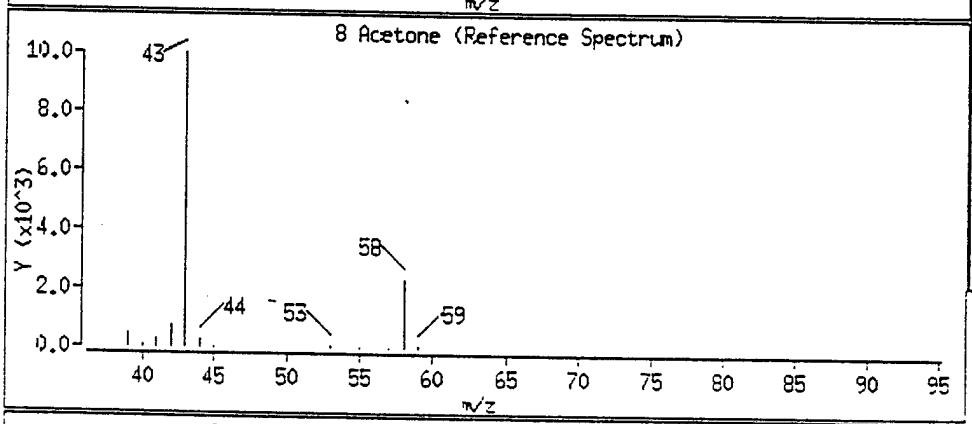
8 Acetone

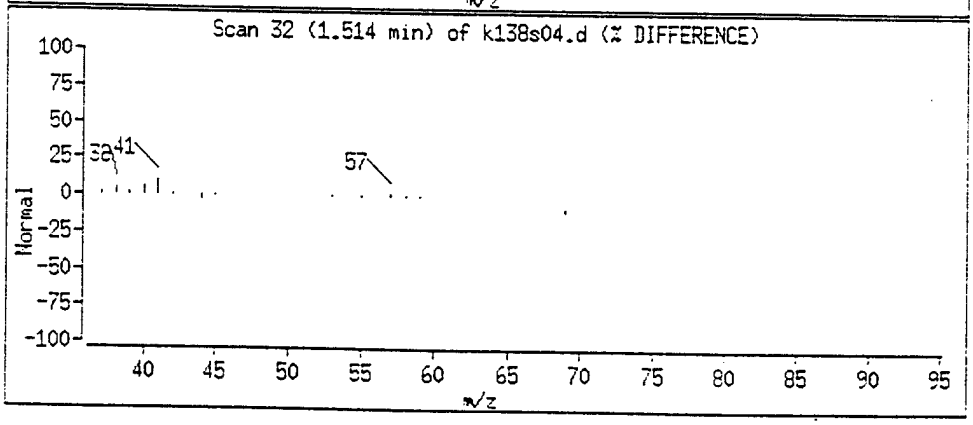












Data File: /chem/k.i/k950518.b/k138s04.d

Date : 18-MAY-95 12:50

Client ID:

Instrument: k.i

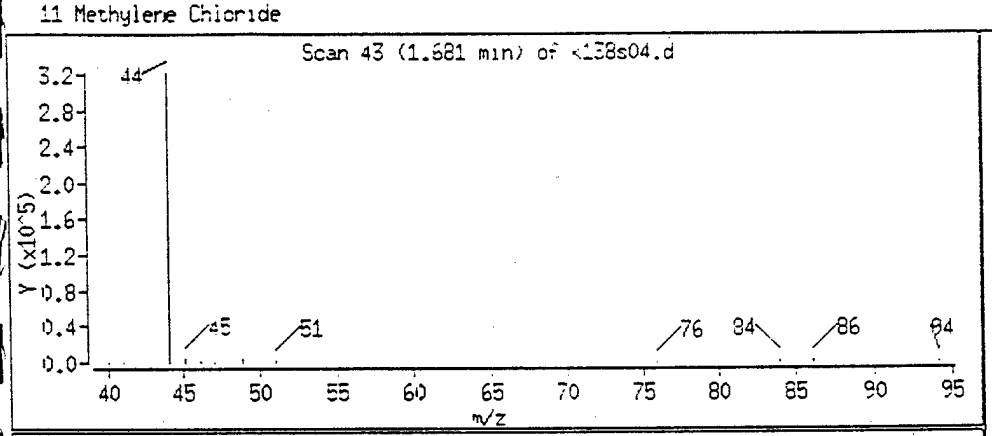
Sample Info: 9505612-06A-8240S/1X

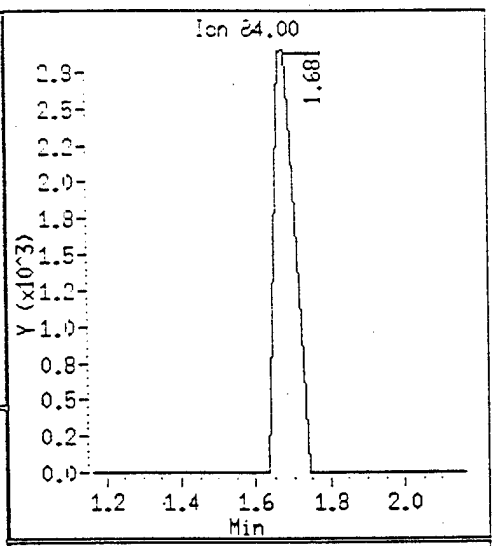
Operator: mLW

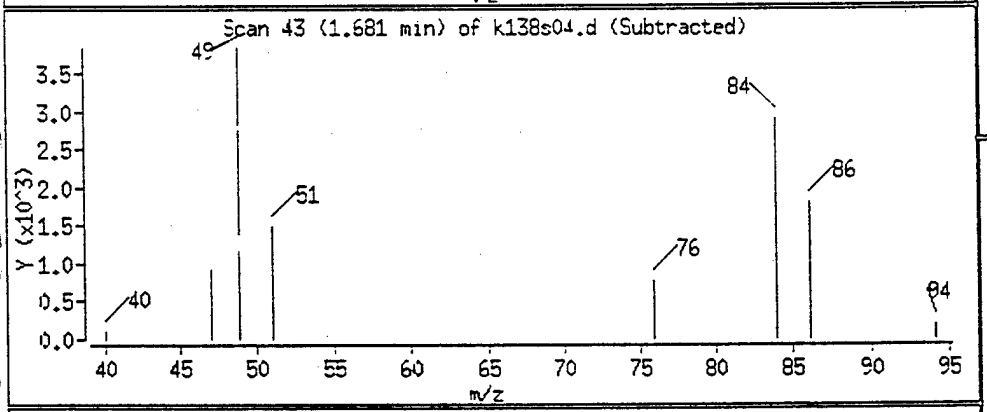
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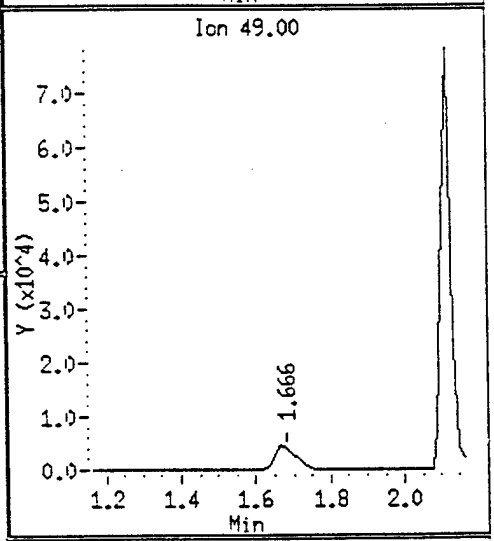
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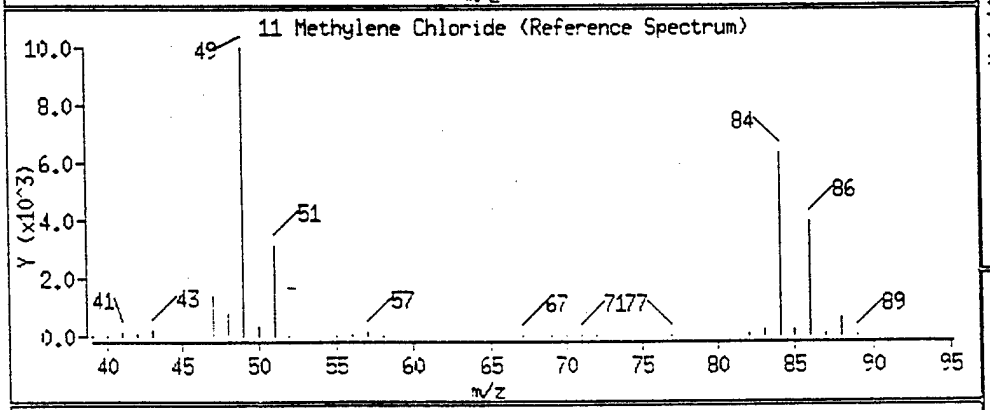
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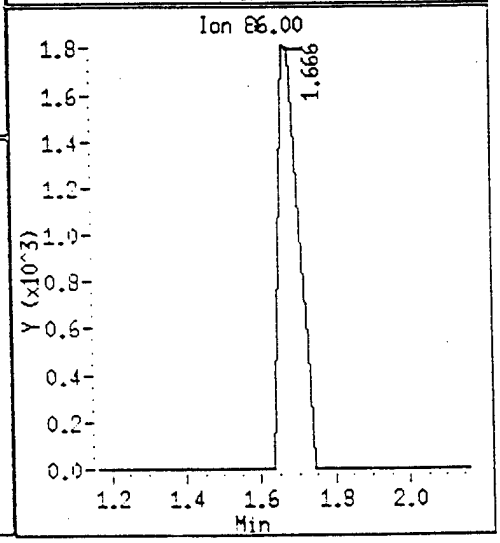


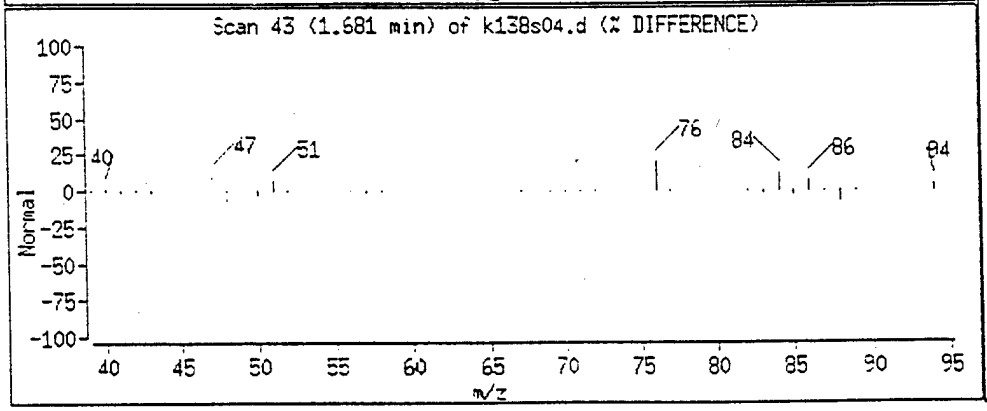








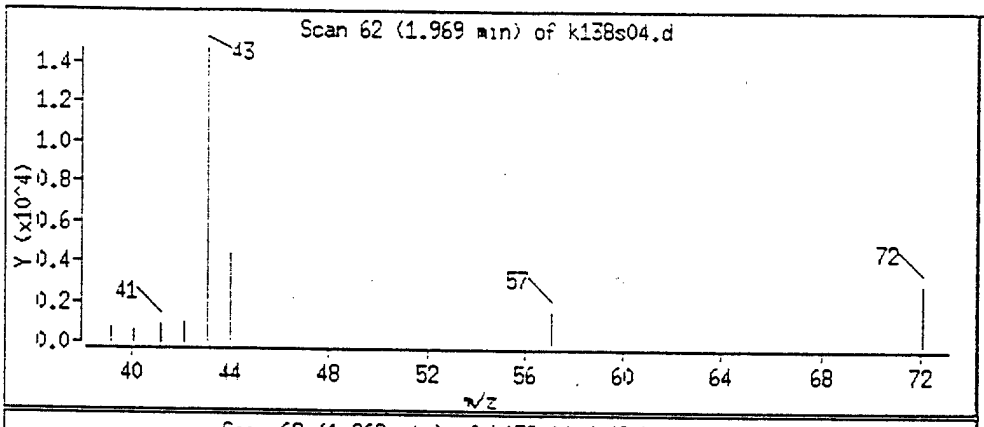


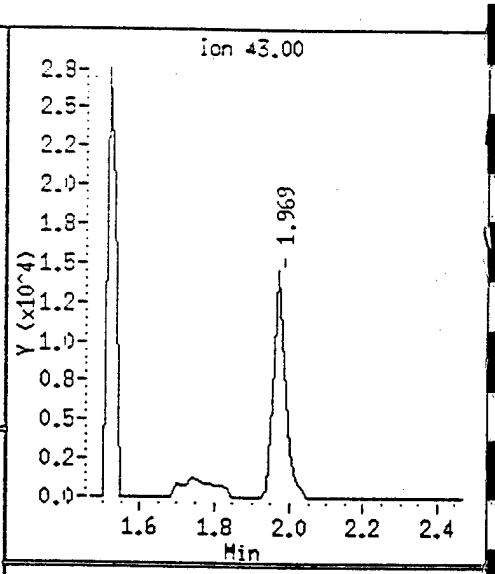


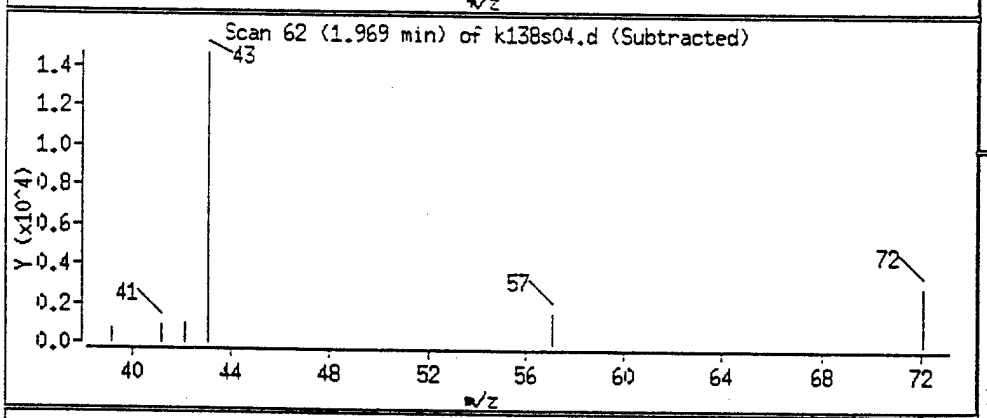
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Date : 18-MAY-95 12:50
Client ID:
Sample Info: 9505612-06A-8240S/1X

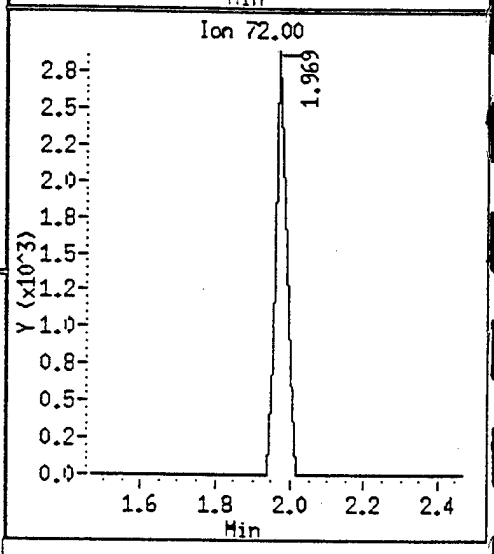
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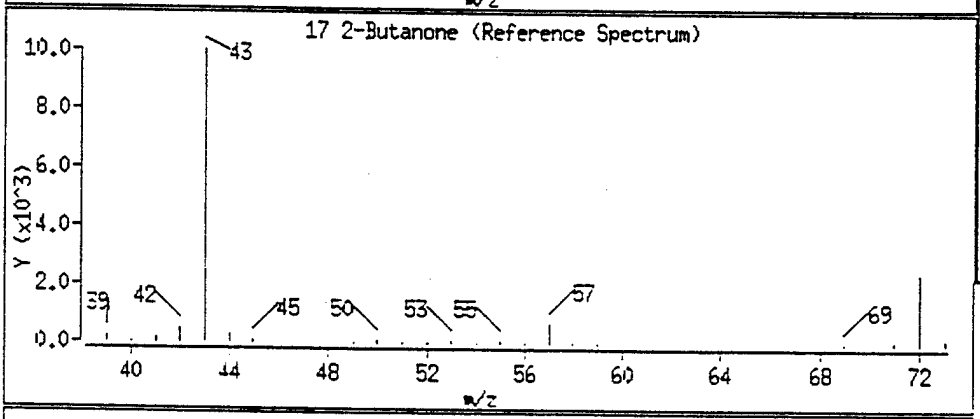
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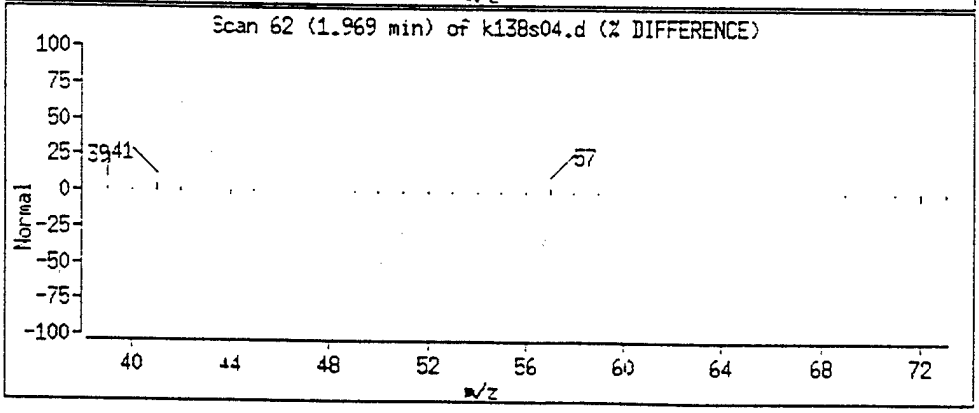












SPL Houston Labs

Data file : /chem/h.i/h950525.b/h145s17.d
Lab Smp Id:
Inj Date : 26-MAY-1995 01:21
Operator : LH Inst ID: h.i
Smp Info : 9505612-06B-8270S/1X
Misc Info : E142S1/H142B02/H145CC1
Comment :
Method : /chem/h.i/h950525.b/hclps.m
Meth Date : 25-May-1995 17:33 liping Quant Type: ISTD
Cal Date : 25-MAY-1995 14:51 Cal File: h145cc1.d
Als bottle: 21
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: 8270.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	66 Phenanthrene	178.00	8.568	8.571	(1.003)	102060	12	200(a)
	70 Fluoranthene	202.00	9.777	9.791	(1.144)	54417	8	140(a)
	71 Pyrene	202.00	10.014	10.016	(0.885)	37904	8	140(a)
	75 Benzo[a]anthracene	228.00	11.294	11.308	(0.998)	9442	3	56(a)
	77 Chrysene	228.00	11.341	11.355	(1.002)	9095	4	59(a)
	80 Benzo[b]fluoranthene	252.00	12.763	12.777	(0.955)	5663	3	52(aM)
*	11 1,4-Dichlorobenzene-d4	152.00	4.113	4.115	(1.000)	220304	40	
*	32 Naphthalene-d8	136.00	5.298	5.300	(1.000)	776329	40	
*	48 Acenaphthene-d10	164.00	7.052	7.066	(1.000)	281068	40	
*	65 Phenanthrene-d10	188.00	8.545	8.559	(1.000)	267499	40	
*	76 Chrysene-d12	240.00	11.318	11.320	(1.000)	87864	40	
*	83 Perylene-d12	264.00	13.368	13.382	(1.000)	39578	40	
$	23 Nitrobenzene-d5	82.00	4.622	4.636	(0.872)	696220	75	1200
$	41 2-Fluorobiphenyl	172.00	6.376	6.390	(0.904)	770189	78	1300
$	72 Terphenyl-d14	244.00	10.180	10.194	(0.899)	230162	98	1600
$	4 Phenol-d5	99.00	3.840	3.854	(0.934)	1218345	110	1900
$	3 2-Fluorophenol	112.00	3.153	3.131	(0.767)	918083	90	1500
$	61 2,4,6-Tribromophenol	329.70	7.869	7.871	(0.921)	50791	110	1800(Q)

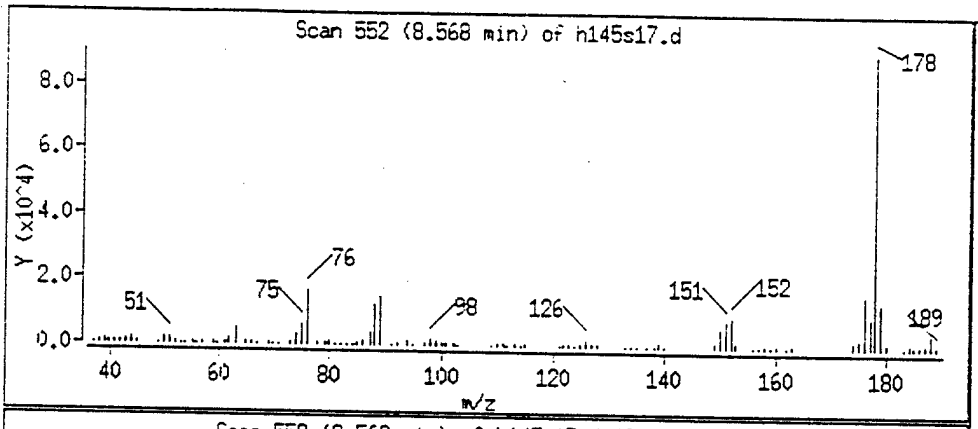
QC Flag Legend

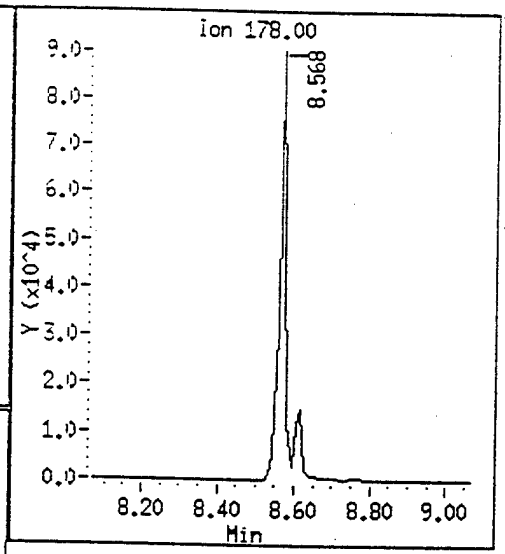
a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

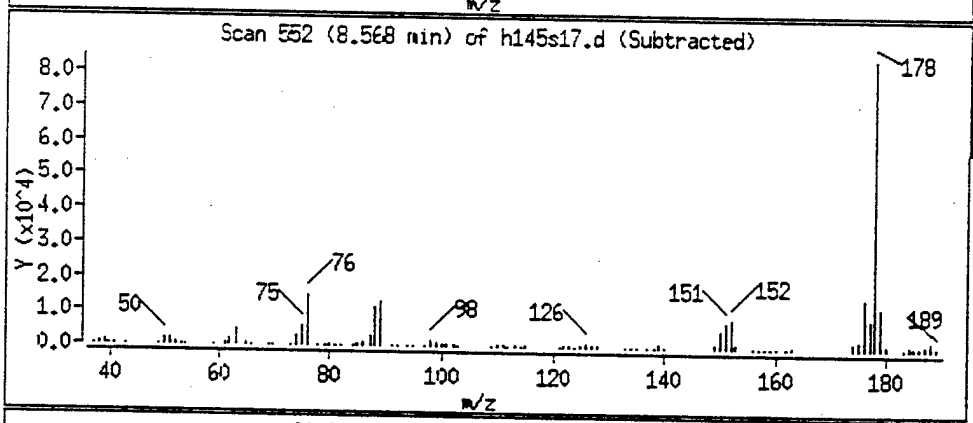
Data File: /chem/h.i/h950525.b/h145s17.d
Date : 26-MAY-1995 01:21
Client ID:
Sample Info: 9505612-063-8270S/1X
Volume Injected (uL): 2.0
Column phase:

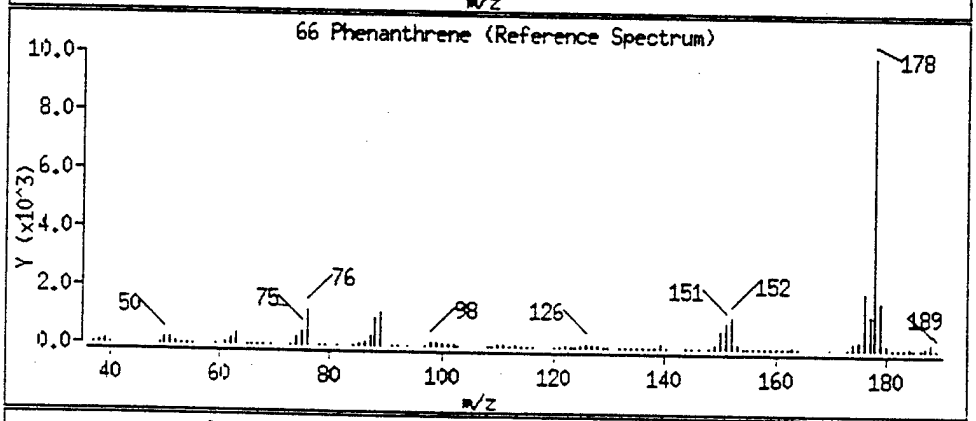
Instrument: h.i
Operator: LH
Column diameter: 0.25

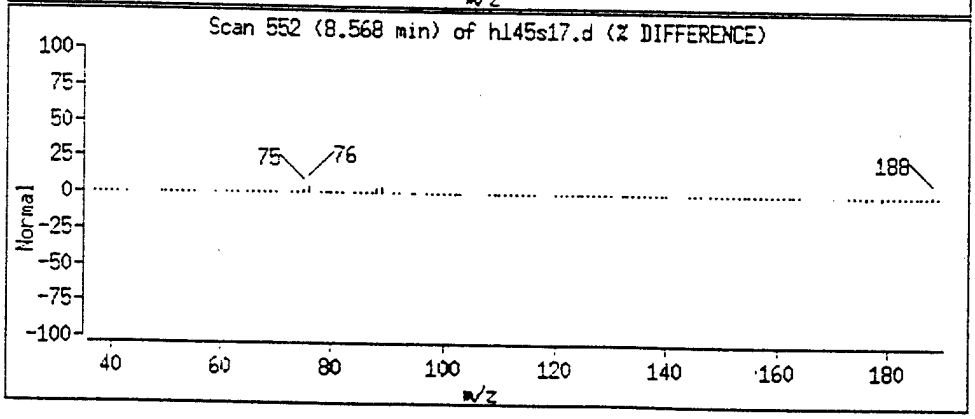
66 Phenanthrene











Data File: /chem/h.i/h950525.b/h145s17.d

Date : 26-MAY-1995 01:21

Client ID:

Instrument: h.i

Sample Info: 9505612-06B-8270S/1X

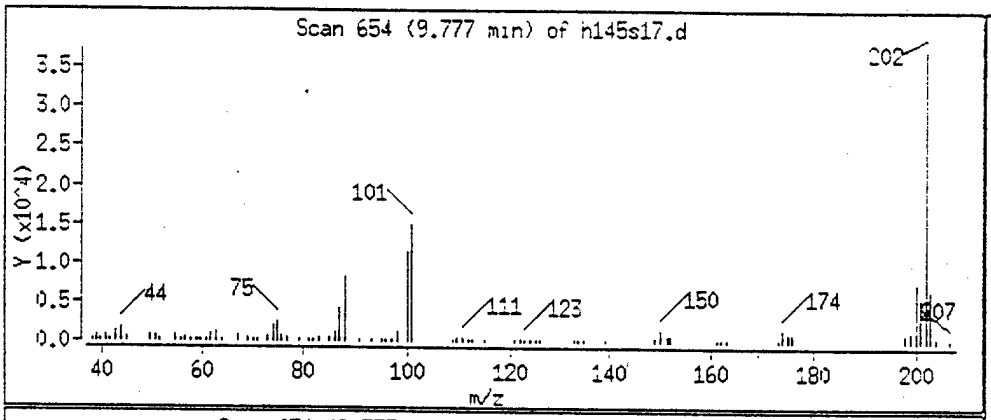
Volume Injected (uL): 2.0

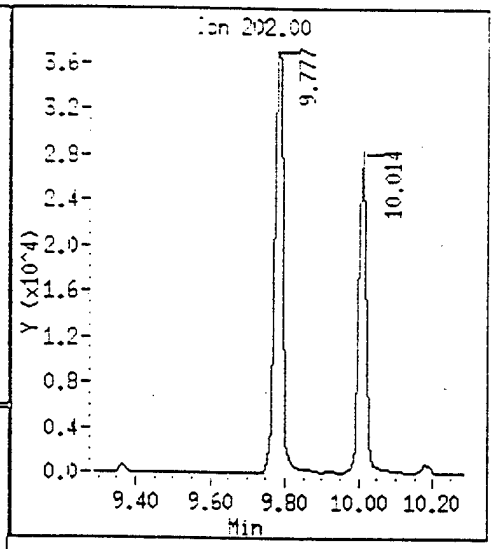
Operator: LH

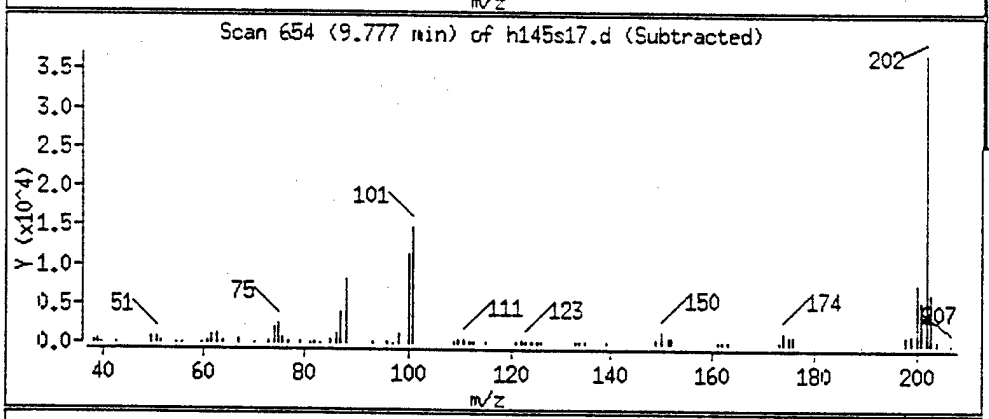
Column phase:

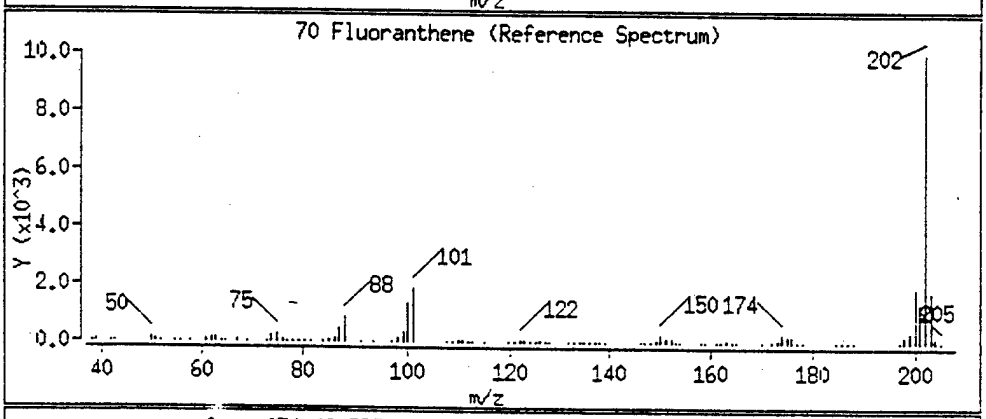
Column diameter: 0.25

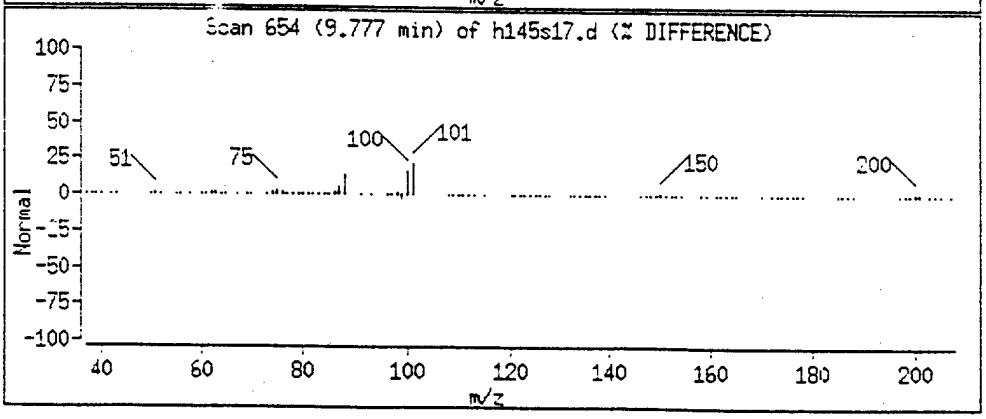
70 Fluoranthene







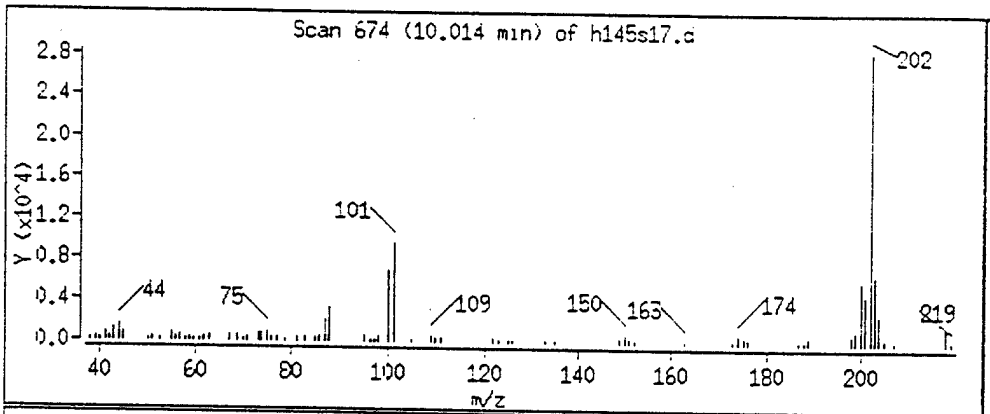


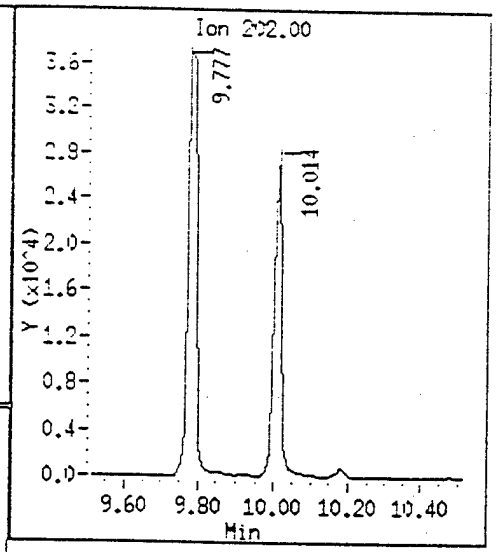


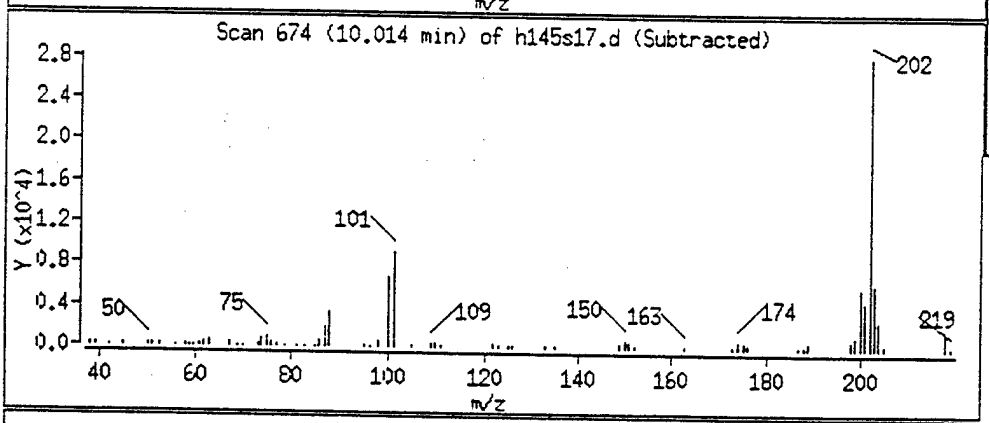
Data File: /chem/h.i/h950525.b/h145s17.d
Date : 26-MAY-1995 01:21
Client ID:
Sample Info: 9505612-06B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

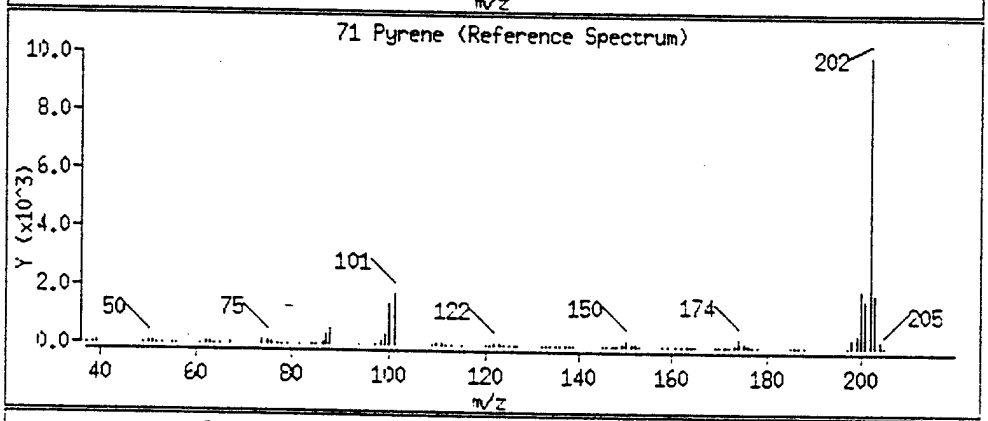
Instrument: h.i
Operator: LH
Column diameter: 0.25

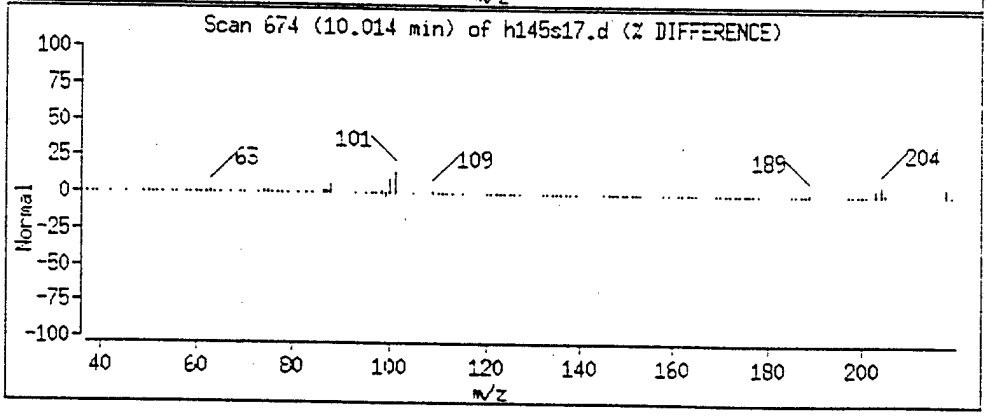
71 Pyrene











Data File: /chem/h.i/h950525.b/h145s17.d

Date : 26-MAY-1995 01:21

Client ID:

Instrument: h.i

Sample Info: 9505612-06B-8270S/1X

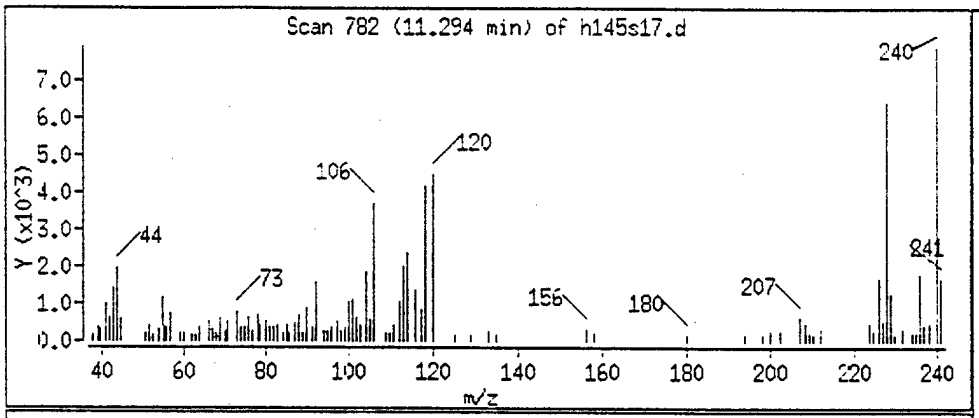
Volume Injected (uL): 2.0

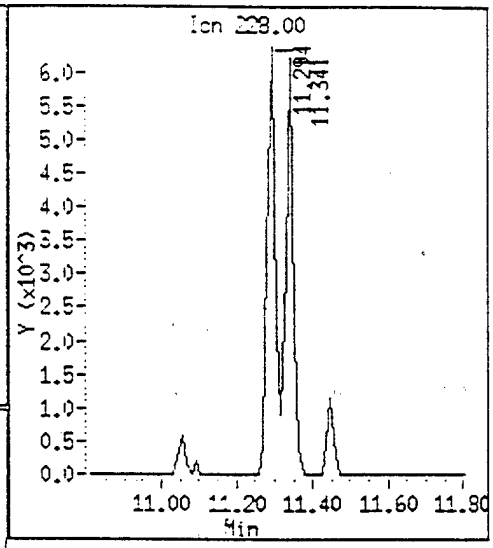
Operator: LH

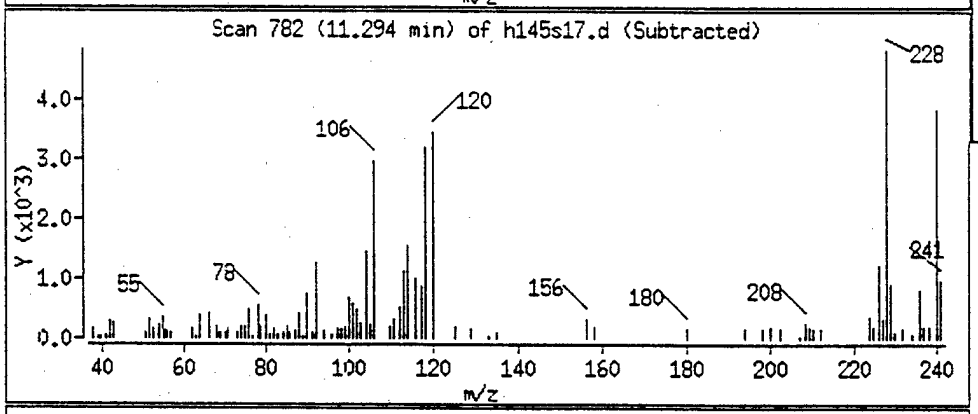
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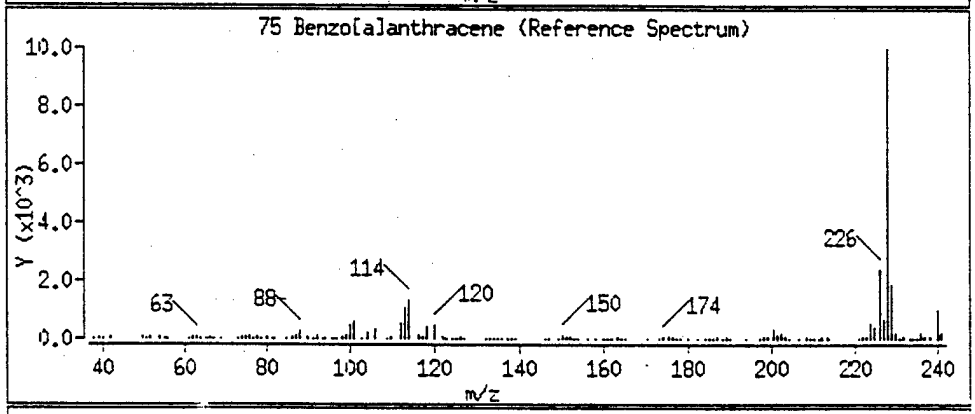
Column diameter: 0.25

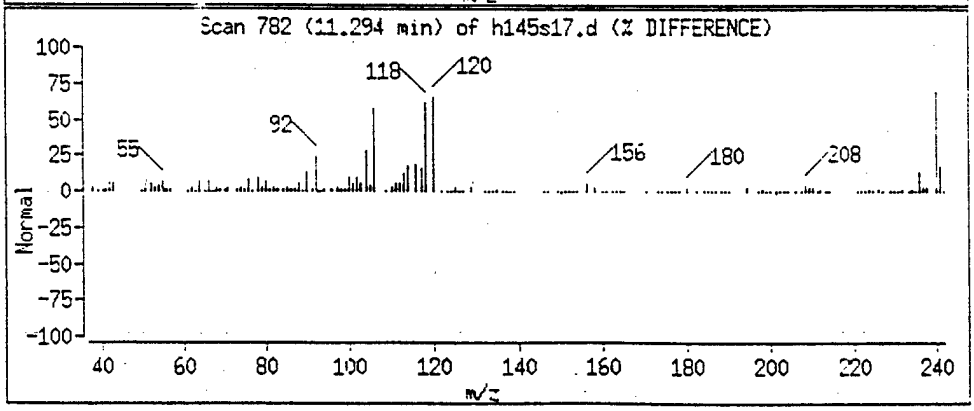
75 Benzo[a]anthracene







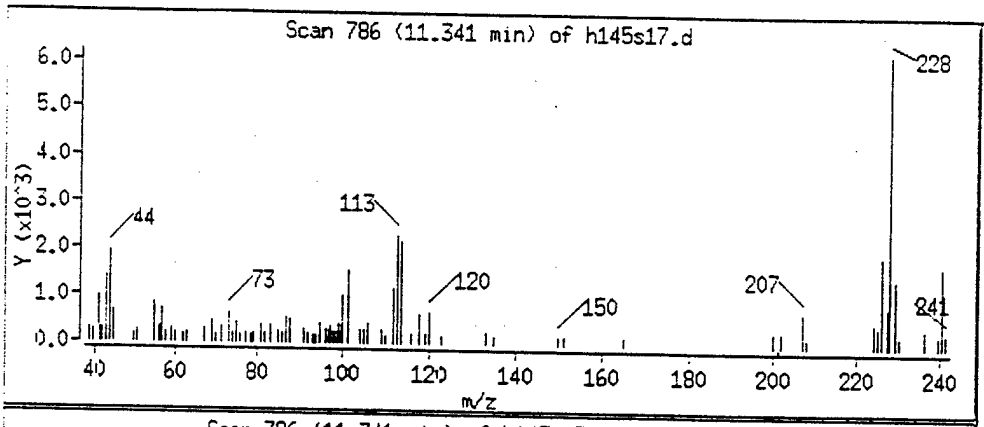


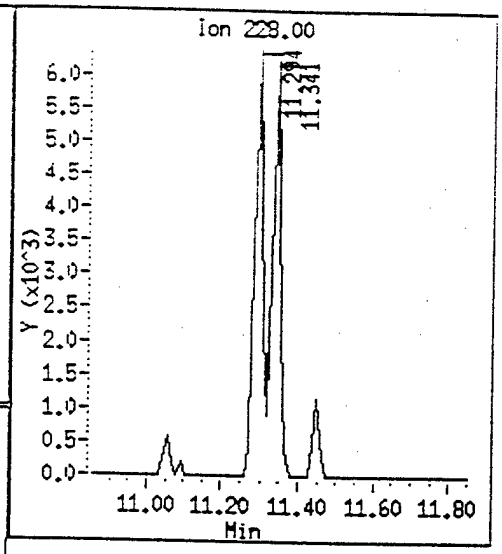


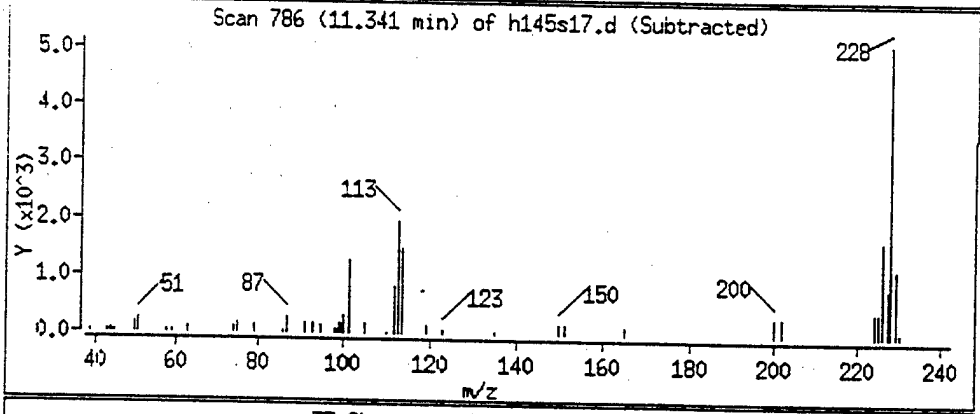
Data File: /chem/h.i/h950525.b/h145s17.d
Date : 26-MAY-1995 01:21
Client ID:
Sample Info: 9505612-06B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

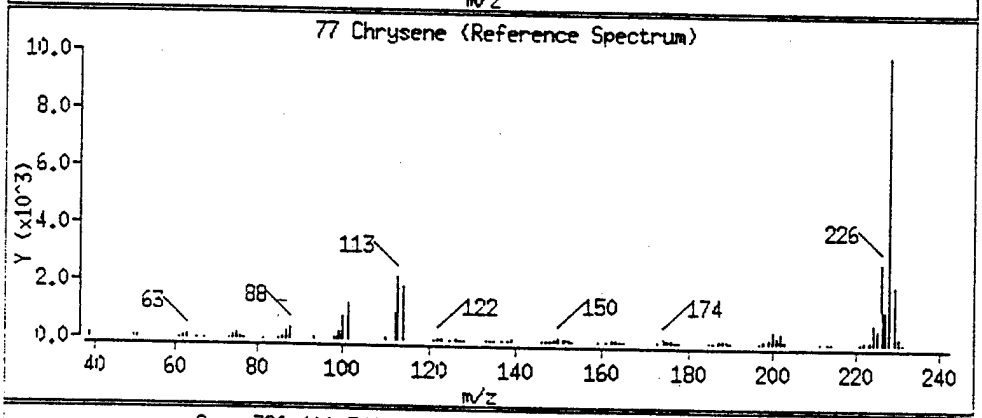
Instrument: h.i
Operator: LH
Column diameter: 0.25

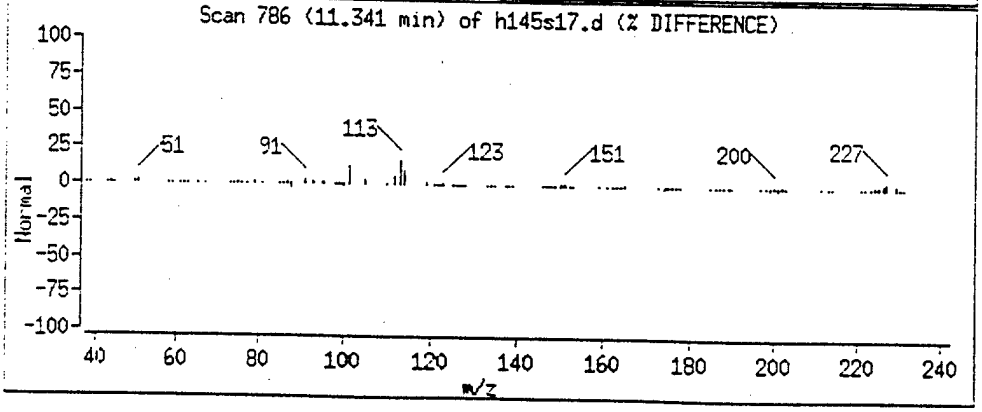
77 Chrysene











Data File: /chem/h.i/h950525.b/h145s17.d

Date : 26-MAY-1995 01:21

Client ID:

Sample Info: 9505612-06B-8270S/1X

Volume Injected (uL): 2.0

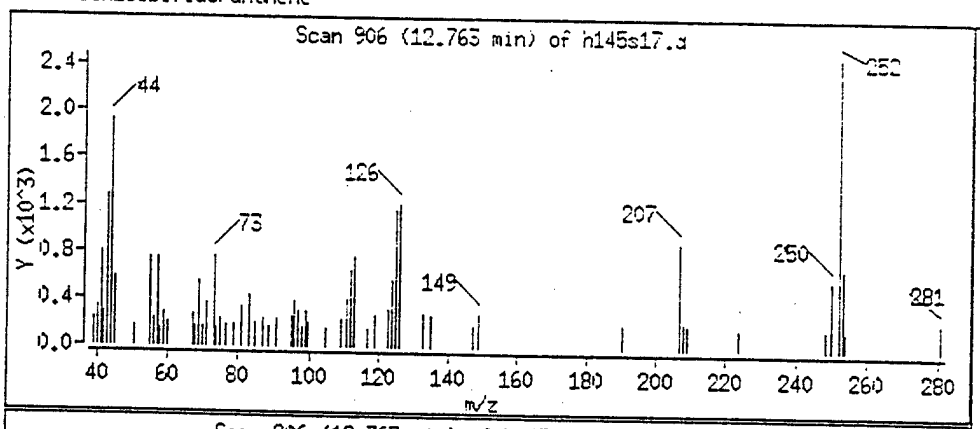
Column phase:

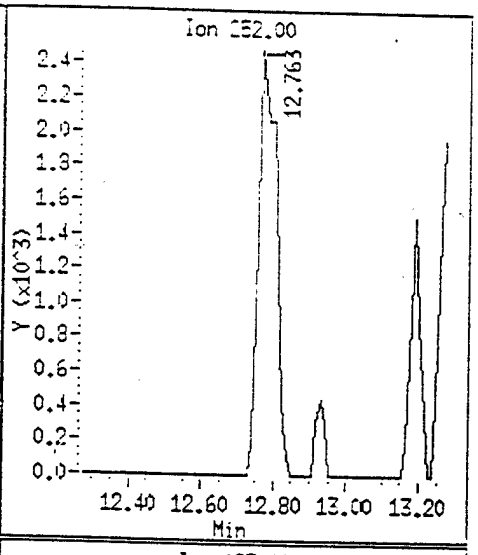
Instrument: h.:

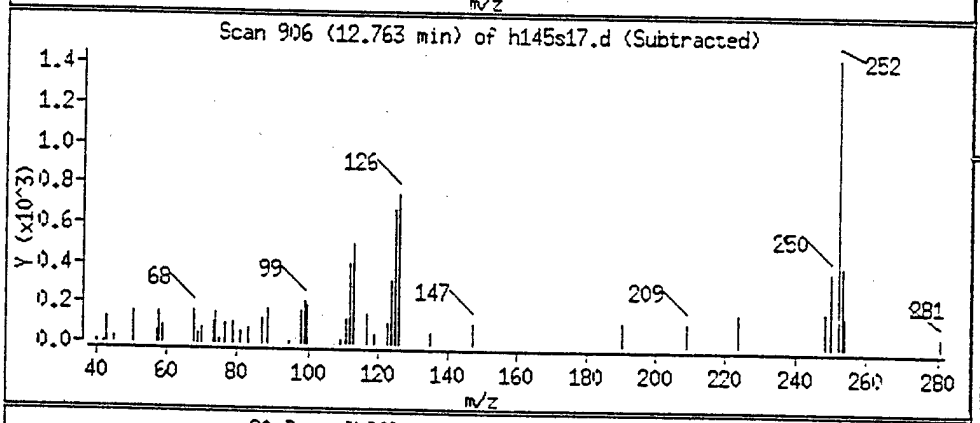
Operator: LH

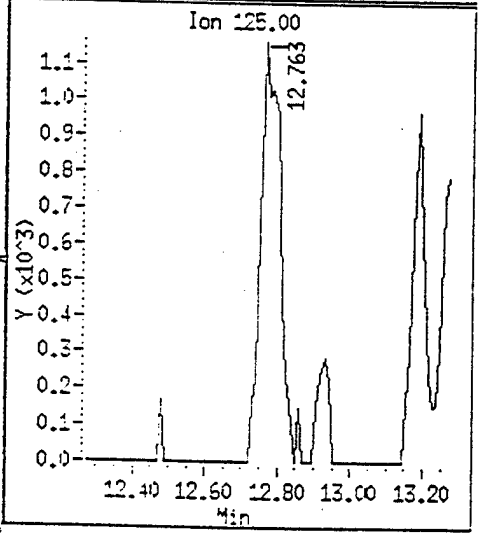
Column diameter: 0.25

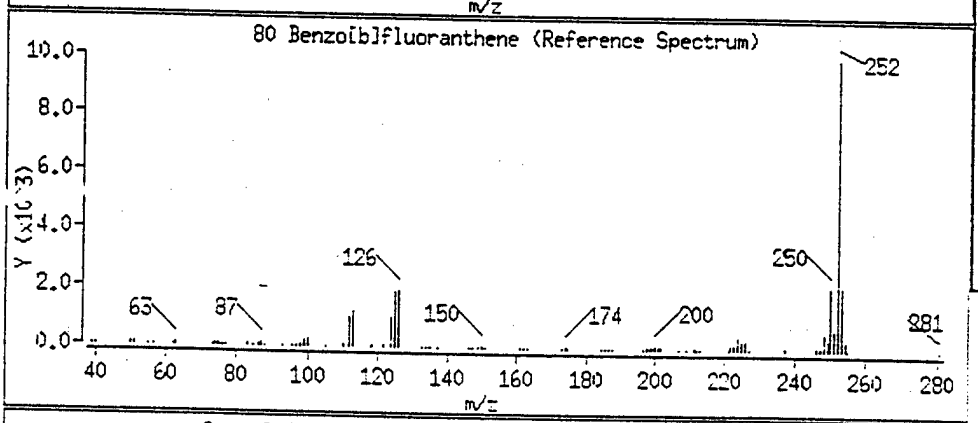
80 Benzo[b]fluoranthene

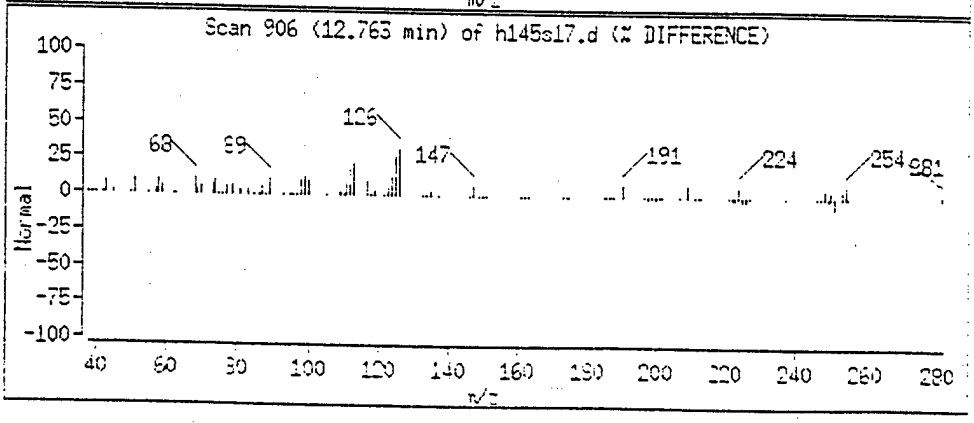












SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h145s17.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950525.b/hclps.m
Misc Infc: E142S1/H142B02/H145CC1

Calibration Date: 05/25/95
Calibration Time: 1451

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	213376	106688	426752	220304	3.25
32 Naphthalene-d8	590600	295300	1181200	776329	31.45
48 Acenaphthene-d10	186159	93080	372318	281068	50.98
65 Phenanthrene-d10	197293	98646	394586	267499	35.58
76 Chrysene-d12	94767	47384	189534	87864	-7.28
83 Perylene-d12	48855	24428	97710	39578	-18.99

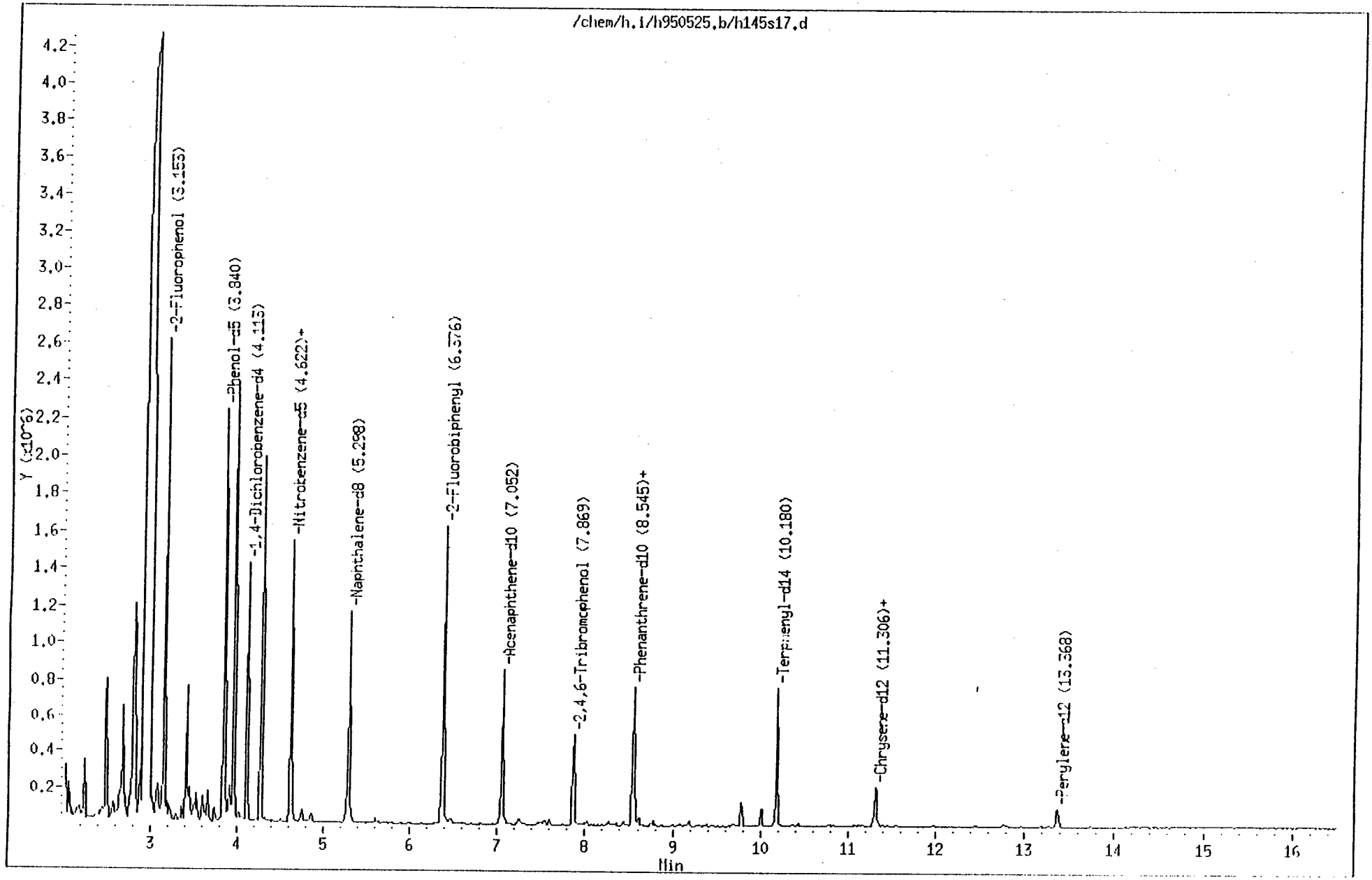
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.11	3.61	4.61	4.11	-0.05
32 Naphthalene-d8	5.30	4.80	5.80	5.30	-0.04
48 Acenaphthene-d10	7.07	6.57	7.57	7.05	-0.20
65 Phenanthrene-d10	8.56	8.06	9.06	8.54	-0.16
76 Chrysene-d12	11.32	10.82	11.82	11.32	-0.02
83 Perylene-d12	13.38	12.88	13.88	13.37	-0.10

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950525.b/h145s17.d
Date : 26-MAY-95 01:21
Client ID:
Sample Info: 9505612-06B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
3880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 95 - 05 - 612

Approved for release by:

M. Scott Sample

M. Scott Sample, Laboratory Director *Date:* 6/7/95

Karen Satterfield

Karen Satterfield, Project Manager *Date:* 6/7/95

QUALITY CONTROL

DOCUMENTATION

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 504973 SAS No.: ___ SDG NO.: 505612

Matrix Spike - EPA Sample No.: SWTSI-Q2(RINSE)

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	43	86	61-145
Trichloroethene	50.0	0	45	90	71-120
Benzene	50.0	0	42	84	76-127
Toluene	50.0	0	42	84	76-125
Chlorobenzene	50.0	0	44	88	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	48	96	11	14	61-145
Trichloroethene	50.0	48	96	6	14	71-120
Benzene	50.0	46	92	9	11	76-127
Toluene	50.0	46	92	9	13	76-125
Chlorobenzene	50.0	47	94	7	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 1

Idelis Williams, Q C Officer

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 505512 SAS No.: ___ SDG NO.: 505612

Matrix Spike - EPA Sample No.: 025-009BH 14-14.5

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	49	98	59-172
Trichloroethene	50.0	0	43	86	62-137
Benzene	50.0	0	46	92	66-142
Toluene	50.0	0	47	94	59-139
Chlorobenzene	50.0	0	43	86	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	48	96	2	22	59-172
Trichloroethene	50.0	43	86	0	24	62-137
Benzene	50.0	46	92	0	21	66-142
Toluene	50.0	46	92	2	21	59-139
Chlorobenzene	50.0	42	84	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 2

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: K950518094856

Reported on: 05/24/95 11:21
Analyzed on: 05/18/95 11:04
Analyst: HLW

METHOD 8240 **K138B02**

Compound	Result	Detection Limit	Units
1,2-Dichloroethene (total)	ND	5	ug/Kg
Xylene (Total)	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Chloroethane	ND	10	ug/Kg
Bromomethane	ND	10	ug/Kg
Acetone	ND	100	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
Methylene Chloride	ND	5	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Chloroform	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
Benzene	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: K950518094856

Reported on: 05/24/95 11:21
Analyzed on: 05/18/95 11:04
Analyst: HLW

METHOD 8240 K138B02

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	94	70-121	% Recovery
Toluene-d8	102	84-138	% Recovery
Bromofluorobenzene	100	59-113	% Recovery

Samples in Batch 9505612-03 9505612-04 9505612-05 9505612-06

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138b02.d
Lab Smp Id: BLANK-8240S/1X
Inj Date : 18-MAY-1995 11:04
Operator : HLW Inst ID: k.i
Smp Info : BLANK-8240S/1X
Misc Info : K138S1//K138CS2
Comment :
Method : /chem/k.i/k950518.b/kvoclps.m
Meth Date : 18-May-1995 11:45 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.120	2.119	(1.000)	70737	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.121)	30065	240	47
* 31 1,4-Difluorobenzene	114.00	2.802	2.801	(1.000)	414166	250	
$ 40 Toluene-d8	98.00	4.544	4.543	(0.671)	469802	260	51
* 51 Chlorobenzene-d5	117.00	6.771	6.771	(1.000)	308724	250	
$ 61 Bromofluorobenzene	95.00	8.862	8.862	(1.309)	178381	250	50

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138b02.d
Lab Smp Id: BLANK-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info: K138S1//K138CS2

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	70737	3.66
31 1,4-Difluorobenzene	425497	212748	850994	414166	-2.66
51 Chlorobenzene-d5	323411	161706	646822	308724	-4.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.04
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.03
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.01

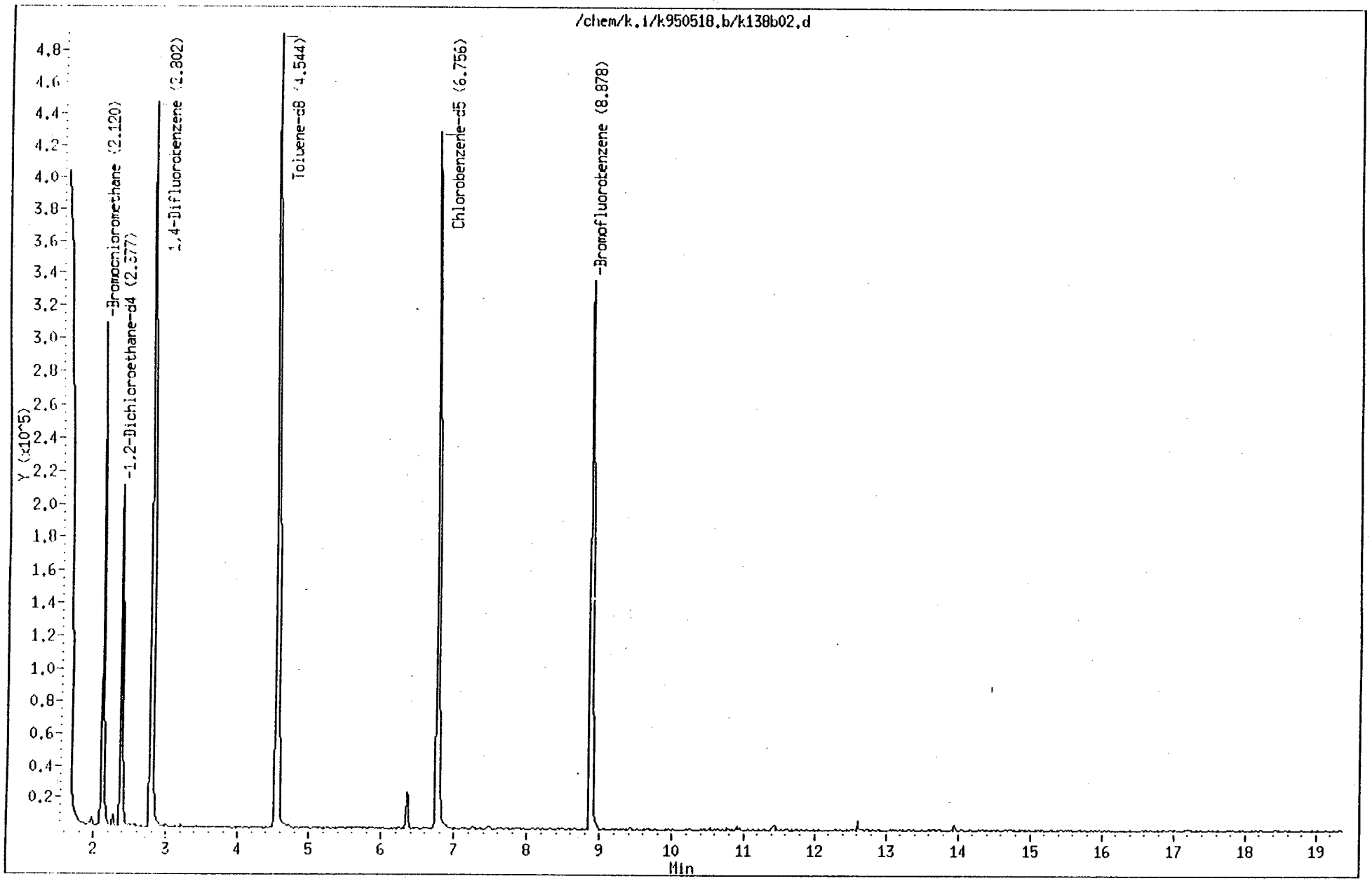
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138b02.d
Date : 18-MAY-1995 11:04
Client ID:
Sample Info: BLANK-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Matrix: Aqueous
Sample ID: BLANK
Batch: L950518104642

Reported on: 05/24/95 11:21
Analyzed on: 05/18/95 08:19
Analyst: JC

METHOD 8240/624 L138B01

Compound	Result	Detection Limit	Units
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: L950518104642

Reported on: 05/24/95 11:2
Analyzed on: 05/18/95 08:19
Analyst: JC

METHOD 8240/624 L138B01

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	99	76-114	% Recovery
Toluene-d8	101	88-110	% Recovery
Bromofluorobenzene	96	86-115	% Recovery

Samples in Batch 9505612-01 9505612-02

Notes

ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950518.b/l138b01.d
Lab Smp Id:
Inj Date : 18-MAY-1995 08:19
Operator : JC Inst ID: 1.i
Smp Info : BLANK-8240W/1X
Misc Info : L138W1//L138CW1
Comment :
Method : /chem/1.i/1950518.b/lvoclpw.m
Meth Date : 18-May-1995 08:19 jimmy Quant Type: ISTD
Cal Date : 18-MAY-1995 07:51 Cal File: l138cw1.d
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
23 Bromochloromethane	128.00	5.254	5.245	(1.000)	70698	250	
26 1,2-Dichloroethane-d4	102.00	6.030	6.020	(1.148)	29808	250	49
32 1,4-Difluorobenzene	114.00	6.957	6.947	(1.000)	395194	250	
43 Toluene-d8	98.00	9.177	9.176	(0.825)	407937	250	50
50 Chlorobenzene-d5	117.00	11.120	11.119	(1.000)	304640	250	
51 Bromofluorobenzene	95.00	12.796	12.795	(1.151)	145497	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l138b01.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950518.b/lvoclpw.m
Misc Info: L138W1//L138CW1

Calibration Date: 05/18/95
Calibration Time: 0751

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	74479	37240	148958	70698	-5.08
32 1,4-Difluorobenzene	412556	206278	825112	395194	-4.21
50 Chlorobenzene-d5	322864	161432	645728	304640	-5.64

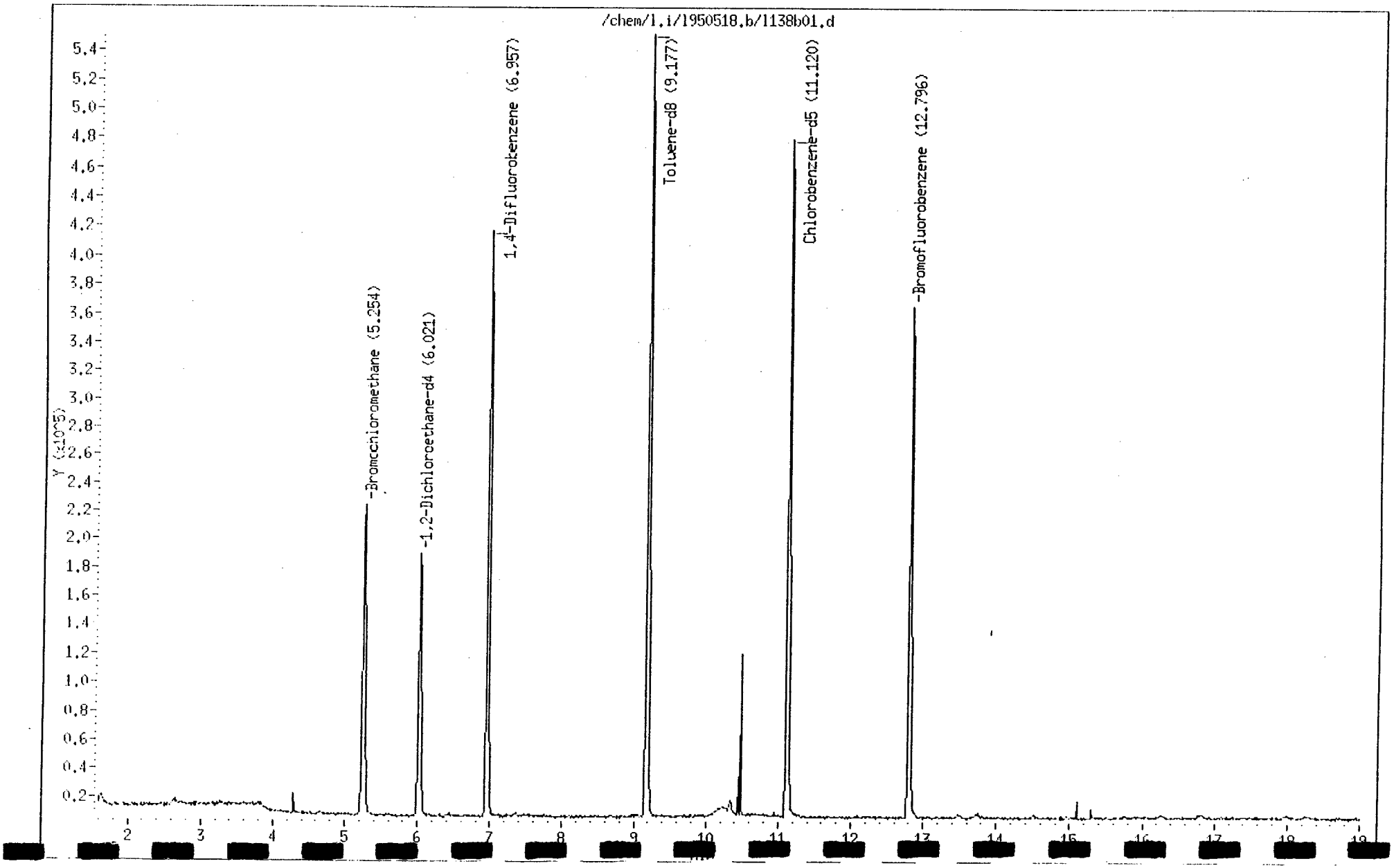
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.25	0.18
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.96	0.14
50 Chlorobenzene-d5	11.12	10.62	11.62	11.12	0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950518.b/1138b01.d
Date : 18-MAY-1995 08:19
Client ID:
Sample Info: BLANK-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i

Operator: JC
Column diameter: 0.25



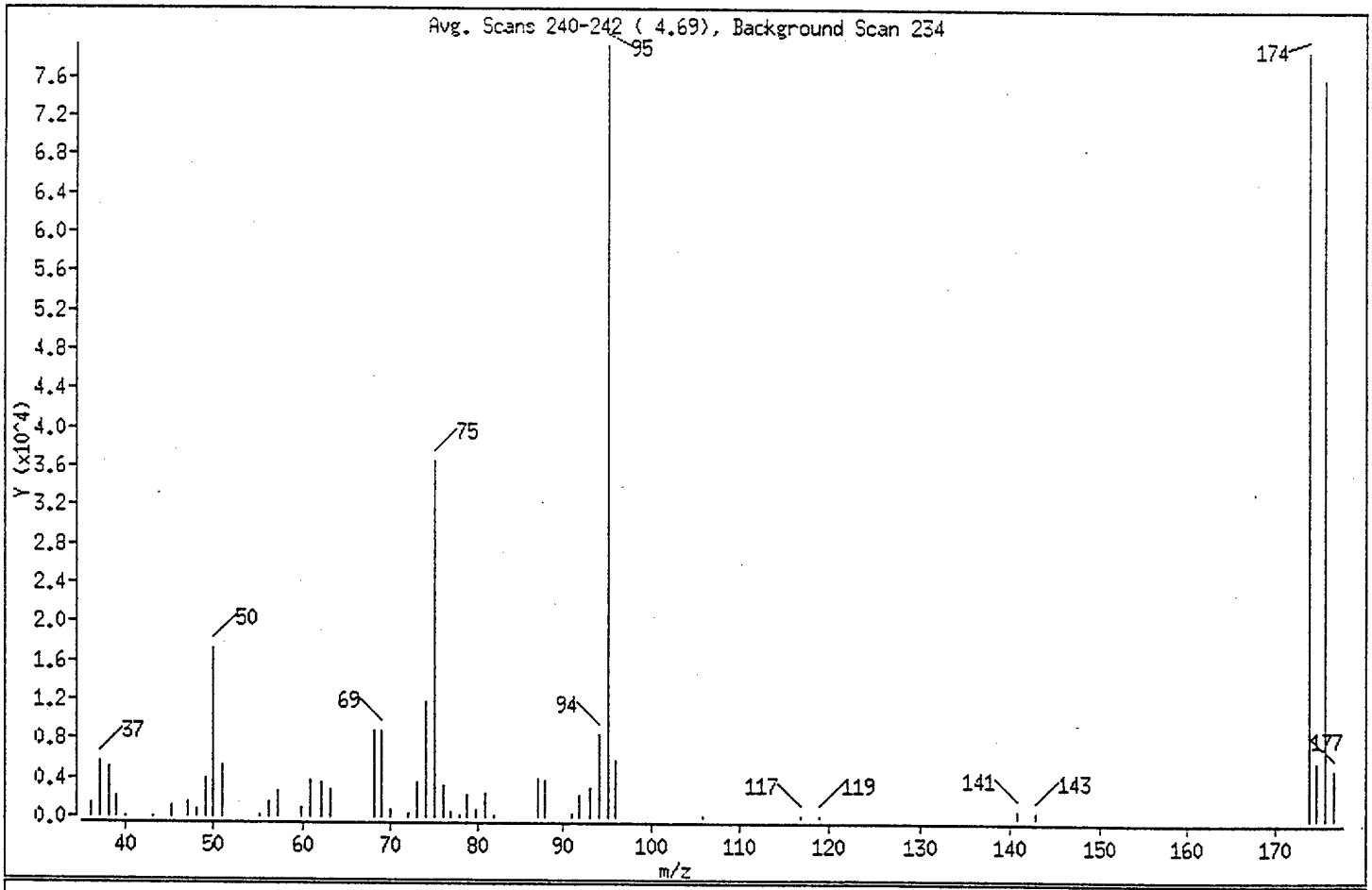
Data File: /chem/1.i/1950518.b/1138bf2.d
Date : 18-MAY-95 07:37
Client ID:
Sample Info: 50 NG BF3

Instrument: 1.i

Operator:

Column phase:
1 bfb

Column diameter: 0.25



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.79
75	30.00 - 60.00% of mass 95	46.19
96	5.00 - 9.00% of mass 95	7.41
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	99.62
175	5.00 - 9.00% of mass 174	7.27 (7.30)
176	95.00 - 101.00% of mass 174	95.92 (96.29)
177	5.00 - 9.00% of mass 176	6.41 (6.68)

Data File: /chem/1.i/1950518.b/1138bf2.d

Date : 18-MAY-95 07:37

Client ID:

Instrument: 1.i

Sample Info: 50 NG BFB

Operator:

Column pnase:

Column diameter: 0.25

Data File: 1138bf2.d

Spectrum : Avg. Scans 240-242 (4.69), Background Scan 234

Largest m/z: 95.05

Number of peaks: 50

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.05	1389	56.05	1505	76.05	3186	95.05	79336
37.05	5714	57.05	2539	76.95	596	96.05	5878
38.05	5043	59.85	901	78.05	173	105.90	185
39.05	2054	60.95	3678	78.85	2343	116.85	175
39.95	17	62.05	3536	79.95	743	118.85	226
43.10	36	63.10	2766	80.95	2433	140.85	732
45.10	1032	68.00	8727	81.95	212	142.90	570
47.10	1503	69.00	8806	87.00	3887	173.95	79032
48.00	728	70.00	770	88.00	3693	174.95	5769
49.00	3914	72.00	446	91.00	324	175.95	76096
50.00	17288	73.05	3488	91.90	2271	176.95	5086
51.00	5221	74.05	11753	93.05	2997		
55.05	176	75.05	36648	94.05	8493		

Data File: /chem/1.i/1950518.b/1138bf2.d

Date : 18-MAY-95 07:37

Client ID:

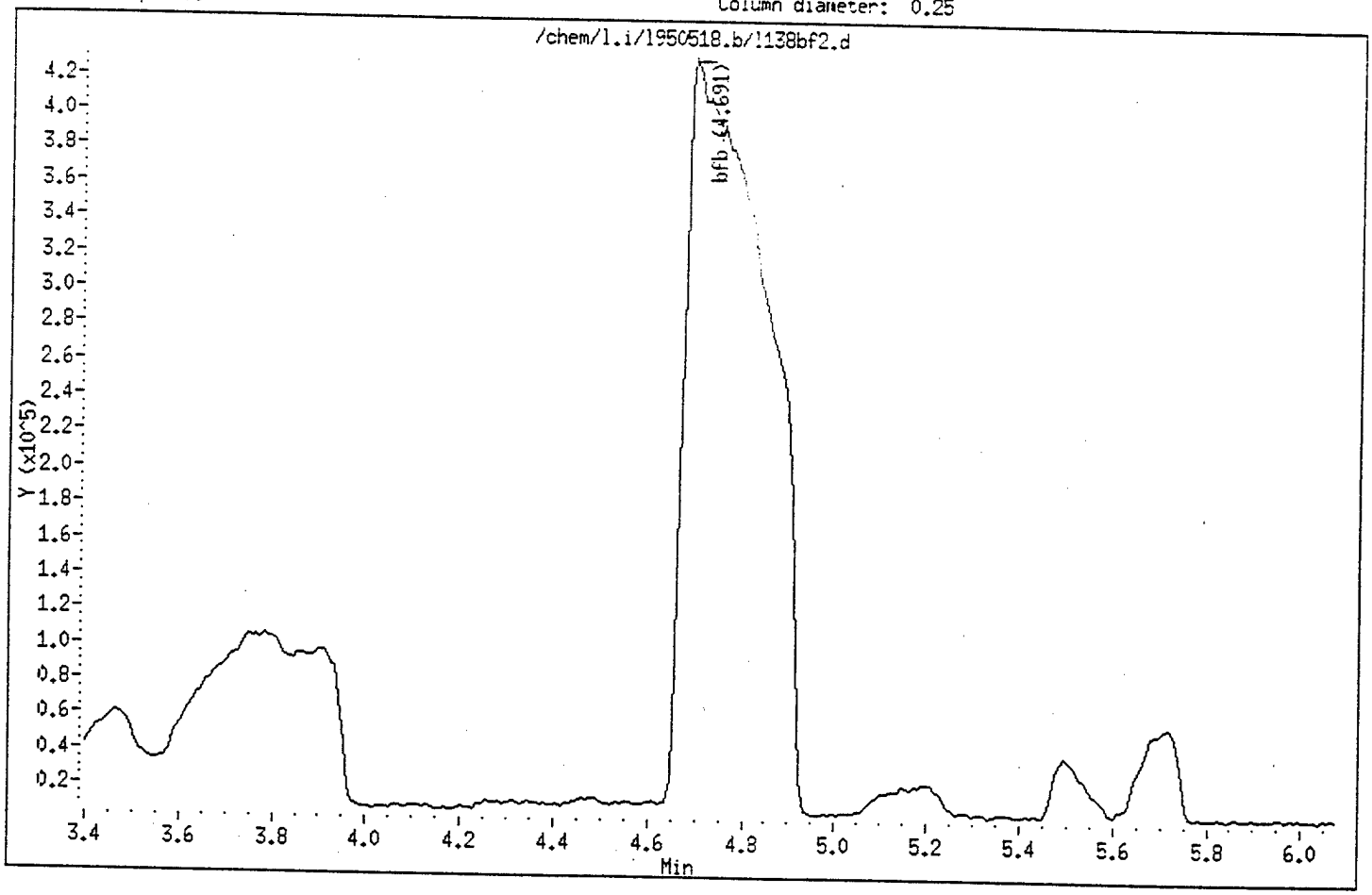
Sample Info: 50 NG BFB

Instrument: 1.i

Operator:

Column phase:

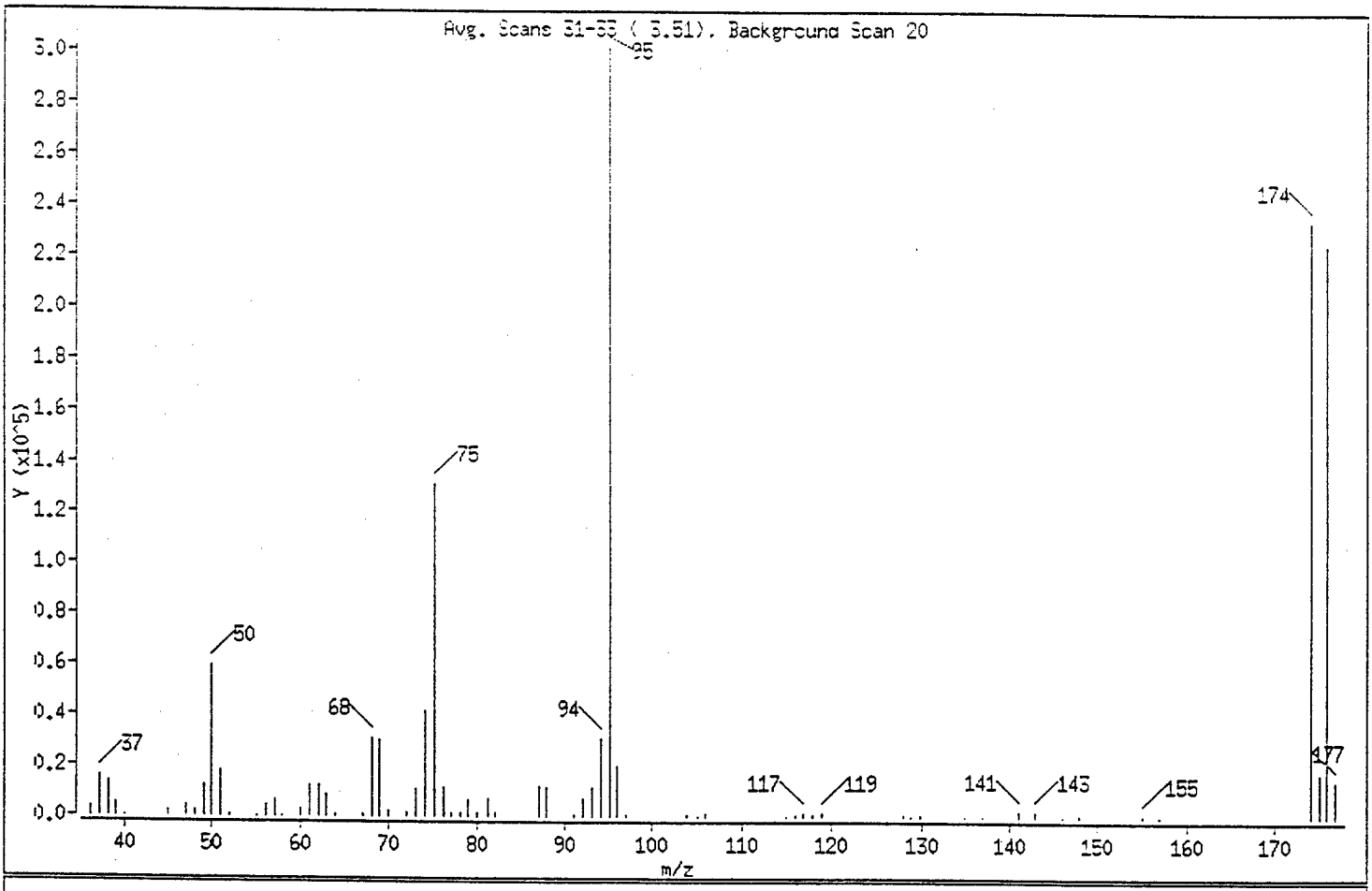
Column diameter: 0.25



Data File: /chem/k.i/k950518.b/k138bf1.d
Date : 18-MAY-95 08:48
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i
Operator:
Column diameter: 2.00

Column phase:
1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.53
75	30.00 - 60.00% of mass 95	43.49
96	5.00 - 9.00% of mass 95	6.61
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	77.85
175	5.00 - 9.00% of mass 174	5.65 (7.26)
176	95.00 - 101.00% of mass 174	74.64 (95.87)
177	5.00 - 9.00% of mass 176	4.80 (6.43)

Data File: /chem/k.i/k950518.b/k138bf1.d
Date : 18-MAY-95 08:48
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i
Operator:
Column phase:
Column diameter: 0.00

Data File: k138bf1.d
Spectrum : Avg. Scans 31-33 (3.51), Background Scan 20
Largest m/z: 95.10
Number of peaks: 68

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	3277	62.05	12274	87.05	12004	128.85	184
37.10	15700	63.05	8656	87.95	11588	129.95	928
38.10	13513	64.05	730	91.00	1066	134.90	184
39.10	4669	67.05	653	92.10	7354	137.00	167
40.00	16	68.05	30752	93.10	11166	140.95	2061
45.05	2278	69.05	29712	94.10	30552	142.95	2071
47.05	4175	70.05	2136	95.10	301376	145.95	181
48.05	2033	72.10	1434	96.10	19928	147.95	691
49.05	12109	73.10	10917	97.00	478	155.10	668
50.05	58872	74.10	41496	103.95	1060	157.00	230
51.10	18112	75.10	131072	105.05	280	174.00	234624
52.00	893	76.10	11086	105.95	1155	175.10	17040
55.10	349	77.00	1735	115.00	173	176.00	224960
56.10	4160	78.00	1212	116.00	850	177.00	14473
57.10	6735	78.90	6637	116.90	1352		
58.10	178	80.00	1711	118.00	773		
60.00	2610	81.05	6852	118.90	1094		
61.05	12329	82.05	1358	127.95	895		

Data File: /chem/k.i/k950518.b/k138bf1.d

Date : 18-MAY-95 08:48

Client ID:

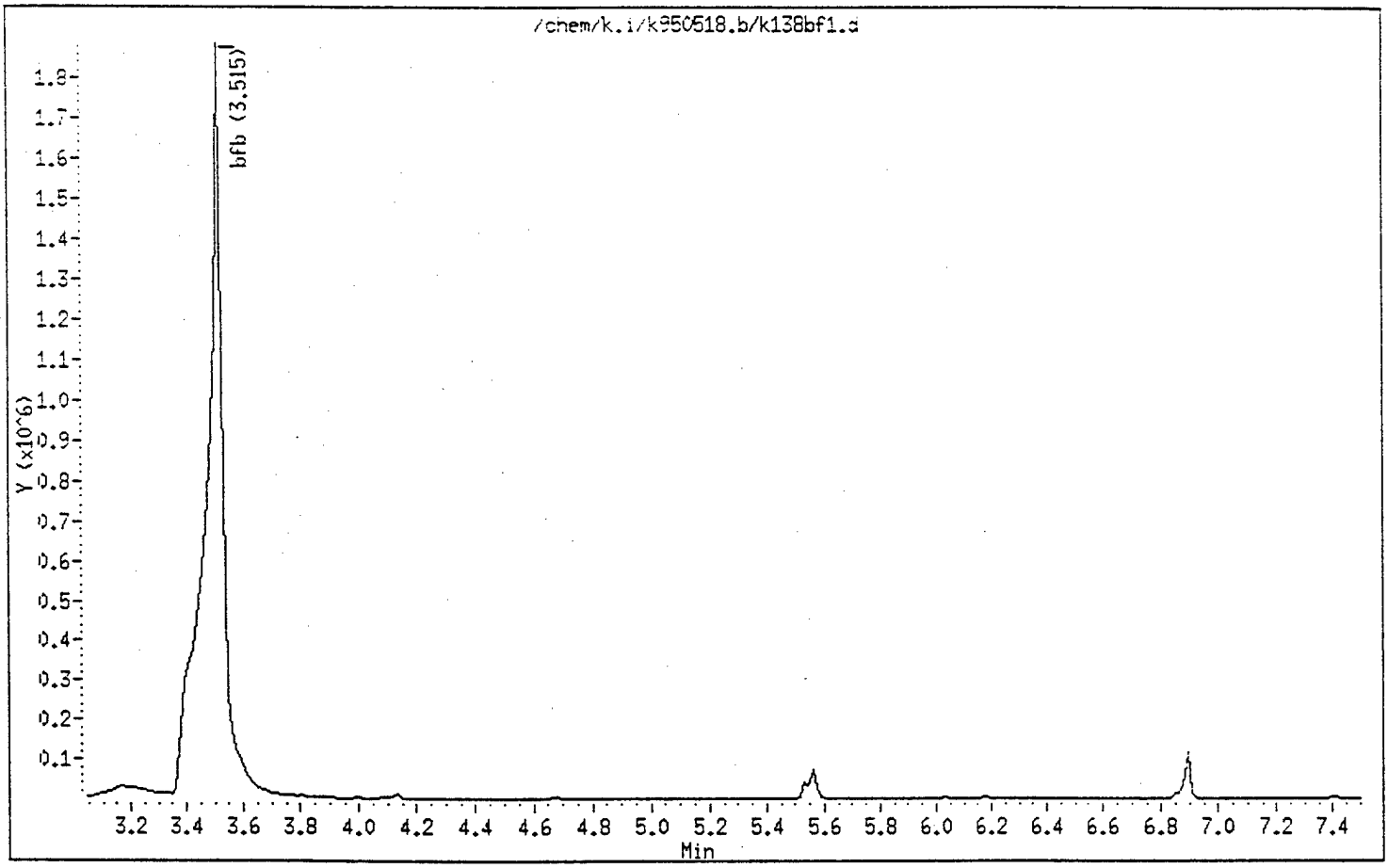
Instrument: k.i

Sample Info: BFB 50 NG

Operator:

Column phase:

Column diameter: 2.00



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:01
End Cal Date : 15-MAY-1995 16:50
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/1.i/1950515.b/1voclpw.m
Cal Date : 15-May-1995 18:03 jimmy
Curve Type : Average

Calibration File Names:
Level 1: /chem/1.i/1950515.b/l135iw1.d
Level 2: /chem/1.i/1950515.b/l135iw2.d
Level 3: /chem/1.i/1950515.b/l135iw3.d
Level 4: /chem/1.i/1950515.b/l135iw4.d
Level 5: /chem/1.i/1950515.b/l135iw5.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	1 Chloromethane	2.53469	2.46842	2.40993	2.24270	2.13410	2.35797	7.018
	2 Vinyl Chloride	2.15588	2.05812	1.92853	1.72484	1.50591	1.87466	13.963
	3 Bromomethane	1.57635	1.46649	1.43809	1.36195	1.27968	1.42451	7.840
	4 Chloroethane	1.32315	1.25666	1.23000	1.17009	1.14698	1.22538	5.736
	7 Trichlorofluoromethane	1.77615	1.87700	1.92740	1.88929	1.98661	1.89129	4.083
	8 Acetone	0.35473	0.34636	0.41881	0.38295	0.40077	0.38073	8.003
	11 1,1-Dichloroethene	1.36689	1.36051	1.37007	1.31370	1.34237	1.35071	1.725
	13 Methylene Chloride	1.58139	1.57589	1.57776	1.53741	1.55025	1.56454	1.249
	14 Carbon Disulfide	5.08861	4.88442	5.08749	5.01579	5.10478	5.03622	1.818
	15 trans-1,2-Dichloroethene	1.81130	1.76068	1.76382	1.71541	1.73350	1.75694	2.070
	17 1,1-Dichloroethane	3.81133	3.80219	3.81689	3.72452	3.79535	3.79006	0.991
M	18 1,2-Dichloroethene (total)	1.88696	1.86736	1.89304	1.83662	1.86102	1.86900	1.201
	19 Vinyl Acetate	6.71971	6.47589	6.30870	6.32029	6.30748	6.42641	2.781
	20 2-Butanone	1.77204	2.19596	2.84855	3.00350	2.82041	2.52809	20.706
	21 cis-1,2-Dichloroethene	1.96261	1.97404	2.02226	1.95783	1.98853	1.98105	1.307
	24 Chloroform	3.20496	3.10773	3.20887	3.10154	3.15704	3.15603	1.623
	27 1,1,1-Trichloroethane	0.42972	0.41276	0.42102	0.42257	0.42505	0.42222	1.476
	28 1,2-Dichloroethane	2.83567	2.73248	2.83571	2.81633	2.84749	2.81353	1.659
	30 Benzene	1.36785	1.32782	1.33242	1.33179	1.32646	1.33727	1.292
	31 Carbon Tetrachloride	0.35796	0.34490	0.33517	0.34949	0.35190	0.34789	2.451
	34 1,2-Dichloropropane	0.40309	0.40066	0.40018	0.39582	0.39982	0.39991	0.656
	35 Trichloroethene	0.29675	0.29862	0.30518	0.30173	0.30592	0.30164	1.325
	37 Bromodichloromethane	0.37488	0.37240	0.39115	0.40234	0.40478	0.38911	3.369
	39 2-Chloroethylvinylether	0.14751	0.14946	0.16067	0.18324	0.18712	0.16560	11.244
	40 4-Methyl-2-Pentanone	0.51047	0.50945	0.53860	0.70627	0.69005	0.61097	15.636
	41 cis-1,3-Dichloropropene	0.44699	0.46624	0.48409	0.49904	0.50912	0.48110	5.197
	42 trans-1,3-Dichloropropene	0.39062	0.41017	0.42373	0.44118	0.45047	0.42423	5.681

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:01
End Cal Date : 15-MAY-1995 16:50
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/1.i/1950515.b/1voc1pw.m
Cal Date : 15-May-1995 18:03 jimmy
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	44 Toluene	0.92066	0.92819	0.96125	0.93556	0.95211	0.93955	1.789
	45 1,1,2-Trichloroethane	0.25924	0.25896	0.25902	0.25981	0.25844	0.25909	0.190
	46 2-Hexanone	0.38933	0.51386	0.77985	0.87032	0.85399	0.68147	31.859
	47 Dibromochloromethane	0.25671	0.25558	0.27075	0.28453	0.29659	0.27283	6.513
	49 Tetrachloroethene	0.34146	0.33321	0.34043	0.32876	0.33693	0.33616	1.562
	52 Chlorobenzene	0.99545	0.99207	1.02427	1.01530	1.02623	1.01066	1.585
M	53 Xylene (Total)	0.61228	0.63114	0.64334	0.64105	0.65059	0.63568	2.330
	54 Ethylbenzene	0.49960	0.51225	0.52525	0.52490	0.53471	0.51934	2.623
	55 m,p-Xylene(s)	0.62089	0.63223	0.65070	0.64644	0.65428	0.64091	2.181
	56 Bromoform	0.20330	0.21650	0.23402	0.25781	0.27995	0.23832	12.990
	57 Styrene	0.92546	0.96177	1.01847	1.05438	1.07478	1.00697	6.215
	59 o-Xylene	0.59507	0.62895	0.62862	0.63029	0.64320	0.62522	2.865
	60 1,1,2,2-Tetrachloroethane	0.48853	0.50657	0.50606	0.52504	0.51171	0.50758	2.584
$	26 1,2-Dichloroethane-d4	0.42347	0.41892	0.43981	0.41437	0.42888	0.42509	2.312
$	43 Toluene-d8	1.29950	1.32463	1.35216	1.33757	1.35179	1.33313	1.649
$	61 Bromofluorobenzene	0.50362	0.49600	0.51360	0.52340	0.53569	0.51446	3.058

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/1950515.b/l135iw1.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:01
Operator : JC Inst ID: l.i
Smp Info : 10 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/1950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:20 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1	Chloromethane	50.00	1.795	1.795	(0.343)	35698	50	54
2	Vinyl Chloride	62.00	1.902	1.902	(0.363)	30363	50	58
3	Bromomethane	94.00	2.143	2.143	(0.409)	22201	50	55
4	Chloroethane	64.00	2.205	2.205	(0.421)	18635	50	54
7	Trichlorofluoromethane	101.00	2.562	2.562	(0.489)	25015	50	47
8	Acetone	58.00	2.615	2.615	(0.499)	4996	50	46(a)
11	1,1-Dichloroethene	96.00	3.008	3.008	(0.574)	19251	50	50
13	Methylene Chloride	84.00	3.248	3.248	(0.620)	22272	50	50
18	1,2-Dichloroethene (total)	96.00				53151	100	100
14	Carbon Disulfide	76.00	3.373	3.373	(0.644)	71667	50	50
15	trans-1,2-Dichloroethene	96.00	3.837	3.837	(0.733)	25510	50	52
17	1,1-Dichloroethane	63.00	4.175	4.175	(0.797)	53678	50	50
19	Vinyl Acetate	43.00	4.264	4.264	(0.814)	94639	50	52
20	2-Butanone	43.00	4.639	4.639	(0.886)	24957	50	35(a)
21	cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.949)	27641	50	50
24	Chloroform	83.00	5.245	5.245	(1.002)	45138	50	51
27	1,1,1-Trichloroethane	97.00	6.029	6.029	(0.869)	34137	50	51
28	1,2-Dichloroethane	62.00	6.118	6.118	(1.169)	39937	50	50
30	Benzene	78.00	6.484	6.484	(0.934)	108663	50	51
31	Carbon Tetrachloride	117.00	6.511	6.511	(0.938)	28437	50	51
34	1,2-Dichloropropane	63.00	7.464	7.464	(1.076)	32022	50	50
35	Trichloroethene	130.00	7.491	7.491	(1.080)	33574	50	49
37	Bromodichloromethane	83.00	7.687	7.687	(1.108)	29781	50	48
39	2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	11718	50	44 a.
40	4-Methyl-2-Pentanone	43.00	8.507	8.507	(1.226)	40552	50	42 a.
41	cis-1,3-Dichloropropene	75.00	8.543	8.543	(1.231)	35509	50	46
42	trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	31031	50	46
44	Toluene	92.00	9.256	9.256	(0.833)	57707	50	49
45	1,1,2-Trichloroethane	83.00	9.345	9.345	(1.347)	20594	50	50

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
46 2-Hexanone	43.00	9.711	9.711	(0.874)	24403	50	28(a)
47 Dibromochloromethane	129.00	9.969	9.969	(1.437)	20393	50	47
49 Tetrachloroethene	164.00	10.317	10.317	(0.929)	21403	50	51
52 Chlorobenzene	112.00	11.155	11.155	(1.004)	62395	50	49
M 53 Xylene (Total)	106.00				115134	150	140
54 Ethylbenzene	106.00	11.458	11.458	(1.031)	31315	50	48
55 m,p-Xylene(s)	106.00	11.618	11.618	(1.046)	77835	100	97
56 Bromoform	173.00	12.037	12.037	(1.083)	12743	50	43
57 Styrene	104.00	12.082	12.082	(1.087)	58008	50	46
59 o-Xylene	106.00	12.144	12.144	(1.093)	37299	50	48
60 1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	30621	50	48
* 3 Bromochloromethane	128.00	5.236	5.236	(1.000)	70419	250	
2 1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	397204	250	
50 Chlorobenzene-d5	117.00	11.110	11.110	(1.000)	313401	250	
S 26 1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.146)	5964	50	50
S 3 Toluene-d8	98.00	9.158	9.158	(0.824)	81453	50	49
1 Bromofluorobenzene	95.00	12.786	12.786	(1.151)	31567	50	49

2 Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw1.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

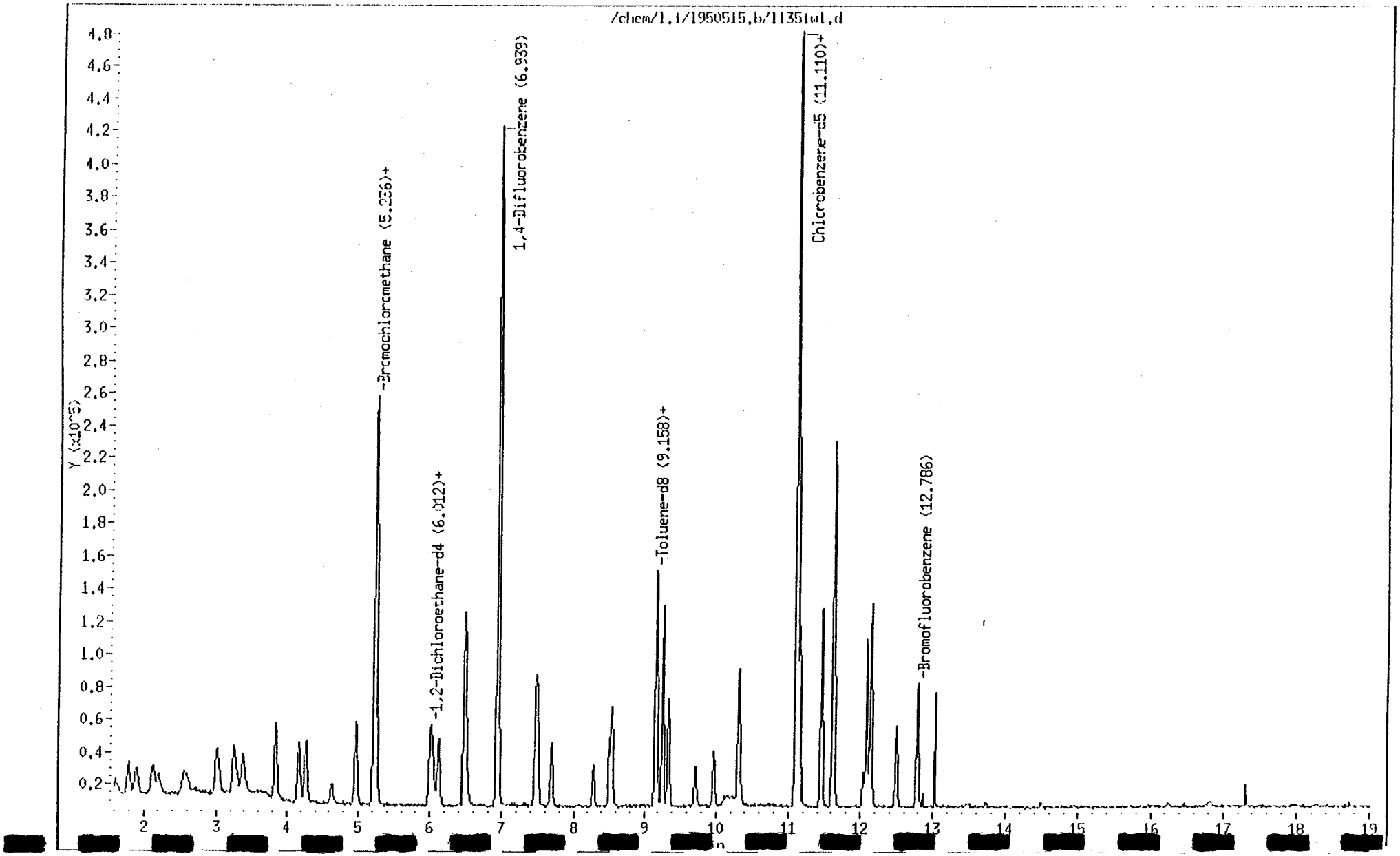
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70419	-0.24
32 1,4-Difluorobenzene	406982	203491	813964	397204	-2.40
50 Chlorobenzene-d5	313180	156590	626360	313401	0.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	-0.01
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	-0.01
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.1/1950515.b/1135iw1.d
Date : 15-MAY-1995 15:01
Client ID:
Sample Info: 10 UG L SID-02404/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.1
Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950515.b/l135iw2.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:28
Operator : JC
Smp Info : 20 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/1.i/1950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:20 jimmy
Cal Date : 15-MAY-1995 15:55
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: 1.i

Quant Type: ISTD
Cal File: l135iw3.d
Calibration Sample, Level: 2

Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	1 Chloromethane	50.00	1.795	1.795	(0.343)	69877	100	100
	2 Vinyl Chloride	62.00	1.902	1.902	(0.363)	88062	100	110
	3 Bromomethane	94.00	2.134	2.134	(0.408)	41514	100	100
	4 Chloroethane	64.00	2.205	2.205	(0.421)	35874	100	100
	7 Trichlorofluoromethane	101.00	2.562	2.562	(0.489)	83135	100	99
	8 Acetone	58.00	2.606	2.606	(0.498)	9805	100	91(a)
	11 1,1-Dichloroethene	96.00	3.016	3.016	(0.576)	38814	100	100
	13 Methylene Chloride	84.00	3.248	3.248	(0.620)	44621	100	100
M	18 1,2-Dichloroethene (total)	96.00				105724	200	200
	14 Carbon Disulfide	76.00	3.373	3.373	(0.644)	138270	100	97
	15 trans-1,2-Dichloroethene	96.00	3.836	3.836	(0.733)	49842	100	100
	17 1,1-Dichloroethane	63.00	4.175	4.175	(0.797)	107634	100	100
	19 Vinyl Acetate	43.00	4.264	4.264	(0.814)	183322	100	100
	20 2-Butanone	43.00	4.630	4.630	(0.884)	62164	100	87(a)
	21 cis-1,2-Dichloroethene	96.00	4.968	4.968	(0.949)	58382	100	100
	24 Chloroform	83.00	5.245	5.245	(1.002)	87975	100	98
	27 1,1,1-Trichloroethane	97.00	6.029	6.029	(0.869)	65648	100	98
	28 1,2-Dichloroethane	62.00	6.118	6.118	(1.169)	77352	100	97
	30 Benzene	78.00	6.475	6.475	(0.933)	211187	100	99
	31 Carbon Tetrachloride	117.00	6.502	6.502	(0.937)	54855	100	99
	34 1,2-Dichloropropane	63.00	7.464	7.464	(1.076)	63724	100	100
	35 Trichloroethene	130.00	7.491	7.491	(1.080)	47495	100	99
	37 Bromodichloromethane	83.00	7.687	7.687	(1.108)	59229	100	96
	39 2-Chloroethylvinylether	63.00	8.284	8.284	(1.194)	23771	100	90
	40 4-Methyl-2-Pentanone	43.00	8.507	8.507	(1.226)	91127	100	93
	41 cis-1,3-Dichloropropene	75.00	8.552	8.552	(1.233)	74184	100	97
	42 trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	68237	100	97
	44 Toluene	92.00	9.256	9.256	(0.833)	115972	100	99
	45 1,1,2-Trichloroethane	83.00	9.345	9.345	(1.347)	41187	100	100

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
46 2-Hexanone	43.00	9.711	9.711	(0.874)	64204	100	75
47 Dibromochloromethane	129.00	9.969	9.969	(1.437)	40650	100	94
49 Tetrachloroethene	164.00	10.308	10.308	(0.928)	41633	100	99
52 Chlorobenzene	112.00	11.155	11.155	(1.004)	103953	100	98
53 Xylene (Total)	106.00				236570	300	300
54 Ethylbenzene	106.00	11.458	11.458	(1.031)	64002	100	99
55 m,p-Xylene(s)	106.00	11.618	11.618	(1.046)	157987	200	200
56 Bromoform	173.00	12.037	12.037	(1.083)	27050	100	91
57 Styrene	104.00	12.091	12.091	(1.088)	120167	100	96
59 o-Xylene	106.00	12.144	12.144	(1.093)	78583	100	100
60 1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	63293	100	100
23 Bromochloromethane	128.00	5.236	5.236	(1.000)	70771	250	
32 1,4-Difluorobenzene	114.00	6.938	6.938	(1.000)	397619	250	
* 50 Chlorobenzene-d5	117.00	11.110	11.110	(1.000)	312360	250	
S 26 1,2-Dichloroethane-d4	102.00	6.002	6.002	(1.146)	11859	100	98
43 Toluene-d8	98.00	9.158	9.158	(0.824)	165505	100	99
61 Bromofluorobenzene	95.00	12.786	12.786	(1.151)	61972	100	96

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 1.i
Lab File ID: l135iw2.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/1.i/1950515.b/1voc1pw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70771	0.26
32 1,4-Difluorobenzene	406982	203491	813964	397619	-2.30
50 Chlorobenzene-d5	313180	156590	626360	312360	-0.26

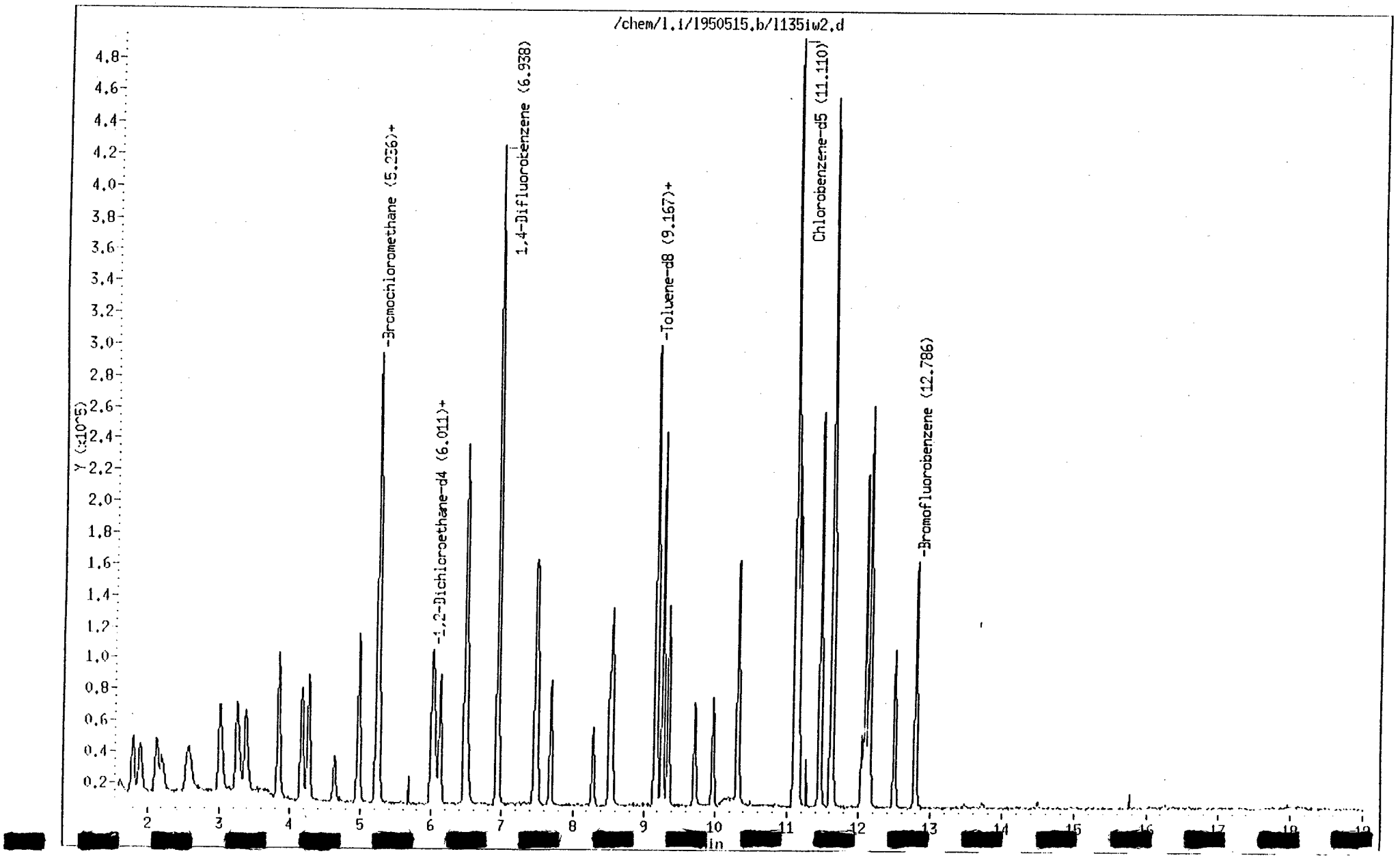
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	-0.02
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	-0.01
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950515.b/1135iw2.d
Date : 15-MAY-1995 15:28
Client ID:
Sample Info: 20 UG-L STD-8240M/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i

Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950515.b/l135iw3.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:55
Operator : JC Inst ID: 1.i
Smp Info : 50 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/1.i/1950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	1 Chloromethane	50.00	1.796	1.796	(0.343)	170117	250	260
	2 Vinyl Chloride	62.00	1.903	1.903	(0.363)	136135	250	260
	3 Bromomethane	94.00	2.135	2.135	(0.408)	101515	250	250
	4 Chloroethane	64.00	2.206	2.206	(0.421)	86826	250	250
	7 Trichlorofluoromethane	101.00	2.563	2.563	(0.489)	136055	250	250
	8 Acetone	58.00	2.616	2.616	(0.500)	29564	250	280(a)
	11 1,1-Dichloroethene	96.00	3.017	3.017	(0.576)	96713	250	250
	13 Methylene Chloride	84.00	3.249	3.249	(0.620)	111374	250	250
M	18 1,2-Dichloroethene (total)	96.00				267259	500	510
	14 Carbon Disulfide	76.00	3.383	3.383	(0.646)	359126	250	250
	15 trans-1,2-Dichloroethene	96.00	3.837	3.837	(0.733)	124508	250	250
	17 1,1-Dichloroethane	63.00	4.176	4.176	(0.797)	269434	250	250
	19 Vinyl Acetate	43.00	4.265	4.265	(0.814)	445331	250	240
	20 2-Butanone	43.00	4.631	4.631	(0.884)	201079	250	280
	21 cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.949)	142751	250	260
	24 Chloroform	83.00	5.255	5.255	(1.003)	226514	250	250
	27 1,1,1-Trichloroethane	97.00	6.039	6.039	(0.870)	171347	250	250
	28 1,2-Dichloroethane	62.00	6.119	6.119	(1.169)	200173	250	250
	30 Benzene	78.00	6.476	6.476	(0.933)	542269	250	250
	31 Carbon Tetrachloride	117.00	6.503	6.503	(0.937)	136410	250	240
	34 1,2-Dichloropropane	63.00	7.465	7.465	(1.076)	162865	250	250
	35 Trichloroethene	130.00	7.492	7.492	(1.080)	124201	250	250
	37 Bromodichloromethane	83.00	7.688	7.688	(1.108)	159191	250	250
	39 2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	65389	250	240
	40 4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	259900	250	260
	41 cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	197015	250	250
	42 trans-1,3-Dichloropropene	75.00	9.177	9.177	(1.322)	174484	250	250
	44 Toluene	92.00	9.266	9.266	(0.834)	301045	250	260
	45 1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	105417	250	250

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
46 2-Hexanone	43.00	9.712	9.712	(0.874)	244233	250	290
47 Dibromochloromethane	129.00	9.970	9.970	(1.437)	110190	250	250
49 Tetrachloroethene	164.00	10.318	10.318	(0.929)	106617	250	250
52 Chlorobenzene	112.00	11.156	11.156	(1.004)	320781	250	250
53 Xylene (Total)	106.00				604441	750	760
54 Ethylbenzene	106.00	11.459	11.459	(1.031)	164497	250	250
55 m,p-Xylene(s)	106.00	11.619	11.619	(1.046)	407870	500	510
56 Bromoform	173.00	12.038	12.038	(1.083)	73290	250	240
57 Styrene	104.00	12.092	12.092	(1.088)	318966	250	250
59 o-Xylene	106.00	12.145	12.145	(1.093)	196871	250	250
60 1,1,2,2-Tetrachloroethane	83.00	12.493	12.493	(1.124)	158488	250	250
3 Bromochloromethane	128.00	5.237	5.237	(1.000)	70590	250	
2 1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	406982	250	
30 Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	313180	250	
26 1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.146)	31046	250	260
3 Toluene-d8	98.00	9.159	9.159	(0.824)	423470	250	250
1 Bromofluorobenzene	95.00	12.778	12.778	(1.150)	160849	250	250

Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw3.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

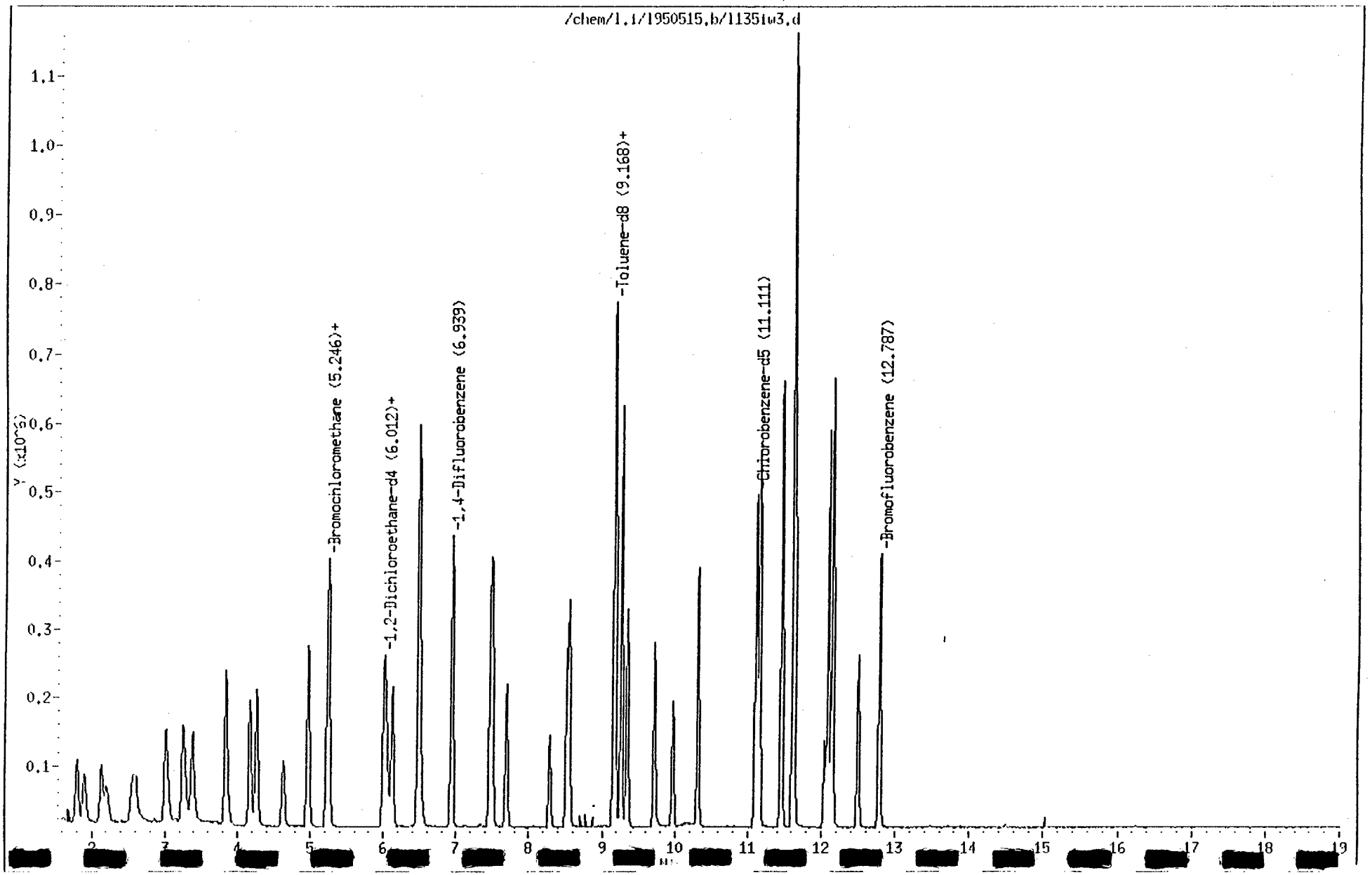
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70590	0.00
32 1,4-Difluorobenzene	406982	203491	813964	406982	0.00
50 Chlorobenzene-d5	313180	156590	626360	313180	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	0.00
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950515.b/1135iw3.d
Date : 15-MAY-1995 15:55
Client ID:
Sample Info: 50 UG-L STD-8240W/IX
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i
Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/1950515.b/l135iw4.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:23
Operator : JC
Smp Info : 100 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/1950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy
Cal Date : 15-MAY-1995 15:55
Als bottle: 6
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: l.i

Quant Type: ISTD
Cal File: l135iw3.d
Calibration Sample, Level: 4

Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1	Chloromethane	50.00	1.796	1.796	(0.343)	306183	500	480
2	Vinyl Chloride	62.00	1.903	1.903	(0.363)	235482	500	460
3	Bromomethane	94.00	2.135	2.135	(0.408)	185939	500	480
4	Chloroethane	64.00	2.206	2.206	(0.421)	159745	500	480
7	Trichlorofluoromethane	101.00	2.572	2.572	(0.491)	257933	500	500
8	Acetone	58.00	2.616	2.616	(0.500)	52282	500	500
11	1,1-Dichloroethene	96.00	3.018	3.018	(0.576)	179351	500	490
13	Methylene Chloride	84.00	3.258	3.258	(0.622)	209894	500	490
1 18	1,2-Dichloroethene (total)	96.00				501486	1000	980
14	Carbon Disulfide	76.00	3.383	3.383	(0.646)	684776	500	500
15	trans-1,2-Dichloroethene	96.00	3.838	3.838	(0.733)	234195	500	490
17	1,1-Dichloroethane	63.00	4.176	4.176	(0.797)	508487	500	490
19	Vinyl Acetate	43.00	4.265	4.265	(0.814)	862871	500	490
20	2-Butanone	43.00	4.622	4.622	(0.883)	410050	500	590
21	cis-1,2-Dichloroethene	96.00	4.970	4.970	(0.949)	267291	500	490
24	Chloroform	83.00	5.255	5.255	(1.003)	423434	500	490
27	1,1,1-Trichloroethane	97.00	6.030	6.030	(0.869)	321955	500	500
28	1,2-Dichloroethane	62.00	6.120	6.120	(1.169)	384496	500	500
30	Benzene	78.00	6.476	6.476	(0.933)	1014686	500	500
31	Carbon Tetrachloride	117.00	6.503	6.503	(0.937)	266275	500	500
34	1,2-Dichloropropane	63.00	7.466	7.466	(1.076)	301575	500	490
35	Trichloroethene	130.00	7.492	7.492	(1.080)	229888	500	500
37	Bromodichloromethane	83.00	7.688	7.688	(1.108)	306543	500	520
39	2-Chloroethylvinylether	63.00	8.286	8.286	(1.194)	139610	500	550
40	4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	538108	500	580
41	cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	380219	500	520
42	trans-1,3-Dichloropropene	75.00	9.177	9.177	(1.322)	336137	500	520
44	Toluene	92.00	9.266	9.266	(0.834)	559204	500	500
45	1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	197945	500	500

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT ng/	ON-COL ng/
46 2-Hexanone	43.00	9.712	9.712	(0.874)	520212	500	640
47 Dibromochloromethane	129.00	9.970	9.970	(1.437)	216783	500	520
49 Tetrachloroethene	164.00	10.318	10.318	(0.929)	196510	500	490
52 Chlorobenzene	112.00	11.156	11.156	(1.004)	606870	500	500
53 Xylene (Total)	106.00				1149517	1500	1500
54 Ethylbenzene	106.00	11.459	11.459	(1.031)	313742	500	500
55 m,p-Xylene(s)	106.00	11.619	11.619	(1.046)	772778	1000	1000
56 Bromoform	173.00	12.038	12.038	(1.083)	154100	500	540
57 Styrene	104.00	12.092	12.092	(1.088)	630228	500	520
59 o-Xylene	106.00	12.145	12.145	(1.093)	376739	500	500
60 1,1,2,2-Tetrachloroethane	83.00	12.493	12.493	(1.124)	313828	500	520
23 Bromochloromethane	128.00	5.237	5.237	(1.000)	68262	250	
32 1,4-Difluorobenzene	114.00	6.940	6.940	(1.000)	380949	250	
50 Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	298861	250	
S 26 1,2-Dichloroethane-d4	102.00	6.004	6.004	(1.146)	56572	500	490
43 Toluene-d8	98.00	9.159	9.159	(0.824)	799498	500	500
61 Bromofluorobenzene	95.00	12.787	12.787	(1.151)	312847	500	510

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw4.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

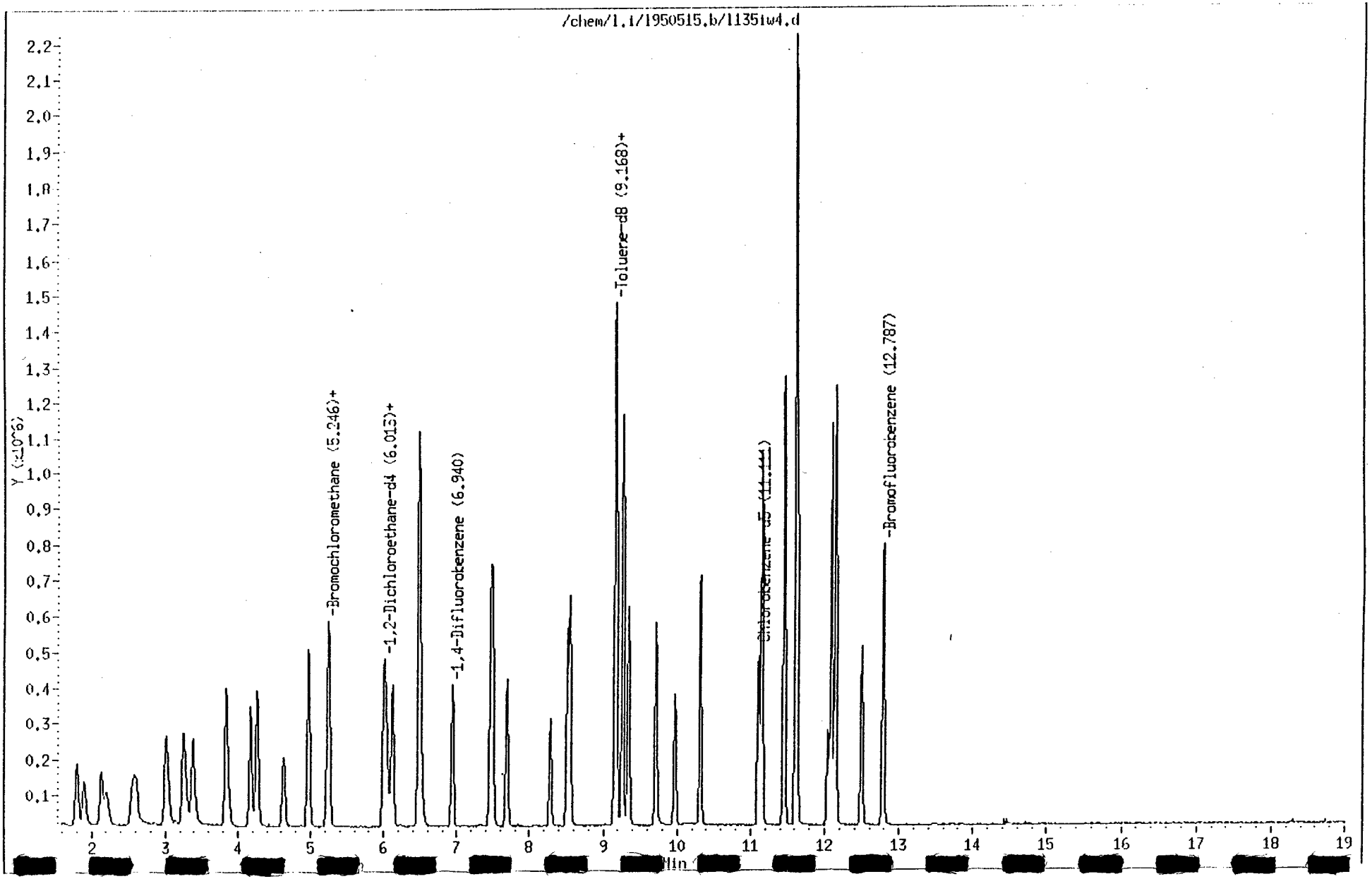
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	68262	-3.30
32 1,4-Difluorobenzene	406982	203491	813964	380949	-6.40
50 Chlorobenzene-d5	313180	156590	626360	298861	-4.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	0.01
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950515.b/1135iw4.d
Date : 15-MAY-1995 16:23
Client ID:
Sample Info: 100 UG L STD 02404/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i
Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/1950515.b/l135iw5.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:50
Operator : JC Inst ID: l.i
Smp Info : 200 UG-L STD-8240W/IX
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/1950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	1 Chloromethane	50.00	1.796	1.796	(0.344)	593202	1000	900
	2 Vinyl Chloride	62.00	1.894	1.894	(0.362)	418589	1000	800
	3 Bromomethane	94.00	2.134	2.134	(0.408)	355706	1000	900
	4 Chloroethane	64.00	2.197	2.197	(0.420)	318820	1000	940
	7 Trichlorofluoromethane	101.00	2.562	2.562	(0.490)	552207	1000	1000
	8 Acetone	58.00	2.607	2.607	(0.499)	111399	1000	1000
	11 1,1-Dichloroethene	96.00	3.008	3.008	(0.575)	373131	1000	990
	13 Methylene Chloride	84.00	3.249	3.249	(0.621)	430915	1000	990
M	18 1,2-Dichloroethene (total)	96.00				1034591	2000	2000(A)
	14 Carbon Disulfide	76.00	3.374	3.374	(0.645)	1418944	1000	1000
	15 trans-1,2-Dichloroethene	96.00	3.828	3.828	(0.732)	481851	1000	990
	17 1,1-Dichloroethane	63.00	4.167	4.167	(0.797)	1054970	1000	1000
	19 Vinyl Acetate	43.00	4.256	4.256	(0.814)	1753253	1000	980
	20 2-Butanone	43.00	4.621	4.621	(0.884)	783972	1000	1100
	21 cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.951)	552740	1000	1000
	24 Chloroform	83.00	5.245	5.245	(1.003)	877544	1000	1000
	27 1,1,1-Trichloroethane	97.00	6.030	6.030	(0.869)	671040	1000	1000
	28 1,2-Dichloroethane	62.00	6.119	6.119	(1.171)	791500	1000	1000
	30 Benzene	78.00	6.476	6.476	(0.933)	2094131	1000	990
	31 Carbon Tetrachloride	117.00	6.502	6.502	(0.937)	555561	1000	1000
	34 1,2-Dichloropropane	63.00	7.465	7.465	(1.076)	631209	1000	1000
	35 Trichloroethene	130.00	7.492	7.492	(1.080)	482966	1000	1000
	37 Bromodichloromethane	83.00	7.688	7.688	(1.108)	639042	1000	1000
	39 2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	295420	1000	1100
	40 4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	1089413	1000	1100
	41 cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	803771	1000	1000
	42 trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	711168	1000	1100
	44 Toluene	92.00	9.266	9.266	(0.834)	1166273	1000	1000
	45 1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	408013	1000	1000

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
46	2-Hexanone	43.00	9.711	9.711	(0.874)	1046075	1000	1200 (A)
47	Dibromochloromethane	129.00	9.970	9.970	(1.437)	468238	1000	1100
49	Tetrachloroethene	164.00	10.317	10.317	(0.929)	412712	1000	1000
52	Chlorobenzene	112.00	11.155	11.155	(1.004	1257086	1000	1000
53	Xylene (Total)	106.00				2390775	2000	2100
54	Ethylbenzene	106.00	11.458	11.458	(1.031	654989	1000	1000
55	m,p-Xylene(s)	106.00	11.628	11.628	(1.047)	1602901	1000	1000
56	Bromoform	173.00	12.038	12.038	(1.083)	342914	1000	1200
57	Styrene	104.00	12.091	12.091	(1.088)	1316527	1000	1100
59	o-Xylene	106.00	12.145	12.145	(1.093)	787874	1000	1000
60	1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	626810	1000	1000
23	Bromochloromethane	128.00	5.228	5.228	(1.000)	69491	250	
32	1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	394685	250	
* 50	Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	306233	250	
26	1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.148)	119214	1000	1000
43	Toluene-d8	98.00	9.159	9.159	(0.824)	1655854	1000	1000 (A)
* 61	Bromofluorobenzene	95.00	12.787	12.787	(1.151)	656187	1000	1000 (A)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw5.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

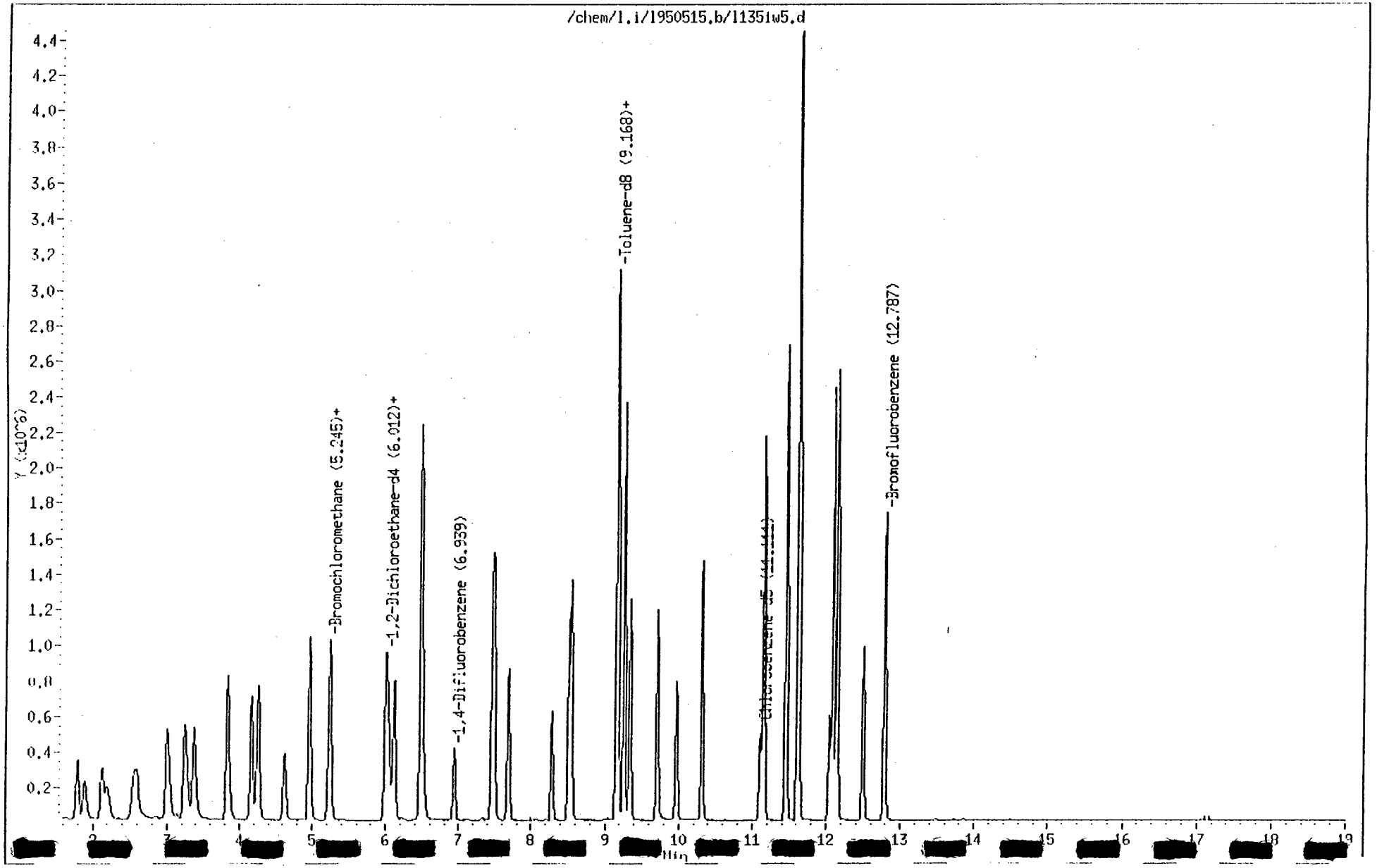
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	69491	-1.56
32 1,4-Difluorobenzene	406982	203491	813964	394685	-3.02
50 Chlorobenzene-d5	313180	156590	626360	306233	-2.22

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.23	-0.17
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950515.b/11351w5.d
Date : 15-MAY-1995 16:50
Client ID:
Sample Info: 200 UG-L STD-8240M/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i
Operator: JC
Column diameter: 0.25



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvcclps.m
Cal Date : 09-May-1995 18:14 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/k.i/k950502.b/k122is1e.d
Level 2: /chem/k.i/k950502.b/k122is2e.d
Level 3: /chem/k.i/k950502.b/k122cs7.d
Level 4: /chem/k.i/k950502.b/k122is4e.d
Level 5: /chem/k.i/k950502.b/k122is5e.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	4 Chloromethane	2.61598	2.81482	2.12233	2.24403	2.45830	2.45109	11.367
	5 Vinyl Chloride	2.65380	2.94683	2.27075	2.29473	2.52382	2.53798	10.993
	7 Bromomethane	2.11466	2.01524	1.61752	1.66188	1.78547	1.83895	11.862
	6 Chloroethane	1.70772	2.47252	1.96573	1.98068	2.14242	2.05381	13.687
	9 Trichlorofluoromethane	1.49304	2.08578	2.00085	1.92770	2.26966	1.95541	14.741
	8 Acetone	0.27178	0.26116	0.28834	0.18784	0.20866	0.24356	17.700
	10 1,1-Dichloroethene	1.85538	2.17717	2.01911	2.00216	2.12934	2.03663	6.147
	11 Methylene Chloride	2.38104	2.68890	2.40798	2.23657	2.35295	2.41349	6.930
M	1 1,2-Dichloroethene (total)	2.48786	2.60735	2.54327	2.57358	2.54340	2.55109	1.730
	12 Carbon Disulfide	7.61210	8.72426	7.92999	7.84861	8.50089	8.12317	5.767
	13 trans-1,2-Dichloroethene	2.45393	2.74754	2.54113	2.51774	2.55500	2.58307	4.537
	14 1,1-Dichloroethane	4.64531	5.12809	4.72981	4.78124	4.76879	4.81065	3.851
	16 Vinyl Acetate	4.39095	4.67428	4.62771	4.19908	3.81329	4.34106	8.099
	17 2-Butanone	2.07727	1.95040	2.25063	1.42863	1.46330	1.83405	20.182
	19 cis-1,2-Dichloroethene	2.52179	2.46715	2.54541	2.62942	2.43180	2.51911	3.022
	21 Chloroform	4.03686	4.22412	3.99063	3.96111	4.20345	4.06323	3.740
	24 1,1,1-Trichloroethane	3.10851	3.57553	3.17577	3.10886	3.55489	3.30471	7.247
	25 1,2-Dichloroethane	0.46771	0.44242	0.46820	0.45167	0.45093	0.45619	2.487
	27 Benzene	1.45923	1.42676	1.47373	1.47356	1.42845	1.45235	1.608
	28 Carbon Tetrachloride	0.37727	0.36450	0.38452	0.39331	0.40772	0.38546	4.232
	33 1,2-Dichloropropane	0.39723	0.37732	0.40855	0.37269	0.37777	0.38671	3.990
	34 Trichloroethene	0.33210	0.31444	0.34870	0.32128	0.32473	0.32825	3.986
	35 Bromodichloromethane	0.41562	0.40335	0.45507	0.41056	0.44324	0.42557	5.255
	15 2-Chloroethylvinylether	0.76056	0.69309	0.74966	0.77129	0.68699	0.73232	5.381
	38 4-Methyl-2-Pentanone	0.36838	0.41150	0.43019	0.23238	0.26823	0.34214	25.632
	42 cis-1,3-Dichloropropene	0.39013	0.36628	0.41665	0.38134	0.39805	0.39049	4.310
	37 trans-1,3-Dichloropropene	0.66721	0.74886	0.70980	0.62420	0.74084	0.69815	7.498

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvoclps.m
Cal Date : 09-May-1995 18:14 hillery
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	43 Toluene	1.22134	1.32245	1.18326	1.04139	1.17488	1.18866	8.504
	44 1,1,2-Trichloroethane	0.34616	0.33240	0.31910	0.27189	0.31178	0.31627	8.374
	45 2-Hexanone	0.35970	0.60509	0.51642	0.14372	0.31633	0.38825	46.295
	46 Dibromochloromethane	0.36006	0.38294	0.37802	0.33114	0.40668	0.37177	7.573
	48 Tetrachloroethene	0.41111	0.43522	0.40448	0.35990	0.40363	0.40287	6.757
	52 Chlorobenzene	1.13558	1.08935	1.14714	1.12095	1.06593	1.11179	3.019
M	2 Xylene (Total)	0.69398	0.81685	0.69844	0.69500	0.67635	0.71612	7.953
	53 Ethylbenzene	0.59157	0.65401	0.60740	0.59508	0.59898	0.60941	4.204
	54 m,p-Xylene(s)	0.71166	0.83335	0.73199	0.70548	0.65004	0.72650	9.222
	55 Bromoform	0.17950	0.21853	0.21733	0.20692	0.24260	0.21298	10.719
	57 Styrene	1.03398	1.23180	1.04130	1.08557	1.25174	1.12888	9.316
	58 o-Xylene	0.65863	0.78384	0.63135	0.67405	0.72897	0.69537	8.765
	59 1,1,2,2-Tetrachloroethane	0.36578	0.44209	0.33519	0.32841	0.31594	0.35748	14.192
$	23 1,2-Dichloroethane-d4	0.46776	0.54303	0.42892	0.45129	0.52086	0.48237	9.941
$	40 Toluene-d8	1.71636	1.89329	1.54687	1.47209	1.67607	1.66093	9.799
$	61 Bromofluorobenzene	0.65848	0.66793	0.55819	0.46477	0.53858	0.57759	14.326

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122isle.d
Lab Smp Id: 10 PPB STD 8240S
Inj Date : 02-MAY-1995 20:30
Operator : HLW Inst ID: k.i
Smp Info : 10 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
4 Chloromethane	50.00	1.348	1.392	(0.636)	43102	62	12
5 Vinyl Chloride	62.00	1.394	1.422	(0.657)	43725	58	12(Q)
7 Bromomethane	94.00	1.424	1.437	(0.672)	34842	65	13
6 Chloroethane	64.00	1.439	1.437	(0.679)	28137	43	9(aQ)
9 Trichlorofluoromethane	100.90	1.515	1.528	(0.714)	24600	37	7
8 Acetone	58.00	1.515	1.513	(0.714)	4478	47	9(aQM)
10 1,1-Dichloroethene	96.00	1.621	1.619	(0.764)	30570	46	9
11 Methylene Chloride	84.00	1.667	1.665	(0.786)	39231	49	10
M 1 1,2-Dichloroethene (total)	96.00				81982	98	20
12 Carbon Disulfide	76.00	1.712	1.710	(0.807)	125420	46	10
13 trans-1,2-Dichloroethene	96.00	1.773	1.786	(0.836)	40432	46	10
14 1,1-Dichloroethane	63.00	1.848	1.846	(0.871)	76538	49	10
16 Vinyl Acetate	43.00	1.863	1.862	(0.879)	72347	47	9(a)
17 2-Butanone	43.00	1.970	1.952	(0.929)	34226	46	9(a)
19 cis-1,2-Dichloroethene	96.00	2.045	2.043	(0.964)	41550	50	10
21 Chloroform	83.00	2.121	2.119	(1.000)	66513	50	10
24 1,1,1-Trichloroethane	97.00	2.394	2.392	(1.129)	51217	49	10
25 1,2-Dichloroethane	62.00	2.409	2.407	(0.964)	47068	50	10
27 Benzene	78.00	2.545	2.543	(0.913)	146848	50	10
28 Carbon Tetrachloride	117.00	2.576	2.574	(0.924)	37966	49	10
33 1,2-Dichloropropane	63.00	3.076	3.074	(1.103)	39975	49	10
34 Trichloroethene	130.00	3.091	3.089	(1.109)	33421	48	10
35 Bromodichloromethane	83.00	3.222	3.220	(1.162)	41826	46	9
15 2-Chloroethylvinylether	63.00	1.848	1.846	(0.663)	76538	51	10
38 4-Methyl-2-Pentanone	43.00	4.061	3.998	(1.457)	37072	43	8(a)
42 cis-1,3-Dichloropropene	75.00	4.651	4.634	(1.669)	39260	47	9
37 trans-1,3-Dichloropropene	75.00	3.954	3.953	(0.567)	47187	47	9
43 Toluene	92.00	4.636	4.634	(0.688)	86390	52	10
44 1,1,2-Trichloroethane	83.00	4.788	4.771	(0.710)	24485	54	11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)	
45	2-Hexanone	43.00	5.424	5.347	(0.804)	25443	18		a
46	Dibromochloromethane	129.00	5.594	5.577	(0.800)	25468	48	10	
48	Tetrachloroethene	164.00	5.798	5.786	(0.858)	29079	51	10	
50	Chlorobenzene	112.00	6.801	6.801	(1.009)	80324	49	10	
	m Xylene (Total)	106.00				147264	100	20	
53	Ethylbenzene	106.00	7.242	7.241	(1.074)	41944	49	10	
54	m,p-Xylene(s)	106.00	7.455	7.468	(1.106)	100677	97	19	
55	Bromoform	173.00	7.815	7.816	(1.160)	12697	41	8	
57	Styrene	104.00	8.015	8.013	(1.189)	73137	50	10	
58	o-Xylene	106.00	8.061	8.074	(1.196)	46587	51	10	
59	1,1,2,2-Tetrachloroethane	83.00	8.521	8.504	(1.279)	25673	54		
20	Bromochloromethane	128.00	2.121	2.119	(1.000)	82382	250		
31	1,4-Difluorobenzene	114.00	2.788	2.786	(1.000)	503171	250		
51	Chlorobenzene-d5	117.00	6.742	6.756	(1.000)	353668	250		
23	1,2-Dichloroethane-d4	102.00	2.364	2.362	(1.114)	7707	54		
40	Toluene-d8	98.00	4.530	4.528	(0.672)	121404	55		
61	Bromofluorobenzene	95.00	8.364	8.347	(1.315)	46577	59		

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
- Spike/Surrogate failed recovery limits.
- Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122isle.d
Lab Smp Id: 10 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	82382	6.43
31 1,4-Difluorobenzene	488350	244175	976700	503171	3.03
51 Chlorobenzene-d5	357839	178920	715678	353668	-1.17

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.10
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.07
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.19

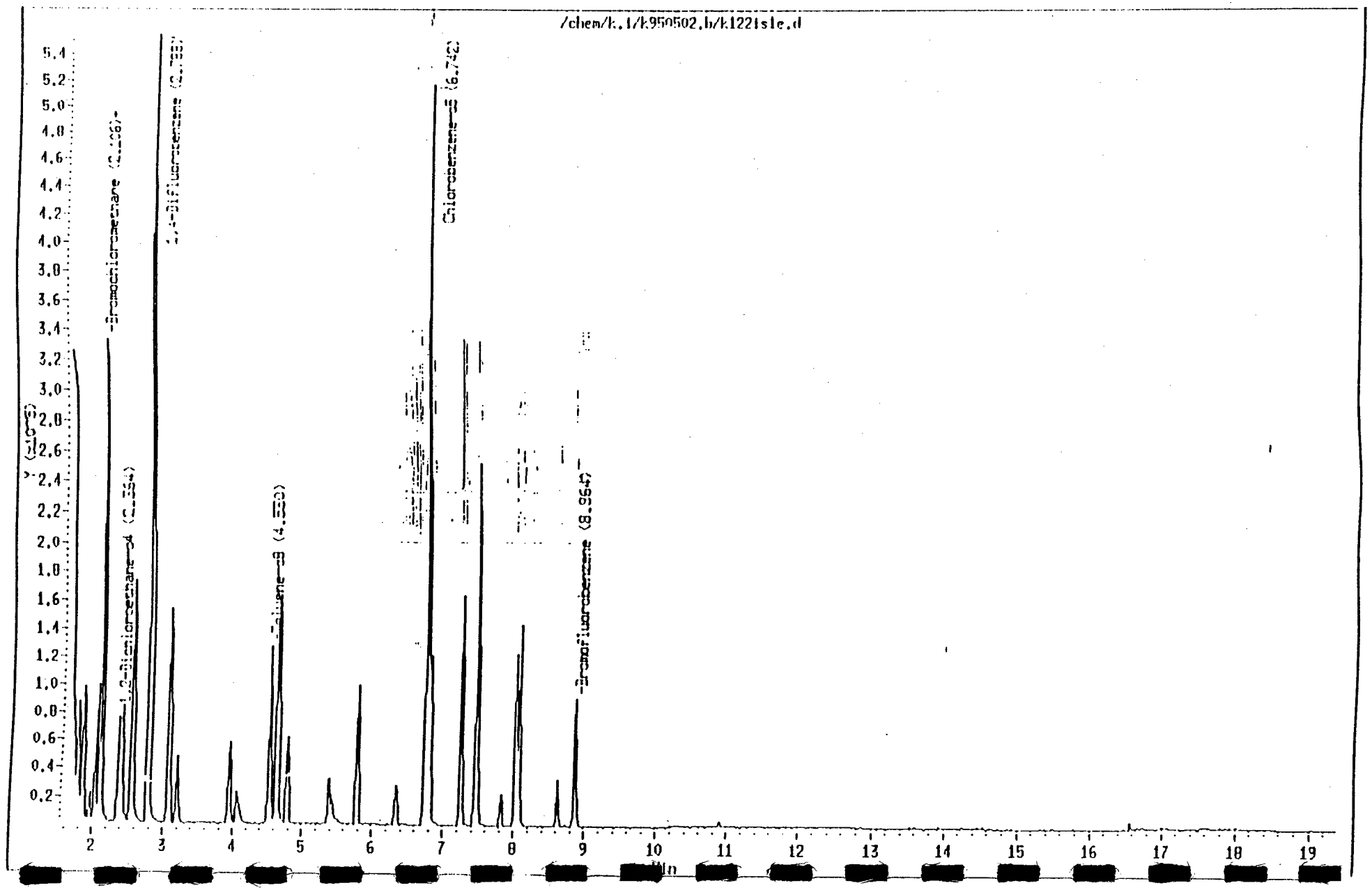
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AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221sle.d
Date : 02-MAY-1995 20:30
Client ID:
Sample Info: 10 PPB SID 02405

Instrument: k.1

Operator: MLH
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Inj Date : 02-MAY-1995 19:54
Operator : HLW Inst ID: k.i
Smp Info : 20 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvcclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 8
Dil Factor: 1.0000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
	4 Chloromethane	50.00	1.382	1.392	(0.643)	81838	130	26	
	5 Vinyl Chloride	62.00	1.392	1.422	(0.657)	85676	130	26 (CM)	
	7 Bromomethane	94.00	1.438	1.437	(0.678)	58591	120	25	
	6 Chloroethane	64.00	1.453	1.437	(0.685)	71986	120	25 (Q)	
	9 Trichlorofluoromethane	100.00	1.529	1.528	(0.721)	60642	100	21	
	8 Acetone	58.00	1.514	1.513	(0.714)	7593	90	18 (aCM)	
	10 1,1-Dichloroethene	96.00	1.620	1.619	(0.764)	63299	110	22	
	11 Methylene Chloride	84.00	1.665	1.665	(0.786)	78177	110	22	
M	1 1,2-Dichloroethene (total)	96.00				151612	200	41	
	12 Carbon Disulfide	76.00	1.710	1.710	(0.807)	253649	110	22	
	13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	79882	110	22	
	14 1,1-Dichloroethane	63.00	1.847	1.846	(0.871)	149094	110	22	
	16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	135900	100	20	
	17 2-Butanone	43.00	1.968	1.952	(0.928)	56706	87	17 (a)	
	19 cis-1,2-Dichloroethene	96.00	2.044	2.043	(0.964)	71730	97	19	
	21 Chloroform	83.00	2.120	2.119	(1.000)	122812	100	21	
	24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	103955	110	22	
	25 1,2-Dichloroethane	62.00	2.408	2.407	(0.964)	95170	94	19	
	27 Benzene	78.00	2.544	2.543	(0.913)	306916	97	19	
	28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	78408	95	19	
	33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	81167	92	18	
	34 Trichloroethene	130.00	3.089	3.089	(1.109)	67641	90	18	
	35 Bromodichloromethane	83.00	3.211	3.210	(1.152)	86756	89	18	
	15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	149094	92	18	
	38 4-Methyl-2-Pentanone	43.00	4.029	3.998	(1.446)	38512	95	19	
	42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.663)	78792	88	18	
	37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.536)	99671	100	21	
	43 Toluene	92.00	4.635	4.634	(0.588)	176014	110	22	
	44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.710)	44241	100	21	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
45 2-Hexanone	43.00	5.352	5.347	(0.800)	80536	100	20
46 Dibromochloromethane	129.00	5.782	5.777	(0.800)	50968	100	20
48 Tetrachloroethene	164.00	5.786	5.786	(0.858)	57926	110	22
52 Chlorobenzene	112.00	6.802	6.801	(1.009)	144990	95	19
2 Xylene (Total)	106.00				326160	350	70
53 Ethylbenzene	106.00	7.241	7.241	(1.074)	87047	110	22
54 m,p-Xylene(s)	106.00	7.453	7.468	(1.106)	221833	230	46
55 Bromoform	173.00	7.817	7.816	(1.160)	29086	100	20
57 Styrene	104.00	8.014	8.013	(1.189)	163949	120	24
58 o-Xylene	106.00	8.059	8.074	(1.196)	104327	120	25
59 1,1,2,2-Tetrachloroethane	83.00	8.505	8.504	(1.276)	58841	130	26
20 Bromochloromethane	128.00	2.120	2.119	(1.000)	72685	250	[illegible]
31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	537784	250	[illegible]
51 Chlorobenzene-d5	117.00	6.741	6.756	(1.000)	332743	250	[illegible]
23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	15738	130	26
40 Toluene-d8	98.00	4.529	4.528	(0.672)	251991	120	24 (R)
S 61 Bromofluorobenzene	95.00	8.362	8.347	(1.315)	88999	120	24 (R)

QC Flag Legend

B - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1300

Level: LOW
Sample Type: SOIL

COMPOUND	AREA LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2017408	1008704	4034816	1772685	-6.10
31 1,4-Difluorobenzene	1488350	744175	2976700	1537784	10.12
51 Chlorobenzene-d5	1357839	678920	2715678	1262743	-7.01

COMPOUND	RT LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.03
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.02
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.22

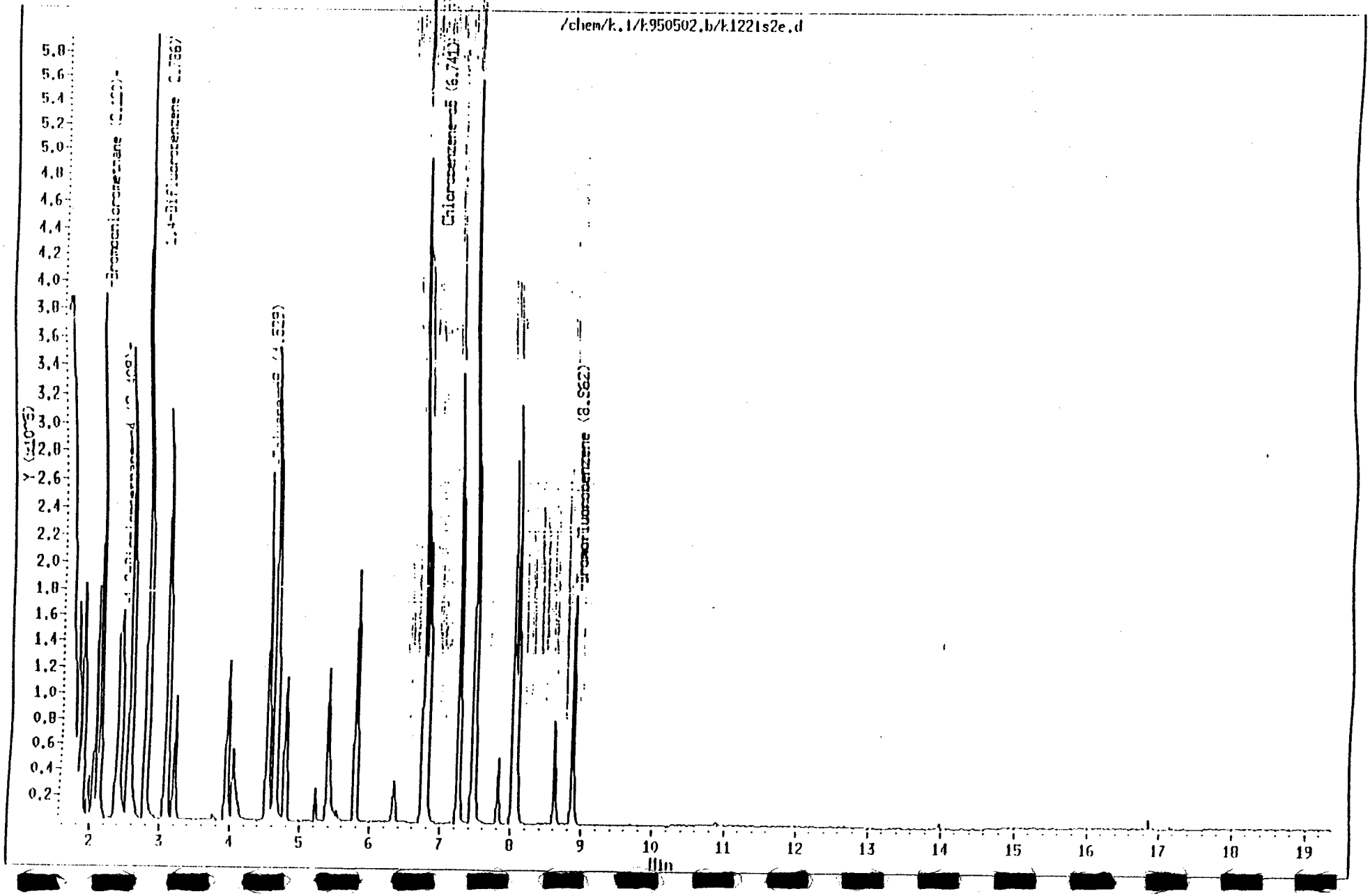
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s2e.d
Date : 02-MAY-1995 19:54
Client ID:
Sample Info: 20 PPB SIB 0240S

Column phase: 30m,1p5ms,0.25u df

Instrument: k.1

Operator: MJH
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122cs7.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 02-MAY-1995 18:00
Operator : HLW Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 5
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4	Chloromethane	50.00	1.361	1.392	(0.642)	164285	250	50
5	Vinyl Chloride	62.00	1.407	1.422	(0.664)	175774	250	50
7	Bromomethane	94.00	1.437	1.437	(0.678)	125209	250	50
6	Chloroethane	64.00	1.437	1.437	(0.678)	152163	250	50
9	Trichlorofluoromethane	100.00	1.528	1.528	(0.721)	154882	250	50
8	Acetone	58.00	1.513	1.513	(0.714)	22120	250	50 (a)
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	156295	250	50
11	Methylene Chloride	84.00	1.665	1.665	(0.785)	186397	250	50
M 1	1,2-Dichloroethene (total)	96.00				393739	500	100
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	613845	250	50
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	196704	250	50
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	366125	250	50
16	Vinyl Acetate	43.00	1.961	1.962	(0.878)	358222	250	50
17	2-Butanone	43.00	1.968	1.952	(0.928)	174217	250	50
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	197035	250	50
21	Chloroform	83.00	2.119	2.119	(1.000)	308907	250	50
24	1,1,1-Trichloroethane	97.00	2.192	2.192	(1.129)	245830	250	50
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	228647	250	50
27	Benzene	78.00	2.543	2.543	(0.913)	719698	250	50
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	197782	250	50
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	199516	250	50
34	Trichloroethene	130.00	3.089	3.089	(1.109)	170287	250	50
35	Bromodichloromethane	83.00	3.210	3.210	(1.152)	222234	250	50
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	366096	250	50
38	4-Methyl-2-Pentanone	43.00	4.013	3.998	(1.441)	210082	250	50
42	cis-1,3-Dichloropropene	75.00	4.649	4.634	(1.669)	203470	250	50
37	trans-1,3-Dichloropropene	75.00	3.952	3.953	(0.585)	253995	250	50
43	Toluene	92.00	4.634	4.634	(0.686)	423416	250	50
44	1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	124187	250	50

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN ng	FINAL ug/Kg
45 2-Hexanone	43.00	5.177	5.147	(0.796)	184794	250	50
46 Dibromochloromethane	129.00	5.352	5.377	(0.798)	135271	250	50
48 Tetrachloroethene	164.00	5.801	5.786	(0.859)	144739	250	50
52 Chlorobenzene	112.00	6.801	6.801	(1.007)	410492	250	50
2 Xylene (Total)	106.00				749788	750	150
53 Ethylbenzene	106.00	7.040	7.041	(1.072)	217352	250	50
54 m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	523866	500	100
55 Bromoform	173.00	7.816	7.816	(1.157)	77770	250	50
57 Styrene	104.00	8.013	8.013	(1.186)	372618	250	50
58 o-Xylene	106.00	8.074	8.074	(1.195)	225922	250	50
59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	119944	250	50
20 Bromochloromethane	128.00	2.219	2.219	(1.000)	77408	250	50
31 1,4-Difluorobenzene	114.00	2.786	2.756	(1.000)	488350	250	
51 Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	357839	250	
23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	233202	250	50
S 40 Toluene-d8	98.00	4.528	4.528	(0.670)	551531	250	50
S 61 Bromofluorobenzene	95.00	8.347	8.347	(1.312)	199743	250	50

QC Flag Legend

B - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122cs7.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	AREA LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	77408	0.00
31 1,4-Difluorobenzene	488350	244175	976700	488350	0.00
51 Chlorobenzene-d5	357839	178920	715678	357839	0.00

COMPOUND	RT LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

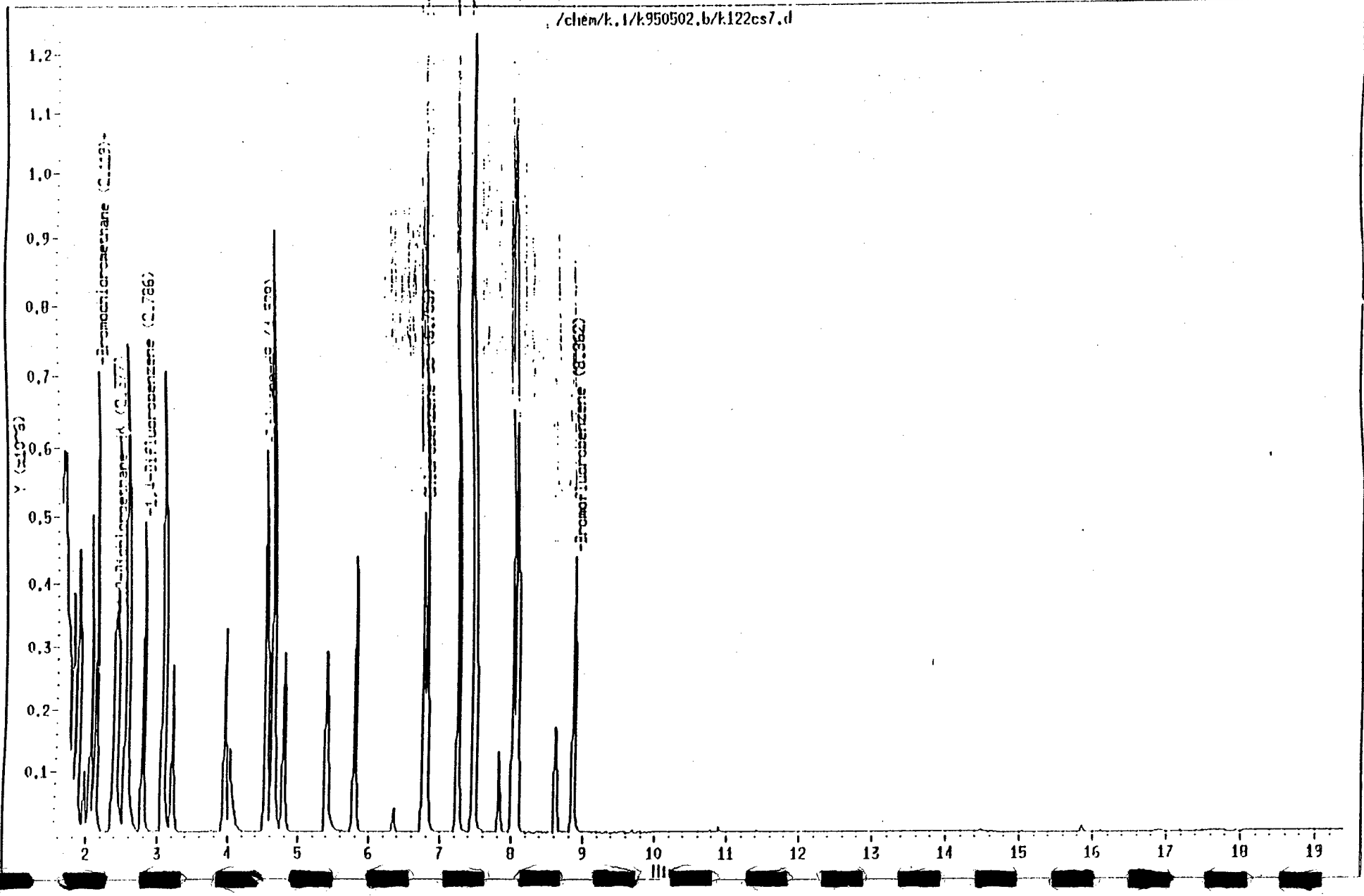
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k122cs7.d
Date : 02-MAY-1995 10:00
Client ID:
Sample Info: 50 PPB STD 02405

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLH
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Inj Date : 02-MAY-1995 21:00
Operator : HLW Inst ID: k.i
Smp Info : 100 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillary Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal-File: k122cs7.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	4 Chloromethane	50.00	1.377	1.392	(0.650)	363004	530	100
	5 Vinyl Chloride	62.00	1.422	1.422	(0.671)	371205	500	100
	7 Bromomethane	94.00	1.437	1.437	(0.678)	268832	510	100
	6 Chloroethane	64.00	1.437	1.437	(0.678)	320402	500	100
	9 Trichlorofluoromethane	100.00	1.528	1.528	(0.721)	311932	480	96
	8 Acetone	58.00	1.513	1.513	(0.714)	30286	320	65(a)
	10 1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	323877	500	99
	11 Methylene Chloride	84.00	1.668	1.668	(0.785)	361796	460	93
M	1 1,2-Dichloroethene (total)	96.00				832625	1000	200
	12 Carbon Disulfide	76.00	1.725	1.710	(0.814)	1269622	490	99
	13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	407280	500	99
	14 1,1-Dichloroethane	63.00	1.847	1.846	(0.871)	773432	500	100
	16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	679260	450	91
	17 2-Butanone	43.00	1.953	1.952	(0.921)	231101	320	63
	19 cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	425345	500	100
	22 Chloroform	83.00	2.119	2.119	(1.000)	624589	480	97
	24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	502902	490	98
	25 1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	452921	480	96
	27 Benzene	78.00	2.544	2.543	(0.913)	1477643	500	100
	28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	394399	510	100
	33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	373720	460	91
	34 Trichloroethene	130.00	3.089	3.089	(1.109)	322170	460	92
	35 Bromodichloromethane	83.00	3.210	3.210	(1.152)	411699	450	90
	15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	773432	510	100
	38 4-Methyl-2-Pentanone	43.00	4.023	3.998	(1.441)	233024	270	54
	42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.664)	382393	460	92
	37 trans-1,3-Dichloropropene	75.00	3.963	3.963	(0.585)	481365	440	88
	43 Toluene	92.00	4.635	4.634	(0.686)	803091	440	88
	44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	209676	430	85

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN ng)	FINAL (ug/Kg)
45	2-Hexanone	43.00	5.177	5.347	(0.796)	110835	140	28
46	Dibromochloromethane	129.00	5.192	5.377	(0.798)	255268	440	88
48	Tetrachloroethene	164.00	5.786	5.786	(0.856)	277544	440	89
50	Chlorobenzene	112.00	6.801	6.801	(1.007)	864442	490	98
	Xylene (Total)	106.00				1607895	1500	300
53	Ethylbenzene	106.00	7.241	7.241	(1.072)	458911	490	98
54	m,p-Xylene(s)	106.00	7.451	7.466	(1.103)	1088090	960	190
55	Bromoform	173.00	7.815	7.815	(1.157)	159567	480	95
57	Styrene	104.00	8.013	8.013	(1.186)	837162	520	100
58	o-Xylene	106.00	8.059	8.074	(1.193)	519805	530	110
59	1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	253253	490	98
20	Bromochloromethane	128.00	2.119	2.119	(1.000)	308210	250	50
31	1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	501386	250	50
51	Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	385585	250	50
23	1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	73003	530	100(R)
40	Toluene-d8	98.00	4.523	4.528	(0.670)	1135233	480	95(R)
S 61	Bromofluorobenzene	95.00	8.847	8.847	(1.310)	358413	420	83(R)

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	AREA STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	377408	188704	754816	380882	0.89
31 1,4-Difluorobenzene	488350	244175	976700	501386	2.67
51 Chlorobenzene-d5	357839	178920	715678	385585	7.75

COMPOUND	RT STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.01
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

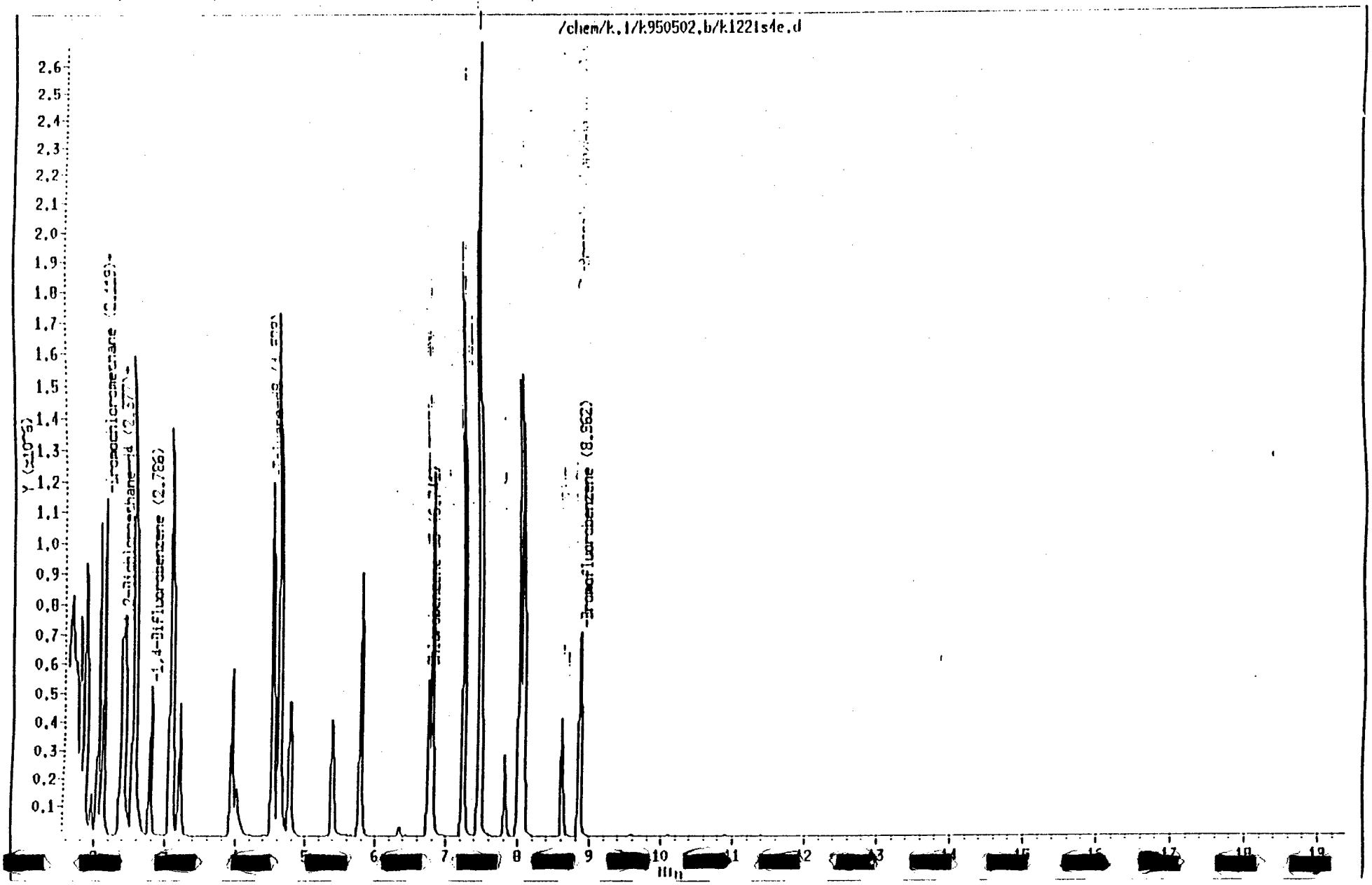
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k,1/k950502,b/k1221s4e.d
Date : 02-MAY-1995 21:00
Client ID:
Sample Info: 100 PPB SIB 02405

Column phase: 30m,hp5ms,0.25u df

Instrument: k,1

Operator: MLH
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122isSe.d
Lab Smp Id: 200 PPB STD 8240S
Inj Date : 02-MAY-1995 21:27
Operator : HLW Inst ID: k.i
Smp Info : 200 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 10
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CC-COLUMN (ug)	FINAL (ug/Kg)
	----------	----	--	------	------	--------	-------	--------
4	Chloromethane	50.00	1.392	1.392	(0.657)	685728	1200	230
5	Vinyl Chloride	62.00	1.422	1.422	(0.671)	704004	1100	220
7	Bromomethane	94.00	1.437	1.437	(0.678)	498045	1100	220
6	Chloroethane	64.00	1.437	1.437	(0.678)	597616	1100	220
9	Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	633109	1200	230
8	Acetone	58.00	1.513	1.513	(0.714)	88205	720	140
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	593966	1000	210
11	Methylene Chloride	84.00	1.665	1.665	(0.785)	656340	980	200
M 1	1,2-Dichloroethene (total)	96.00				1413932	2000	400(A)
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	2371271	1100	210
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	740595	1000	210
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	1330224	1000	200
16	Vinyl Acetate	43.00	1.862	1.862	(0.878)	1063693	820	160
17	2-Butanone	43.00	1.952	1.952	(0.921)	408178	680	120
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	678337	960	190
21	Chloroform	83.00	2.119	2.119	(1.000)	1172526	1000	210
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	991614	1100	220
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.364)	873142	960	190
27	Benzene	78.00	2.543	2.543	(0.913)	2755913	970	190
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	789468	1100	220
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	701473	920	180
34	Trichloroethene	130.00	3.089	3.089	(1.109)	823771	930	190
35	Bromodichloromethane	83.00	3.210	3.210	(1.152)	958246	970	190
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	1330224	920	180
38	4-Methyl-2-Pentanone	43.00	3.998	3.998	(1.435)	819380	920	120
42	cis-1,3-Dichloropropene	75.00	4.634	4.634	(1.664)	770745	960	190
37	trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.585)	993745	1000	210
43	Toluene	92.00	4.634	4.634	(0.686)	1575951	990	200
44	1,1,2-Trichloroethane	83.00	4.771	4.771	(0.706)	418215	980	200

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)	
45 2-Hexanone	43.00	5.347	5.347	(0.791)	424312	800	120	
46 Dibromochloromethane	129.00	5.377	5.377	(0.796)	545513	1100	200	
48 Tetrachloroethene	164.00	5.786	5.786	(0.856)	541413	1000	200	
52 Chlorobenzene	112.00	6.801	6.801	(1.007)	1429806	900	180	
2 Xylene (Total)	106.00				2721696	2900	580	
53 Ethylbenzene	106.00	7.241	7.241	(1.072)	803456	990	200	
54 m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	1743881	1800	360	
55 Bromoform	173.00	7.816	7.816	(1.157)	325417	1100	220	
57 Styrene	104.00	8.013	8.013	(1.186)	1679049	1200	240(A)	
58 o-Xylene	106.00	8.074	8.074	(1.195)	977815	1200	230	
59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	423790	940	190	
20 Bromochloromethane	128:00	[illegible]	[illegible]	(1.000)	69736	[illegible]	[illegible]	
31 1,4-Difluorobenzene	114:00	[illegible]	[illegible]	(1.000)	484077	250	[illegible]	
51 Chlorobenzene-d5	117:00	[illegible]	[illegible]	(1.000)	335343	250	[illegible]	
23 1,2-Dichloroethane-d4	102:00	[illegible]	2.362	(1.114)	145292	1200	240(AR)	
40 Toluene-d8	98:00	[illegible]	4.528	(0.670)	2248228	1100	220(AR)	
61 Bromofluorobenzene	95.00	8.847	8.847	(1.310)	722436	960	190(R)	

C Flag Legend

- Target compound detected but, quantitated amount exceeded maximum amount.
- Spike/Surrogate failed recovery limits.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122isSe.d
Lab Smp Id: 200 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	AREA LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	[illegible]	38704	154816	69736	-9.91
31 1,4-Difluorobenzene	488350	244175	976700	484077	-0.87
51 Chlorobenzene-d5	357839	178920	715678	335343	-6.29

COMPOUND	RT LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

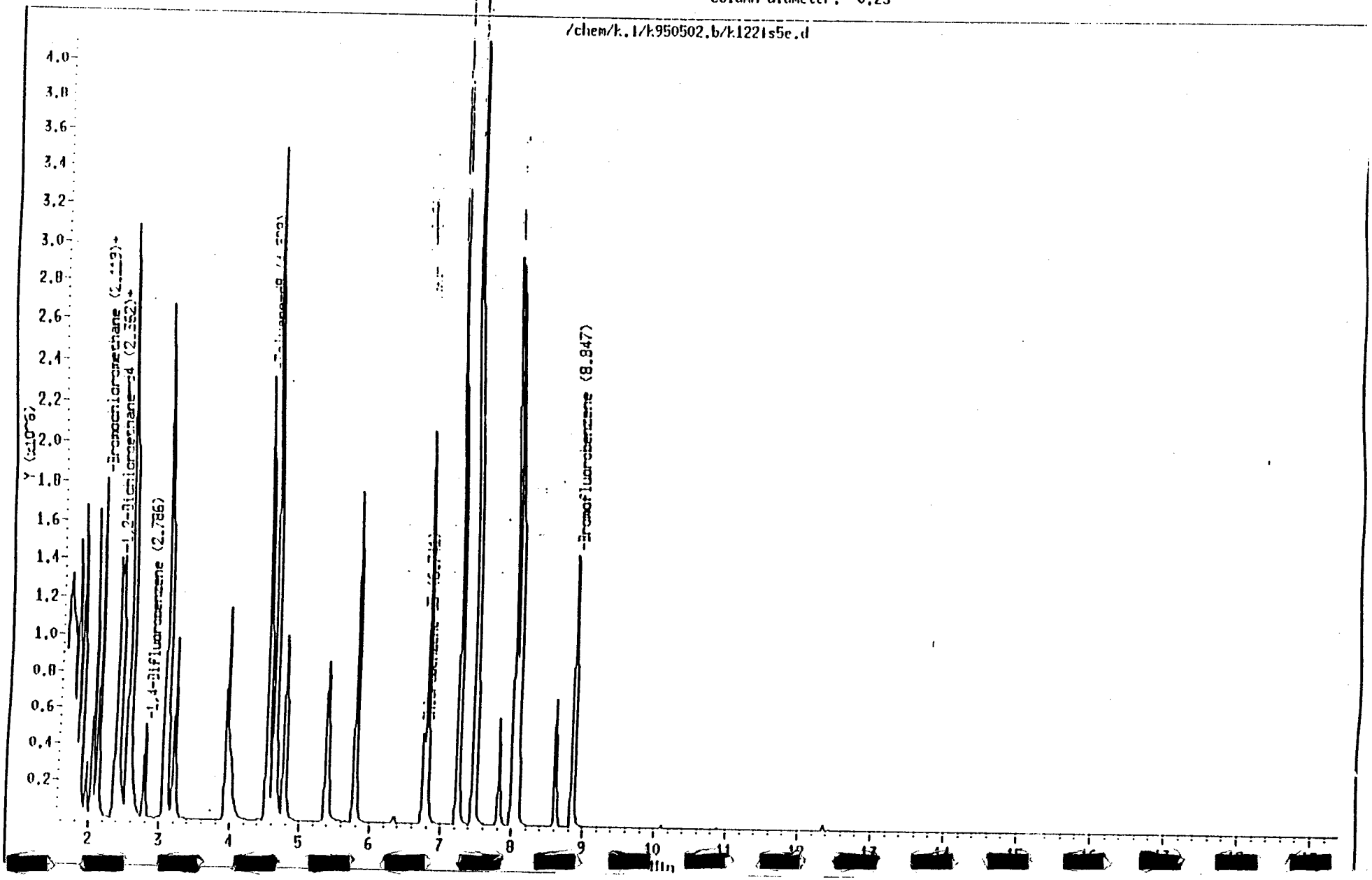
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s5e.d
Date : 02-MAY-1995 21:27
Client ID:
Sample Info: 200 PPB SID 8240S

Instrument: k.1

Operator: MLW
Column diameter: 0.25

Column phase: 30m,1p5ms,0.25u df



Data File: /chem/1.i/1950518.b/1138cw1.d
Report Date: 18-May-1995 08:19

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: 1.i
Lab File ID: 1138cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 18-MAY-1995 07:5[illegible]
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:0[illegible] 16:50
Method File: /chem/1.i/1950518.b [illegible]vocipw.m

	COMPOUND	RRF	RF25D	MIN RRF	%D	MAX %D
	1 Chloromethane	2.358	2.208	0.010	6.4	40.0
	2 Vinyl Chloride	1.875	1.901	0.100	1.4	25.0
	3 Bromomethane	1.425	1.357	0.100	4.8	25.0
	4 Chloroethane	1.225	1.162	0.010	5.2	40.0
	7 Trichlorofluoromethane	1.891	1.959	0.010	3.6	40.0
	8 Acetone	0.381	0.346	0.010	9.2	100.0
	11 1,1-Dichloroethene	1.351	1.259	0.100	6.8	25.0
	13 Methylene Chloride	1.565	1.471	0.010	6.0	40.0
M	18 1,2-Dichloroethene (total)	1.869	1.796	0.010	3.9	40.0
	14 Carbon Disulfide	5.036	4.750	0.010	5.7	40.0
	15 trans-1,2-Dichloroethene	1.757	1.689	0.010	3.9	40.0
	17 1,1-Dichloroethane	3.790	3.634	0.200	4.1	25.0
	19 Vinyl Acetate	6.426	6.215	0.010	3.3	100.0
	20 2-Butanone	2.528	2.604	0.010	3.0	100.0
	21 cis-1,2-Dichloroethene	1.981	1.903	0.010	3.9	25.0
	24 Chloroform	3.156	3.038	0.200	3.7	25.0
	27 1,1,1-Trichloroethane	0.422	0.412	0.100	2.5	25.0
	28 1,2-Dichloroethane	2.814	2.741	0.100	2.6	25.0
	30 Benzene	1.337	1.288	0.500	3.7	25.0
	31 Carbon Tetrachloride	0.348	0.352	0.100	1.2	25.0
	34 1,2-Dichloropropane	0.400	0.380	0.010	5.0	25.0
	35 Trichloroethene	0.302	0.303	0.300	0.4	25.0
	37 Bromodichloromethane	0.389	0.396	0.200	1.7	25.0
	39 2-Chloroethylvinylether	0.166	0.181	0.010	9.5	100.0
	40 4-Methyl-2-Pentanone	0.611	0.671	0.010	9.9	100.0
	41 cis-1,3-Dichloropropene	0.481	0.493	0.100	2.5	25.0
	42 trans-1,3-Dichloropropene	0.424	0.434	0.100	2.4	25.0
	44 Toluene	0.940	0.904	0.400	3.7	25.0
	45 1,1,2-Trichloroethane	0.259	0.255	0.100	1.5	25.0
	46 2-Hexanone	0.681	0.757	0.010	11.0	100.0
	47 Dibromochloromethane	0.273	0.292	0.100	7.2	25.0
	49 Tetrachloroethene	0.336	0.334	0.200	0.5	25.0
	52 Chlorobenzene	1.011	0.992	0.500	1.9	25.0
M	53 Xylene (Total)	0.636	0.619	0.300	2.6	25.0
	54 Ethylbenzene	0.519	0.505	0.100	2.8	25.0
	55 m,p-Xylene(s)	0.641	0.628	0.300	2.0	25.0
	56 Bromoform	0.238	0.292	0.100	22.5	25.0
	57 Styrene	1.007	0.990	0.300	1.7	25.0
	59 o-Xylene	0.625	0.602	0.300	3.8	25.0
	60 1,1,2,2-Tetrachloroethane	0.508	0.494	0.300	2.6	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: l.i
Lab File ID: l138cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 18-MAY-1995 07:51
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:01 16:50
Method File: /chem/l.i/1950518.b/lvoclpw.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 26 1,2-Dichloroethane-d4	0.425	0.427	0.010	0.4	40.0
$ 43 Toluene-d8	1.333	1.325	0.010	0.6	40.0
$ 61 Bromofluorobenzene	0.514	0.498	0.010	3.2	25.0

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950518.b/l138cw1.d
Lab Smp Id:
Inj Date : 18-MAY-1995 07:51
Operator : JC Inst ID: l.i
Smp Info : 50 UG-L STD-8240W/1X
Misc Info : L138W1//L138CW1
Comment :
Method : /chem/l.i/l950518.b/lvoclpw.m
Meth Date : 18-May-1995 08:19 jimmy Quant Type: ISTD
Cal Date : 18-MAY-1995 07:51 Cal File: l138cw1.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	1 Chloromethane	50.00	1.795	1.795	(0.342)	164447	250	230
	2 Vinyl Chloride	62.00	1.902	1.902	(0.363)	141588	250	250
	3 Bromomethane	94.00	2.134	2.134	(0.407)	101051	250	240
	4 Chloroethane	64.00	2.214	2.214	(0.422)	86563	250	240
	7 Trichlorofluoromethane	101.00	2.562	2.562	(0.488)	145880	250	260
	8 Acetone	58.00	2.615	2.615	(0.499)	25739	250	230(a)
	11 1,1-Dichloroethene	96.00	3.016	3.016	(0.575)	93742	250	230
	13 Methylene Chloride	84.00	3.257	3.257	(0.621)	109542	250	240
M	18 1,2-Dichloroethene (total)	96.00				267577	500	480
	14 Carbon Disulfide	76.00	3.382	3.382	(0.645)	353787	250	240
	15 trans-1,2-Dichloroethene	96.00	3.845	3.845	(0.733)	125812	250	240
	17 1,1-Dichloroethane	63.00	4.184	4.184	(0.798)	270644	250	240
	19 Vinyl Acetate	43.00	4.273	4.273	(0.815)	462893	250	240
	20 2-Butanone	43.00	4.639	4.639	(0.884)	193929	250	260
	21 cis-1,2-Dichloroethene	96.00	4.986	4.986	(0.951)	141765	250	240
	24 Chloroform	83.00	5.263	5.263	(1.003)	226283	250	240
	27 1,1,1-Trichloroethane	97.00	6.047	6.047	(0.870)	169828	250	240
	28 1,2-Dichloroethane	62.00	6.127	6.127	(1.168)	204178	250	240
	30 Benzene	78.00	6.493	6.493	(0.935)	531189	250	240
	31 Carbon Tetrachloride	117.00	6.520	6.520	(0.938)	145208	250	250
	34 1,2-Dichloropropane	63.00	7.473	7.473	(1.076)	156726	250	240
	35 Trichloroethene	130.00	7.509	7.509	(1.081)	124882	250	250
	37 Bromodichloromethane	83.00	7.696	7.696	(1.108)	163225	250	250
	39 2-Chloroethylvinylether	63.00	8.302	8.302	(1.195)	74801	250	270
	40 4-Methyl-2-Pentanone	43.00	8.525	8.525	(1.227)	276929	250	270
	41 cis-1,3-Dichloropropene	75.00	8.561	8.561	(1.232)	203376	250	260
	42 trans-1,3-Dichloropropene	75.00	9.185	9.185	(1.322)	179203	250	260
	44 Toluene	92.00	9.274	9.274	(0.834)	292004	250	240
	45 1,1,2-Trichloroethane	83.00	9.354	9.354	(1.346)	105288	250	250

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
6	2-Hexanone	43.00	9.729	9.729	(0.875)	244301	250	280
7	Dibromochloromethane	129.00	9.987	9.987	(1.438)	120629	250	270
49	Tetrachloroethene	164.00	10.326	10.326	(0.929)	107980	250	250
52	Chlorobenzene	112.00	11.173	11.173	(1.005)	320123	250	240
3	Xylene (Total)	106.00				599647	750	730
4	Ethylbenzene	106.00	11.467	11.467	(1.031)	162924	250	240
55	m,p-Xylene(s)	106.00	11.636	11.636	(1.046)	405405	500	490
6	Bromoform	173.00	12.055	12.055	(1.084)	94233	250	310
7	Styrene	104.00	12.100	12.100	(1.088)	319479	250	240
9	o-Xylene	106.00	12.162	12.162	(1.094)	194242	250	240
60	1,1,2,2-Tetrachloroethane	83.00	12.510	12.510	(1.125)	159623	250	240
3	Bromochloromethane	128.00	5.245	5.245	(1.000)	74479	250	
2	1,4-Difluorobenzene	114.00	6.947	6.947	(1.000)	412556	250	
50	Chlorobenzene-d5	117.00	11.119	11.119	(1.000)	322864	250	
26	1,2-Dichloroethane-d4	102.00	6.020	6.020	(1.148)	31772	250	250
8	Toluene-d8	98.00	9.176	9.176	(0.825)	427894	250	250
1	Bromofluorobenzene	95.00	12.795	12.795	(1.151)	160865	250	240

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l138cw1.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950518.b/lvoclpw.m
Misc Info: L138W1//L138CW1

Calibration Date: 05/18/95
Calibration Time: 0751

Level: LOW
Sample Type: WATER

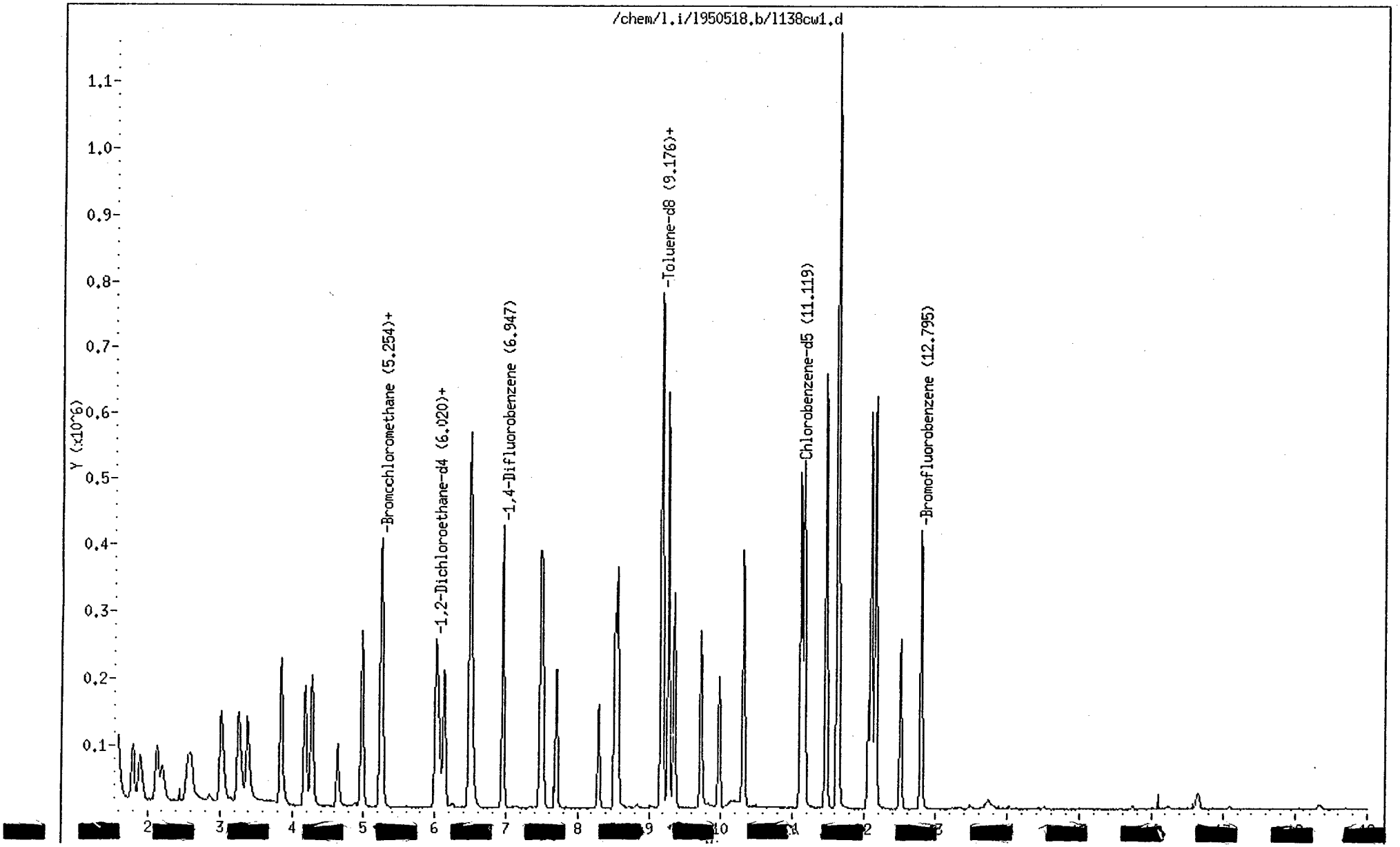
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	74479	37240	148958	74479	0.00
32 1,4-Difluorobenzene	412556	206278	825112	412556	0.00
50 Chlorobenzene-d5	322864	161432	645728	322864	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	0.00
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.95	0.00
50 Chlorobenzene-d5	11.12	10.62	11.62	11.12	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950518.b/1138cw1.d
Date : 18-MAY-1995 07:51
Client ID:
Sample Info: 50 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i
Operator: JC
Column diameter: 0.25



SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i Injection Date: 18-MAY-1995 09:43
Lab File ID: k138cs2.d Init. Calibration Date(s): 05/02/95 05/02/95
Analysis Type: SOIL Init. Calibration Times: 20:30 21:27
Lab Sample ID: 50 PPB STD 8240S Method File: /chem/k.i/k950518.b/kvoclps.m
Quant Type: ISTD

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	4 Chloromethane	2.451	2.800	0.010	14.2	40.0
	5 Vinyl Chloride	2.538	2.715	0.100	7.0	25.0
	7 Bromomethane	1.839	1.921	0.100	4.4	25.0
	6 Chloroethane	2.054	2.267	0.010	10.4	40.0
	9 Trichlorofluoromethane	1.955	1.856	0.010	5.1	40.0
	8 Acetone	0.244	0.249	0.010	2.2	100.0
	10 1,1-Dichloroethene	2.037	1.768	0.100	13.2	25.0
	11 Methylene Chloride	2.413	2.188	0.010	9.3	40.0
M	1 1,2-Dichloroethene (total)	2.551	2.328	0.010	8.7	40.0
	12 Carbon Disulfide	8.123	6.977	0.010	14.1	40.0
	13 trans-1,2-Dichloroethene	2.583	2.307	0.010	10.7	40.0
	14 1,1-Dichloroethane	4.811	4.573	0.200	4.9	25.0
	16 Vinyl Acetate	4.341	3.433	0.010	20.9	100.0
	17 2-Butanone	1.834	1.963	0.010	7.0	100.0
	19 cis-1,2-Dichloroethene	2.519	2.350	0.010	6.7	100.0
	21 Chloroform	4.063	3.949	0.200	2.8	25.0
	24 1,1,1-Trichloroethane	3.305	3.206	0.100	3.0	25.0
	25 1,2-Dichloroethane	0.456	0.509	0.100	11.5	25.0
	27 Benzene	1.452	1.396	0.500	3.9	25.0
	28 Carbon Tetrachloride	0.385	0.402	0.100	4.2	25.0
	33 1,2-Dichloropropane	0.387	0.391	0.010	1.2	25.0
	34 Trichloroethene	0.328	0.313	0.300	4.7	25.0
	35 Bromodichloromethane	0.426	0.449	0.010	5.5	100.0
	15 2-Chloroethylvinylether	0.732	0.733	0.010	0.1	100.0
	38 4-Methyl-2-Pentanone	0.342	0.398	0.010	16.4	100.0
	42 cis-1,3-Dichloropropene	0.390	0.425	0.200	8.8	25.0
	37 trans-1,3-Dichloropropene	0.698	0.677	0.100	3.0	25.0
	43 Toluene	1.189	1.059	0.400	10.9	25.0
	44 1,1,2-Trichloroethane	0.316	0.306	0.100	3.4	25.0
	45 2-Hexanone	0.388	0.425	0.010	9.5	100.0
	46 Dibromochloromethane	0.372	0.365	0.100	1.8	25.0
	48 Tetrachloroethene	0.403	0.350	0.200	13.0	25.0
	52 Chlorobenzene	1.112	1.060	0.500	4.6	25.0
M	2 Xylene (Total)	0.716	0.671	0.300	6.2	25.0
	53 Ethylbenzene	0.609	0.558	0.300	8.5	25.0
	54 m,p-Xylene(s)	0.727	0.680	0.300	6.5	25.0
	55 Bromoform	0.213	0.229	0.100	7.5	25.0
	57 Styrene	1.129	1.083	0.300	4.1	25.0
	58 o-Xylene	0.695	0.655	0.300	5.8	25.0
	59 1,1,2,2-Tetrachloroethane	0.357	0.407	0.300	13.8	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k138cs2.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 18-MAY-1995 09:43
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950518.b/kvoclps.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 23 1,2-Dichloroethane-d4	0.482	0.449	0.010	6.9	40.0
$ 40 Toluene-d8	1.661	1.488	0.010	10.4	40.0
$ 61 Bromofluorobenzene	0.578	0.576	0.200	0.2	25.0

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950518.b/k138cs2.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 18-MAY-1995 09:43
Operator : HLW Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950518.b/kvoclps.m
Meth Date : 18-May-1995 10:07 hillery Quant Type: ISTD
Cal Date : 18-MAY-1995 09:43 Cal File: k138cs2.d
Als bottle: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
4	Chloromethane	50.00	1.361	1.361	(0.642)	191074	250	50
5	Vinyl Chloride	62.00	1.407	1.407	(0.664)	185299	250	50
7	Bromomethane	94.00	1.437	1.437	(0.678)	131067	250	50
6	Chloroethane	64.00	1.437	1.437	(0.678)	154716	250	50
9	Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	126642	250	50
8	Acetone	58.00	1.513	1.513	(0.714)	16981	250	50(a)
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	120660	250	50
11	Methylene Chloride	84.00	1.664	1.664	(0.785)	149326	250	50
M 1	1,2-Dichloroethene (total)	96.00				317760	500	100
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	476100	250	50
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	157401	250	50
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	312051	250	50
16	Vinyl Acetate	43.00	1.861	1.861	(0.878)	234289	250	50
17	2-Butanone	43.00	1.967	1.967	(0.928)	133920	250	50
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	160359	250	50
21	Chloroform	83.00	2.119	2.119	(1.000)	269456	250	50
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	218775	250	50
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.859)	216438	250	50
27	Benzene	78.00	2.558	2.558	(0.913)	594015	250	50
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.919)	170946	250	50
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.097)	166534	250	50
34	Trichloroethene	130.00	3.089	3.089	(1.103)	133163	250	50
35	Bromodichloromethane	83.00	3.210	3.210	(1.146)	190949	250	50
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.659)	312051	250	50
38	4-Methyl-2-Pentanone	43.00	4.028	4.028	(1.438)	169514	250	50
42	cis-1,3-Dichloropropene	75.00	4.649	4.649	(1.660)	180709	250	50
37	trans-1,3-Dichloropropene	75.00	3.968	3.968	(0.586)	218979	250	50
43	Toluene	92.00	4.649	4.649	(0.687)	342377	250	50
44	1,1,2-Trichloroethane	83.00	4.801	4.801	(0.709)	98812	250	50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.392	5.392	(0.796)	137474	250	50
	46 Dibromochloromethane	129.00	5.407	5.407	(0.799)	118111	250	50
	48 Tetrachloroethene	164.00	5.801	5.801	(0.857)	113312	250	50
	52 Chlorobenzene	112.00	6.816	6.816	(1.007)	342903	250	50
M	2 Xylene (Total)	106.00				651395	750	150
	53 Ethylbenzene	106.00	7.256	7.256	(1.072)	180383	250	50
	54 m,p-Xylene(s)	106.00	7.468	7.468	(1.103)	439564	500	100
	55 Bromoform	173.00	7.831	7.831	(1.157)	74012	250	50
	57 Styrene	104.00	8.028	8.028	(1.186)	350149	250	50
	58 o-Xylene	106.00	8.074	8.074	(1.192)	211831	250	50
	59 1,1,2,2-Tetrachloroethane	83.00	8.619	8.619	(1.273)	131567	250	50
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	68238	250	
*	31 1,4-Difluorobenzene	114.00	2.801	2.801	(1.000)	425497	250	
*	51 Chlorobenzene-d5	117.00	6.771	6.771	(1.000)	323411	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.122)	30661	250	50
$	40 Toluene-d8	98.00	4.543	4.543	(0.671)	481150	250	50
$	61 Bromofluorobenzene	95.00	8.862	8.862	(1.309)	186356	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k138cs2.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950518.b/kvoclps.m
Misc Info:

Calibration Date: 05/18/95
Calibration Time: 0943

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	68238	34119	136476	68238	0.00
31 1,4-Difluorobenzene	425497	212748	850994	425497	0.00
51 Chlorobenzene-d5	323411	161706	646822	323411	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.00
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.00

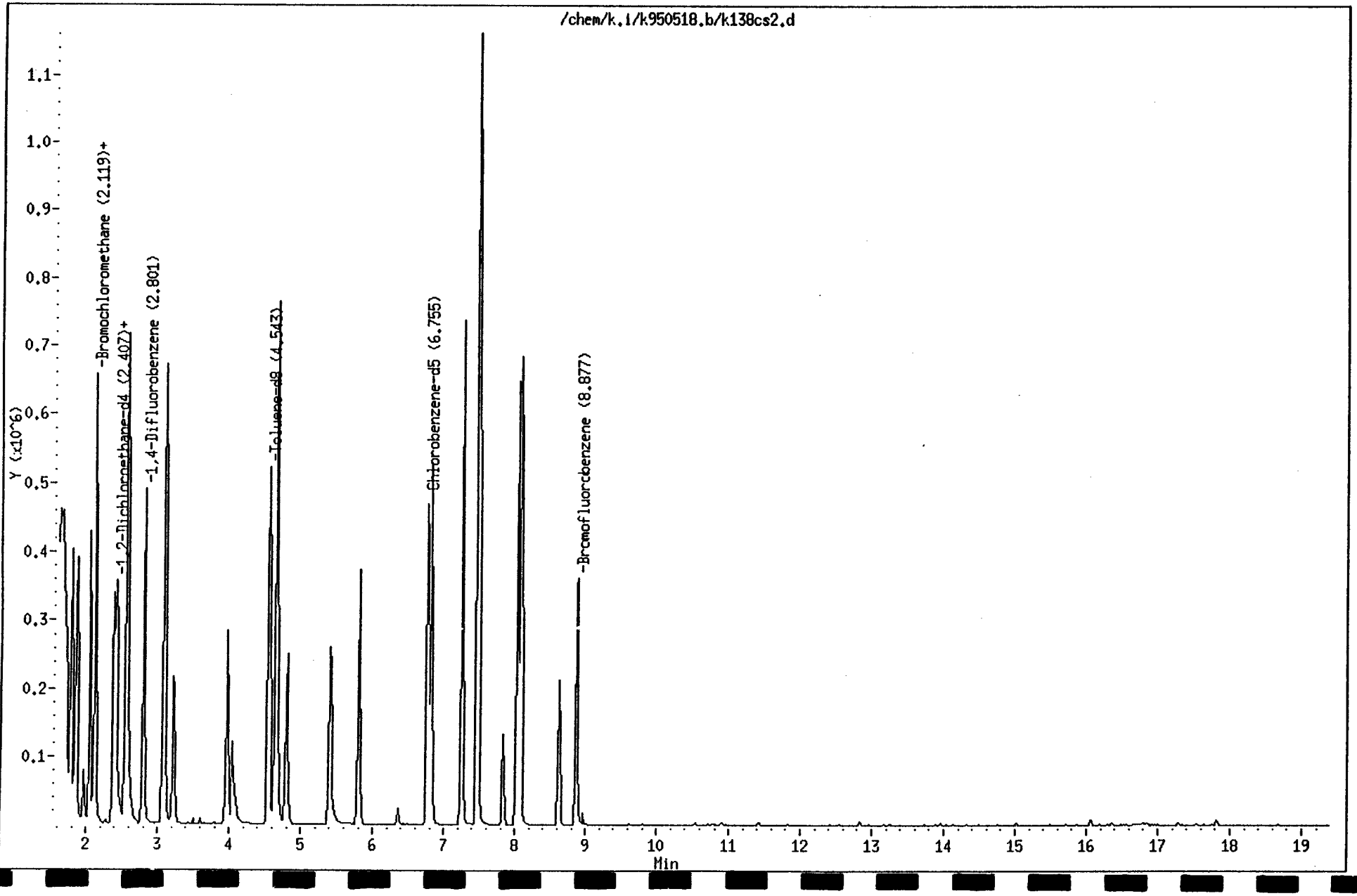
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950518.b/k138cs2.d
Date : 18-MAY-1995 09:43
Client ID:
Sample Info: 50 PPB STD 8240S

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Houston Labs

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: LCS-8270S
Level: LC
Data Type: MS DATA
SpikeList File: 8270s.spk
Method File: /chem/h.i/h950518.b/hclps.m
Misc Info: E137S1/H137B02/H138CC1

Client SDG: h950518
Fraction: SV

Operator: LH
SampleType: BLANK
Quant Type: ISTD

	SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
5	Phenol	2500	1300	53.81	26-90
9	2-Chlorophenol	2500	1500	59.66	25-102
12	1,4-Dichlorobenzen	1600	1100	69.76	28-104
21	N-Nitroso-di-n-pro	1600	1400	89.70	41-126
31	1,2,4-Trichloroben	1600	1100	70.70	38-107
36	4-Chloro-3-methylp	2500	1900	76.05	26-103
49	Acenaphthene	1600	1100	70.82	31-137
51	4-Nitrophenol	2500	1500	60.07	11-114
53	2,4-Dinitrotoluene	1600	1200	78.31	28-89
64	Pentachlorophenol	2500	850	33.98	17-109
71	Pyrene	1600	1100	66.87	35-142

	SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 23	Nitrobenzene-d5	1600	1200	74.46	23-120
$ 41	2-Fluorobiphenyl	1600	1200	75.54	30-115
$ 72	Terphenyl-d14	1600	1200	71.97	18-137
$ 3	2-Fluorophenol	2500	1500	61.31	25-121
$ 4	Phenol-d5	2500	1700	66.79	24-113
$ 61	2,4,6-Tribromophen	2500	1800	73.02	19-122

Idelis Williams, QC Officer

3B

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 504362 SAS No.: ___ SDG NO.: 505612

Matrix Spike - EPA Sample No.: SFA-Q2-4(0-3')VER

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
Phenol	2500	0	2200	88	26- 90
2-Chlorophenol	2500	0	2200	88	25-102
1,4-Dichlorobenzene	1600	0	1300	81	28-104
N-Nitroso-di-n-prop.(1)	1600	0	1700	106	41-126
1,2,4-Trichlorobenzene	1600	0	1500	94	38-107
4-Chloro-3-methylphenol	2500	0	2500	100	26-103
Acenaphthene	1600	0	1700	106	31-137
4-Nitrophenol	2500	0	1000	40	11-114
2,4-Dinitrotoluene	1600	0	1600	105*	28- 89
Pentachlorophenol	2500	0	950	38	17-109
Pyrene	1600	0	1800	113	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
Phenol	2500	2200	88	0	35	26- 90
2-Chlorophenol	2500	2300	92	4	50	25-102
1,4-Dichlorobenzene	1600	1400	88	8	27	28-104
N-Nitroso-di-n-prop.(1)	1600	1800	113	6	38	41-126
1,2,4-Trichlorobenzene	1600	1600	100	6	23	38-107
4-Chloro-3-methylphenol	2500	2600	104*	4	33	26-103
Acenaphthene	1600	1500	94	12	19	31-137
4-Nitrophenol	2500	1200	48	18	50	11-114
2,4-Dinitrotoluene	1600	1500	94*	6	47	28- 89
Pentachlorophenol	2500	910	36	5	47	17-109
Pyrene	1600	1800	113	0	36	35-142

(1) N-Nitroso-di-n-propylamine

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 11 outside limits

Spike Recovery: 3 out of 22 outside limits

FORM III SV - 2

Idelis Williams, QC Officer

3A

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: BLANK SAS No.: ____ SDG NO.: 505612

Matrix Spike - EPA Sample No.: BLK01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC.
Phenol	75	0	36	48	12-110
2-Chlorophenol	75	0	39	52	27-123
1,4-Dichlorobenzene	50	0	30	60	36- 97
N-Nitroso-di-n-propylamin	50	0	32	64	41-116
1,2,4-Trichlorobenzene	50	0	31	62	39- 98
4-Chloro-3-methylphenol	75	0	46	61	23- 97
Acenaphthene	50	0	30	60	46-118
4-Nitrophenol	75	0	56	75	10- 80
2,4-Dinitrotoluene	50	0	35	70	24- 96
Pentachlorophenol	75	0	27	36	9-103
Pyrene	50	0	28	56	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
Phenol	75	37	49	2	42	12-110
2-Chlorophenol	75	43	57	9	40	27-123
1,4-Dichlorobenzene	50	31	62	3	28	36- 97
N-Nitroso-di-n-propylamin	50	31	62	3	38	41-116
1,2,4-Trichlorobenzene	50	31	62	0	28	39- 98
4-Chloro-3-methylphenol	75	48	64	5	42	23- 97
Acenaphthene	50	34	68	13	31	46-118
4-Nitrophenol	75	52	69	8	50	10- 80
2,4-Dinitrotoluene	50	35	70	0	38	24- 96
Pentachlorophenol	75	22	29	22	50	9-103
Pyrene	50	27	54	4	31	26-127

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

FORM III SV - 1

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 06/07/95 10:43
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Pyridine	ND	5	ug/L
Phenol	ND	5	ug/L
Aniline	ND	5	ug/L
bis(2-Chloroethyl)ether	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
bis(2-chloroisopropyl)ethe	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
N-Nitroso-di-n-propylamine	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Nitrobenzene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Nitrophenol	ND	25	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Benzoic acid	ND	25	ug/L
bis(2-Chloroethoxy)methane	ND	5	ug/L
2,4-Dichlorophenol	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
Naphthalene	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
4-Chloro-3-methylphenol	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
Dimethylphthalate	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 06/07/95 10:43
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	5	ug/L
3-Nitroaniline	ND	25	ug/L
Acenaphthene	ND	5	ug/L
2,4-Dinitrophenol	ND	25	ug/L
4-Nitrophenol	ND	25	ug/L
Dibenzofuran	ND	5	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
4-Chlorophenyl-phenylether	ND	5	ug/L
Fluorene	ND	5	ug/L
4-Nitroaniline	ND	25	ug/L
4,6-Dinitro-2-methylphenol	ND	25	ug/L
n-Nitrosodiphenylamine	ND	5	ug/L
1,2-Diphenylhydrazine	ND	5	ug/L
4-Bromophenyl-phenylether	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Anthracene	ND	5	ug/L
Carbazole	ND	5	ug/L
Di-n-butylphthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Pyrene	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	5	ug/L
Benzo[a]anthracene	ND	5	ug/L
Chrysene	ND	5	ug/L
bis(2-Ethylhexyl)phthalate	ND	5	ug/L
Di-n-octylphthalate	ND	5	ug/L
Benzo[b]fluoranthene	ND	5	ug/L
Benzo[k]fluoranthene	ND	5	ug/L
Benzo[a]pyrene	ND	5	ug/L
Indeno[1,2,3-cd]pyrene	ND	5	ug/L
Dibenz[a,h]anthracene	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 06/07/95 10:43
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
2-Fluorophenol	54	21-110	% Recovery
Phenol-d5	58	10-110	% Recovery
Nitrobenzene-d5	64	35-114	% Recovery
2-Fluorobiphenyl	75	43-116	% Recovery
2,4,6-Tribromophenol	74	10-123	% Recovery
Terphenyl-d14	72	33-141	% Recovery

Samples in Batch 9505612-02
Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Houston Labs

Data file : /chem/h.i/h950522.b/h138b01.d
Lab Smp Id:
Inj Date : 22-MAY-1995 11:49
Operator : LH Inst ID: h.i
Smp Info : BLANK-8270W/1X
Misc Info : E138C1/H138B01/H142CC1
Comment :
Method : /chem/h.i/h950522.b/hclpw.m
Meth Date : 22-May-1995 15:19 liping Quant Type: ISTD
Cal Date : 22-MAY-1995 10:35 Cal File: h142cc1.d
Als bottle: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: BLK.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
$ 3 2-Fluorophenol	112.00	3.321	3.320	(0.765)	2914389	81	40
$ 4 Phenol-d5	99.00	4.055	4.055	(0.934)	3742198	88	44
* 11 1,4-Dichlorobenzene-d4	152.00	4.340	4.340	(1.000)	922221	40	
$ 23 Nitrobenzene-d5	82.00	4.850	4.861	(0.878)	2349612	64	32
* 32 Naphthalene-d8	136.00	5.525	5.537	(1.000)	3533399	40	
$ 41 2-Fluorobiphenyl	172.00	6.616	6.615	(0.906)	3903583	75	37
* 48 Acenaphthene-d10	164.00	7.303	7.303	(1.000)	1735082	40	
$ 61 2,4,6-Tribromophenol	329.70	8.109	8.120	(0.922)	787164	110	55
* 65 Phenanthrene-d10	188.00	8.796	8.796	(1.000)	2304171	40	
$ 72 Terphenyl-d14	244.00	10.432	10.432	(0.897)	2828861	72	36
* 76 Chrysene-d12	240.00	11.629	11.641	(1.000)	1551972	40	
* 83 Perylene-d12	264.00	13.810	13.821	(1.000)	973027	40	

Data File: /chem/h.i/h950522.b/h138b01.d
Report Date: 22-May-1995 12:08

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h138b01.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950522.b/hclpw.m
Misc Info: E138C1/H138B01/H142CC1

Calibration Date: 05/22/95
Calibration Time: 1035

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	846816	423408	1693632	922221	8.90
32 Naphthalene-d8	3123628	1561814	6247256	3533399	13.12
48 Acenaphthene-d10	1557742	778871	3115484	1735082	11.38
65 Phenanthrene-d10	2030569	1015284	4061138	2304171	13.47
76 Chrysene-d12	1465667	732834	2931334	1551972	5.89
83 Perylene-d12	1077186	538593	2154372	973027	-9.67

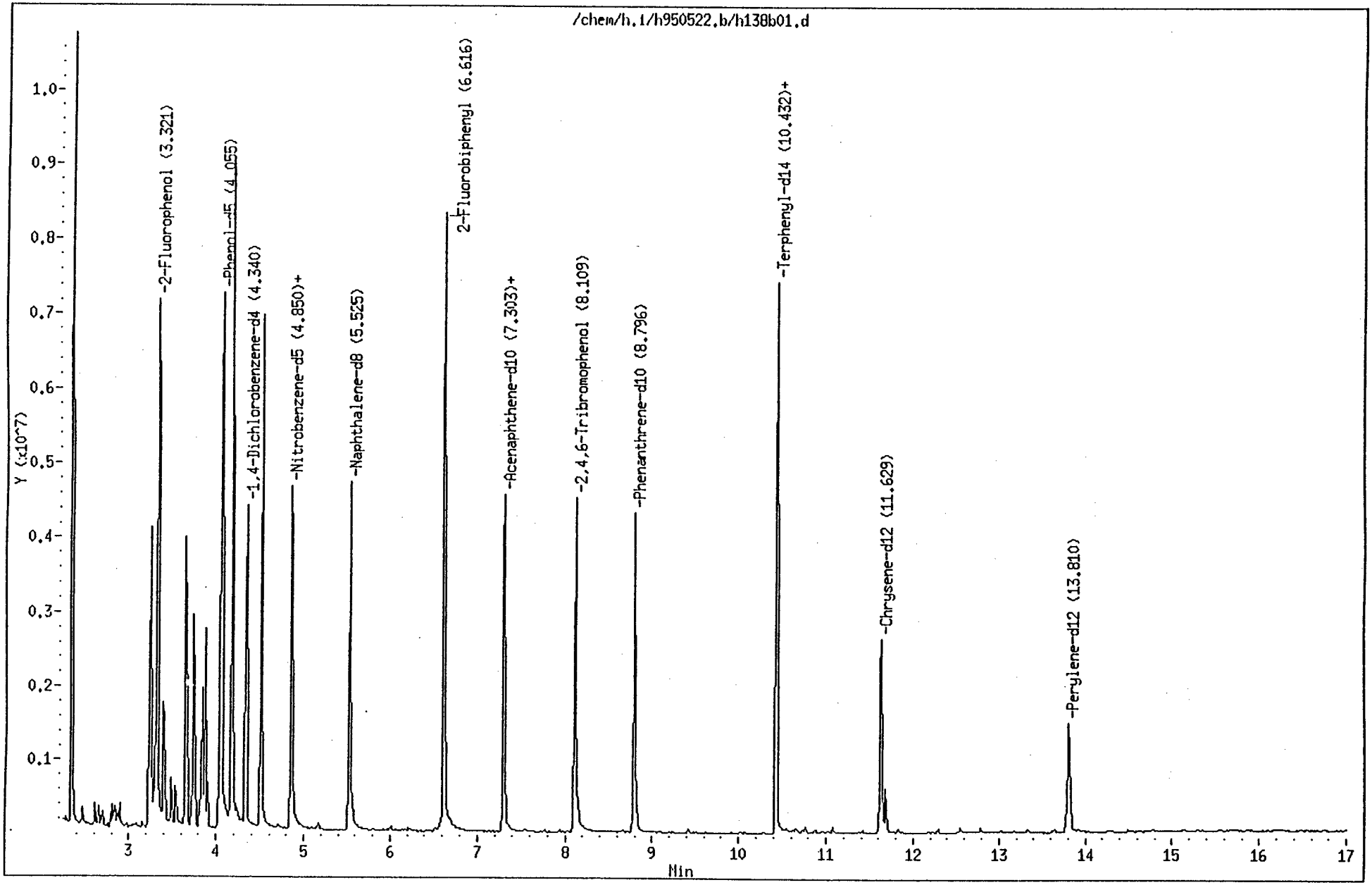
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.34	3.84	4.84	4.34	0.01
32 Naphthalene-d8	5.54	5.04	6.04	5.53	-0.21
48 Acenaphthene-d10	7.30	6.80	7.80	7.30	0.01
65 Phenanthrene-d10	8.80	8.30	9.30	8.80	0.00
76 Chrysene-d12	11.64	11.14	12.14	11.63	-0.10
83 Perylene-d12	13.82	13.32	14.32	13.81	-0.08

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950522.b/h138b01.d
Date : 22-MAY-95 11:49
Client ID:
Sample Info: BLANK-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 06/07/95 10:40
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Pyridine	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
bis(2-Chloroethyl)ether	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
bis(2-chloroisopropyl)ethe	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
N-Nitroso-di-n-propylamine	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Nitrobenzene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Benzoic acid	ND	1600	ug/Kg
bis(2-Chloroethoxy)methane	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
4-Chloro-3-methylphenol	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
Dimethylphthalate	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 06/07/95 10:40
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	330	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
Acenaphthene	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
Dibenzofuran	ND	330	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
4-Chlorophenyl-phenylether	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
4,6-Dinitro-2-methylphenol	ND	800	ug/Kg
n-Nitrosodiphenylamine	ND	330	ug/Kg
1,2-Diphenylhydrazine	ND	330	ug/Kg
4-Bromophenyl-phenylether	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
Di-n-butylphthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
Benzo[a]anthracene	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
bis(2-Ethylhexyl)phthalate	ND	330	ug/Kg
Di-n-octylphthalate	ND	330	ug/Kg
Benzo[b]fluoranthene	ND	330	ug/Kg
Benzo[k]fluoranthene	ND	330	ug/Kg
Benzo[a]pyrene	ND	330	ug/Kg
Indeno[1,2,3-cd]pyrene	ND	330	ug/Kg
Dibenz[a,h]anthracene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 06/07/95 10:40
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	330	ug/Kg

Surrogate	Result	QC Criteria	Units
2-Fluorophenol	61	25-121	% Recovery
Phenol-d5	80	24-113	% Recovery
Nitrobenzene-d5	80	23-120	% Recovery
2-Fluorobiphenyl	78	30-115	% Recovery
2,4,6-Tribromophenol	67	19-122	% Recovery
Terphenyl-d14	96	18-137	% Recovery

Samples in Batch 9505612-03 9505612-04 9505612-05 9505612-06

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Houston Labs

Data file : /chem/h.i/h950525.b/h142b02.d
Lab Smp Id:
Inj Date : 25-MAY-1995 18:11
Operator : LH Inst ID: h.i
Smp Info : BLANK-8270S/1X
Misc Info : E142S1/H142B02/H145CC1
Comment :
Method : /chem/h.i/h950525.b/hclps.m
Meth Date : 25-May-1995 17:33 liping Quant Type: ISTD
Cal Date : 25-MAY-1995 14:51 Cal File: h145cc1.d
Als bottle: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: blk.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
$ 3 2-Fluorophenol	112.00	3.140	3.131	(0.764)	494829	92	1500
$ 4 Phenol-d5	99.00	3.840	3.854	(0.934)	692297	120	2000
* 11 1,4-Dichlorobenzene-d4	152.00	4.112	4.115	(1.000)	116443	40	
$ 23 Nitrobenzene-d5	82.00	4.622	4.636	(0.872)	391059	76	1300
* 32 Naphthalene-d8	136.00	5.297	5.300	(1.000)	426876	40	
$ 41 2-Fluorobiphenyl	172.00	6.376	6.390	(0.904)	481093	75	1200
* 48 Acenaphthene-d10	164.00	7.051	7.066	(1.000)	180773	40	
$ 61 2,4,6-Tribromophenol	329.70	7.869	7.871	(0.921)	36758	100	1700
* 65 Phenanthrene-d10	188.00	8.544	8.559	(1.000)	213616	40	
$ 72 Terphenyl-d14	244.00	10.179	10.194	(0.899)	276153	92	1500
* 76 Chrysene-d12	240.00	11.317	11.320	(1.000)	111995	40	
* 83 Perylene-d12	264.00	13.367	13.382	(1.000)	54692	40	

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h142b02.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950525.b/hclps.m
Misc Info: E142S1/H142B02/H145CC1

Calibration Date: 05/25/95
Calibration Time: 1451

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	213376	106688	426752	116443	-45.43
32 Naphthalene-d8	590600	295300	1181200	426876	-27.72
48 Acenaphthene-d10	186159	93080	372318	180773	-2.89
65 Phenanthrene-d10	197293	98646	394586	213616	8.27
76 Chrysene-d12	94767	47384	189534	111995	18.18
83 Perylene-d12	48855	24428	97710	54692	11.95

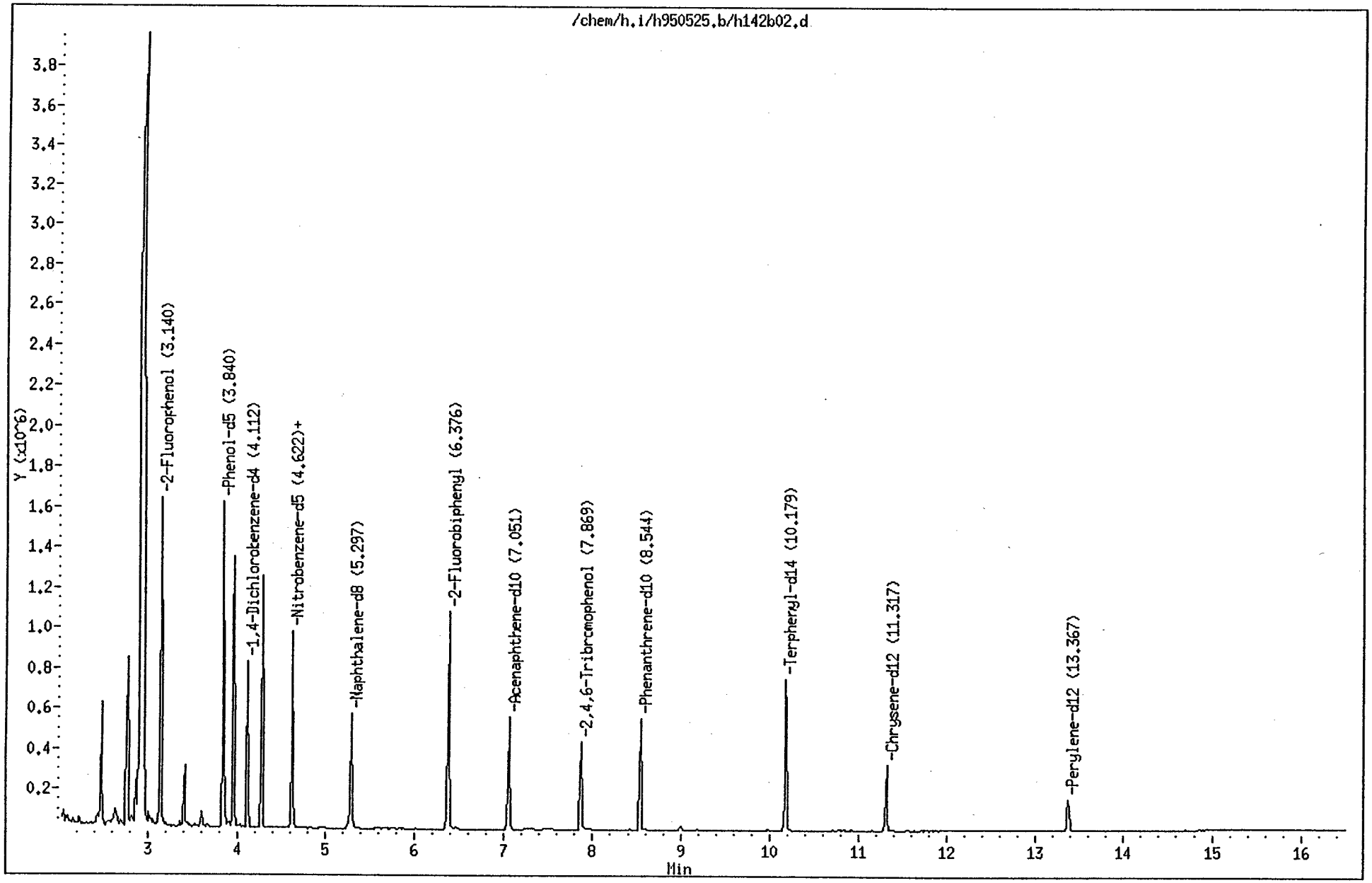
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.11	3.61	4.61	4.11	-0.07
32 Naphthalene-d8	5.30	4.80	5.80	5.30	-0.05
48 Acenaphthene-d10	7.07	6.57	7.57	7.05	-0.21
65 Phenanthrene-d10	8.56	8.06	9.06	8.54	-0.17
76 Chrysene-d12	11.32	10.82	11.82	11.32	-0.02
83 Perylene-d12	13.38	12.88	13.88	13.37	-0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950525.b/h142b02.d
Date : 25-MAY-95 18:11
Client ID:
Sample Info: BLANK-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



Data File: /chem/j.i/j950522.b/j142df2.d

Date : 22-MAY-95 10:29

Client ID:

Instrument: j.i

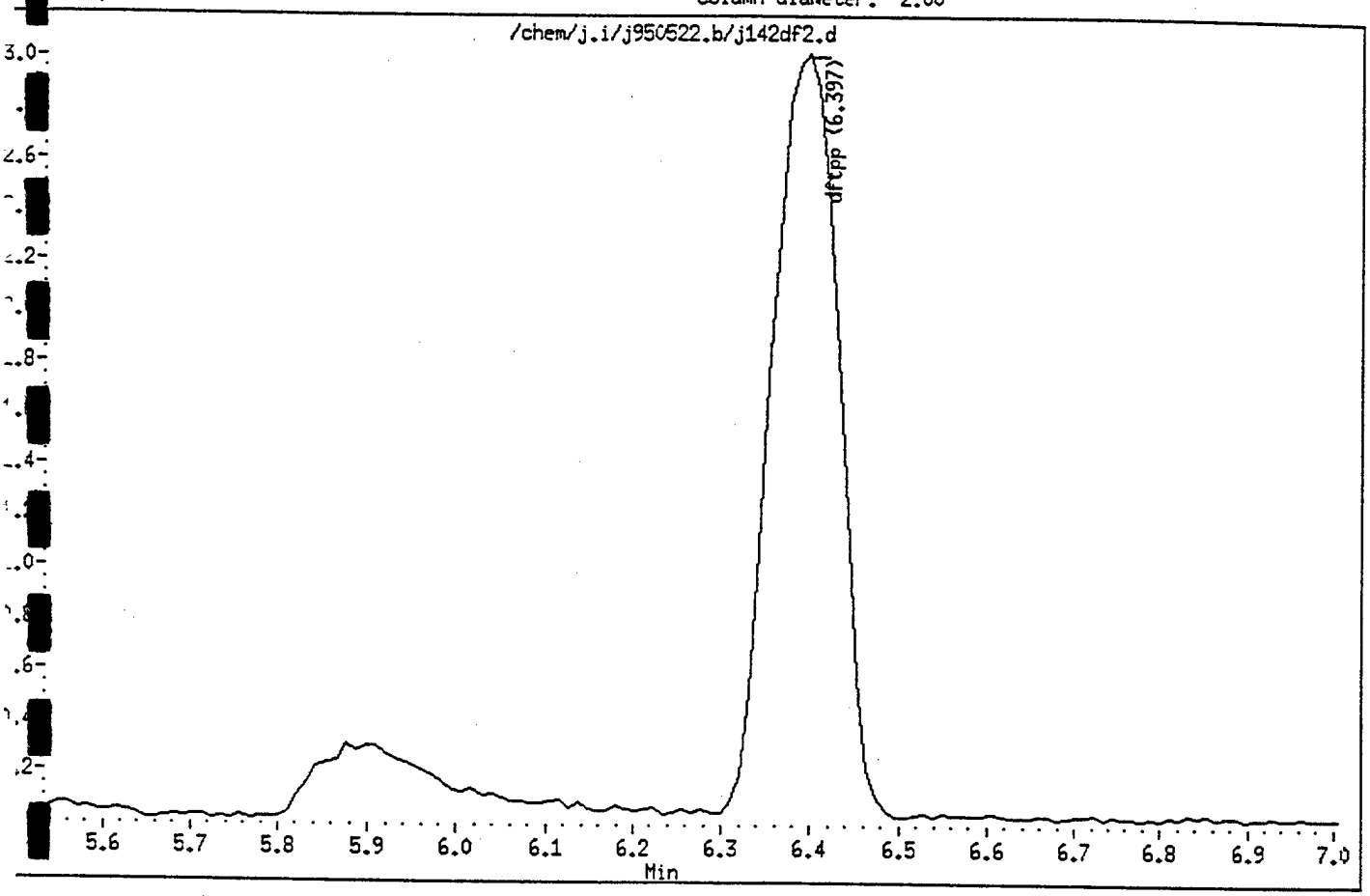
Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0

Operator: PC

Column phase:

Column diameter: 2.00



Data File: /chem/j.i/j950522.b/j142df2.d

Date : 22-MAY-95 10:29

Client ID:

Sample Info: 50 NG DFTPP

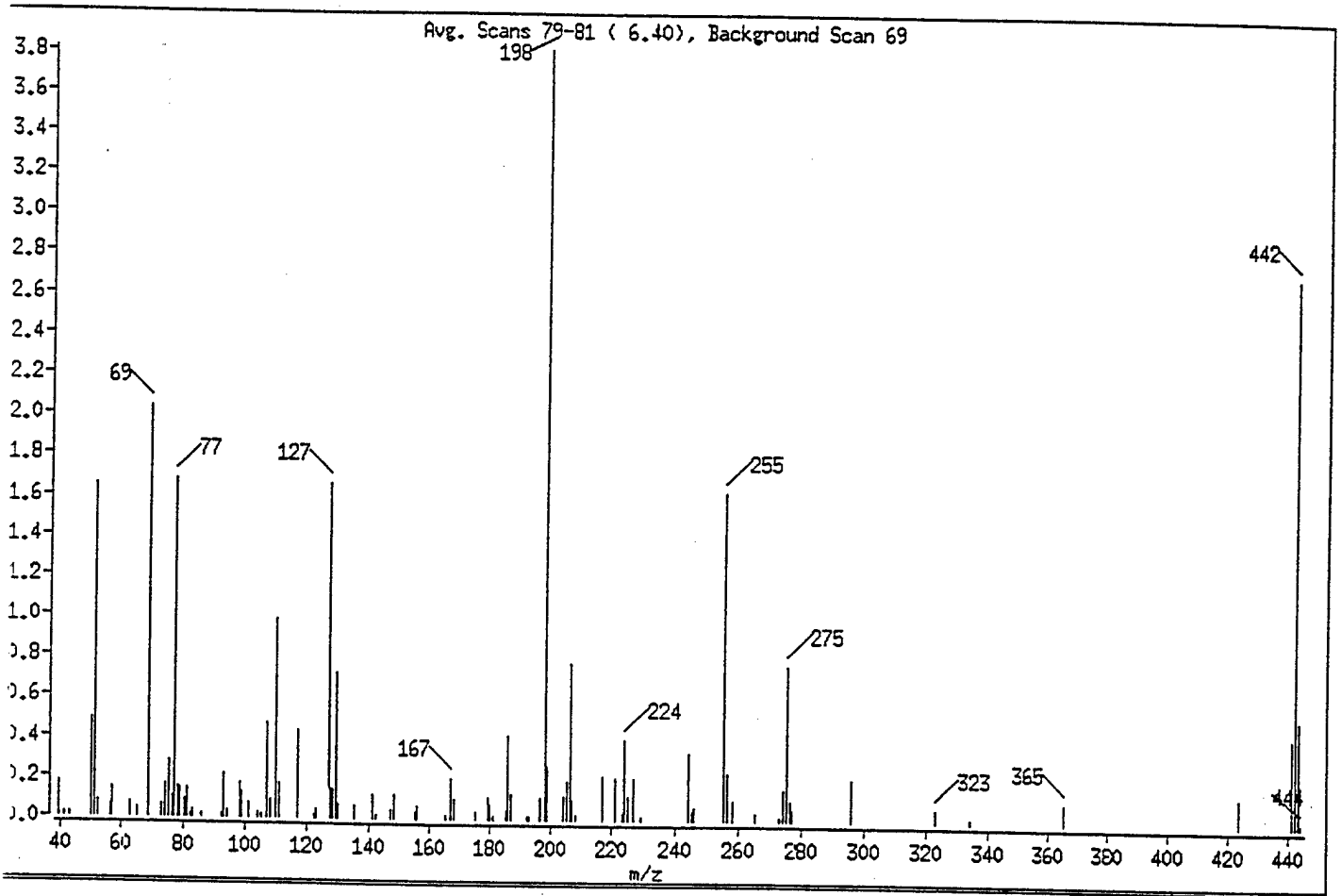
Volume Injected (uL): 2.0

Column phase:
1 dftpp

Instrument: j.i

Operator: PC

Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	43.17
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	53.33
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	43.50
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.91
275	10.00 - 30.00% of mass 198	20.09
365	Greater than 0.75% of mass 198	2.56
441	Present, but less than mass 443	11.36
442	40.00 - 110.00% of mass 198	71.14
443	17.00 - 23.00% of mass 442	13.75 (19.33)

ta File: /chem/j.i/j950522.b/j142df2.d
te : 22-MAY-95 10:29
Client ID:
Instrument: j.i
mple Info: 50 NG DFTPP
olume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 2.00

Data File: j142df2.d
Spectrum : Avg. Scans 79-81 (6.40), Background Scan 69
Largest m/z: 197.95
Number of peaks: 97

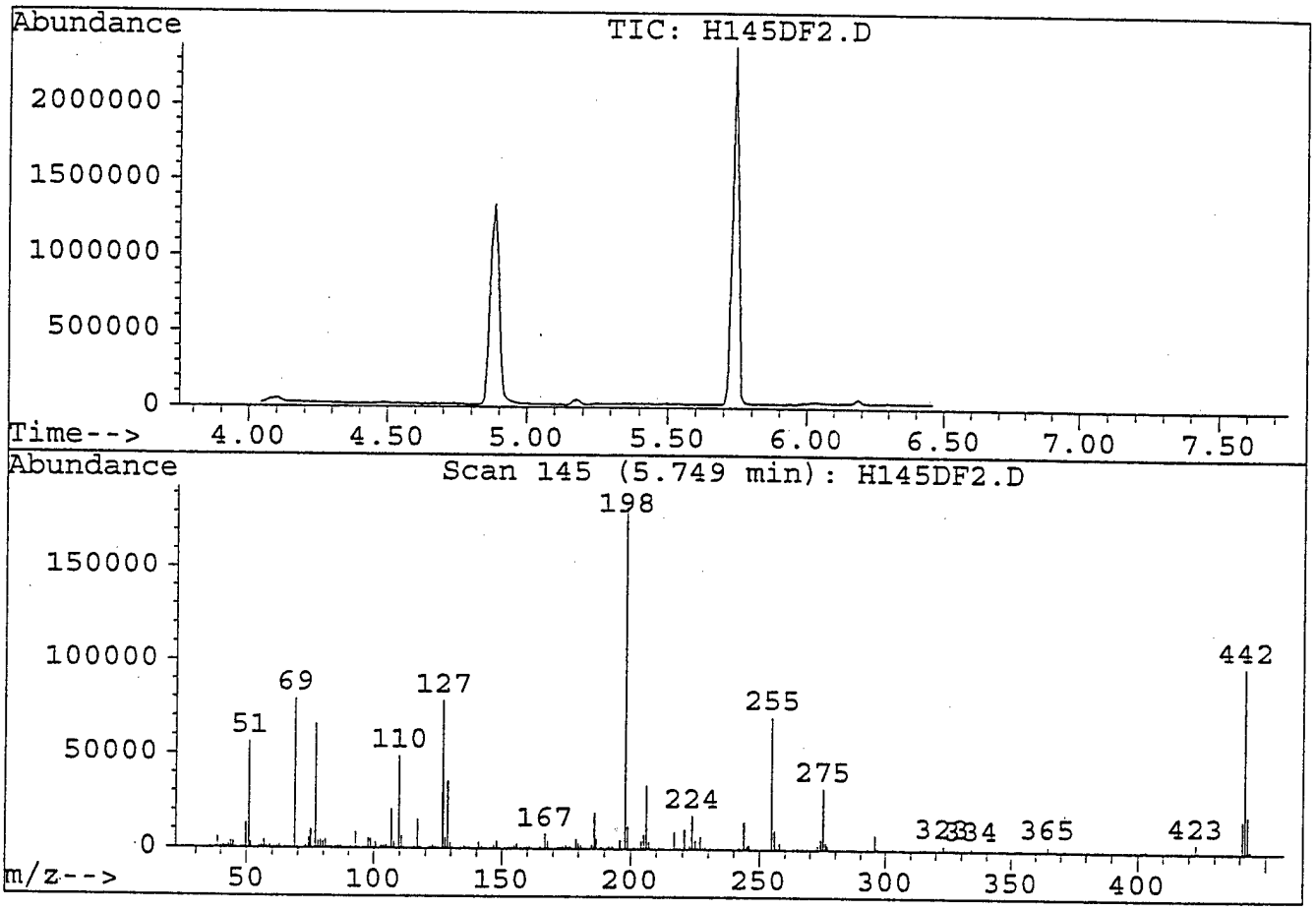
m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.05	1718	93.90	369	166.95	1941	228.90	166
41.05	193	97.90	1710	167.95	971	244.00	3361
42.95	178	98.90	1288	174.95	402	244.90	408
50.00	4873	100.80	730	178.95	1058	245.80	656
51.00	16464	103.90	231	179.95	694	254.90	16216
52.00	840	104.90	208	180.95	187	256.00	2315
56.00	621	107.00	4711	185.05	406	257.90	1014
57.00	1398	108.00	920	185.95	4116	264.90	397
63.00	703	110.00	9845	186.85	1280	272.90	170
64.90	426	111.00	1673	191.95	194	274.00	1574
68.90	20336	116.90	4331	192.95	198	275.00	7662
73.00	587	121.90	198	195.95	1096	276.00	974
74.00	1661	122.90	414	197.95	38136	277.00	559
74.90	2837	127.00	16584	198.85	2636	295.90	2067
76.10	1097	128.00	1406	203.95	1196	322.95	626
77.00	16768	129.00	7231	205.05	1864	333.85	205
78.00	1504	129.90	743	205.95	7725	364.95	978
78.90	1437	134.90	599	206.95	981	423.00	1351
79.90	863	140.85	1193	208.05	228	441.00	4334
80.90	1426	141.85	178	216.85	2202	442.00	27128
82.00	169	147.05	448	220.95	2037	443.00	5244
82.90	371	147.95	1161	223.05	379	444.00	187
85.90	170	154.95	358	224.05	3931		
92.00	207	155.95	602	224.95	1205		
92.90	2158	164.95	149	226.95	2088		

DFTPP

Data File : C:\HPCHEM\1\DATA\H950525\H145DF2.D
Acq On : 25 May 95 2:39 pm
Sample : 50 NG DFTPP
Misc : 950525 50NG DFTPP

Vial: 1
Operator: LH
Inst : h
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ENVDEF.M
Title :



Peak Apex is scan: 145

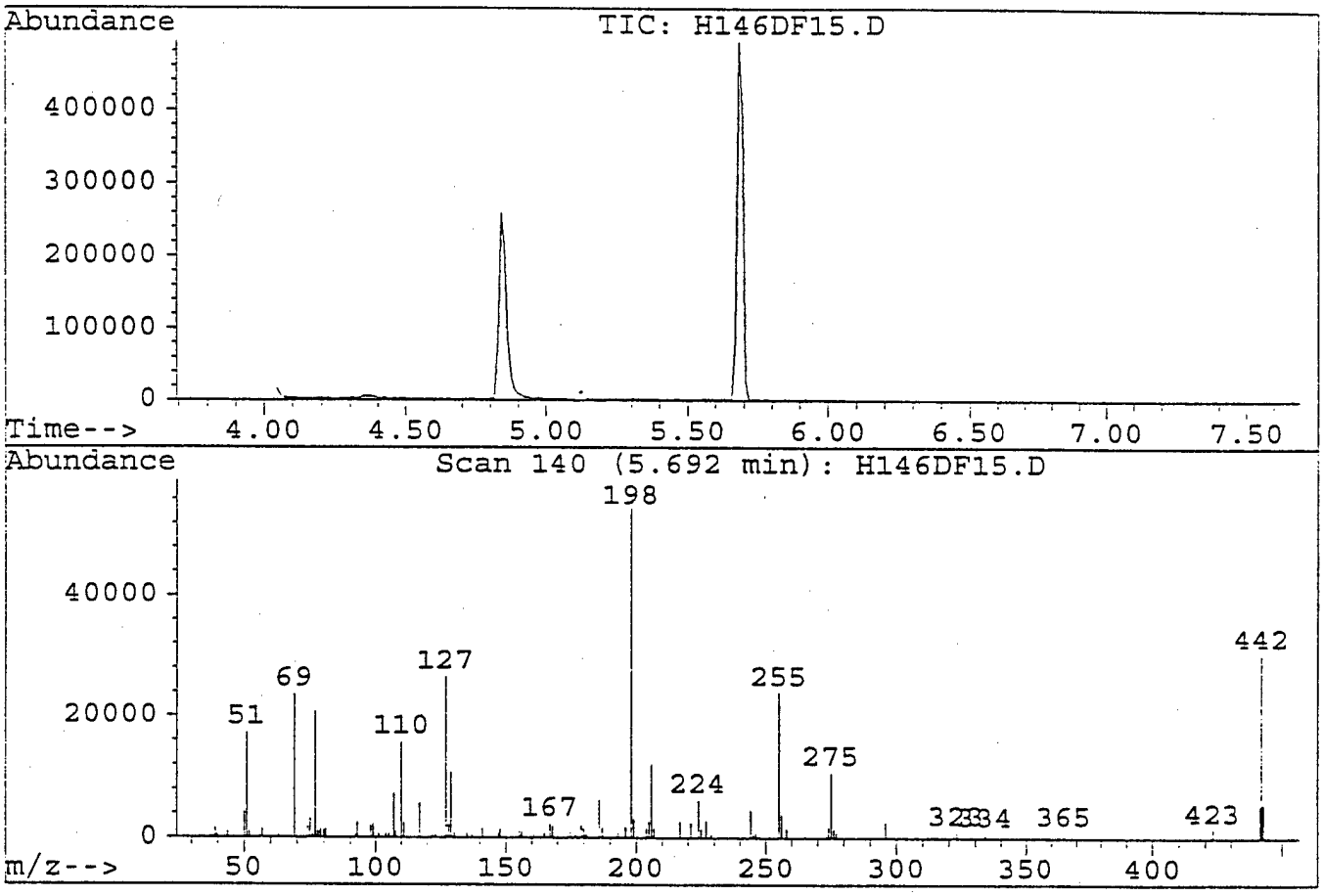
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	56152	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	43.0	79248	PASS
70	69	0	2	0.9	688	PASS
127	198	40	60	42.5	78360	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	184192	PASS
199	198	5	9	6.5	11962	PASS
275	198	10	30	17.6	32480	PASS
365	198	1	100	1.7	3186	PASS
441	443	0	100	87.8	17112	PASS
442	198	40	100	53.7	98872	PASS
443	442	17	23	19.7	19488	PASS

DFTPP

Data File : C:\HPCHEM\1\DATA\H950526\H146DF15.D
Acq On : 26 May 95 1:30 pm
Sample : 50 NG DFTPP
Misc : 950526 50NG DFTPP

Vial: 1
Operator: LH
Inst : h
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ENVDEF.M
Title :



Peak Apex is scan: 140

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	17184	PASS
68	69	0	2	0.0	0	PASS
69	198	0	100	41.8	23528	PASS
70	69	0	2	0.0	0	PASS
127	198	40	60	47.0	26440	PASS
197	198	0	1	0.0	0	PASS
198	198	100	100	100.0	56280	PASS
199	198	5	9	5.5	3091	PASS
275	198	10	30	19.0	10675	PASS
365	198	1	100	1.5	865	PASS
441	443	0	100	94.5	5304	PASS
442	198	40	100	53.8	30304	PASS
443	442	17	23	18.5	5612	PASS

H146DF15.D ENVDEF.M Fri May 26 13:38:40 1995

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAY-1995 15:37
End Cal Date : 24-MAY-1995 17:27
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/h.i/h950524.b/hclpw.m
Cal Date : 25-May-1995 11:24 liping
Curve Type : Average

Calibration File Names:
Level 1: /chem/h.i/h950524.b/h144ic5.d
Level 2: /chem/h.i/h950524.b/h144ic1.d
Level 3: /chem/h.i/h950524.b/h144ic4.d
Level 4: /chem/h.i/h950524.b/h144ic3.d
Level 5: /chem/h.i/h950524.b/h144ic2.d

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
2 Pyridine	2.28163	2.28935	2.34936	2.03309	2.27949	2.24659	5.464
5 Phenol	2.15885	2.33902	2.29608	2.19533	1.96442	2.19074	6.667
6 Aniline	2.10403	2.21855	2.21002	2.12645	2.08007	2.14782	2.930
7 bis(2-Chloroethyl)ether	1.77650	1.94108	2.14610	1.97130	1.73803	1.91460	8.573
9 2-Chlorophenol	1.43628	1.54078	1.55090	1.45120	1.41062	1.47795	4.313
10 1,3-Dichlorobenzene	1.60259	1.57654	1.61540	1.56002	1.48290	1.56749	3.318
12 1,4-Dichlorobenzene	1.59348	1.66011	1.60455	1.50189	1.51123	1.57425	4.246
13 Benzyl alcohol	0.60744	1.04660	0.94143	0.91747	0.80948	0.86448	19.269
15 1,2-Dichlorobenzene	1.40817	1.47891	1.47631	1.39469	1.31210	1.41403	4.859
16 2-Methylphenol	1.31226	1.49853	1.55538	1.54560	1.29242	1.44084	8.914
17 ortho-Cresol	1.31226	1.49853	1.55538	1.54560	1.25483	1.43332	9.760
18 bis(2-chloroisopropyl)ether	2.27146	2.78240	2.78511	2.64464	2.22931	2.54258	10.742
19 4-Methylphenol	1.12841	1.51334	1.50445	1.51665	1.20425	1.37342	13.906
20 meta,para-Cresol	1.12841	1.51334	1.50445	1.51665	1.20425	1.37342	13.906
21 N-Nitroso-di-n-propylamine	0.78994	1.23508	1.24076	1.19516	0.88553	1.06929	20.087
22 Hexachloroethane	0.67327	0.70873	0.70054	0.67277	0.64458	0.67998	3.749
24 Nitrobenzene	0.45435	0.44441	0.44707	0.43117	0.42986	0.44137	2.394
25 Isophorone	0.70168	0.93206	0.94179	0.91291	0.76885	0.85146	12.824
26 2-Nitrophenol	0.18614	0.20309	0.21825	0.20917	0.20607	0.20454	5.746
27 2,4-Dimethylphenol	0.36264	0.38493	0.39825	0.38415	0.36478	0.37895	3.963
28 Benzoic acid	0.05088	0.09164	0.08413	0.12394	0.11486	0.09309	30.808
29 bis(2-Chloroethoxy)methane	0.44732	0.55675	0.56815	0.53768	0.49086	0.52015	9.667
30 2,4-Dichlorophenol	0.23288	0.25184	0.25953	0.25752	0.24359	0.24907	4.401
31 1,2,4-Trichlorobenzene	0.26784	0.26441	0.26150	0.25058	0.25914	0.26069	2.503
33 Naphthalene	1.07847	1.11273	1.07983	1.04880	1.01613	1.06719	3.413
34 4-Chloroaniline	0.35385	0.37402	0.39411	0.39719	0.35376	0.37459	5.593

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAY-1995 15:37
End Cal Date : 24-MAY-1995 17:27
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/h.i/h950524.b/hclpw.m
Cal Date : 25-May-1995 11:24 liping
Curve Type : Average

	20	50	80	120	160	___	
Compound	Level 1	Level 2	Level 3	Level 4	Level 5	RRF	% RSD
35 Hexachlorobutadiene	0.11480	0.11122	0.10532	0.10308	0.11161	0.10921	4.434
36 4-Chloro-3-methylphenol	0.23777	0.29945	0.32905	0.32624	0.27691	0.29388	12.904
37 2-Methylnaphthalene	0.51928	0.63985	0.65227	0.63550	0.55996	0.60137	9.728
38 Hexachlorocyclopentadiene	0.24604	0.24463	0.23977	0.23190	0.28446	0.24936	8.175
39 2,4,6-Trichlorophenol	0.29102	0.30603	0.33802	0.31234	0.33975	0.31743	6.637
40 2,4,5-Trichlorophenol	0.35022	0.35167	0.36376	0.37569	0.39340	0.36695	4.912
42 2-Chloronaphthalene	1.28826	1.18699	1.18506	1.14313	1.24265	1.20922	4.680
43 2-Nitroaniline	0.47938	0.43179	0.51679	0.51697	0.49926	0.48884	7.250
44 Dimethylphthalate	1.26769	1.47156	1.47318	1.39440	1.34890	1.39115	6.249
45 2,6-Dinitrotoluene	0.31500	0.33018	0.36346	0.36531	0.33405	0.34160	6.439
46 Acenaphthylene	2.01280	2.04850	2.08995	2.02574	2.01404	2.03821	1.584
47 3-Nitroaniline	0.38229	0.31580	0.37685	0.41785	0.41291	0.38114	10.694
49 Acenaphthene	1.22600	1.22493	1.23998	1.19998	1.17659	1.21350	2.074
50 2,4-Dinitrophenol	+++++	0.06279	0.06761	0.09797	0.11445	0.08570	28.812
51 4-Nitrophenol	0.12220	0.11034	0.13989	0.17829	0.17099	0.14434	20.578
52 Dibenzofuran	1.59396	1.47503	1.60149	1.60354	1.59367	1.57354	3.511
53 2,4-Dinitrotoluene	0.35659	0.37904	0.44609	0.47693	0.44583	0.42090	12.046
54 Diethylphthalate	1.32981	1.45455	1.57480	1.55118	1.40770	1.46361	6.929
55 4-Chlorophenyl-phenylether	0.46727	0.47953	0.52550	0.50777	0.45354	0.48672	6.058
56 Fluorene	1.15997	1.19786	1.24985	1.23108	1.09954	1.18766	5.050
57 4-Nitroaniline	0.33427	0.24827	0.34776	0.40565	0.40250	0.34769	18.432
58 4,6-Dinitro-2-methylphenol	0.04969	0.13351	0.15528	0.17318	0.16787	0.13591	37.204
59 n-Nitrosodiphenylamine	0.60541	0.66638	0.63817	0.58939	0.60271	0.62041	5.051
60 1,2-Diphenylhydrazine	3.34058	3.34696	3.04960	2.48399	2.51876	2.94798	14.423
62 4-Bromophenyl-phenylether	0.17214	0.19808	0.19637	0.17718	0.19136	0.18703	6.251
63 Hexachlorobenzene	0.16823	0.19438	0.18883	0.17199	0.18593	0.18187	6.178
64 Pentachlorophenol	0.04472	0.08025	0.09620	0.09782	0.10504	0.08481	28.497
66 Phenanthrene	1.31908	1.35092	1.38235	1.33519	1.27360	1.33223	3.021
67 Anthracene	1.26005	1.20713	1.25176	1.25538	1.27109	1.24908	1.966
68 Carbazole	1.23511	1.04712	1.08204	1.19107	1.20507	1.15208	7.150
69 Di-n-butylphthalate	1.92346	2.39617	2.28402	2.09315	1.87674	2.11471	10.615
70 Fluoranthene	1.00415	0.96239	0.97113	1.08519	1.05453	1.01548	5.234
71 Pyrene	1.84559	2.14910	2.51281	1.83018	2.06973	2.08148	13.365
73 Butylbenzylphthalate	1.18449	1.55517	1.78750	1.29790	1.32604	1.43022	16.839

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 24-MAY-1995 15:37
End Cal Date : 24-MAY-1995 17:27
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/h.i/h950524.b/hclpw.m
Cal Date : 25-May-1995 11:24 liping
Curve Type : Average

	Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
74	3,3'-Dichlorobenzidine	0.36901	0.35015	0.35212	0.42264	0.43086	0.38496	10.120
75	Benzo[a]anthracene	1.22512	1.30810	1.29249	1.26276	1.31563	1.28082	2.901
77	Chrysene	1.12139	1.17058	1.15553	1.16769	1.17767	1.15857	1.922
78	bis(2-Ethylhexyl)phthalate	1.61321	2.27355	2.55927	1.80086	1.73308	1.99599	20.166
79	Di-n-octylphthalate	4.59916	6.32942	8.10606	5.41092	5.14095	5.91730	23.229
80	Benzo[b]fluoranthene	1.73562	1.91285	1.97460	1.94104	2.01785	1.91639	5.655
81	Benzo[k]fluoranthene	1.91354	1.93392	2.12893	1.94650	1.89006	1.96259	4.862
82	Benzo[a]pyrene	1.46907	1.50773	1.55629	1.57007	1.59528	1.53969	3.295
84	Indeno[1,2,3-cd]pyrene	1.36877	1.14554	1.31602	1.36987	1.48429	1.33690	9.228
85	Dibenz[a,h]anthracene	1.10842	0.92782	1.09172	1.13520	1.21562	1.09576	9.604
86	Benzo[g,h,i]perylene	1.14279	0.95007	1.07152	1.06231	1.18715	1.08277	8.344
96	Benzidine	0.02577	0.01491	0.01195	0.01354	0.01484	0.01620	33.844
$ 3	2-Fluorophenol	1.65905	1.65493	1.53384	1.38758	1.57348	1.56178	7.116
$ 4	Phenol-d5	1.96888	2.11810	2.06782	2.00217	1.81107	1.99361	5.882
$ 23	Nitrobenzene-d5	0.44882	0.44555	0.45212	0.44167	0.42865	0.44336	2.050
$ 41	2-Fluorobiphenyl	1.35668	1.31934	1.32347	1.24625	1.30201	1.30955	3.096
$ 61	2,4,6-Tribromophenol	0.05928	0.06982	0.07427	0.06839	0.07684	0.06972	9.679
$ 72	Terphenyl-d14	0.95812	1.13018	1.35023	1.01533	1.08714	1.10820	13.584

SPL Houston Labs

Data file : /chem/h.i/h950524.b/h144ic5.d
Lab Smp Id:
Inj Date : 24-MAY-1995 17:27
Operator : LH Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950524 STD020
Comment :
Method : /chem/h.i/h950524.b/hclpw.m
Meth Date : 25-May-1995 11:25 liping Quant Type: ISTD
Cal Date : 24-MAY-1995 15:37 Cal File: h144ic1.d
Als bottle: 6
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
2	Pyridine	79.00	2.326	2.305	(0.557)	254620	20	10
5	Phenol	94.00	3.902	3.905	(0.935)	240918	18	9
6	Aniline	93.00	3.926	3.916	(0.940)	234800	19	9(Q)
7	bis(2-Chloroethyl)ether	93.00	3.962	3.964	(0.949)	198249	18	9
9	2-Chlorophenol	128.00	4.021	4.023	(0.963)	160282	19	9
10	1,3-Dichlorobenzene	146.00	4.151	4.142	(0.994)	178842	20	10
12	1,4-Dichlorobenzene	146.00	4.187	4.189	(1.003)	177825	19	10
13	Benzyl alcohol	108.00	4.305	4.307	(1.031)	67788	12	6(Q)
15	1,2-Dichlorobenzene	146.00	4.364	4.355	(1.045)	157145	19	10
16	2-Methylphenol	108.00	4.424	4.426	(1.060)	146442	18	9
18	bis(2-chloroisopropyl)ether	45.00	4.447	4.450	(1.065)	253485	16	8
19	4-Methylphenol	108.00	4.554	4.556	(1.091)	125926	15	7
21	N-Nitroso-di-n-propylamine	70.00	4.566	4.568	(1.094)	88154	13	6
22	Hexachloroethane	117.00	4.637	4.639	(1.111)	75134	19	9
24	Nitrobenzene	77.00	4.708	4.710	(0.878)	136157	20	10
25	Isophorone	82.00	4.921	4.924	(0.918)	210273	15	8
26	2-Nitrophenol	139.00	5.016	5.018	(0.936)	55780	18	9(a)
27	2,4-Dimethylphenol	107.00	5.052	5.054	(0.943)	108673	19	9
28	Benzoic acid	122.00	5.087	5.149	(0.949)	15247	11	6(aQM)
29	bis(2-Chloroethoxy)methane	93.00	5.135	5.137	(0.958)	134049	16	8
30	2,4-Dichlorophenol	162.00	5.241	5.244	(0.978)	69787	18	9
31	1,2,4-Trichlorobenzene	180.00	5.324	5.327	(0.993)	80264	20	10
33	Naphthalene	128.00	5.384	5.386	(1.004)	323189	19	10
34	4-Chloroaniline	127.00	5.443	5.445	(1.015)	106039	19	9
35	Hexachlorobutadiene	225.00	5.561	5.564	(1.038)	34402	21	10
36	4-Chloro-3-methylphenol	107.00	5.941	5.943	(1.108)	71252	16	8
37	2-Methylnaphthalene	142.00	6.059	6.061	(1.130)	155614	16	8
38	Hexachlorocyclopentadiene	237.00	6.296	6.298	(0.884)	22075	20	10(M)
39	2,4,6-Trichlorophenol	196.00	6.367	6.381	(0.894)	26111	19	10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	==========	====	==	======	======	========	=======	=======
40	2,4,5-Trichlorophenol	196.00	6.415	6.417	(0.900)	31422	20	10
42	2-Chloronaphthalene	162.00	6.545	6.547	(0.918)	115585	22	11
43	2-Nitroaniline	65.00	6.663	6.678	(0.935)	43011	22	11(a)
44	Dimethylphthalate	163.00	6.877	6.891	(0.965)	113740	17	9
45	2,6-Dinitrotoluene	165.00	6.948	6.950	(0.975)	28262	19	10
46	Acenaphthylene	152.00	6.972	6.974	(0.978)	180592	20	10
47	3-Nitroaniline	138.00	7.090	7.092	(0.995)	34300	24	12(a)
49	Acenaphthene	153.00	7.149	7.163	(1.003)	109999	20	10
51	4-Nitrophenol	109.00	7.303	7.294	(1.025)	10964	22	11(aQ)
52	Dibenzofuran	168.00	7.315	7.317	(1.027)	143013	22	11
53	2,4-Dinitrotoluene	165.00	7.339	7.353	(1.030)	31994	19	9(Q)
54	Diethylphthalate	149.00	7.600	7.602	(1.067)	119313	18	9
55	4-Chlorophenyl-phenylether	204.00	7.659	7.673	(1.075)	41924	19	10
56	Fluorene	166.00	7.659	7.673	(1.075)	104075	19	10
57	4-Nitroaniline	138.00	7.706	7.720	(1.081)	29991	27	13(a)
58	4,6-Dinitro-2-methylphenol	198.00	7.777	7.768	(0.904)	5043	7	4(a)
59	n-Nitrosodiphenylamine	169.00	7.789	7.791	(0.905)	61448	18	9
60	1,2-Diphenylhydrazine	77.00	7.813	7.827	(0.908)	339062	20	10
62	4-Bromophenyl-phenylether	248.00	8.157	8.159	(0.948)	17472	17	9
63	Hexachlorobenzene	283.70	8.311	8.313	(0.966)	17075	17	9
64	Pentachlorophenol	265.50	8.500	8.502	(0.988)	4539	11	6(aM)
66	Phenanthrene	178.00	8.631	8.645	(1.003)	133884	20	10
67	Anthracene	178.00	8.678	8.692	(1.008)	127893	21	10
68	Carbazole	167.00	8.844	8.846	(1.028)	125361	24	12
69	Di-n-butylphthalate	149.00	9.247	9.261	(1.074)	195227	16	8
70	Fluoranthene	202.00	9.851	9.853	(1.145)	101919	21	10
71	Pyrene	202.00	10.076	10.090	(0.885)	106701	17	8
73	Butylbenzylphthalate	149.00	10.775	10.790	(0.946)	68480	15	8
74	3,3'-Dichlorobenzidine	252.00	11.344	11.370	(0.996)	21334	21	10
75	Benzo[a]anthracene	228.00	11.368	11.382	(0.998)	70829	19	9
77	Chrysene	228.00	11.415	11.441	(1.002)	64832	19	10
78	bis(2-Ethylhexyl)phthalate	149.00	11.475	11.489	(1.007)	93266	14	7
79	Di-n-octylphthalate	149.00	12.304	12.318	(0.913)	148146	14	7
80	Benzo[b]fluoranthene	252.00	12.861	12.887	(0.954)	55907	18	9
81	Benzo[k]fluoranthene	252.00	12.897	12.923	(0.957)	61638	20	10
82	Benzo[a]pyrene	252.00	13.383	13.409	(0.993)	47321	19	10
84	Indeno[1,2,3-cd]pyrene	276.00	15.255	15.293	(1.132)	44090	24	12
85	Dibenz[a,h]anthracene	278.00	15.290	15.316	(1.135)	35704	24	12
86	Benzo[g,h,i]perylene	276.00	15.741	15.779	(1.168)	36811	24	12
$ 3	2-Fluorophenol	112.00	3.179	3.170	(0.762)	185143	20	10(R)
$ 4	Phenol-d5	99.00	3.890	3.893	(0.932)	219718	18	9
$ 61	2,4,6-Tribromophenol	329.70	7.931	7.934	(0.922)	6017	17	8
$ 23	Nitrobenzene-d5	82.00	4.684	4.687	(0.874)	134499	20	10(R)
$ 41	2-Fluorobiphenyl	172.00	6.438	6.452	(0.904)	121724	20	10(R)
$ 72	Terphenyl-d14	244.00	10.242	10.256	(0.899)	55393	17	8(R)
* 11	1,4-Dichlorobenzene-d4	152.00	4.175	4.177	(1.000)	223191	40	
* 32	Naphthalene-d8	136.00	5.360	5.362	(1.000)	599345	40	
* 48	Acenaphthene-d10	164.00	7.126	7.128	(1.000)	179444	40	
* 65	Phenanthrene-d10	188.00	8.607	8.621	(1.000)	202996	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 76 Chrysene-d12	240.00	11.392	11.406	(1.000)	115628	40	
* 83 Perylene-d12	264.00	13.477	13.503	(1.000)	64423	40	
17 ortho-Cresol	108.00	4.424	4.426	(1.060)	146442	18	9
20 meta,para-Cresol	108.00	4.554	4.556	(1.091)	125926	15	7(a)
96 Benzidine	184.00	10.242	10.481	(0.899)	1490	34	17

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h144ic5.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950524.b/hclpw.m
Misc Info: 950524 STD020

Calibration Date: 05/24/95
Calibration Time: 1537

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	212958	106479	425916	223191	4.81
32 Naphthalene-d8	774451	387226	1548902	599345	-22.61
48 Acenaphthene-d10	331554	165777	663108	179444	-45.88
65 Phenanthrene-d10	334831	167416	669662	202996	-39.37
76 Chrysene-d12	151179	75590	302358	115628	-23.52
83 Perylene-d12	75826	37913	151652	64423	-15.04

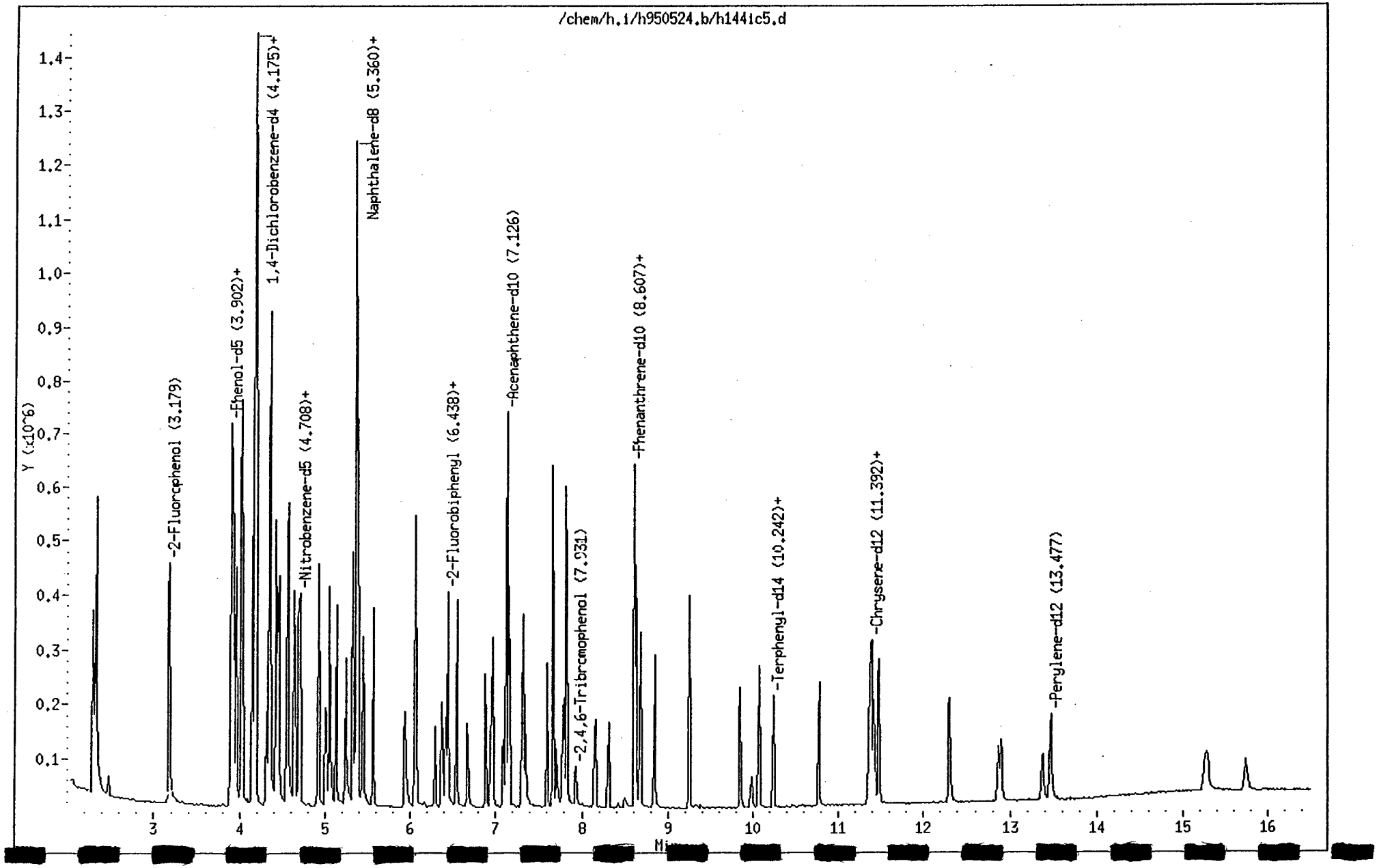
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.18	3.68	4.68	4.17	-0.05
32 Naphthalene-d8	5.36	4.86	5.86	5.36	-0.04
48 Acenaphthene-d10	7.13	6.63	7.63	7.13	-0.03
65 Phenanthrene-d10	8.62	8.12	9.12	8.61	-0.16
76 Chrysene-d12	11.41	10.91	11.91	11.39	-0.12
83 Perylene-d12	13.50	13.00	14.00	13.48	-0.19

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950524.b/h144ic5.d
Date : 24-MAY-95 17:27
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



Data File: /chem/h.i/h950524.b/h144ic1.d
Report Date: 25-May-1995 11:26

SPL Houston Labs

Data file : /chem/h.i/h950524.b/h144ic1.d
Lab Smp Id:
Inj Date : 24-MAY-1995 15:37
Operator : LH
Smp Info : STD-8270W/1X
Misc Info : 950524 STD050
Comment :
Method : /chem/h.i/h950524.b/hclpw.m
Meth Date : 25-May-1995 11:25 liping
Cal Date : 24-MAY-1995 15:37
Als bottle: 2
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: h.i

Quant Type: ISTD
Cal File: h144ic1.d

Compound Sublist: std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
2 Pyridine	79.00	2.305	2.305	(0.552)	609419	50	25
5 Phenol	94.00	3.905	3.905	(0.935)	622641	50	25
6 Aniline	93.00	3.916	3.916	(0.938)	590572	50	25 (M)
7 bis(2-Chloroethyl)ether	93.00	3.964	3.964	(0.949)	516710	50	25
9 2-Chlorophenol	128.00	4.023	4.023	(0.963)	410151	50	25
10 1,3-Dichlorobenzene	146.00	4.142	4.142	(0.991)	419672	50	25
12 1,4-Dichlorobenzene	146.00	4.189	4.189	(1.003)	441918	50	25
13 Benzyl alcohol	108.00	4.307	4.307	(1.031)	278601	50	25 (M)
15 1,2-Dichlorobenzene	146.00	4.355	4.355	(1.043)	393681	50	25
16 2-Methylphenol	108.00	4.426	4.426	(1.060)	398904	50	25
18 bis(2-chloroisopropyl)ether	45.00	4.450	4.450	(1.065)	740668	50	25
19 4-Methylphenol	108.00	4.556	4.556	(1.091)	402848	50	25
21 N-Nitroso-di-n-propylamine	70.00	4.568	4.568	(1.094)	328774	50	25
22 Hexachloroethane	117.00	4.639	4.639	(1.111)	188661	50	25
24 Nitrobenzene	77.00	4.710	4.710	(0.878)	430216	50	25
25 Isophorone	82.00	4.924	4.924	(0.918)	902290	50	25
26 2-Nitrophenol	139.00	5.018	5.018	(0.936)	196603	50	25
27 2,4-Dimethylphenol	107.00	5.054	5.054	(0.943)	372635	50	25
28 Benzoic acid	122.00	5.149	5.149	(0.960)	88715	50	25 (M)
29 bis(2-Chloroethoxy)methane	93.00	5.137	5.137	(0.958)	538967	50	25
30 2,4-Dichlorophenol	162.00	5.244	5.244	(0.978)	243799	50	25
31 1,2,4-Trichlorobenzene	180.00	5.327	5.327	(0.993)	255968	50	25
33 Naphthalene	128.00	5.386	5.386	(1.004)	1077195	50	25
34 4-Chloroaniline	127.00	5.445	5.445	(1.015)	362080	50	25
35 Hexachlorobutadiene	225.00	5.564	5.564	(1.038)	107667	50	25
36 4-Chloro-3-methylphenol	107.00	5.943	5.943	(1.108)	289887	50	25
37 2-Methylnaphthalene	142.00	6.061	6.061	(1.130)	619413	50	25
38 Hexachlorocyclopentadiene	237.00	6.298	6.298	(0.884)	101385	50	25 (M)
39 2,4,6-Trichlorophenol	196.00	6.381	6.381	(0.895)	126832	50	25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)	
40	2,4,5-Trichlorophenol	196.00	6.417	6.417	(0.900)	145749	50	25	
42	2-Chloronaphthalene	162.00	6.547	6.547	(0.919)	491938	50	25	
43	2-Nitroaniline	65.00	6.678	6.678	(0.937)	178954	50	25	
44	Dimethylphthalate	163.00	6.891	6.891	(0.967)	609879	50	25	
45	2,6-Dinitrotoluene	165.00	6.950	6.950	(0.975)	136840	50	25	
46	Acenaphthylene	152.00	6.974	6.974	(0.978)	848986	50	25	
47	3-Nitroaniline	138.00	7.092	7.092	(0.995)	130882	50	25	
49	Acenaphthene	153.00	7.163	7.163	(1.005)	507662	50	25	
50	2,4-Dinitrophenol	184.00	7.258	7.258	(1.018)	26021	50	25	(M)
51	4-Nitrophenol	109.00	7.294	7.294	(1.023)	45729	50	25	
52	Dibenzofuran	168.00	7.317	7.317	(1.027)	611317	50	25	
53	2,4-Dinitrotoluene	165.00	7.353	7.353	(1.032)	157090	50	25	
54	Diethylphthalate	149.00	7.602	7.602	(1.066)	602826	50	25	
55	4-Chlorophenyl-phenylether	204.00	7.673	7.673	(1.076)	198738	50	25	
56	Fluorene	166.00	7.673	7.673	(1.076)	496445	50	25	
57	4-Nitroaniline	138.00	7.720	7.720	(1.083)	102895	50	25	
58	4,6-Dinitro-2-methylphenol	198.00	7.768	7.768	(0.901)	55879	50	25	
59	n-Nitrosodiphenylamine	169.00	7.791	7.791	(0.904)	278904	50	25	
60	1,2-Diphenylhydrazine	77.00	7.827	7.827	(0.908)	1400832	50	25	
62	4-Bromophenyl-phenylether	248.00	8.159	8.159	(0.946)	82905	50	25	
63	Hexachlorobenzene	283.70	8.313	8.313	(0.964)	81356	50	25	
64	Pentachlorophenol	265.50	8.502	8.502	(0.986)	33588	50	25	
66	Phenanthrene	178.00	8.645	8.645	(1.003)	565411	50	25	
67	Anthracene	178.00	8.692	8.692	(1.008)	505232	50	25	
68	Carbazole	167.00	8.846	8.846	(1.026)	438260	50	25	
69	Di-n-butylphthalate	149.00	9.261	9.261	(1.074)	1002890	50	25	
70	Fluoranthene	202.00	9.853	9.853	(1.143)	402796	50	25	
71	Pyrene	202.00	10.090	10.090	(0.885)	406123	50	25	
73	Butylbenzylphthalate	149.00	10.790	10.790	(0.946)	293886	50	25	
74	3,3'-Dichlorobenzidine	252.00	11.370	11.370	(0.997)	66169	50	25	
75	Benzo[a]anthracene	228.00	11.382	11.382	(0.998)	247196	50	25	
77	Chrysene	228.00	11.441	11.441	(1.003)	221209	50	25	
78	bis(2-Ethylhexyl)phthalate	149.00	11.489	11.489	(1.007)	429641	50	25	
79	Di-n-octylphthalate	149.00	12.318	12.318	(0 912)	599918	50	25	
80	Benzo[b]fluoranthene	252.00	12.887	12.887	(0.954)	181305	50	25	
81	Benzo[k]fluoranthene	252.00	12.923	12.923	(0.957)	183302	50	25	
82	Benzo[a]pyrene	252.00	13.409	13.409	(0.993)	142906	50	25	
84	Indeno[1,2,3-cd]pyrene	276.00	15.293	15.293	(1.133)	108577	50	25	
85	Dibenz[a,h]anthracene	278.00	15.316	15.316	(1.134)	87941	50	25	
86	Benzo[g,h,i]perylene	276.00	15.779	15.779	(1.168)	90050	50	25	
$ 3	2-Fluorophenol	112.00	3.170	3.170	(0.759)	440538	50	25	
$ 4	Phenol-d5	99.00	3.893	3.893	(0.932)	563834	50	25	
$ 61	2,4,6-Tribromophenol	329.70	7.934	7.934	(0.920)	29221	50	25	
$ 23	Nitrobenzene-d5	82.00	4.687	4.687	(0.874)	431318	50	25	
$ 41	2-Fluorobiphenyl	172.00	6.452	6.452	(0.905)	546791	50	25	
$ 72	Terphenyl-d14	244.00	10.256	10.256	(0.899)	213575	50	25	
* 11	1,4-Dichlorobenzene-d4	152.00	4.177	4.177	(1.000)	212958	40		
* 32	Naphthalene-d8	136.00	5.362	5.362	(1.000)	774451	40		
* 48	Acenaphthene-d10	164.00	7.128	7.128	(1.000)	331554	40		

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 65 Phenanthrene-d10	188.00	8.621	8.621	(1.000)	334831	40	
* 76 Chrysene-d12	240.00	11.406	11.406	(1.000)	151179	40	
* 83 Perylene-d12	264.00	13.503	13.503	(1.000)	75826	40	
17 ortho-Cresol	108.00	4.426	4.426	(1.060)	398904	50	25
20 meta,para-Cresol	108.00	4.556	4.556	(1.091)	402848	50	25
96 Benzidine	184.00	10.481	10.481	(0.919)	2817	50	25

QC Flag Legend

M - Compound response manually integrated.

Data File: /chem/h.i/h950524.b/h144ic1.d
Report Date: 24-May-1995 16:46

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h144ic1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950524.b/hclpw.m
Misc Info: 950524 STD050

Calibration Date: 05/24/95
Calibration Time: 1537

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	212958	106479	425916	212958	0.00
32 Naphthalene-d8	774451	387226	1548902	774451	0.00
48 Acenaphthene-d10	331554	165777	663108	331554	0.00
65 Phenanthrene-d10	334831	167416	669662	334831	0.00
76 Chrysene-d12	151179	75590	302358	151179	0.00
83 Perylene-d12	75826	37913	151652	75826	0.00

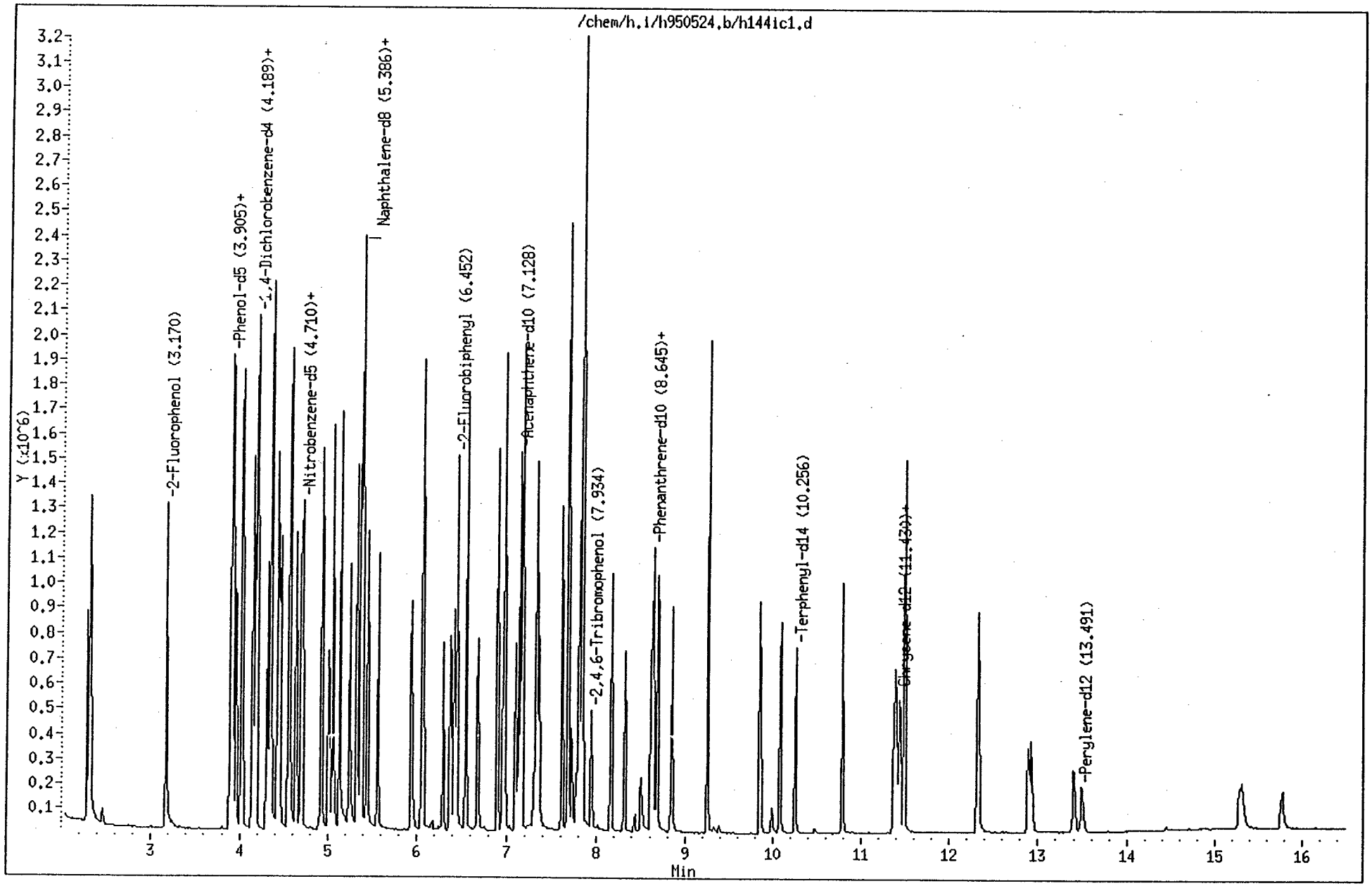
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.18	3.68	4.68	4.18	0.00
32 Naphthalene-d8	5.36	4.86	5.86	5.36	0.00
48 Acenaphthene-d10	7.13	6.63	7.63	7.13	0.00
65 Phenanthrene-d10	8.62	8.12	9.12	8.62	0.00
76 Chrysene-d12	11.41	10.91	11.91	11.41	0.00
83 Perylene-d12	13.50	13.00	14.00	13.50	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950524.b/h144ic1.d
Date : 24-MAY-1995 15:37
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



Data File: /chem/h.i/h950524.b/h144ic4.d
Report Date: 25-May-1995 11:26

SPL Houston Labs

Data file : /chem/h.i/h950524.b/h144ic4.d
Lab Smp Id:
Inj Date : 24-MAY-1995 16:45
Operator : LH Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950524 STD080
Comment :
Method : /chem/h.i/h950524.b/hclpw.m
Meth Date : 25-May-1995 11:25 liping Quant Type: ISTD
Cal Date : 24-MAY-1995 15:37 Cal File: h144ic1.d
Als bottle: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
2 Pyridine	79.00	2.313	2.305	(0.554)	719493	82	41
5 Phenol	94.00	3.901	3.905	(0.935)	703173	78	39
6 Aniline	93.00	3.925	3.916	(0.940)	676820	80	40(Q)
7 bis(2-Chloroethyl)ether	93.00	3.960	3.964	(0.949)	657242	88	44
9 2-Chlorophenol	128.00	4.031	4.023	(0.966)	474963	80	40
10 1,3-Dichlorobenzene	146.00	4.150	4.142	(0.994)	494717	82	41
12 1,4-Dichlorobenzene	146.00	4.197	4.189	(1.006)	491394	77	39
13 Benzyl alcohol	108.00	4.304	4.307	(1.031)	288314	72	36(Q)
15 1,2-Dichlorobenzene	146.00	4.363	4.355	(1.045)	452119	80	40
16 2-Methylphenol	108.00	4.422	4.426	(1.060)	476336	83	42
18 bis(2-chloroisopropyl)ether	45.00	4.446	4.450	(1.065)	852941	80	40
19 4-Methylphenol	108.00	4.553	4.556	(1.091)	460739	80	40
21 N-Nitroso-di-n-propylamine	70.00	4.576	4.568	(1.097)	379982	80	40
22 Hexachloroethane	117.00	4.636	4.639	(1.111)	214539	79	40
24 Nitrobenzene	77.00	4.707	4.710	(0.876)	516409	80	40
25 Isophorone	82.00	4.932	4.924	(0.918)	1087863	81	40
26 2-Nitrophenol	139.00	5.015	5.018	(0.934)	252098	86	43
27 2,4-Dimethylphenol	107.00	5.050	5.054	(0.940)	460021	83	41
28 Benzoic acid	122.00	5.157	5.149	(0.960)	97175	73	37(M)
29 bis(2-Chloroethoxy)methane	93.00	5.133	5.137	(0.956)	656270	82	41
30 2,4-Dichlorophenol	162.00	5.252	5.244	(0.978)	299781	82	41
31 1,2,4-Trichlorobenzene	180.00	5.323	5.327	(0.991)	302057	79	40
33 Naphthalene	128.00	5.382	5.386	(1.002)	1247316	78	39
34 4-Chloroaniline	127.00	5.453	5.445	(1.015)	455235	84	42
35 Hexachlorobutadiene	225.00	5.560	5.564	(1.035)	121657	76	38
36 4-Chloro-3-methylphenol	107.00	5.939	5.943	(1.106)	380091	88	44
37 2-Methylnaphthalene	142.00	6.058	6.061	(1.128)	753441	82	41
38 Hexachlorocyclopentadiene	237.00	6.295	6.298	(0.884)	126317	78	39
39 2,4,6-Trichlorophenol	196.00	6.378	6.381	(0.895)	178079	88	44

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	40 2,4,5-Trichlorophenol	196.00	6.413	6.417	(0.900)	191639	83	41
	42 2-Chloronaphthalene	162.00	6.544	6.547	(0.918)	624323	80	40
	43 2-Nitroaniline	65.00	6.674	6.678	(0.937)	272259	96	48
	44 Dimethylphthalate	163.00	6.887	6.891	(0.967)	776115	80	40
	45 2,6-Dinitrotoluene	165.00	6.958	6.950	(0.977)	191482	88	44
	46 Acenaphthylene	152.00	6.970	6.974	(0.978)	1101046	82	41
	47 3-Nitroaniline	138.00	7.089	7.092	(0.995)	198538	95	48
	49 Acenaphthene	153.00	7.160	7.163	(1.005)	653261	81	40
	50 2,4-Dinitrophenol	184.00	7.207	7.258	(1.012)	35620	86	43 (QM)
	51 4-Nitrophenol	109.00	7.290	7.294	(1.023)	73698	100	51
	52 Dibenzofuran	168.00	7.314	7.317	(1.027)	843714	87	43
	53 2,4-Dinitrotoluene	165.00	7.349	7.353	(1.032)	235014	94	47
	54 Diethylphthalate	149.00	7.610	7.602	(1.068)	829650	87	43
	55 4-Chlorophenyl-phenylether	204.00	7.669	7.673	(1.077)	276849	88	44
	56 Fluorene	166.00	7.669	7.673	(1.077)	658457	83	42
	57 4-Nitroaniline	138.00	7.717	7.720	(1.083)	183209	110	56
	58 4,6-Dinitro-2-methylphenol	198.00	7.764	7.768	(0.901)	95252	93	46
	59 n-Nitrosodiphenylamine	169.00	7.788	7.791	(0.904)	391473	77	38
	60 1,2-Diphenylhydrazine	77.00	7.823	7.827	(0.908)	1870702	73	36
	62 4-Bromophenyl-phenylether	248.00	8.155	8.159	(0.946)	120456	79	40
	63 Hexachlorobenzene	283.70	8.309	8.313	(0.964)	115831	78	39
	64 Pentachlorophenol	265.50	8.499	8.502	(0.986)	59009	96	48 (M)
	66 Phenanthrene	178.00	8.641	8.645	(1.003)	847969	82	41
	67 Anthracene	178.00	8.677	8.692	(1.007)	767862	83	41
	68 Carbazole	167.00	8.842	8.846	(1.026)	663754	83	41
	69 Di-n-butylphthalate	149.00	9.257	9.261	(1.074)	1401079	76	38
	70 Fluoranthene	202.00	9.850	9.853	(1.143)	595718	81	40
	71 Pyrene	202.00	10.075	10.090	(0.885)	580132	94	47
	73 Butylbenzylphthalate	149.00	10.774	10.790	(0.946)	412680	92	46
	74 3,3'-Dichlorobenzidine	252.00	11.355	11.370	(0.997)	81294	80	40
	75 Benzo[a]anthracene	228.00	11.378	11.382	(0.999)	298398	79	40
	77 Chrysene	228.00	11.426	11.441	(1.003)	266777	79	39
	78 bis(2-Ethylhexyl)phthalate	149.00	11.473	11.489	(1.007)	590859	90	45
	79 Di-n-octylphthalate	149.00	12.303	12.318	(0.913)	765715	100	51
	80 Benzo[b]fluoranthene	252.00	12.872	12.887	(0.955)	186525	82	41
	81 Benzo[k]fluoranthene	252.00	12.907	12.923	(0.958)	201103	88	44
	82 Benzo[a]pyrene	252.00	13.393	13.409	(0.994)	147010	82	41
	84 Indeno[1,2,3-cd]pyrene	276.00	15.265	15.293	(1.133)	124314	92	46
	85 Dibenz[a,h]anthracene	278.00	15.301	15.316	(1.135)	103126	94	47
	86 Benzo[g,h,i]perylene	276.00	15.751	15.779	(1.169)	101218	90	45
$	3 2-Fluorophenol	112.00	3.178	3.170	(0.761)	469738	74	37
$	4 Phenol-d5	99.00	3.889	3.893	(0.932)	633271	78	39
$	61 2,4,6-Tribromophenol	329.70	7.930	7.934	(0.920)	45561	85	42
$	23 Nitrobenzene-d5	82.00	4.695	4.687	(0.874)	522241	81	40
$	41 2-Fluorobiphenyl	172.00	6.449	6.452	(0.905)	697245	80	40
$	72 Terphenyl-d14	244.00	10.241	10.256	(0.899)	311727	96	48
*	11 1,4-Dichlorobenzene-d4	152.00	4.173	4.177	(1.000)	153125	40	
*	32 Naphthalene-d8	136.00	5.370	5.362	(1.000)	577552	40	
*	48 Acenaphthene-d10	164.00	7.124	7.128	(1.000)	263415	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 65 Phenanthrene-d10	188.00	8.617	8.621	(1.000)	306713	40	
76 Chrysene-d12	240.00	11.390	11.406	(1.000)	115435	40	
83 Perylene-d12	264.00	13.476	13.503	(1.000)	47231	40	
17 ortho-Cresol	108.00	4.422	4.426	(1.060)	476336	83	42
20 meta,para-Cresol	108.00	4.553	4.556	(1.091)	460739	80	40
96 Benzidine	184.00	10.466	10.481	(0.919)	2760	64	32

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h144ic4.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950524.b/hclpw.m
Misc Info: 950524 STD080

Calibration Date: 05/24/95
Calibration Time: 1537

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	212958	106479	425916	153125	-28.10
32 Naphthalene-d8	774451	387226	1548902	577552	-25.42
48 Acenaphthene-d10	331554	165777	663108	263415	-20.55
65 Phenanthrene-d10	334831	167416	669662	306713	-8.40
76 Chrysene-d12	151179	75590	302358	115435	-23.64
83 Perylene-d12	75826	37913	151652	47231	-37.71

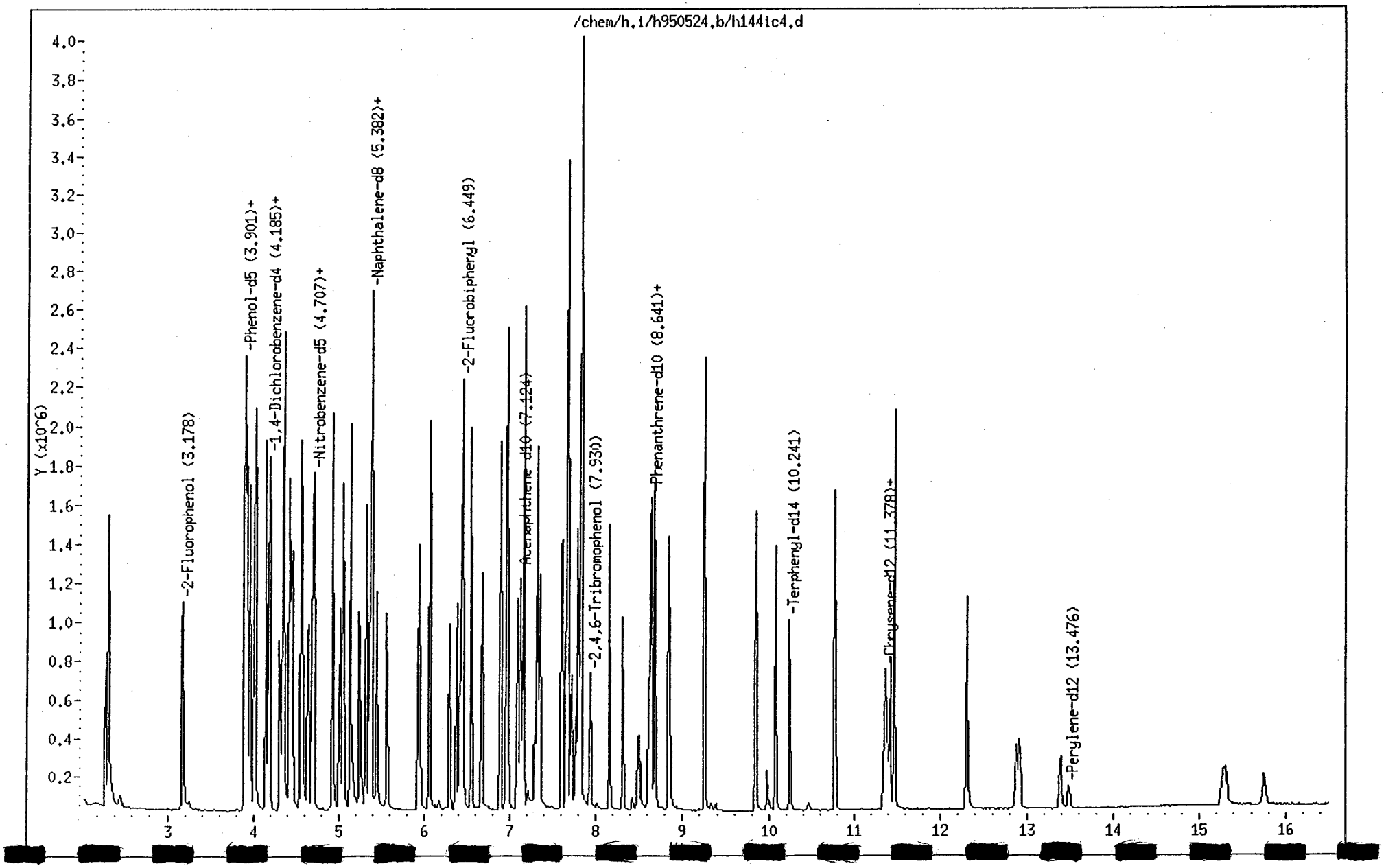
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.18	3.68	4.68	4.17	-0.09
32 Naphthalene-d8	5.36	4.86	5.86	5.37	0.15
48 Acenaphthene-d10	7.13	6.63	7.63	7.12	-0.05
65 Phenanthrene-d10	8.62	8.12	9.12	8.62	-0.04
76 Chrysene-d12	11.41	10.91	11.91	11.39	-0.14
83 Perylene-d12	13.50	13.00	14.00	13.48	-0.20

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950524.b/h144ic4.d
Date : 24-MAY-95 16:45
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/h.i/h950524.b/h144ic3.d
Lab Smp Id:
Inj Date : 24-MAY-1995 16:25
Operator : LH Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950524 STD120
Comment :
Method : /chem/h.i/h950524.b/hclpw.m
Meth Date : 25-May-1995 11:25 liping Quant Type: ISTD
Cal Date : 24-MAY-1995 15:37 Cal File: h144ic1.d
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
2	Pyridine	79.00	2.316	2.305	(0.555)	850581	110	53
5	Phenol	94.00	3.904	3.905	(0.935)	918457	110	56
6	Aniline	93.00	3.928	3.916	(0.940)	889637	120	58 (Q)
7	bis(2-Chloroethyl)ether	93.00	3.963	3.964	(0.949)	824728	120	61
9	2-Chlorophenol	128.00	4.034	4.023	(0.966)	607134	110	56
10	1,3-Dichlorobenzene	146.00	4.153	4.142	(0.994)	652661	120	59
12	1,4-Dichlorobenzene	146.00	4.188	4.189	(1.003)	628341	110	54
13	Benzyl alcohol	108.00	4.307	4.307	(1.031)	383839	100	52 (Q)
15	1,2-Dichlorobenzene	146.00	4.354	4.355	(1.043)	583492	110	56
16	2-Methylphenol	108.00	4.425	4.426	(1.060)	646631	120	62
18	bis(2-chloroisopropyl)ether	45.00	4.449	4.450	(1.065)	1106432	110	57
19	4-Methylphenol	108.00	4.556	4.556	(1.091)	634519	120	60
21	N-Nitroso-di-n-propylamine	70.00	4.580	4.568	(1.096)	500018	120	58
22	Hexachloroethane	117.00	4.639	4.639	(1.111)	281466	110	57
24	Nitrobenzene	77.00	4.710	4.710	(0.878)	685948	120	58
25	Isophorone	82.00	4.935	4.924	(0.920)	1452329	120	59
26	2-Nitrophenol	139.00	5.018	5.018	(0.936)	332764	120	62
27	2,4-Dimethylphenol	107.00	5.054	5.054	(0.943)	611132	120	60
28	Benzoic acid	122.00	5.184	5.149	(0.967)	197173	160	81 (M)
29	bis(2-Chloroethoxy)methane	93.00	5.136	5.137	(0.958)	855392	120	58
30	2,4-Dichlorophenol	162.00	5.243	5.244	(0.978)	409676	120	61
31	1,2,4-Trichlorobenzene	180.00	5.326	5.327	(0.993)	398642	110	57
33	Naphthalene	128.00	5.385	5.386	(1.004)	1668516	110	56
34	4-Chloroaniline	127.00	5.445	5.445	(1.015)	631877	130	64
35	Hexachlorobutadiene	225.00	5.563	5.564	(1.038)	163982	110	56
36	4-Chloro-3-methylphenol	107.00	5.942	5.943	(1.108)	519010	130	65
37	2-Methylnaphthalene	142.00	6.061	6.061	(1.130)	1011007	120	60
38	Hexachlorocyclopentadiene	237.00	6.298	6.298	(0.884)	174882	110	57
39	2,4,6-Trichlorophenol	196.00	6.381	6.381	(0.895)	235536	120	61

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN ng/	CONCENTRATIONS FINAL ug/L
	40 2,4,5-Trichlorophenol	196.00	6.416	6.417	(0.900)	283310	130	44
	42 2-Chloronaphthalene	162.00	6.847	6.847	(0.919)	962049	120	38
	43 2-Nitroaniline	65.00	6.677	6.678	(0.937)	389856	140	72
	44 Dimethylphthalate	163.00	6.890	6.891	(0.967)	1051836	110	37
	45 2,6-Dinitrotoluene	165.00	6.961	6.960	(0.977)	276484	130	46
	46 Acenaphthylene	152.00	6.973	6.974	(0.978)	1827640	120	39
	47 3-Nitroaniline	138.00	7.092	7.092	(0.995)	318103	160	78
	49 Acenaphthene	153.00	7.163	7.163	(1.005)	904920	120	39
	50 2,4-Dinitrophenol	184.00	7.210	7.208	(1.012)	73878	190	94(Q)
	51 4-Nitrophenol	109.00	7.293	7.294	(1.023)	134446	190	97(Q)
	52 Dibenzofuran	168.00	7.317	7.317	(1.027)	1209249	130	65
	53 2,4-Dinitrotoluene	165.00	7.352	7.353	(1.032)	359657	150	75
	54 Diethylphthalate	149.00	7.613	7.602	(1.068)	1169764	130	64
	55 4-Chlorophenyl-phenylether	204.00	7.672	7.673	(1.076)	382917	130	64
	56 Fluorene	166.00	7.672	7.673	(1.076)	928371	120	62
	57 4-Nitroaniline	138.00	7.720	7.720	(1.083)	305905	200	98
	58 4,6-Dinitro-2-methylphenol	198.00	7.779	7.768	(0.902)	175211	160	78
	59 n-Nitrosodiphenylamine	169.00	7.803	7.791	(0.905)	596302	110	53
	60 1,2-Diphenylhydrazine	77.00	7.827	7.827	(0.908)	2513124	89	44
	62 4-Bromophenyl-phenylether	248.00	8.158	8.159	(0.946)	179258	110	54
	63 Hexachlorobenzene	283.70	8.312	8.313	(0.964)	174010	110	53
	64 Pentachlorophenol	265.50	8.502	8.502	(0.986)	98968	150	73(M)
	66 Phenanthrene	178.00	8.644	8.645	(1.003)	1350846	120	59
	67 Anthracene	178.00	8.692	8.692	(1.008)	1270103	120	62
	68 Carbazole	167.00	8.846	8.846	(1.026)	1205041	140	68
	69 Di-n-butylphthalate	149.00	9.260	9.261	(1.074)	2117698	100	52
	70 Fluoranthene	202.00	9.853	9.853	(1.143)	1097914	140	68
	71 Pyrene	202.00	10.090	10.090	(0.885)	1148953	100	51
	73 Butylbenzylphthalate	149.00	10.777	10.790	(0.945)	814799	100	50
	74 3,3'-Dichlorobenzidine	252.00	11.358	11.370	(0.996)	265326	140	72
	75 Benzo[a]anthracene	228.00	11.382	11.382	(0.998)	792738	120	58
	77 Chrysene	228.00	11.441	11.441	(1.003)	733054	120	60
	78 bis(2-Ethylhexyl)phthalate	149.00	11.476	11.489	(1.006)	1130547	95	48
	79 Di-n-octylphthalate	149.00	12.318	12.318	(0.913)	1827224	100	51
	80 Benzo[b]fluoranthene	252.00	12.887	12.887	(0.955)	655473	120	61
	81 Benzo[k]fluoranthene	252.00	12.934	12.923	(0.959)	657318	120	60
	82 Benzo[a]pyrene	252.00	13.408	13.409	(0.994)	530199	120	62
	84 Indeno[1,2,3-cd]pyrene	276.00	15.292	15.293	(1.133)	462594	140	72
	85 Dibenz[a,h]anthracene	278.00	15.328	15.316	(1.136)	383348	150	73
	86 Benzo[g,h,i]perylene	276.00	15.778	15.779	(1.170)	358732	130	67
S	3 2-Fluorophenol	112.00	3.169	3.170	(0.759)	880520	100	50
S	4 Phenol-d5	99.00	3.892	3.893	(0.932)	837643	110	57
S	61 2,4,6-Tribromophenol	329.70	7.933	7.934	(0.920)	69197	120	59
S	23 Nitrobenzene-d5	82.00	4.698	4.687	(0.876)	702637	120	59(R)
S	41 2-Fluorobiphenyl	172.00	6.452	6.452	(0.908)	939812	110	57
S	72 Terphenyl-d14	244.00	10.256	10.256	(0.899)	837408	110	54
*	11 1,4-Dichlorobenzene-d4	152.00	4.177	4.177	(1.000)	139456	40	
*	32 Naphthalene-d8	136.00	5.362	5.362	(1.000)	530294	40	
*	48 Acenaphthene-d10	164.00	7.127	7.128	(1.000)	251371	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 68 Phenanthrene-d10	188.00	8.621	8.621	1.000)	337243	40	
* 76 Chrysene-d12	240.00	11.405	11.406	1.000)	209261	40	
* 83 Perylene-d12	264.00	13.491	13.503	1.000)	112564	40	
17 ortho-Cresol	108.00	4.425	4.426	1.060)	646631	120	61
20 meta,para-Cresol	108.00	4.556	4.556	1.091)	634519	120	60
86 Benzidine	184.00	10.469	10.481	0.918)	8499	110	84

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h144ic3.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950524.b/hclpw.m
Misc Info: 950524 STD120

Calibration Date: 05/24/95
Calibration Time: 1537

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	212958	106479	425916	139456	-34.51
32 Naphthalene-d8	774451	387226	1548902	530294	-31.53
48 Acenaphthene-d10	331554	165777	663108	251371	-24.18
65 Phenanthrene-d10	334831	167416	669662	337243	0.72
76 Chrysene-d12	151179	75590	302358	209261	38.42
83 Perylene-d12	75826	37913	151652	112564	48.45

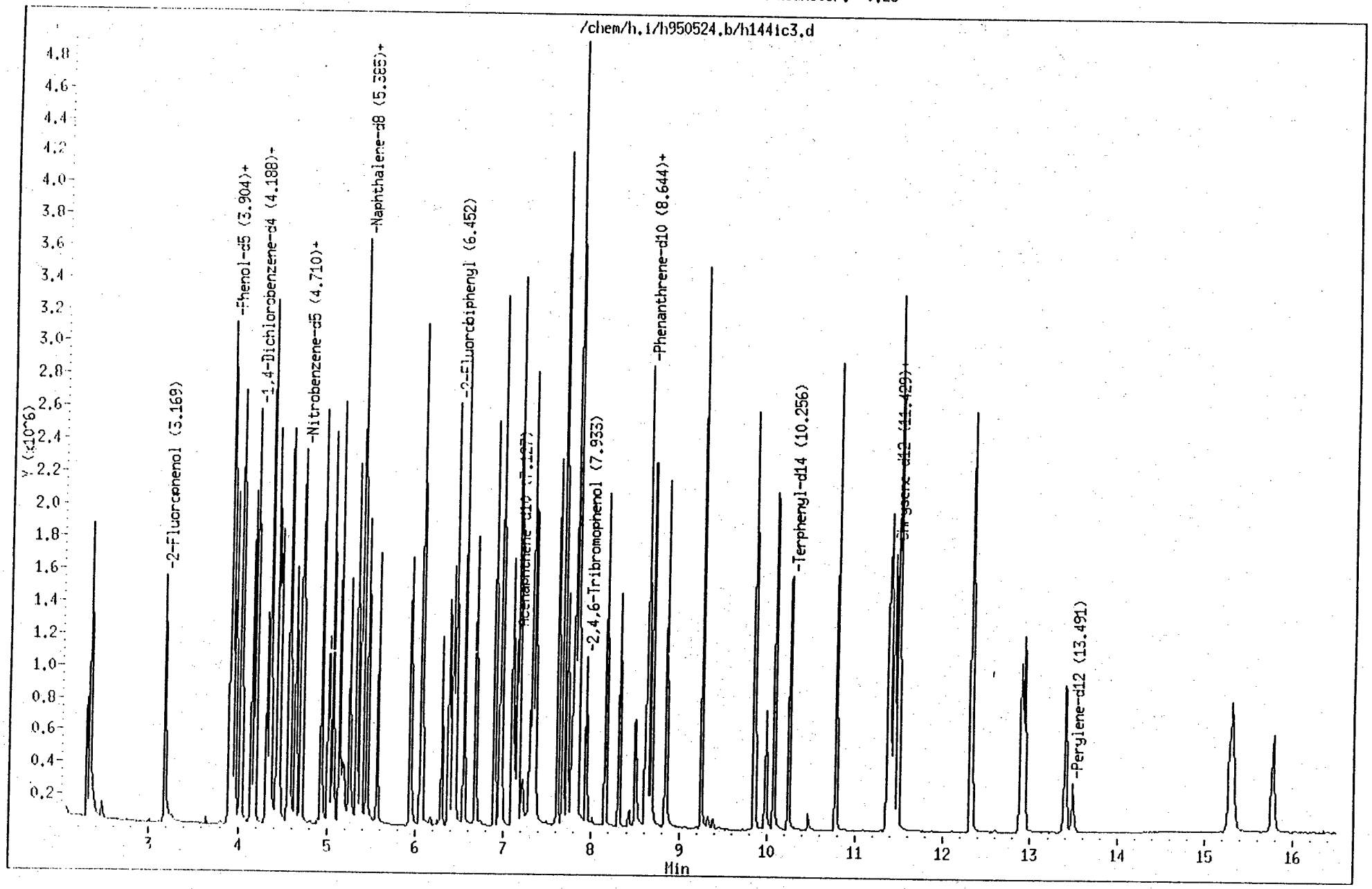
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.18	3.68	4.68	4.18	-0.01
32 Naphthalene-d8	5.36	4.86	5.86	5.36	-0.01
48 Acenaphthene-d10	7.13	6.63	7.63	7.13	-0.01
65 Phenanthrene-d10	8.62	8.12	9.12	8.62	-0.01
76 Chrysene-d12	11.41	10.91	11.91	11.41	0.00
83 Perylene-d12	13.50	13.00	14.00	13.49	-0.09

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950524.b/h144ic3.d
Date : 24-MAY-95 16:25
Client ID:
Sample Info: SID-8270W/1X
Volume Injected (ul): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/h.i/h950524.b/h144ic2.d
Lab Smp Id:
Inj Date : 24-MAY-1995 16:03
Operator : LH
Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950524 STD160
Comment :
Method : /chem/h.i/h950524.b/hclpw.m
Meth Date : 25-May-1995 11:25 liping
Quant Type: ISTD
Cal Date : 24-MAY-1995 15:37
Cal File: h144ic1.d
Als bottle: 3
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL ug/L)
2 Pyridine	79.00	2.301	2.305	(0.551)	1909241	160	80
5 Phenol	94.00	3.912	3.905	(0.938)	1645342	130	67
6 Aniline	93.00	3.924	3.916	(0.940)	1742206	150	75(Q)
7 bis(2-Chloroethyl)ether	93.00	3.960	3.964	(0.949)	1455727	140	72
9 2-Chlorophenol	128.00	4.031	4.023	(0.966)	1181499	150	73
10 1,3-Dichlorobenzene	146.00	4.149	4.142	(0.994)	1242033	150	75
12 1,4-Dichlorobenzene	146.00	4.197	4.189	(1.006)	1265767	140	73
13 Benzyl alcohol	108.00	4.315	4.307	(1.034)	577995	120	62(Q)
15 1,2-Dichlorobenzene	146.00	4.363	4.355	(1.045)	1098980	140	71
16 2-Methylphenol	108.00	4.422	4.426	(1.060)	1082492	140	69(M)
18 bis(2-chloroisopropyl)ether	45.00	4.446	4.450	(1.065)	1867208	120	64
19 4-Methylphenol	108.00	4.564	4.556	(1.094)	1008650	130	64
21 N-Nitroso-di-n-propylamine	70.00	4.576	4.568	(1.097)	741696	110	57
22 Hexachloroethane	117.00	4.647	4.639	(1.114)	539878	140	73
24 Nitrobenzene	77.00	4.718	4.710	(0.879)	1117037	150	77
25 Isophorone	82.00	4.931	4.924	(0.918)	1997952	130	66
26 2-Nitrophenol	139.00	5.014	5.018	(0.934)	535500	160	81
27 2,4-Dimethylphenol	107.00	5.062	5.054	(0.943)	947924	150	76
28 Benzoic acid	122.00	5.204	5.149	(0.969)	298491	200	100(M)
29 bis(2-Chloroethoxy)methane	93.00	5.245	5.237	(0.958)	1275569	140	70
30 2,4-Dichlorophenol	162.00	5.251	5.244	(0.978)	632996	150	77
31 1,2,4-Trichlorobenzene	180.00	5.334	5.327	(0.993)	673406	160	78
33 Naphthalene	128.00	5.394	5.386	(1.004)	2640558	150	73
34 4-Chloroaniline	127.00	5.453	5.445	(1.015)	919289	150	76
35 Hexachlorobutadiene	225.00	5.571	5.564	(1.038)	290035	160	80
36 4-Chloro-3-methylphenol	107.00	5.939	5.943	(1.106)	719584	150	74
37 2-Methylnaphthalene	142.00	6.069	6.061	(1.130)	1455124	140	70
38 Hexachlorocyclopentadiene	237.00	6.294	6.298	(0.884)	269159	190	93
39 2,4,6-Trichlorophenol	196.00	6.377	6.381	(0.895)	321472	180	89

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ng/L)
	40 2,4,5-Trichlorophenol	196.00	6.405	6.417	(0.902)	372241	180	89
	42 2-Chloronaphthalene	162.00	6.555	6.547	(0.920)	1175806	170	84
	43 2-Nitroaniline	65.00	6.673	6.678	(0.937)	472406	180	92
	44 Dimethylphthalate	163.00	6.899	6.891	(0.968)	1276343	150	73
	45 2,6-Dinitrotoluene	165.00	6.958	6.950	(0.977)	316086	160	81
	46 Acenaphthylene	152.00	6.982	6.974	(0.980)	1905708	160	79
	47 3-Nitroaniline	138.00	7.100	7.092	(0.997)	390697	210	100
	49 Acenaphthene	153.00	7.169	7.163	(1.005)	1213306	150	77
	50 2,4-Dinitrophenol	184.00	7.207	7.258	(1.012)	108292	290	140 (CM)
	51 4-Nitrophenol	109.00	7.290	7.294	(1.023)	161796	250	120
	52 Dibenzofuran	168.00	7.325	7.317	(1.028)	1507952	170	86
	53 2,4-Dinitrotoluene	165.00	7.361	7.353	(1.033)	421849	190	94
	54 Diethylphthalate	149.00	7.610	7.602	(1.068)	1331983	150	77
	55 4-Chlorophenyl-phenylether	204.00	7.669	7.673	(1.077)	429146	150	76
	56 Fluorene	166.00	7.669	7.673	(1.077)	1040402	150	73
	57 4-Nitroaniline	138.00	7.728	7.720	(1.085)	380854	260	130
	58 4,6-Dinitro-2-methylphenol	198.00	7.776	7.768	(0.902)	191463	200	100
	59 n-Nitrosodiphenylamine	169.00	7.799	7.791	(0.905)	687408	140	72
	60 1,2-Diphenylhydrazine	77.00	7.835	7.827	(0.909)	2872700	120	60
	62 4-Bromophenyl-phenylether	248.00	8.167	8.159	(0.948)	218252	150	77
	63 Hexachlorobenzene	283.70	8.321	8.313	(0.966)	212055	150	76
	64 Pentachlorophenol	265.50	8.498	8.502	(0.986)	119800	210	100 (M)
	66 Phenanthrene	178.00	8.641	8.645	(1.003)	1452564	150	75
	67 Anthracene	178.00	8.688	8.692	(1.008)	1449698	170	84
	68 Carbazole	167.00	8.854	8.846	(1.028)	1374403	180	92
	69 Di-n-butylphthalate	149.00	9.257	9.261	(1.074)	2140454	120	63
	70 Fluoranthene	202.00	9.861	9.853	(1.144)	1202709	180	88
	71 Pyrene	202.00	10.086	10.090	(0.885)	1203083	150	77
	73 Butylbenzylphthalate	149.00	10.786	10.790	(0.946)	770795	140	68
	74 3,3'-Dichlorobenzidine	252.00	11.366	11.370	(0.997)	250447	200	98
	75 Benzo[a]anthracene	228.00	11.390	11.382	(0.999)	764746	160	80
	77 Chrysene	228.00	11.437	11.441	(1.003)	684552	160	80
	78 bis(2-Ethylhexyl)phthalate	149.00	11.485	11.489	(1.007)	1007398	120	61
	79 Di-n-octylphthalate	149.00	12.326	12.318	(0.913)	1564495	130	65
	80 Benzo[b]fluoranthene	252.00	12.895	12.887	(0.955)	614073	170	84
	81 Benzo[k]fluoranthene	252.00	12.930	12.923	(0.958)	575182	160	78
	82 Benzo[a]pyrene	252.00	13.416	13.409	(0.994)	485476	170	85
	84 Indeno[1,2,3-cd]pyrene	276.00	15.300	15.293	(1.133)	451699	210	100
	85 Dibenz[a,h]anthracene	278.00	15.324	15.316	(1.135)	369936	210	100
	86 Benzo[g,h,i]perylene	276.00	15.786	15.779	(1.169)	361273	200	100
S	3 2-Fluorophenol	112.00	3.166	3.170	(0.759)	1317902	150	76
S	4 Phenol-d5	99.00	3.901	3.893	(0.935)	1516902	140	68
S	61 2,4,6-Tribromophenol	329.70	7.941	7.934	(0.922)	87640	180	88
S	23 Nitrobenzene-d5	82.00	4.694	4.687	(0.874)	1113905	150	77 (R)
S	41 2-Fluorobiphenyl	172.00	6.448	6.452	(0.905)	1231974	160	79 (R)
S	72 Terphenyl-d14	244.00	10.252	10.256	(0.899)	631926	150	77 (R)
*	11 1,4-Dichlorobenzene-d4	152.00	4.173	4.177	(1.000)	209393	40	
*	32 Naphthalene-d8	136.00	5.370	5.362	(1.000)	649658	40	
*	48 Acenaphthene-d10	164.00	7.124	7.128	(1.000)	236553	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN ng	FINAL ug/L	
* 65 Phenanthrene-d10	188.00	9.617	9.601	1.000	288110	40		
* 76 Chrysene-d12	240.00	11.402	11.406	1.000	148010	40		
* 83 Perylene-d12	264.00	13.499	13.503	1.000	76081	40		
17 ortho-Cresol	108.00	4.422	4.426	1.060	1081008	100	67	M
20 meta,para-Cresol	108.00	4.564	4.556	1.094	1008480	100	44	
96 Benzidine	184.00	10.477	10.481	0.919	8624	140	40	

QC Flag Legend

Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h144ic2.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950524.b/hclpw.m
Misc Info: 950524 STD160

Calibration Date: 05/24/95
Calibration Time: 1537

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	212958	106479	425916	209393	-1.67
32 Naphthalene-d8	774451	387226	1548902	649658	-16.11
48 Acenaphthene-d10	331554	165777	663108	236553	-28.65
65 Phenanthrene-d10	334831	167416	669662	285130	-14.84
76 Chrysene-d12	151179	75590	302358	145319	-3.88
83 Perylene-d12	75826	37913	151652	76080	0.33

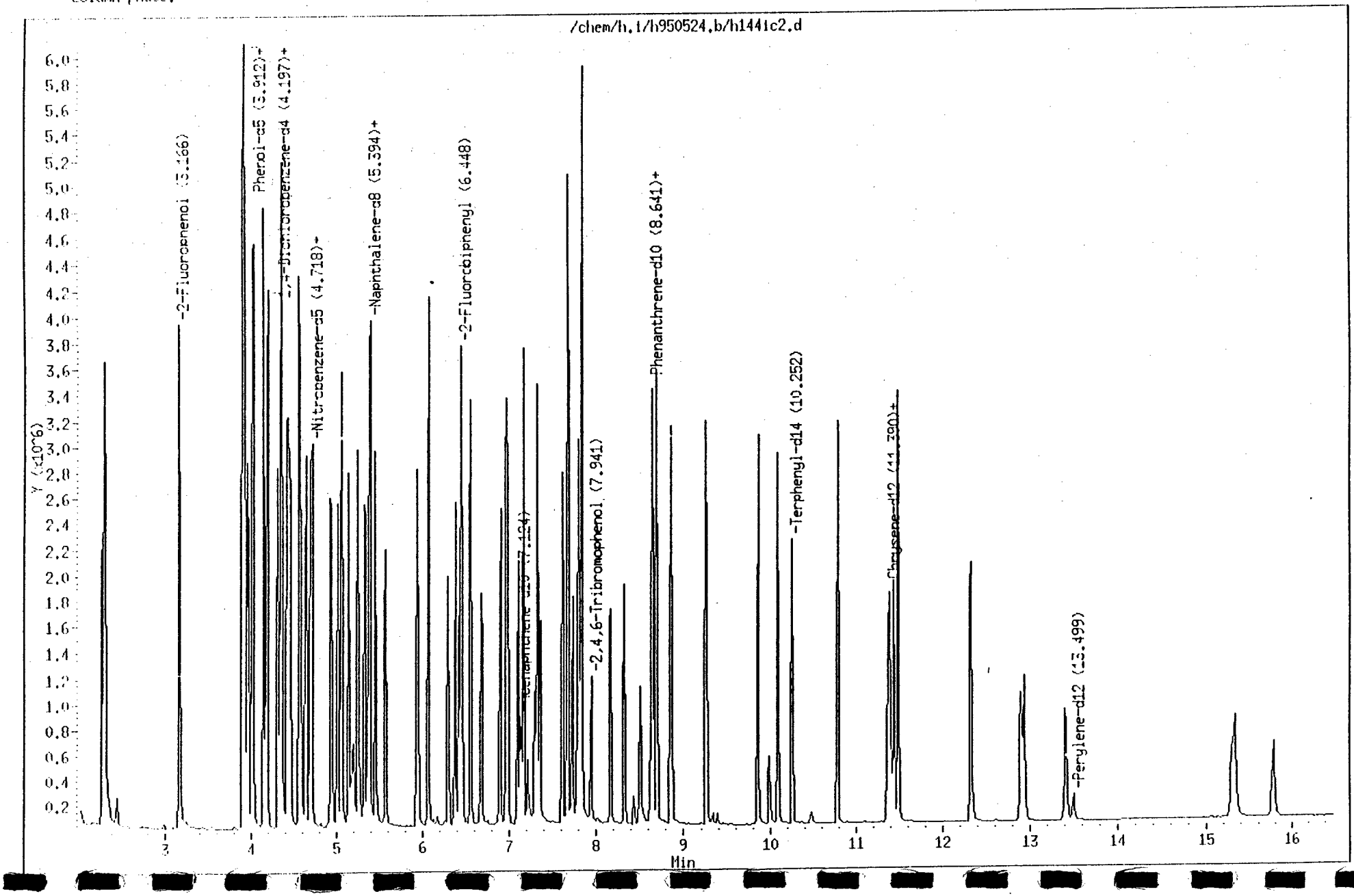
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.18	3.68	4.68	4.17	-0.10
32 Naphthalene-d8	5.36	4.86	5.86	5.37	0.15
48 Acenaphthene-d10	7.13	6.63	7.63	7.12	-0.06
65 Phenanthrene-d10	8.62	8.12	9.12	8.62	-0.05
76 Chrysene-d12	11.41	10.91	11.91	11.40	-0.04
83 Perylene-d12	13.50	13.00	14.00	13.50	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950524.b/h144ic2.d
Date : 24-MAY-95 16:03
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (ul): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/j.i/j950515.b/j135ic1.d
Level 2: /chem/j.i/j950515.b/j135ic2.d
Level 3: /chem/j.i/j950515.b/j135ic3.d
Level 4: /chem/j.i/j950515.b/j135ic4.d
Level 5: /chem/j.i/j950515.b/j135ic5.d

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
2 Pyridine	0.95105	1.26705	1.23502	1.33160	1.48833	1.25461	15.601
5 Phenol	1.51832	1.65443	1.58304	1.72973	2.00205	1.69751	11.054
6 Aniline	1.36393	1.76985	1.74905	1.92722	2.16595	1.79520	16.327
7 bis(2-Chloroethyl)ether	1.25411	1.48762	1.45620	1.46936	1.54893	1.44325	7.728
9 2-Chlorophenol	1.02696	1.23674	1.15397	1.23144	1.29693	1.18921	8.740
10 1,3-Dichlorobenzene	1.34917	1.49659	1.38271	1.45601	1.48908	1.43471	4.578
12 1,4-Dichlorobenzene	1.60006	1.67907	1.54190	1.52079	1.54718	1.57780	4.037
13 Benzyl alcohol	0.53329	0.79005	0.82283	0.89240	0.98200	0.80411	20.933
15 1,2-Dichlorobenzene	1.50220	1.52238	1.37536	1.38949	1.44032	1.44595	4.536
16 2-Methylphenol	1.19543	1.35725	1.32818	1.36100	1.48673	1.34572	7.718
17 ortho-Cresol	1.19543	1.35725	1.32818	1.43178	1.48673	1.35987	8.165
18 bis(2-chloroisopropyl)ether	1.76798	1.76851	1.70940	1.71433	1.82264	1.75657	2.647
19 4-Methylphenol	1.05392	1.30252	1.42666	1.38146	1.41489	1.31589	11.722
20 meta,para-Cresol	1.05886	1.30252	1.42666	1.48284	1.41489	1.33715	12.621
21 N-Nitroso-di-n-propylamine	0.87335	1.06493	1.06762	1.07818	1.15447	1.04771	9.945
22 Hexachloroethane	0.69094	0.69528	0.62342	0.62498	0.65254	0.65743	5.263
24 Nitrobenzene	0.28587	0.32718	0.32549	0.36702	0.37957	0.33703	11.059
25 Isophorone	0.76857	0.85821	0.78532	0.81508	0.82607	0.81065	4.331
26 2-Nitrophenol	0.13155	0.14223	0.16652	0.19168	0.20758	0.16791	19.118
27 2,4-Dimethylphenol	0.33771	0.36339	0.33649	0.35681	0.36466	0.35181	3.912
28 Benzoic acid	0.06016	0.04836	0.11869	0.18084	0.15672	0.11295	51.464
29 bis(2-Chloroethoxy)methane	0.42222	0.46401	0.43459	0.44374	0.45735	0.44438	3.800
30 2,4-Dichlorophenol	0.25343	0.29339	0.28143	0.29478	0.30181	0.28492	6.678
31 1,2,4-Trichlorobenzene	0.30741	0.32200	0.29045	0.30527	0.31109	0.30724	3.706
33 Naphthalene	1.01228	1.05065	0.96870	1.00463	1.01642	1.01053	2.898
34 4-Chloroaniline	0.40672	0.43940	0.40261	0.41762	0.42253	0.41778	3.473

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INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	$\overline{RRF}$	% RSD
35 Hexachlorobutadiene	0.16723	0.16702	0.15373	0.15764	0.16195	0.16151	3.647
36 4-Chloro-3-methylphenol	0.27010	0.31639	0.30299	0.31421	0.31424	0.30359	6.403
37 2-Methylnaphthalene	0.71152	0.72896	0.68681	0.70283	0.70093	0.70621	2.196
38 Hexachlorocyclopentadiene	0.08166	0.15446	0.18379	0.23183	0.26697	0.18374	38.979
39 2,4,6-Trichlorophenol	0.28606	0.33348	0.32647	0.38371	0.41647	0.34924	14.647
40 2,4,5-Trichlorophenol	0.27887	0.37871	0.36262	0.37822	0.37673	0.35503	12.137
42 2-Chloronaphthalene	1.07462	1.14790	1.04047	1.09629	1.14040	1.09994	4.098
43 2-Nitroaniline	0.26045	0.30646	0.32759	0.35965	0.36334	0.32350	13.093
44 Dimethylphthalate	1.33503	1.45003	1.17295	1.13198	1.13770	1.24554	11.327
45 2,6-Dinitrotoluene	0.19775	0.23250	0.26006	0.27051	0.27623	0.24741	13.117
46 Acenaphthylene	1.89377	1.98018	1.81003	1.86750	1.89947	1.89019	3.255
47 3-Nitroaniline	0.24880	0.29390	0.30926	0.31630	0.33588	0.30083	10.891
49 Acenaphthene	1.10308	1.15985	1.06041	1.08599	1.10991	1.10385	3.322
50 2,4-Dinitrophenol	0.01312	0.03990	0.06599	0.10986	0.13994	0.07376	69.684
51 4-Nitrophenol	0.10125	0.09981	0.12493	0.12426	0.12827	0.11571	12.054
52 Dibenzofuran	1.60012	1.70641	1.57273	1.65040	1.66645	1.63922	3.247
53 2,4-Dinitrotoluene	0.22118	0.31857	0.35206	0.39893	0.38067	0.33428	20.987
54 Diethylphthalate	1.29307	1.16339	1.07643	1.08836	1.08674	1.14160	8.017
55 4-Chlorophenyl-phenylether	0.60706	0.64523	0.59312	0.61902	0.50838	0.59456	8.720
56 Fluorene	1.27759	1.36248	1.23577	1.28125	1.26119	1.28366	3.706
57 4-Nitroaniline	0.21402	0.28985	0.25758	0.28689	0.31079	0.27183	13.782
58 4,6-Dinitro-2-methylphenol	0.03059	0.05007	0.09116	0.15279	0.16501	0.09792	61.232
59 n-Nitrosodiphenylamine	0.51655	0.55847	0.50740	0.51665	0.49939	0.51969	4.394
60 1,2-Diphenylhydrazine	2.08860	2.25724	2.09159	2.52856	2.40385	2.27397	8.504
62 4-Bromophenyl-phenylether	0.21346	0.23072	0.21828	0.22724	0.21989	0.22192	3.143
63 Hexachlorobenzene	0.23804	0.25488	0.23514	0.29216	0.28083	0.26021	9.787
64 Pentachlorophenol	0.07041	0.09786	0.10596	0.13378	0.14153	0.10991	26.098
66 Phenanthrene	1.21947	1.39737	1.29086	1.62620	1.56750	1.42028	12.280
67 Anthracene	1.23143	1.19931	1.09424	1.29253	1.25997	1.21550	6.256
68 Carbazole	1.02126	1.13742	0.97197	1.20739	1.17657	1.10292	9.218
69 Di-n-butylphthalate	1.29031	1.43356	1.34818	1.64157	1.62900	1.46852	10.936
70 Fluoranthene	1.07541	1.10480	1.00195	1.25405	1.25060	1.13736	9.798
71 Pyrene	1.33167	1.47384	1.36535	1.43146	1.45975	1.41241	4.352
73 Butylbenzylphthalate	0.77066	0.86319	0.76986	0.81568	0.82800	0.80948	4.919

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

	Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
74	3,3'-Dichlorobenzidine	0.39914	0.42903	0.40834	0.44206	0.45633	0.42698	5.513
75	Benzo[a]anthracene	1.22568	1.28194	1.19877	1.22823	1.26654	1.24023	2.707
77	Chrysene	1.14333	1.20407	1.10284	1.18931	1.15540	1.15899	3.441
78	bis(2-Ethylhexyl)phthalate	1.06264	1.15854	1.05292	1.09392	1.11358	1.09632	3.868
79	Di-n-octylphthalate	2.56522	3.05460	2.92959	3.23091	3.34981	3.02603	10.041
80	Benzo[b]fluoranthene	1.68789	1.88018	1.96569	2.05254	2.22508	1.96227	10.168
81	Benzo[k]fluoranthene	1.66504	1.81921	1.51041	1.60892	1.48518	1.61775	8.293
82	Benzo[a]pyrene	1.41684	1.53858	1.45954	1.51435	1.54723	1.49531	3.719
84	Indeno[1,2,3-cd]pyrene	1.34560	1.43852	1.29149	1.33980	1.41585	1.36625	4.391
85	Dibenz[a,h]anthracene	1.13755	1.23807	1.10419	1.14280	1.21980	1.16848	4.921
86	Benzo[g,h,i]perylene	1.07314	1.11446	1.00801	1.04609	1.12547	1.07343	4.520
96	Benzidine	0.23696	0.40586	0.33322	0.43468	0.44840	0.37182	23.543
$ 3	2-Fluorophenol	0.53676	0.60858	0.58345	0.78905	0.89782	0.68313	22.467
$ 4	Phenol-d5	1.27175	1.56530	1.53071	1.64719	1.81856	1.56670	12.694
$ 8	2-Chlorophenol-d4	0.98505	1.16531	1.06248	1.15564	1.20282	1.11426	7.969
$ 14	1,2-Dichlorobenzene-d4	0.38858	0.43736	0.37932	0.40981	0.41932	0.40688	5.747
$ 23	Nitrobenzene-d5	0.28758	0.32000	0.32625	0.37035	0.38320	0.33747	11.565
$ 41	2-Fluorobiphenyl	1.22535	1.30328	1.21468	1.26964	1.32263	1.26712	3.720
$ 61	2,4,6-Tribromophenol	0.09140	0.10858	0.10962	0.11966	0.11862	0.10962	10.387
$ 72	Terphenyl-d14	0.90836	1.01420	0.94580	1.00700	1.01611	0.97829	4.979

SPL Houston Labs

ata file : /chem/j.i/j950515.b/j135ic1.d
ab Smp Id:
j Date : 15-MAY-1995 15:27
erator : PC Inst ID: j.i
mp Info : STD-8270W/1X
sc Info : 950515 STD020
mment :
ethod : /chem/j.i/j950515.b/jc1pw.m
eth Date : 16-May-1995 13:16 patti Quant Type: ISTD
Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
s bottle: 2 Calibration Sample, Level: 1
il Factor: 1.000
egrator: HP RTE Compound Sublist: Std.sub
rget Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Pyridine	79.00	4.136	4.136	(0.514)	149998	20	15
5 Phenol	94.00	7.462	7.462	(0.927)	239466	20	18
Aniline	93.00	7.484	7.484	(0.930)	215115	20	15
bis(2-Chloroethyl)ether	93.00	7.571	7.571	(0.940)	197795	20	17
9 2-Chlorophenol	128.00	7.702	7.702	(0.957)	161969	20	17
1,3-Dichlorobenzene	146.00	7.974	7.974	(0.991)	212788	20	19
1,4-Dichlorobenzene	146.00	8.084	8.084	(1.004)	252358	20	20
3 Benzyl alcohol	108.00	8.411	8.411	(1.045)	84109	20	13(M)
5 1,2-Dichlorobenzene	146.00	8.465	8.465	(1.051)	236923	20	21
2-Methylphenol	108.00	8.662	8.662	(1.076)	188540	20	18
bis(2-chloroisopropyl)ether	45.00	8.694	8.694	(1.080)	278842	20	20
19 4-Methylphenol	108.00	8.989	8.989	(1.116)	166221	20	16(M)
N-Nitroso-di-n-propylamine	70.00	8.989	8.989	(1.116)	137742	20	17
Hexachloroethane	117.00	9.109	9.109	(1.131)	108974	20	21
24 Nitrobenzene	77.00	9.294	9.294	(0.857)	184415	20	17
Isophorone	82.00	9.817	9.817	(0.905)	495813	20	19
2-Nitrophenol	139.00	10.024	10.024	(0.925)	84866	20	16(aM)
27 2,4-Dimethylphenol	107.00	10.154	10.154	(0.937)	217862	20	19
28 Benzoic acid	122.00	10.623	10.623	(0.980)	38807	20	11(aQM)
bis(2-Chloroethoxy)methane	93.00	10.351	10.351	(0.955)	272381	20	19
30 2,4-Dichlorophenol	162.00	10.590	10.590	(0.977)	163487	20	18
31 1,2,4-Trichlorobenzene	180.00	10.754	10.754	(0.992)	198316	20	20
Naphthalene	128.00	10.885	10.885	(1.004)	453030	20	20
4-Chloroaniline	127.00	11.093	11.093	(1.023)	262378	20	19
35 Hexachlorobutadiene	225.00	11.333	11.333	(1.045)	107879	20	21
4-Chloro-3-methylphenol	107.00	12.301	12.301	(1.135)	174247	20	18
2-Methylnaphthalene	142.00	12.530	12.530	(1.156)	459009	20	20
38 Hexachlorocyclopentadiene	237.00	13.096	13.096	(0.867)	29991	20	9(a)
2,4,6-Trichlorophenol	196.00	13.314	13.314	(0.882)	105065	20	16

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)	
40 2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.889)	102426	20	16	(a)
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.908)	394689	20	20	
43 2-Nitroaniline	65.00	14.056	14.056	(0.931)	95660	20	16	(a)
44 Dimethylphthalate	163.00	14.579	14.579	(0.965)	490332	20	21	
45 2,6-Dinitrotoluene	165.00	14.732	14.732	(0.975)	72630	20	16	(M)
46 Acenaphthylene	152.00	14.721	14.721	(0.975)	695549	20	20	
47 3-Nitroaniline	138.00	15.091	15.091	(0.999)	91381	20	16	(a)
49 Acenaphthene	153.00	15.179	15.179	(1.005)	405143	20	20	
50 2,4-Dinitrophenol	184.00	15.441	15.441	(1.022)	4818	20	4	(aCM)
51 4-Nitrophenol	109.00	15.659	15.659	(1.037)	37186	20	18	(aCM)
52 Dibenzofuran	168.00	15.582	15.582	(1.032)	587696	20	20	
53 2,4-Dinitrotoluene	165.00	15.713	15.713	(1.040)	81234	20	13	
54 Diethylphthalate	149.00	16.324	16.324	(1.081)	474922	20	23	
55 4-Chlorophenyl-phenylether	204.00	16.444	16.444	(1.089)	222961	20	20	
56 Fluorene	166.00	16.422	16.422	(1.087)	469236	20	20	
57 4-Nitroaniline	138.00	16.619	16.619	(1.100)	78607	20	16	(aQ)
58 4,6-Dinitro-2-methylphenol	198.00	16.728	16.728	(0.893)	16469	20	6	(aM)
59 n-Nitrosodiphenylamine	169.00	16.750	16.750	(0.895)	278110	20	20	
60 1,2-Diphenylhydrazine	77.00	16.826	16.826	(0.899)	1124508	20	18	
62 4-Bromophenyl-phenylether	248.00	17.633	17.633	(0.942)	114929	20	19	
63 Hexachlorobenzene	283.70	17.993	17.993	(0.961)	128163	20	18	
64 Pentachlorophenol	266.00	18.472	18.472	(0.987)	37907	20	13	(aM)
66 Phenanthrene	178.00	18.778	18.778	(1.003)	656565	20	17	
67 Anthracene	178.00	18.887	18.887	(1.009)	663009	20	20	
68 Carbazole	167.00	19.323	19.323	(1.032)	549851	20	18	
69 Di-n-butylphthalate	149.00	20.324	20.324	(1.086)	694710	20	18	
70 Fluoranthene	202.00	21.726	21.726	(1.160)	579004	20	19	
71 Pyrene	202.00	22.271	22.271	(0.877)	567285	20	19	
73 Butylbenzylphthalate	149.00	23.980	23.980	(0.944)	328298	20	19	
74 3,3'-Dichlorobenzidine	252.00	25.341	25.341	(0.997)	170030	20	19	(M)
75 Benzo[a]anthracene	228.00	25.352	25.352	(0.998)	522134	20	20	
77 Chrysene	228.00	25.474	25.474	(1.003)	487055	20	20	
78 bis(2-Ethylhexyl)phthalate	149.00	25.605	25.605	(1.008)	452678	20	19	
79 Di-n-octylphthalate	149.00	27.413	27.413	(0.917)	752106	20	17	
80 Benzo[b]fluoranthene	252.00	28.633	28.633	(0.958)	494877	20	17	
81 Benzo[k]fluoranthene	252.00	28.666	28.666	(0.959)	488178	20	20	(M)
82 Benzo[a]pyrene	252.00	29.703	29.703	(0.993)	415409	20	19	
84 Indeno[1,2,3-cd]pyrene	276.00	34.468	34.468	(1.153)	394521	20	20	
85 Dibenz[a,h]anthracene	278.00	34.534	34.534	(1.155)	333522	20	19	
86 Benzo[g,h,i]perylene	276.00	35.788	35.788	(1.197)	314637	20	20	
11 1,4-Dichlorobenzene-d4	152.00	8.051	8.051	(1.000)	315435	40		
32 Naphthalene-d8	136.00	10.842	10.842	(1.000)	1290219	40		
48 Acenaphthene-d10	164.00	15.102	15.102	(1.000)	734566	40		
65 Phenanthrene-d10	188.00	18.723	18.723	(1.000)	1076808	40		
76 Chrysene-d12	240.00	25.407	25.407	(1.000)	951991	40		
83 Perylene-d12	264.00	29.900	29.900	(1.000)	586387	40		
33 Nitrobenzene-d5	82.00	9.261	9.261	(0.854)	185519	20	17	
41 2-Fluorobipnenyl	172.00	13.478	13.478	(0.892)	450050	20	19	
72 Terphenyl-d14	244.00	22.696	22.696	(0.893)	386959	20	18	

...pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT ng)	ON-COL ng)
Phenol-d5	99.00	7.440	7.440	(0.924)	200578	20	16
3 2-Fluorophenol	112.00	5.843	5.843	(0.726)	84656	20	16 (QM)
61 2,4,6-Tribromophenol	329.70	17.078	17.078	(0.912)	49211	20	17
ortho-Cresol	108.00	8.662	8.662	(1.076)	188540	20	18
2 meta,para-Cresol	108.00	8.989	8.989	(1.116)	167000	20	16 (aM)
96 Benzidine	184.00	22.118	22.118	(0.871)	100944	20	13 (aM)

Flag Legend

Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD020

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	315435	1.66
32 Naphthalene-d8	1245807	622904	2491614	1290219	3.56
48 Acenaphthene-d10	707154	353577	1414308	734566	3.88
65 Phenanthrene-d10	1039593	519796	2079186	1076808	3.58
76 Chrysene-d12	791981	395990	1583962	851991	7.58
83 Perylene-d12	481272	240636	962544	586387	21.84

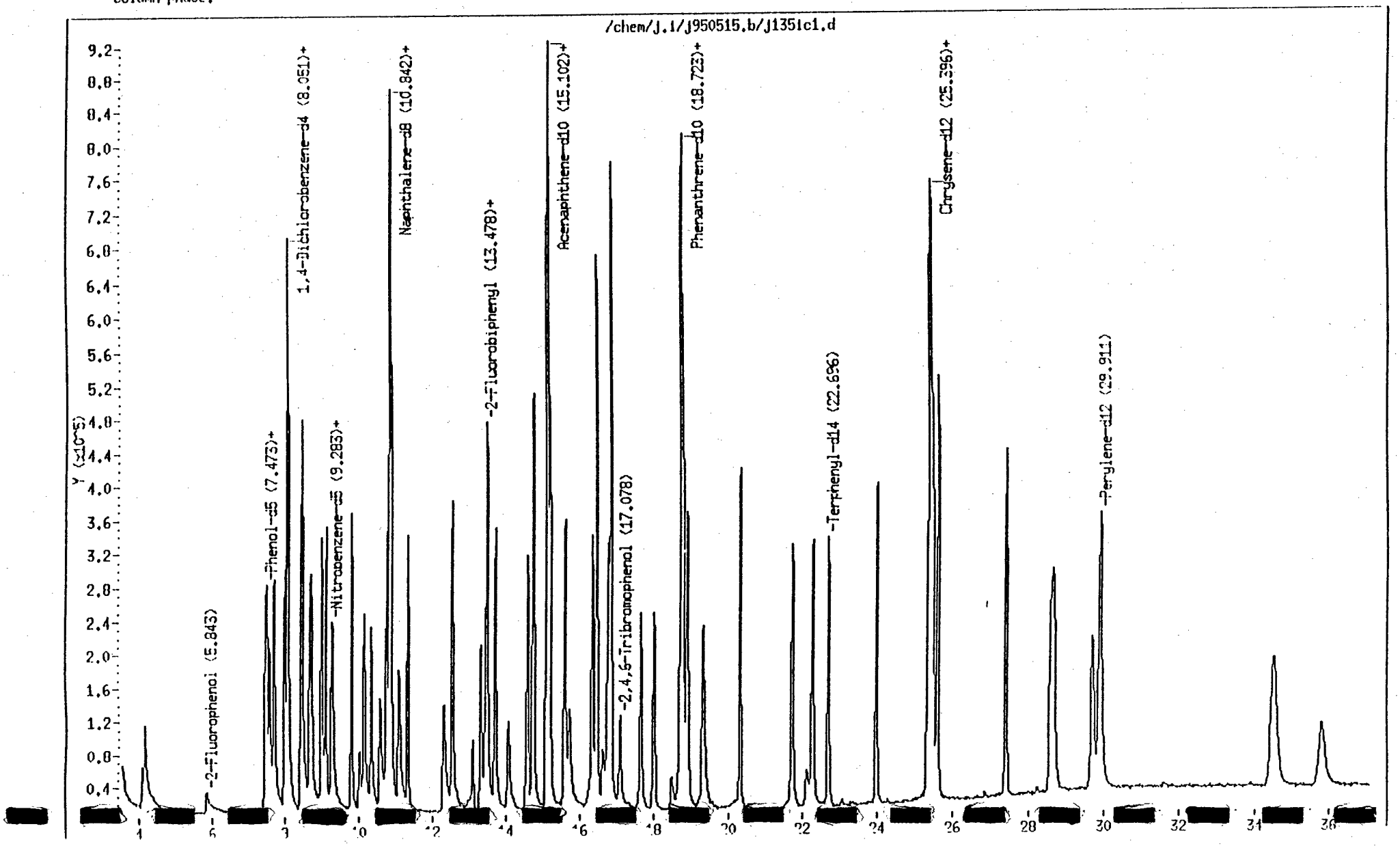
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.12
32 Naphthalene-d8	10.84	10.34	11.34	10.84	-0.03
48 Acenaphthene-d10	15.11	14.61	15.61	15.10	-0.07
65 Phenanthrene-d10	18.73	18.23	19.23	18.72	-0.05
76 Chrysene-d12	25.41	24.91	25.91	25.41	-0.02
83 Perylene-d12	29.92	29.42	30.42	29.90	-0.06

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/J.1/J950515.b/J1351c1.d
Date : 15-MAY-1995 15:27
Client ID:
Sample Info: SID-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: J.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic2.d
Lab Smp Id:
Inj Date : 15-MAY-1995 14:43
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950515 STD050
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Cal Date : 15-MAY-1995 14:43
Als bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 2

Compound Sublist: Std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS CN-CCL (ng)
2 Pyridine	79.00	4.104	4.104	(0.510)	491439	50	50
5 Phenol	94.00	7.452	7.452	(0.927)	641687	50	49
6 Aniline	93.00	7.474	7.474	(0.929)	686454	50	49
7 bis(2-Chloroethyl)ether	93.00	7.572	7.572	(0.942)	576988	50	52
9 2-Chlorophenol	128.00	7.703	7.703	(0.958)	479681	50	52
10 1,3-Dichlorobenzene	146.00	7.975	7.975	(0.992)	580469	50	52
12 1,4-Dichlorobenzene	146.00	8.074	8.074	(1.004)	651245	50	53
13 Benzyl alcohol	108.00	8.390	8.390	(1.043)	306430	50	49
15 1,2-Dichlorobenzene	146.00	8.456	8.456	(1.052)	590469	50	53
16 2-Methylphenol	108.00	8.663	8.663	(1.077)	526423	50	50
18 bis(2-chloroisopropyl)ether	45.00	8.696	8.696	(1.081)	685933	50	50
19 4-Methylphenol	108.00	8.979	8.979	(1.117)	505196	50	49
21 N-Nitroso-di-n-propylamine	70.00	9.001	9.001	(1.119)	413044	50	51
22 Hexachloroethane	117.00	9.110	9.110	(1.133)	269672	50	53
24 Nitrobenzene	77.00	9.296	9.296	(0.857)	509508	50	48
25 Isophorone	82.00	9.830	9.830	(0.906)	1336448	50	53
26 2-Nitrophenol	139.00	10.015	10.015	(0.923)	221484	50	42(a)
27 2,4-Dimethylphenol	107.00	10.146	10.146	(0.936)	565891	50	52
28 Benzoic acid	122.00	10.560	10.560	(0.974)	75311	50	21(aM)
29 bis(2-Chloroethoxy)methane	93.00	10.342	10.342	(0.954)	722590	50	52
30 2,4-Dichlorophenol	162.00	10.582	10.582	(0.976)	456888	50	51
31 1,2,4-Trichlorobenzene	180.00	10.757	10.757	(0.992)	501441	50	52
33 Naphthalene	128.00	10.889	10.889	(1.004)	1636127	50	52
34 4-Chloroaniline	127.00	11.074	11.074	(1.021)	684255	50	52
35 Hexachlorobutadiene	225.00	11.337	11.337	(1.045)	260096	50	52
36 4-Chloro-3-methylphenol	107.00	12.284	12.284	(1.133)	492700	50	52
37 2-Methylnaphthalene	142.00	12.524	12.524	(1.155)	1135186	50	52
38 Hexachlorocyclopentadiene	237.00	13.102	13.102	(0.867)	136536	50	42
39 2,4,6-Trichlorophenol	196.00	13.309	13.309	(0.881)	294778	50	48

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2,4,5-Trichlorophenol	196.00	13.419	13.419	(0.888)	334756	50	53
2-Chloronaphthalene	162.00	13.704	13.704	(0.907)	1014677	50	52
43 2-Nitroaniline	65.00	14.053	14.053	(0.930)	270894	50	47(a)
Dimethylphthalate	163.00	14.588	14.588	(0.965)	1281740	50	58
2,6-Dinitrotoluene	165.00	14.741	14.741	(0.975)	205515	50	47
46 Acenaphthylene	152.00	14.730	14.730	(0.975)	1750366	50	52
3-Nitroaniline	138.00	15.079	15.079	(0.998)	259787	50	49(a)
Acenaphthene	153.00	15.189	15.189	(1.005)	1025240	50	52
50 2,4-Dinitrophenol	184.00	15.364	15.364	(1.017)	35266	50	27(aM)
51 4-Nitrophenol	109.00	15.604	15.604	(1.033)	88228	50	43(a)
Dibenzofuran	168.00	15.582	15.582	(1.031)	1508365	50	52
2,4-Dinitrotoluene	165.00	15.714	15.714	(1.040)	281598	50	48
54 Diethylphthalate	149.00	16.336	16.336	(1.081)	1028369	50	51
4-Chlorophenyl-phenylether	204.00	16.446	16.446	(1.088)	570349	50	54
Fluorene	166.00	16.435	16.435	(1.087)	1204358	50	53
57 4-Nitroaniline	138.00	16.599	16.599	(1.098)	256207	50	53
58 4,6-Dinitro-2-methylphenol	198.00	16.730	16.730	(0.893)	65061	50	26(a)
n-Nitrosodiphenylamine	169.00	16.763	16.763	(0.895)	725731	50	54
1,2-Diphenylhydrazine	77.00	16.840	16.840	(0.899)	2933270	50	50
62 4-Bromophenyl-phenylether	248.00	17.638	17.638	(0.942)	299818	50	52
Hexachlorobenzene	283.70	17.999	17.999	(0.961)	331208	50	49
Pentachlorophenol	266.00	18.457	18.457	(0.985)	127165	50	44(a)
66 Phenanthrene	178.00	18.787	18.787	(1.003)	1815870	50	49
Anthracene	178.00	18.896	18.896	(1.009)	1558490	50	49
Carbazole	167.00	19.312	19.312	(1.031)	1478063	50	52
69 Di-n-butylphthalate	149.00	20.326	20.326	(1.085)	1862897	50	49
70 Fluoranthene	202.00	21.721	21.721	(1.160)	1435681	50	48
Pyrene	202.00	22.278	22.278	(0.877)	1459067	50	52
Butylbenzylphthalate	149.00	23.982	23.982	(0.944)	854533	50	53
74 3,3'-Dichlorobenzidine	252.00	25.336	25.336	(0.997)	424725	50	50
Benzo[a]anthracene	228.00	25.358	25.358	(0.998)	1269093	50	52
Chrysene	228.00	25.479	25.479	(1.003)	1192000	50	52
78 bis(2-Ethylhexyl)phthalate	149.00	25.600	25.600	(1.007)	1146928	50	53
Di-n-octylphthalate	149.00	27.423	27.423	(0.917)	1837617	50	50
Benzo[b]fluoranthene	252.00	28.669	28.669	(0.958)	1131095	50	48(M)
81 Benzo[k]fluoranthene	252.00	28.691	28.691	(0.959)	1094421	50	56(M)
Benzo[a]pyrene	252.00	29.708	29.708	(0.993)	925596	50	51
Indeno[1,2,3-cd]pyrene	276.00	34.493	34.493	(1.153)	865400	50	53
Dibenz[a,h]anthracene	278.00	34.559	34.559	(1.155)	744810	50	53
86 Benzo[g,h,i]perylene	276.00	35.305	35.305	(1.197)	670447	50	52
1,4-Dichlorobenzene-d4	152.00	8.041	8.041	(1.000)	310238	40	
Naphthalene-d8	136.00	10.845	10.845	(1.000)	1245807	40	
48 Acenaphthene-d10	164.00	15.112	15.112	(1.000)	707154	40	
Phenanthrene-d10	188.00	18.732	18.732	(1.000)	1039593	40	
Chrysene-d12	240.00	25.413	25.413	(1.000)	791981	40	
93 Perylene-d12	264.00	29.918	29.918	(1.000)	481272	40	
Nitrobenzene-d5	82.00	9.252	9.252	(0.853)	498320	50	47
2-Fluorobiphenyl	172.00	13.485	13.485	(0.892)	1152025	50	51
Terphenyl-d14	244.00	22.694	22.694	(0.893)	1004031	50	52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
4 Phenol-d5	99.00	7.430	7.430	(0.924)	607117	50	50
3 2-Fluorophenol	112.00	5.821	5.821	(0.724)	236045	50	44
61 2,4,6-Tribromophenol	329.70	17.081	17.081	(0.912)	141097	50	50
17 ortho-Cresol	108.00	8.663	8.663	(1.077)	526423	50	50
20 meta,para-Cresol	108.00	8.979	8.979	(1.117)	505196	50	49
96 Benzidine	184.00	22.081	22.081	(0.869)	401793	50	54

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

rument ID: j.i
File ID: j135ic2.d
ab Smp Id:
lysis Type: SV
nt Type: ISTD
perator: PC
ethod File: /chem/j.i/j950515.b/jclpw.m
c Info: 950515 STD050

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	310288	155144	620576	310288	0.00
2 Naphthalene-d8	1245807	622904	2491614	1245807	0.00
48 Acenaphthene-d10	707154	353577	1414308	707154	0.00
5 Phenanthrene-d10	1039593	519796	2079186	1039593	0.00
6 Chrysene-d12	791981	395990	1583962	791981	0.00
83 Perylene-d12	481272	240636	962544	481272	0.00

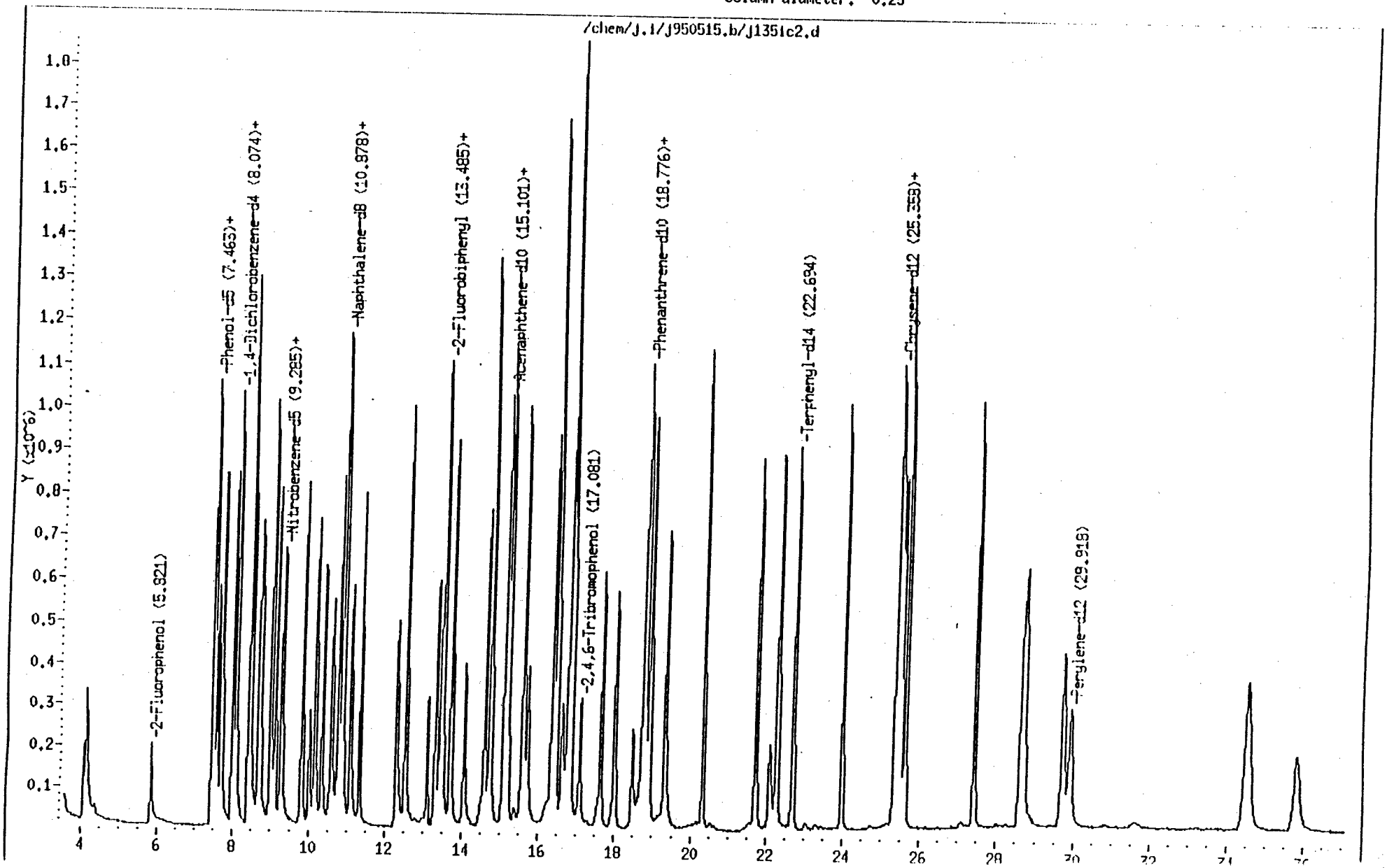
OMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.04	0.00
2 Naphthalene-d8	10.84	10.34	11.34	10.84	0.00
48 Acenaphthene-d10	15.11	14.61	15.61	15.11	0.00
65 Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
6 Chrysene-d12	25.41	24.91	25.91	25.41	0.00
83 Perylene-d12	29.92	29.42	30.42	29.92	0.00

EA UPPER LIMIT = +100% of internal standard area.
A LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/J.1/J950515.b/J1351c2.d
Date : 15-MAY-1995 14:43
Client ID:
Sample Info: SID-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: J.1

Operator: PC
Column diameter: 0.25



Data File: /chem/j.i/j950515.b/j135ic3.d
Report Date: 15-May-1995 13:16

SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic3.d
Lab Smp Id:
Run Date : 15-MAY-1995 16:12
Operator : PC
Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950515 STD080
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Quant Type: ISTD
Acq Date : 15-MAY-1995 14:43
Cal File: j135ic2.d
Vial bottle: 3
Calibration Sample, Level: 3
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: Std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
4 Pyridine	79.00	4.115	4.115	(0.511)	778898	80	79
5 Phenol	94.00	7.474	7.474	(0.928)	998384	80	75
6 Aniline	93.00	7.485	7.485	(0.930)	1103083	80	78
7 bis(2-Chloroethyl)ether	93.00	7.594	7.594	(0.943)	918391	80	81
9 2-Chlorophenol	128.00	7.714	7.714	(0.958)	727783	80	78
10 1,3-Dichlorobenzene	146.00	7.976	7.976	(0.990)	872044	80	77
11 1,4-Dichlorobenzene	146.00	8.086	8.086	(1.004)	972442	80	78
12 Benzyl alcohol	108.00	8.391	8.391	(1.042)	518941	80	82
15 1,2-Dichlorobenzene	146.00	8.467	8.467	(1.051)	867404	80	76
16 2-Methylphenol	108.00	8.664	8.664	(1.076)	837649	80	79
17 bis(2-chloroisopropyl)ether	45.00	8.708	8.708	(1.081)	1078078	80	78
19 4-Methylphenol	108.00	8.991	8.991	(1.117)	899758	80	87
20 N-Nitroso-di-n-propylamine	70.00	9.013	9.013	(1.119)	673322	80	82
21 Hexachloroethane	117.00	9.122	9.122	(1.133)	393179	80	76
24 Nitrobenzene	77.00	9.308	9.308	(0.858)	863562	80	77
25 Isophorone	82.00	9.853	9.853	(0.908)	2083552	80	78
26 2-Nitrophenol	139.00	10.028	10.028	(0.924)	441803	80	79
27 2,4-Dimethylphenol	107.00	10.169	10.169	(0.938)	892755	80	76
28 Benzoic acid	122.00	10.617	10.617	(0.979)	314888	80	84(Q)
29 bis(2-Chloroethoxy)methane	93.00	10.355	10.355	(0.955)	1153023	80	78
30 2,4-Dichlorophenol	162.00	10.584	10.584	(0.976)	746680	80	79
31 1,2,4-Trichlorobenzene	180.00	10.770	10.770	(0.993)	770586	80	76
32 Naphthalene	128.00	10.891	10.891	(1.004)	2570079	80	77
34 4-Chloroaniline	127.00	11.087	11.087	(1.022)	1068177	80	77
35 Hexachlorobutadiene	225.00	11.339	11.339	(1.045)	407861	80	76
36 4-Chloro-3-methylphenol	107.00	12.298	12.298	(1.134)	803875	80	90
37 2-Methylnaphthalene	142.00	12.538	12.538	(1.156)	1822187	80	78
38 Hexachlorocyclopentadiene	237.00	13.106	13.106	(0.867)	274475	80	80
39 2,4,6-Trichlorophenol	196.00	13.313	13.313	(0.881)	487561	80	75

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.888)	541543	80	82
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.907)	1553843	80	76
43 2-Nitroaniline	65.00	14.058	14.058	(0.930)	489221	80	81
44 Dimethylphthalate	163.00	14.604	14.604	(0.966)	1751697	80	75
45 2,6-Dinitrotoluene	165.00	14.757	14.757	(0.976)	388379	80	84
46 Acenaphthylene	152.00	14.735	14.735	(0.975)	2703115	80	77
47 3-Nitroaniline	138.00	15.096	15.096	(0.999)	461845	80	82
49 Acenaphthene	153.00	15.195	15.195	(1.005)	1583625	80	77
50 2,4-Dinitrophenol	184.00	15.370	15.370	(1.017)	98550	80	72 (Q)
51 4-Nitrophenol	109.00	15.610	15.610	(1.033)	186577	80	86
52 Dibenzofuran	168.00	15.588	15.588	(1.031)	2348724	80	77
53 2,4-Dinitrotoluene	165.00	15.720	15.720	(1.040)	525768	80	84
54 Diethylphthalate	149.00	16.354	16.354	(1.082)	1607549	80	75
55 4-Chlorophenyl-phenylether	204.00	16.453	16.453	(1.088)	885765	80	80
56 Fluorene	166.00	16.442	16.442	(1.088)	1845516	80	77
57 4-Nitroaniline	138.00	16.628	16.628	(1.100)	384677	80	76
58 4,6-Dinitro-2-methylphenol	198.00	16.749	16.749	(0.894)	194912	80	74
59 n-Nitrosodiphenylamine	169.00	16.781	16.781	(0.896)	1084913	80	78
60 1,2-Diphenylhydrazine	77.00	16.847	16.847	(0.899)	4472162	80	74
62 4-Bromophenyl-phenylether	248.00	17.646	17.646	(0.942)	466721	80	79
63 Hexachlorobenzene	283.70	18.008	18.008	(0.961)	502771	80	72
64 Pentachlorophenol	266.00	18.467	18.467	(0.986)	226570	80	77
66 Phenanthrene	178.00	18.797	18.797	(1.004)	2760069	80	73
67 Anthracene	178.00	18.896	18.896	(1.009)	2339664	80	72
68 Carbazole	167.00	19.323	19.323	(1.032)	2078236	80	70
69 Di-n-butylphthalate	149.00	20.338	20.338	(1.086)	2882638	80	73
70 Fluoranthene	202.00	21.734	21.734	(1.160)	2142334	80	70
71 Pyrene	202.00	22.281	22.281	(0.876)	2218728	80	77
73 Butylbenzylphthalate	149.00	23.985	23.985	(0.943)	1251034	80	76
74 3,3'-Dichlorobenzidine	252.00	25.339	25.339	(0.997)	663554	80	76
75 Benzo[a]anthracene	228.00	25.372	25.372	(0.998)	1948018	80	77
77 Chrysene	228.00	25.493	25.493	(1.003)	1792140	80	76
78 bis(2-Ethylhexyl)phthalate	149.00	25.614	25.614	(1.007)	1711011	80	77
79 Di-n-octylphthalate	149.00	27.425	27.425	(0.916)	2783071	80	77
80 Benzo[b]fluoranthene	252.00	28.691	28.691	(0.959)	1867379	80	80 (M)
81 Benzo[k]fluoranthene	252.00	28.713	28.713	(0.959)	1434871	80	75 (M)
82 Benzo[a]pyrene	252.00	29.718	29.718	(0.993)	1386544	80	78
84 Indeno[1,2,3-cd]pyrene	276.00	34.509	34.509	(1.153)	1226900	80	76
85 Dibenz[a,h]anthracene	278.00	34.575	34.575	(1.155)	1048970	80	76
86 Benzo[g,h,i]perylene	276.00	35.820	35.820	(1.197)	957599	80	75
1 1,4-Dichlorobenzene-d4	152.00	8.053	8.053	(1.000)	315338	40	
2 Naphthalene-d8	136.00	10.947	10.947	(1.000)	1326560	40	
8 Acenaphthene-d10	164.00	15.118	15.118	(1.000)	746705	40	
5 Phenanthrene-d10	188.00	18.731	18.731	(1.000)	1069083	40	
6 Chrysene-d12	240.00	25.427	25.427	(1.000)	812510	40	
3 Perylene-d12	264.00	29.927	29.927	(1.000)	474994	40	
3 Nitrobenzene-d5	82.00	9.264	9.264	(0.854)	865579	80	77
1 2-Fluorobiphenyl	172.00	13.489	13.489	(0.892)	1814018	80	77
2 Terphenyl-d14	244.00	22.697	22.697	(0.893)	1536945	80	77

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.442	7.442	(0.924)	965380	80	78
3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	367968	80	68
$ 61 2,4,6-Tribromophenol	329.70	17.088	17.088	(0.912)	234377	80	80
17 ortho-Cresol	108.00	8.664	8.664	(1.076)	837649	80	78
20 meta,para-Cresol	108.00	8.991	8.991	(1.117)	899758	80	85
96 Benzidine	184.00	22.083	22.083	(0.868)	541482	80	72

QC Flag Legend

- Qualifier signal failed the ratio test.
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic3.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD080

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	315338	1.63
32 Naphthalene-d8	1245807	622904	2491614	1326560	6.48
48 Acenaphthene-d10	707154	353577	1414308	746705	5.59
65 Phenanthrene-d10	1039593	519796	2079186	1069083	2.84
76 Chrysene-d12	791981	395990	1583962	812510	2.59
83 Perylene-d12	481272	240636	962544	474994	-1.30

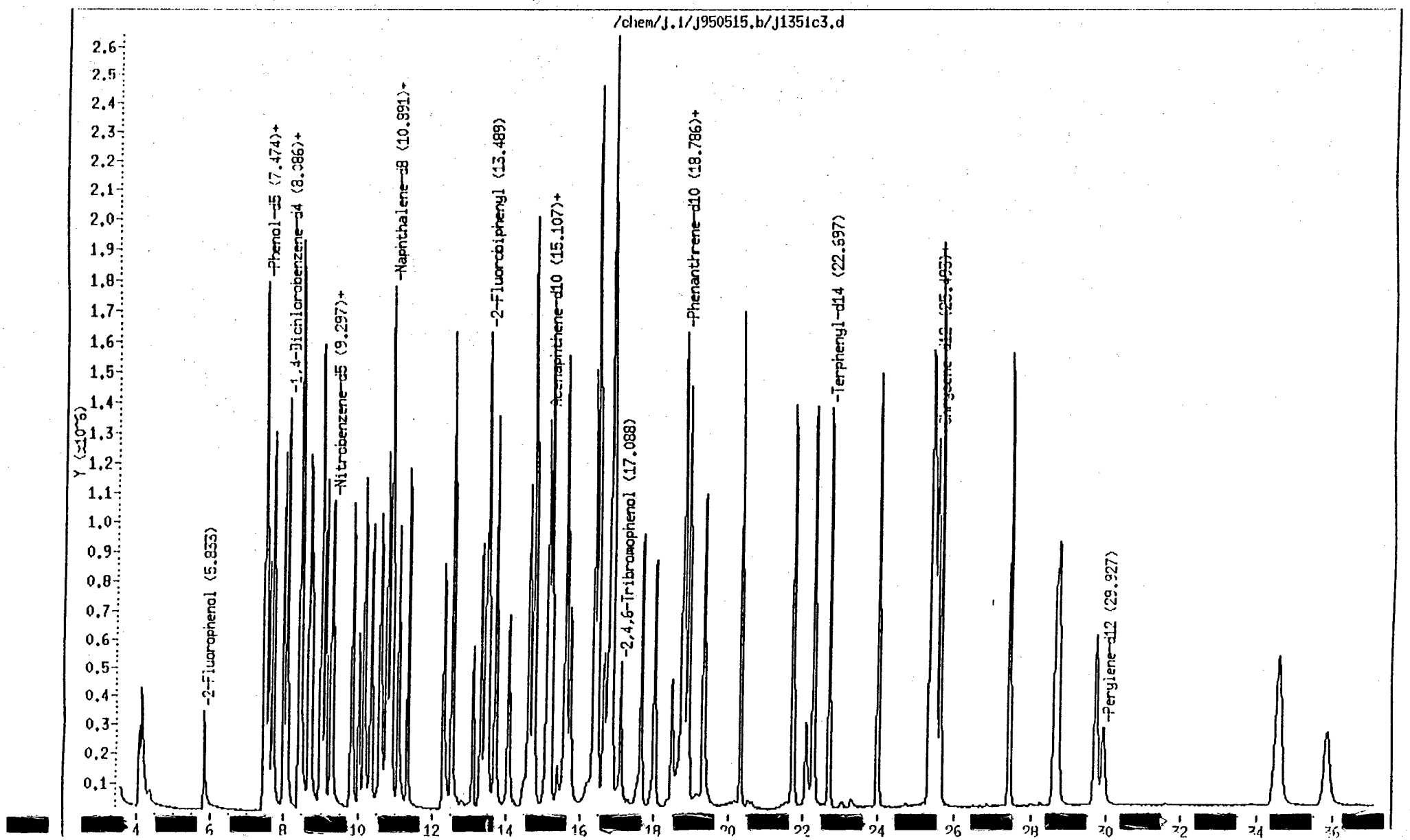
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.15
32 Naphthalene-d8	10.84	10.34	11.34	10.85	0.02
48 Acenaphthene-d10	15.11	14.61	15.61	15.12	0.04
65 Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
76 Chrysene-d12	25.41	24.91	25.91	25.43	0.05
83 Perylene-d12	29.92	29.42	30.42	29.93	0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950515.b/j1351c3.d
Date : 15-MAY-1995 16:12
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic4.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:57
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950515 STD120
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Cal Date : 15-MAY-1995 14:43
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 4

Compound Sublist: Std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS CN-COL (ng)
2 Pyridine	79.00	4.115	4.115	(0.511)	1332117	120	130
5 Phenol	94.00	7.486	7.486	(0.930)	1730405	120	120
6 Aniline	93.00	7.497	7.497	(0.931)	1927971	120	130
7 bis(2-Chloroethyl)ether	93.00	7.606	7.606	(0.944)	1469936	120	120
9 2-Chlorophenol	128.00	7.726	7.726	(0.959)	1231916	120	120
10 1,3-Dichlorobenzene	146.00	7.988	7.988	(0.992)	1456576	120	120
12 1,4-Dichlorobenzene	146.00	8.087	8.087	(1.004)	1521385	120	120
13 Benzyl alcohol	108.00	8.414	8.414	(1.045)	892744	120	130
15 1,2-Dichlorobenzene	146.00	8.480	8.480	(1.053)	1390028	120	120
16 2-Methylphenol	108.00	8.676	8.676	(1.077)	1361526	120	120
18 bis(2-chloroisopropyl)ether	45.00	8.709	8.709	(1.081)	1714995	120	120
19 4-Methylphenol	108.00	9.015	9.015	(1.119)	1381999	120	120
21 N-Nitroso-di-n-propylamine	70.00	9.037	9.037	(1.122)	1078601	120	120
22 Hexachloroethane	117.00	9.124	9.124	(1.133)	625220	120	110
24 Nitrobenzene	77.00	9.321	9.321	(0.858)	1470233	120	130
25 Isophorone	82.00	9.877	9.877	(0.909)	3265075	120	120
26 2-Nitrophenol	139.00	10.030	10.030	(0.924)	767848	120	140
27 2,4-Dimethylphenol	107.00	10.183	10.183	(0.938)	1429335	120	120
28 Benzoic acid	122.00	10.696	10.696	(0.985)	724403	120	190(Q)
29 bis(2-Chloroethoxy)methane	93.00	10.368	10.368	(0.955)	1777529	120	120
30 2,4-Dichlorophenol	162.00	10.598	10.598	(0.976)	1280837	120	120
31 1,2,4-Trichlorobenzene	180.00	10.773	10.773	(0.992)	1222845	120	120
33 Naphthalene	128.00	10.904	10.904	(1.004)	4024385	120	120
34 4-Chloroaniline	127.00	11.090	11.090	(1.021)	1672934	120	120
35 Hexachlorobutadiene	225.00	11.353	11.353	(1.045)	631463	120	120
36 4-Chloro-3-methylphenol	107.00	12.302	12.302	(1.133)	1258654	120	120
37 2-Methylnaphthalene	142.00	12.542	12.542	(1.155)	2815406	120	120
38 Hexachlorocyclopentadiene	237.00	13.111	13.111	(0.967)	510469	120	150
39 2,4,6-Trichlorophenol	196.00	13.319	13.319	(0.981)	844908	120	130

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.429	13.429	(0.888)	832819	120	130
42 2-Chloronaphthalene	162.00	13.725	13.725	(0.907)	2413980	120	120
43 2-Nitroaniline	65.00	14.075	14.075	(0.931)	791923	120	130
44 Dimethylphthalate	163.00	14.622	14.622	(0.967)	2492560	120	110
45 2,6-Dinitrotoluene	165.00	14.764	14.764	(0.976)	595644	120	130
46 Acenaphthylene	152.00	14.742	14.742	(0.975)	4112145	120	120
47 3-Nitroaniline	138.00	15.103	15.103	(0.999)	696467	120	130
49 Acenaphthene	153.00	15.202	15.202	(1.005)	2391293	120	120
50 2,4-Dinitrophenol	184.00	15.377	15.377	(1.017)	241900	120	180 (Q)
51 4-Nitrophenol	109.00	15.618	15.618	(1.033)	273622	120	130 (Q)
52 Dibenzofuran	168.00	15.596	15.596	(1.031)	3634094	120	120
53 2,4-Dinitrotoluene	165.00	15.739	15.739	(1.041)	878421	120	140
54 Diethylphthalate	149.00	16.374	16.374	(1.083)	2396514	120	110
55 4-Chlorophenyl-phenylether	204.00	16.462	16.462	(1.088)	1363055	120	120
56 Fluorene	166.00	16.451	16.451	(1.088)	2821239	120	120
57 4-Nitroaniline	138.00	16.648	16.648	(1.101)	631717	120	130
58 4,6-Dinitro-2-methylphenol	198.00	16.769	16.769	(0.895)	402975	120	190
59 n-Nitrosodiphenylamine	169.00	16.802	16.802	(0.896)	1362669	120	120
60 1,2-Diphenylhydrazine	77.00	16.868	16.868	(0.900)	6669125	120	130
62 4-Bromophenyl-phenylether	248.00	17.646	17.646	(0.941)	599348	120	120
63 Hexachlorobenzene	283.70	18.019	18.019	(0.961)	770567	120	130
64 Pentachlorophenol	266.00	18.480	18.480	(0.986)	352855	120	150
66 Phenanthrene	178.00	18.799	18.799	(1.003)	4289132	120	140
67 Anthracene	178.00	18.920	18.920	(1.009)	3409067	120	130
68 Carbazole	167.00	19.337	19.337	(1.032)	3184518	120	130
69 Di-n-butylphthalate	149.00	20.343	20.343	(1.085)	4329667	120	130
70 Fluoranthene	202.00	21.741	21.741	(1.160)	3307570	120	130
71 Pyrene	202.00	22.289	22.289	(0.876)	3398182	120	120
73 Butylbenzylphthalate	149.00	23.996	23.996	(0.944)	1936372	120	120
74 3,3'-Dichlorobenzidine	252.00	25.353	25.353	(0.997)	1049418	120	120
75 Benzo(a)anthracene	228.00	25.386	25.386	(0.998)	2915731	120	120
77 Chrysene	228.00	25.508	25.508	(1.003)	2823339	120	120
78 bis(2-Ethylhexyl)phthalate	149.00	25.618	25.618	(1.007)	2596903	120	120
79 Di-n-octylphthalate	149.00	27.442	27.442	(0.917)	4244969	120	130
80 Benzo(b)fluoranthene	252.00	28.710	28.710	(0.959)	2696755	120	120 (M)
81 Benzo(k)fluoranthene	252.00	28.721	28.721	(0.960)	2113899	120	120 (M)
82 Benzo(a)pyrene	252.00	29.738	29.738	(0.994)	1989646	120	120
84 Indeno(1,2,3-cd)pyrene	276.00	34.554	34.554	(1.155)	1760313	120	120
85 Dibenz(a,h)anthracene	278.00	34.620	34.620	(1.157)	1501479	120	120
86 Benzo(g,h,i)perylene	276.00	35.855	35.855	(1.198)	1374414	120	120
1 1,4-Dichlorobenzene-d4	152.00	8.054	8.054	(1.000)	333463	40	
2 Naphthalene-d8	136.00	10.860	10.860	(1.000)	1335279	40	
48 Acenaphthene-d10	164.00	15.125	15.125	(1.000)	733982	40	
65 Phenanthrene-d10	188.00	18.744	18.744	(1.000)	879172	40	
76 Chrysene-d12	240.00	25.430	25.430	(1.000)	791311	40	
83 Perylene-d12	264.00	29.925	29.925	(1.000)	437954	40	
33 Nitrobenzene-d5	82.00	9.277	9.277	(0.854)	1483541	120	130
1 2-Fluorobiphenyl	172.00	13.506	13.506	(0.893)	2795685	120	120
72 Terphenyl-d14	244.00	22.706	22.706	(0.893)	2390544	120	120

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
4 Phenol-d5	99.00	7.464	7.464	(0.927)	1647832	120	130
3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	789355	120	140
61 2,4,6-Tribromophenol	329.70	17.098	17.098	(0.912)	315605	120	130
17 ortho-Cresol	108.00	8.676	8.676	(1.077)	1432337	120	130 (QM)
20 meta,para-Cresol	108.00	9.015	9.015	(1.119)	1483413	120	130 (QM)
96 Benzidine	184.00	22.091	22.091	(0.869)	1031906	120	140 (M)

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic4.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD120

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	333463	7.47
32 Naphthalene-d8	1245807	622904	2491614	1335278	7.18
48 Acenaphthene-d10	707154	353577	1414308	733982	3.79
65 Phenanthrene-d10	1039593	519796	2079186	879172	-15.43
76 Chrysene-d12	791981	395990	1583962	791311	-0.08
83 Perylene-d12	481272	240636	962544	437954	-9.00

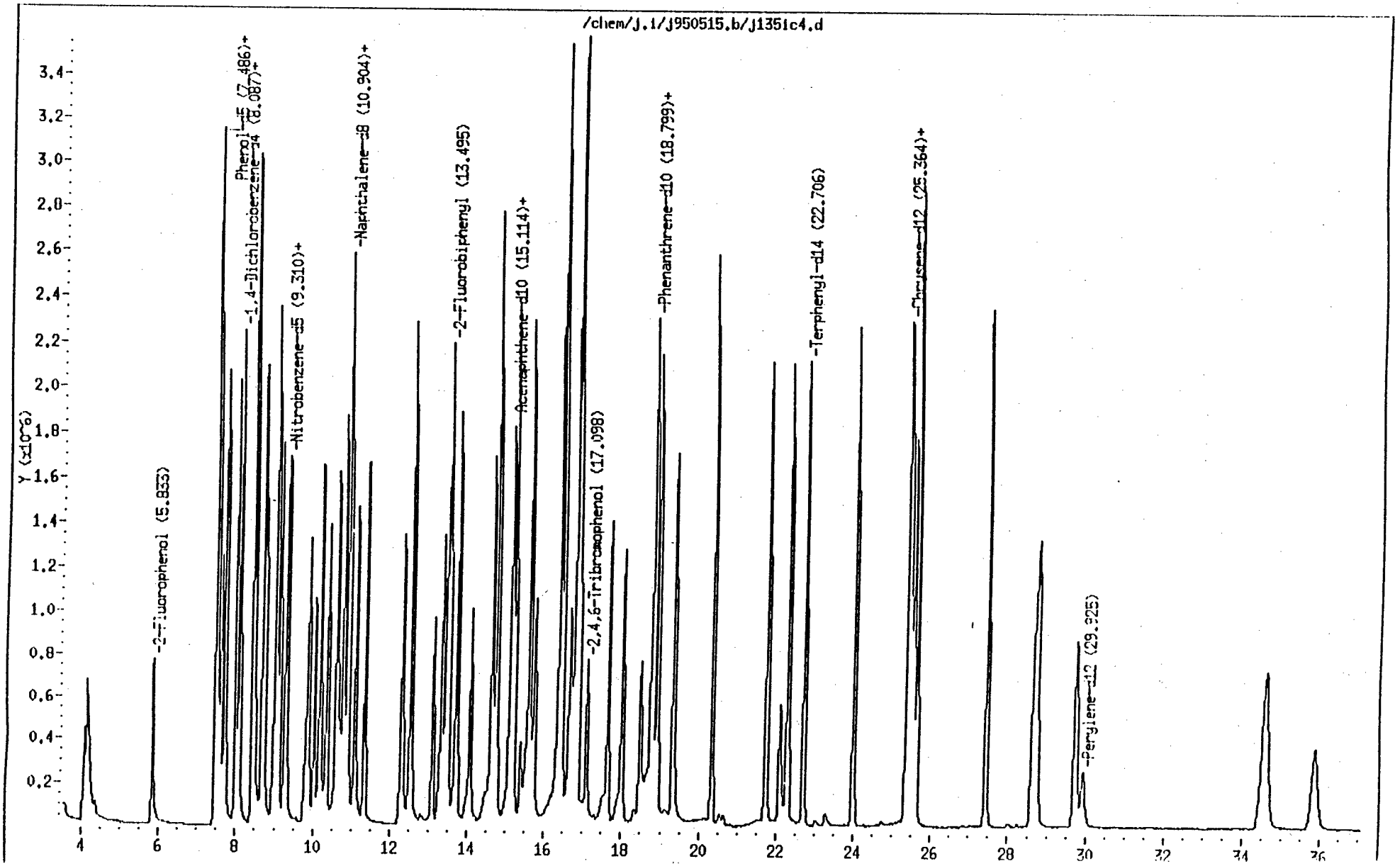
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.16
32 Naphthalene-d8	10.84	10.34	11.34	10.86	0.14
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.09
65 Phenanthrene-d10	18.73	18.23	19.23	18.74	0.07
76 Chrysene-d12	25.41	24.91	25.91	25.43	0.07
83 Perylene-d12	29.92	29.42	30.42	29.93	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950515.b/j1351c4.d
Date : 15-MAY-1995 16:57
Client ID:
Sample Info: SIB-8270M/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic5.d
Lab Smp Id:
Inj Date : 15-MAY-1995 17:42
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950515 STD160
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Inj Date : 15-MAY-1995 14:43
Inj bottle: 5
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 5

Compound Sublist: Std.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	Pyridine	79.00	4.115	4.115	(0.510)	1861341	160	190
5	Phenol	94.00	7.498	7.498	(0.930)	2503807	160	190
	Aniline	93.00	7.509	7.509	(0.931)	2708787	160	190
	bis(2-Chloroethyl)ether	93.00	7.618	7.618	(0.944)	1937134	160	170
9	2-Chlorophenol	128.00	7.727	7.727	(0.958)	1621967	160	170
10	1,3-Dichlorobenzene	146.00	7.989	7.989	(0.991)	1862276	160	170
	1,4-Dichlorobenzene	146.00	8.099	8.099	(1.004)	1934944	160	160
13	Benzyl alcohol	108.00	8.426	8.426	(1.045)	1228109	160	200
15	1,2-Dichlorobenzene	146.00	8.481	8.481	(1.051)	1801304	160	160
	2-Methylphenol	108.00	8.689	8.689	(1.077)	1859340	160	180(Q)
	bis(2-chloroisopropyl)ether	45.00	8.721	8.721	(1.081)	2279436	160	170
19	4-Methylphenol	108.00	9.027	9.027	(1.119)	1769491	160	170
	N-Nitroso-di-n-propylamine	70.00	9.082	9.082	(1.126)	1443812	160	180
	Hexachloroethane	117.00	9.126	9.126	(1.131)	816079	160	160
24	Nitrobenzene	77.00	9.333	9.333	(0.859)	2003056	160	190
25	Isophorone	82.00	9.901	9.901	(0.911)	4359357	160	160
	2-Nitrophenol	139.00	10.043	10.043	(0.924)	1095438	160	200
27	2,4-Dimethylphenol	107.00	10.196	10.196	(0.939)	1924364	160	160
28	Benzoic acid	122.00	10.742	10.742	(0.989)	827023	160	220(Q)
	bis(2-Chloroethoxy)methane	93.00	10.381	10.381	(0.956)	2413515	160	160
	2,4-Dichlorophenol	162.00	10.611	10.611	(0.977)	1591107	160	170
31	1,2,4-Trichlorobenzene	180.00	10.786	10.786	(0.993)	1641684	160	160
	Naphthalene	128.00	10.918	10.918	(1.005)	5363841	160	160
	4-Chloroaniline	127.00	11.104	11.104	(1.022)	2229774	160	160
35	Hexachlorobutadiene	225.00	11.355	11.355	(1.045)	854668	160	160
36	4-Chloro-3-methylphenol	107.00	12.305	12.305	(1.133)	1658292	160	160
	2-Methylnaphthalene	142.00	12.557	12.557	(1.156)	3698963	160	160
38	Hexachlorocyclopentadiene	237.00	13.114	13.114	(0.867)	745519	160	230
39	2,4,6-Trichlorophenol	196.00	13.334	13.334	(0.881)	1162984	160	190

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.444	13.444	(0.888)	1052016	160	170
42 2-Chloronaphthalene	162.00	13.729	13.729	(0.907)	3184566	160	160
43 2-Nitroaniline	65.00	14.080	14.080	(0.931)	1014639	160	180
44 Dimethylphthalate	163.00	14.627	14.627	(0.967)	3177036	160	150
45 2,6-Dinitrotoluene	165.00	14.780	14.780	(0.977)	771380	160	180
46 Acenaphthylene	152.00	14.747	14.747	(0.975)	5304264	160	160
47 3-Nitroaniline	138.00	15.120	15.120	(0.999)	937937	160	180
49 Acenaphthene	153.00	15.219	15.219	(1.006)	3099434	160	160
50 2,4-Dinitrophenol	184.00	15.394	15.394	(1.017)	390783	160	300(Q)
51 4-Nitrophenol	109.00	15.624	15.624	(1.033)	358205	160	180
52 Dibenzofuran	168.00	15.613	15.613	(1.032)	4653568	160	160
53 2,4-Dinitrotoluene	165.00	15.745	15.745	(1.041)	1063034	160	180
54 Diethylphthalate	149.00	16.381	16.381	(1.083)	3034728	160	150
55 4-Chlorophenyl-phenylether	204.00	16.468	16.468	(1.088)	1419658	160	140
56 Fluorene	166.00	16.457	16.457	(1.088)	3521880	160	160
57 4-Nitroaniline	138.00	16.666	16.666	(1.101)	867894	160	180
58 4,6-Dinitro-2-methylphenol	198.00	16.798	16.798	(0.896)	565273	160	270
59 n-Nitrosodiphenylamine	169.00	16.820	16.820	(0.897)	1710758	160	150
60 1,2-Diphenylhydrazine	77.00	16.875	16.875	(0.900)	8234780	160	170
62 4-Bromophenyl-phenylether	248.00	17.654	17.654	(0.941)	753280	160	160
63 Hexachlorobenzene	283.70	18.016	18.016	(0.961)	962032	160	170
64 Pentachlorophenol	266.00	18.478	18.478	(0.985)	484830	160	210
66 Phenanthrene	178.00	18.809	18.809	(1.003)	5369737	160	180
67 Anthracene	178.00	18.919	18.919	(1.009)	4316230	160	160
68 Carbazole	167.00	19.335	19.335	(1.031)	4030549	160	170
69 Di-n-butylphthalate	149.00	20.353	20.353	(1.085)	5580400	160	180
70 Fluoranthene	202.00	21.754	21.754	(1.160)	4284140	160	180
71 Pyrene	202.00	22.303	22.303	(0.876)	4453511	160	160
73 Butylbenzylphthalate	149.00	24.002	24.002	(0.943)	2526104	160	160
74 3,3'-Dichlorobenzidine	252.00	25.360	25.360	(0.997)	1392213	160	170
75 Benzo[a]anthracene	228.00	25.394	25.394	(0.998)	3864041	160	160
77 Chrysene	228.00	25.526	25.526	(1.003)	3524959	160	160
78 bis(2-Ethylhexyl)phthalate	149.00	25.625	25.625	(1.007)	3397374	160	160
79 Di-n-octylphthalate	149.00	27.452	27.452	(0.917)	5502119	160	180
80 Benzo[b]fluoranthene	252.00	28.732	28.732	(0.959)	3654722	160	180(M)
81 Benzo[k]fluoranthene	252.00	28.743	28.743	(0.960)	2439435	160	150(M)
82 Benzo[a]pyrene	252.00	29.761	29.761	(0.994)	2541355	160	160
84 Indeno[1,2,3-cd]pyrene	276.00	34.602	34.602	(1.155)	2325552	160	160(M)
85 Dibenz[a,h]anthracene	278.00	34.657	34.657	(1.157)	2003540	160	170
86 Benzo[g,h,i]perylene	276.00	35.904	35.904	(1.199)	1848595	160	170
22 1,4-Dichlorobenzene-d4	152.00	8.066	8.066	(1.000)	312656	40	
32 Naphthalene-d8	136.00	10.863	10.863	(1.000)	1319300	40	
48 Acenaphthene-d10	164.00	15.131	15.131	(1.000)	598125	40	
65 Phenanthrene-d10	188.00	18.753	18.753	(1.000)	856416	40	
76 Chrysene-d12	240.00	25.449	25.449	(1.000)	762716	40	
83 Perylene-d12	264.00	29.948	29.948	(1.000)	410629	40	
23 Nitrobenzene-d5	82.00	9.290	9.290	(0.855)	2022236	160	180
41 2-Fluorobiphenyl	172.00	13.510	13.510	(0.893)	3693437	160	170
72 Terphenyl-d14	244.00	22.720	22.720	(0.893)	3100007	160	170

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.476	7.476	(0.927)	2274340	160	180
2-Fluorophenol	112.00	5.834	5.834	(0.723)	1122829	160	210
61 2,4,6-Tribromophenol	329.70	17.116	17.116	(0.913)	407049	160	170
ortho-Cresol	108.00	8.589	8.589	(1.077)	1859340	160	170(Q)
meta,para-Cresol	108.00	9.027	9.027	(1.119)	1769491	160	170
96 Benzidine	184.00	22.093	22.093	(0.868)	1368013	160	190

Flag Legend

Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic5.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD160

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	312656	0.76
32 Naphthalene-d8	1245807	622904	2491614	1319300	5.90
48 Acenaphthene-d10	707154	353577	1414308	698125	-1.28
65 Phenanthrene-d10	1039593	519796	2079186	856416	-17.62
76 Chrysene-d12	791981	395990	1583962	762716	-3.70
83 Perylene-d12	481272	240636	962544	410629	-14.68

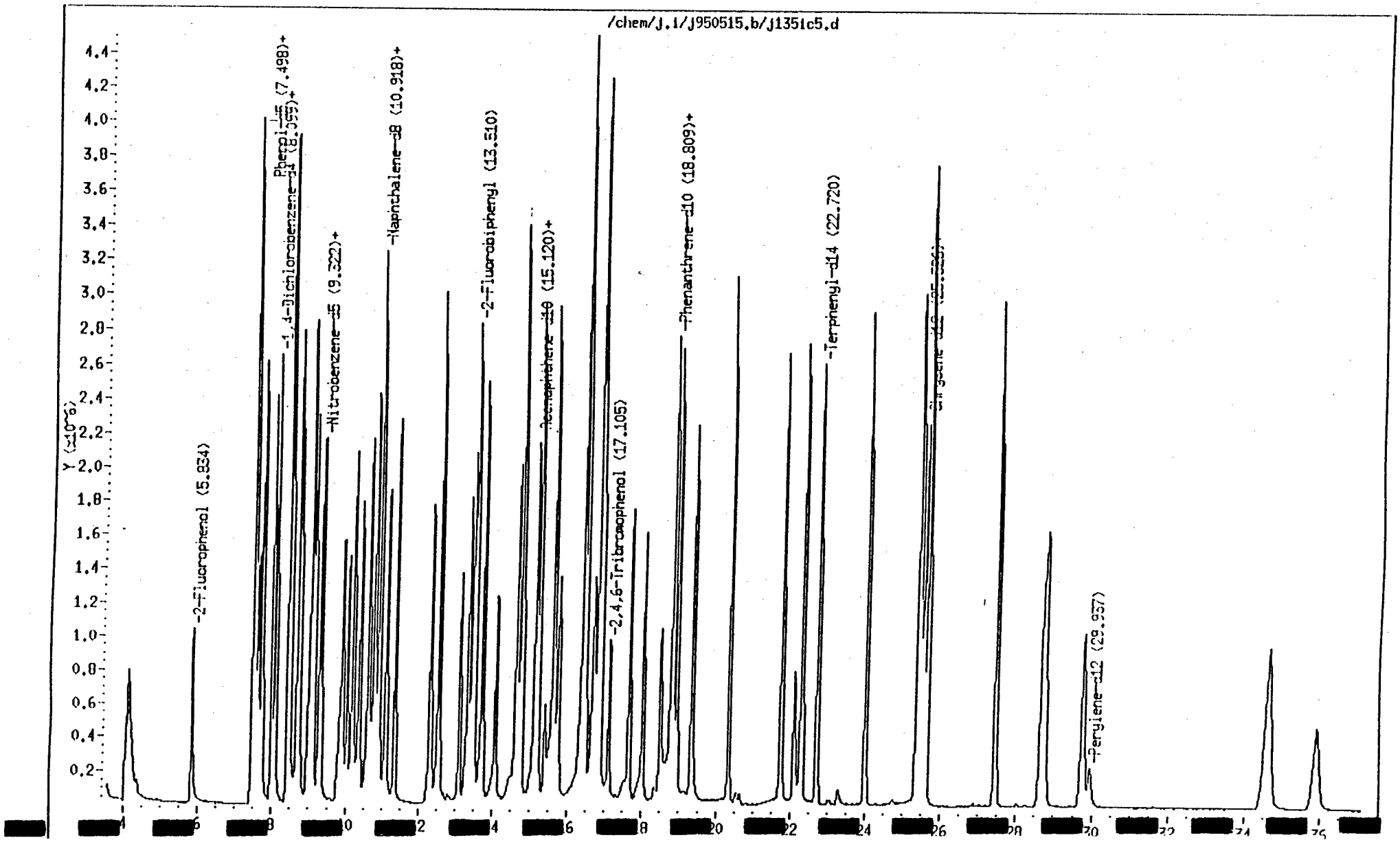
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.07	0.31
32 Naphthalene-d8	10.84	10.34	11.34	10.86	0.17
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.12
65 Phenanthrene-d10	18.73	18.23	19.23	18.75	0.12
76 Chrysene-d12	25.41	24.91	25.91	25.45	0.14
83 Perylene-d12	29.92	29.42	30.42	29.95	0.10

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/J.1/J950515.b/j1351c5.d
Date : 15-MAY-1995 17:42
Client ID:
Sample Info: SID-0270H/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: J.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j142cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 22-MAY-1995 10:47
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950522.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	1.255	1.025	0.010	18.3	40.0
5	Phenol	1.698	1.402	0.800	17.4	25.0
6	Aniline	1.795	1.631	0.010	9.1	40.0
7	bis(2-Chloroethyl)ether	1.443	1.419	0.700	1.7	25.0
9	2-Chlorophenol	1.189	1.283	0.800	7.9	25.0
10	1,3-Dichlorobenzene	1.435	1.481	0.600	3.3	25.0
12	1,4-Dichlorobenzene	1.578	1.669	0.500	5.7	25.0
13	Benzyl alcohol	0.804	0.636	0.010	20.9	40.0
15	1,2-Dichlorobenzene	1.446	1.459	0.400	0.9	25.0
16	2-Methylphenol	1.346	1.115	0.700	17.2	25.0
18	bis(2-chloroisopropyl)ether	1.757	1.798	0.010	2.3	40.0
19	4-Methylphenol	1.316	1.099	0.600	16.5	25.0
21	N-Nitroso-di-n-propylamine	1.048	0.962	0.500	8.2	25.0
22	Hexachloroethane	0.657	0.665	0.300	1.2	25.0
24	Nitrobenzene	0.337	0.365	0.200	8.2	25.0
25	Isophorone	0.811	0.792	0.400	2.4	25.0
26	2-Nitrophenol	0.168	0.202	0.100	20.2	25.0
27	2,4-Dimethylphenol	0.352	0.351	0.200	0.1	25.0
28	Benzoic acid	0.113	0.023	0.010	79.6	100.0
29	bis(2-Chloroethoxy)methane	0.444	0.438	0.300	1.5	25.0
30	2,4-Dichlorophenol	0.285	0.261	0.200	8.5	25.0
31	1,2,4-Trichlorobenzene	0.307	0.324	0.200	5.4	25.0
33	Naphthalene	1.011	1.040	0.700	3.0	25.0
34	4-Chloroaniline	0.418	0.409	0.010	2.2	40.0
35	Hexachlorobutadiene	0.162	0.171	0.010	6.2	40.0
36	4-Chloro-3-methylphenol	0.304	0.305	0.200	0.5	25.0
37	2-Methylnaphthalene	0.706	0.704	0.400	0.4	25.0
38	Hexachlorocyclopentadiene	0.184	0.150	0.010	18.4	100.0
39	2,4,6-Trichlorophenol	0.349	0.330	0.200	5.4	25.0
40	2,4,5-Trichlorophenol	0.355	0.399	0.200	12.4	25.0
42	2-Chloronaphthalene	1.100	1.175	0.800	6.9	25.0
43	2-Nitroaniline	0.323	0.366	0.010	13.2	40.0
44	Dimethylphthalate	1.246	1.429	0.010	14.7	40.0
45	2,6-Dinitrotoluene	0.247	0.329	0.200	33.0	25.0
46	Acenaphthylene	1.890	1.933	1.300	2.3	25.0
47	3-Nitroaniline	0.301	0.309	0.010	2.8	40.0
49	Acenaphthene	1.104	1.159	0.800	5.0	25.0
50	2,4-Dinitrophenol	0.074	0.074	0.010	0.4	100.0
51	4-Nitrophenol	0.116	0.124	0.010	7.1	40.0
52	Dibenzofuran	1.639	1.683	0.800	2.6	25.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j142cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 22-MAY-1995 10:47
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950522.b/jclpw.m

		COMPOUND	RRF	RRF	MIN RRF	%D	MAX %D
	53	2,4-Dinitrotoluene	0.334	0.425	0.200	27.2	25.0
	54	Diethylphthalate	1.142	1.408	0.010	23.3	40.0
	55	4-Chlorophenyl-phenylether	0.595	0.640	0.400	7.6	25.0
	56	Fluorene	1.284	1.339	0.900	4.3	25.0
	57	4-Nitroaniline	0.272	0.227	0.010	16.7	40.0
	58	4,6-Dinitro-2-methylphenol	0.098	0.106	0.010	8.2	40.0
	59	n-Nitrosodiphenylamine	0.520	0.562	0.010	8.2	40.0
	60	1,2-Diphenylhydrazine	2.274	2.378	0.010	4.6	40.0
	62	4-Bromophenyl-phenylether	0.222	0.240	0.100	8.1	25.0
	63	Hexachlorobenzene	0.260	0.268	0.100	3.2	25.0
	64	Pentachlorophenol	0.110	0.113	0.050	3.2	25.0
	66	Phenanthrene	1.420	1.363	0.700	4.0	25.0
	67	Anthracene	1.215	1.233	0.700	1.5	25.0
	68	Carbazole	1.103	1.009	0.010	8.5	40.0
	69	Di-n-butylphthalate	1.469	1.450	0.010	1.3	40.0
	70	Fluoranthene	1.137	1.150	0.600	1.2	25.0
	71	Pyrene	1.412	1.390	0.600	1.6	25.0
	73	Butylbenzylphthalate	0.809	0.789	0.010	2.5	40.0
	74	3,3'-Dichlorobenzidine	0.427	0.389	0.010	8.9	40.0
	75	Benzo[a]anthracene	1.240	1.263	0.800	1.8	25.0
	77	Chrysene	1.159	1.190	0.700	2.7	25.0
	78	bis(2-Ethylhexyl)phthalate	1.096	1.000	0.010	8.8	40.0
	79	Di-n-octylphthalate	3.026	2.923	0.010	3.4	40.0
	80	Benzo[b]fluoranthene	1.962	1.801	0.700	8.2	25.0
	81	Benzo[k]fluoranthene	1.618	2.007	0.700	24.0	25.0
	82	Benzo[a]pyrene	1.495	1.611	0.700	7.8	25.0
	84	Indeno[1,2,3-cd]pyrene	1.366	1.311	0.500	4.0	25.0
	85	Dibenz[a,h]anthracene	1.168	1.078	0.400	7.7	25.0
	86	Benzo[g,h,i]perylene	1.073	0.953	0.500	11.2	25.0
S	23	Nitrobenzene-d5	0.337	0.380	0.200	12.7	25.0
S	41	2-Fluorobiphenyl	1.267	1.314	0.700	3.7	25.0
S	72	Terphenyl-d14	0.978	0.967	0.500	1.2	25.0
S	4	Phenol-d5	1.567	1.457	0.800	7.0	25.0
S	3	2-Fluorophenol	0.683	0.803	0.600	17.6	25.0
S	61	2,4,6-Tribromophenol	0.110	0.122	0.010	11.4	40.0
	17	ortho-Cresol	1.360	1.115	0.700	18.0	25.0
	20	meta,para-Cresol	1.337	1.099	0.600	17.8	25.0
	96	Benzidine	0.372	0.270	0.010	27.3	40.0

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ta file : /chem/j.i/j950522.b/j142cc1.d
b Smp Id:
j Date : 22-MAY-1995 10:47
erator : PC Inst ID: j.i
p Info : STD-8270W/1X
sc Info : 950522 STD050
mment :
thod : /chem/j.i/j950522.b/jc1pw.m
th Date : 22-May-1995 14:07 patti Quant Type: ISTD
l Date : 22-MAY-1995 10:47 Cal File: j142cc1.d
s bottle: 1 Continuing Calibration Sample
l Factor: 1.000
tegrator: HP RTE Compound Sublist: Std.sub
rget Version: 3.10

ounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	CN-COL (ng)
2 Pyridine	79.00	4.017	4.017	(0.506)	431421	50	41
5 Phenol	94.00	7.357	7.357	(0.927)	590215	50	41
6 Aniline	93.00	7.379	7.379	(0.930)	686984	50	45
7 bis(2-Chloroethyl)ether	93.00	7.466	7.466	(0.941)	597641	50	49
9 2-Chlorophenol	128.00	7.587	7.587	(0.956)	540244	50	54
0 1,3-Dichlorobenzene	146.00	7.859	7.859	(0.990)	623824	50	52
2 1,4-Dichlorobenzene	146.00	7.969	7.969	(1.004)	702579	50	53
3 Benzyl alcohol	108.00	8.296	8.296	(1.045)	267679	50	40
5 1,2-Dichlorobenzene	146.00	8.351	8.351	(1.052)	614526	50	50
6 2-Methylphenol	108.00	8.558	8.558	(1.078)	469331	50	41
8 bis(2-chloroisopropyl)ether	45.00	8.580	8.580	(1.081)	756964	50	51(M)
9 4-Methylphenol	108.00	8.875	8.875	(1.118)	462904	50	42
1 N-Nitroso-di-n-propylamine	70.00	8.886	8.886	(1.120)	405170	50	46
2 Hexachloroethane	117.00	8.995	8.995	(1.133)	280059	50	50
4 Nitrobenzene	77.00	9.181	9.181	(0.857)	577786	50	54
5 Isophorone	82.00	9.704	9.704	(0.905)	1254677	50	49
6 2-Nitrophenol	139.00	9.911	9.911	(0.925)	319932	50	60
7 2,4-Dimethylphenol	107.00	10.042	10.042	(0.937)	556818	50	50
8 Benzoic acid	122.00	10.249	10.249	(0.956)	36464	50	10(aM)
9 bis(2-Chloroethoxy)methane	93.00	10.227	10.227	(0.954)	693582	50	49
0 2,4-Dichlorophenol	162.00	10.478	10.478	(0.978)	413323	50	46
1 1,2,4-Trichlorobenzene	180.00	10.642	10.642	(0.993)	513334	50	53
3 Naphthalene	128.00	10.762	10.762	(1.004)	1649126	50	51
4 4-Chloroaniline	127.00	10.981	10.981	(1.024)	647643	50	49
5 Hexachlorobutadiene	225.00	11.211	11.211	(1.046)	271753	50	53
6 4-Chloro-3-methylphenol	107.00	12.180	12.180	(1.136)	483541	50	50
7 2-Methylnaphthalene	142.00	12.410	12.410	(1.158)	1115296	50	50
8 Hexachlorocyclopentadiene	237.00	12.966	12.966	(0.866)	127298	50	41
9 2,4,6-Trichlorophenol	196.00	13.195	13.195	(0.881)	280559	50	47

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.316	13.316	(0.889)	338777	50	56
42 2-Chloronaphthalene	162.00	13.579	13.579	(0.907)	998176	50	53
43 2-Nitroaniline	65.00	13.939	13.939	(0.931)	310921	50	56
44 Dimethylphthalate	163.00	14.463	14.463	(0.966)	1213632	50	57
45 2,6-Dinitrotoluene	165.00	14.616	14.616	(0.976)	279526	50	56
46 Acenaphthylene	152.00	14.594	14.594	(0.974)	1642082	50	51
47 3-Nitroaniline	138.00	14.976	14.976	(1.000)	262562	50	51
49 Acenaphthene	153.00	15.053	15.053	(1.005)	984624	50	52
50 2,4-Dinitrophenol	184.00	15.413	15.413	(1.029)	62875	50	50 (M)
51 4-Nitrophenol	109.00	15.566	15.566	(1.039)	105290	50	54 (M)
52 Dibenzofuran	168.00	15.446	15.446	(1.031)	1428985	50	51
53 2,4-Dinitrotoluene	165.00	15.599	15.599	(1.042)	361075	50	64
54 Diethylphthalate	149.00	16.199	16.199	(1.082)	1195785	50	62
55 4-Chlorophenyl-phenylether	204.00	16.320	16.320	(1.090)	543422	50	54
56 Fluorene	166.00	16.298	16.298	(1.088)	1137349	50	52
57 4-Nitroaniline	138.00	16.517	16.517	(1.103)	192373	50	42 (a)
58 4,6-Dinitro-2-methylphenol	198.00	16.626	16.626	(0.894)	125301	50	54
59 n-Nitrosodiphenylamine	169.00	16.637	16.637	(0.895)	665257	50	54
60 1,2-Diphenylhydrazine	77.00	16.703	16.703	(0.898)	2813034	50	52
62 4-Bromophenyl-phenylether	248.00	17.501	17.501	(0.941)	283653	50	54
63 Hexachlorobenzene	283.70	17.862	17.862	(0.961)	317460	50	52
64 Pentachlorophenol	266.00	18.374	18.374	(0.988)	134193	50	52 (M)
66 Phenanthrene	178.00	18.649	18.649	(1.003)	1611781	50	48
67 Anthracene	178.00	18.759	18.759	(1.009)	1458810	50	51
68 Carbazole	167.00	19.197	19.197	(1.032)	1193050	50	46
69 Di-n-butylphthalate	149.00	20.189	20.189	(1.086)	1714762	50	49
70 Fluoranthene	202.00	21.593	21.593	(1.161)	1360683	50	50
71 Pyrene	202.00	22.128	22.128	(0.876)	1413596	50	49
73 Butylbenzylphthalate	149.00	23.841	23.841	(0.944)	802475	50	49
74 3,3'-Dichlorobenzidine	252.00	25.203	25.203	(0.998)	395528	50	46 (M)
75 Benzo[a]anthracene	228.00	25.203	25.203	(0.998)	1284209	50	51
77 Chrysene	228.00	25.324	25.324	(1.003)	1210786	50	51
78 bis(2-Ethylhexyl)phthalate	149.00	25.446	25.446	(1.008)	1017414	50	46
79 Di-n-octylphthalate	149.00	27.243	27.243	(0.917)	1750252	50	48
80 Benzo[b]fluoranthene	252.00	28.475	28.475	(0.959)	1078283	50	46 (M)
81 Benzo[k]fluoranthene	252.00	28.508	28.508	(0.960)	1201371	50	62 (M)
82 Benzo[a]pyrene	252.00	29.511	29.511	(0.994)	964745	50	54
84 Indeno[1,2,3-cd]pyrene	276.00	34.177	34.177	(1.151)	784971	50	48
85 Dibenz[a,h]anthracene	278.00	34.242	34.242	(1.153)	645611	50	46
86 Benzo[g,h,i]perylene	276.00	35.475	35.475	(1.195)	570684	50	44
1 1,4-Dichlorobenzene-d4	152.00	7.936	7.936	(1.000)	336862	40	
32 Naphthalene-d8	136.00	10.719	10.719	(1.000)	1268035	40	
48 Acenaphthene-d10	164.00	14.976	14.976	(1.000)	679432	40	
65 Phenanthrene-d10	188.00	18.594	18.594	(1.000)	946155	40	
76 Chrysene-d12	240.00	25.247	25.247	(1.000)	813677	40	
83 Perylene-d12	264.00	29.698	29.698	(1.000)	478967	40	
3 Nitrobenzene-d5	82.00	9.148	9.148	(0.853)	602820	50	56
4 2-Fluorobiphenyl	172.00	13.360	13.360	(0.892)	1116048	50	52
72 Terphenyl-d14	244.00	22.555	22.555	(0.893)	983471	50	49

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
4 Phenol-d5	99.00	7.335	7.335	(0.924)	613623	50	46
3 2-Fluorophenol	112.00	5.736	5.736	(0.723)	338301	50	59
61 2,4,6-Tribromophenol	329.70	16.955	16.955	(0.912)	144459	50	56
17 ortho-Cresol	108.00	8.558	8.558	(1.078)	469331	50	41
20 meta,para-Cresol	108.00	8.875	8.875	(1.118)	462904	50	41
96 Benzidine	184.00	22.029	22.029	(0.973)	274854	50	36

: Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
ab File ID: j142cc1.d
ab Smp Id:
nalysis Type: SV
ent Type: ISTD
perator: PC
ethod File: /chem/j.i/j950522.b/jclpw.m
c Info: 950522 STD050

Calibration Date: 05/22/95
Calibration Time: 1047

Level: LOW
Sample Type: WATER

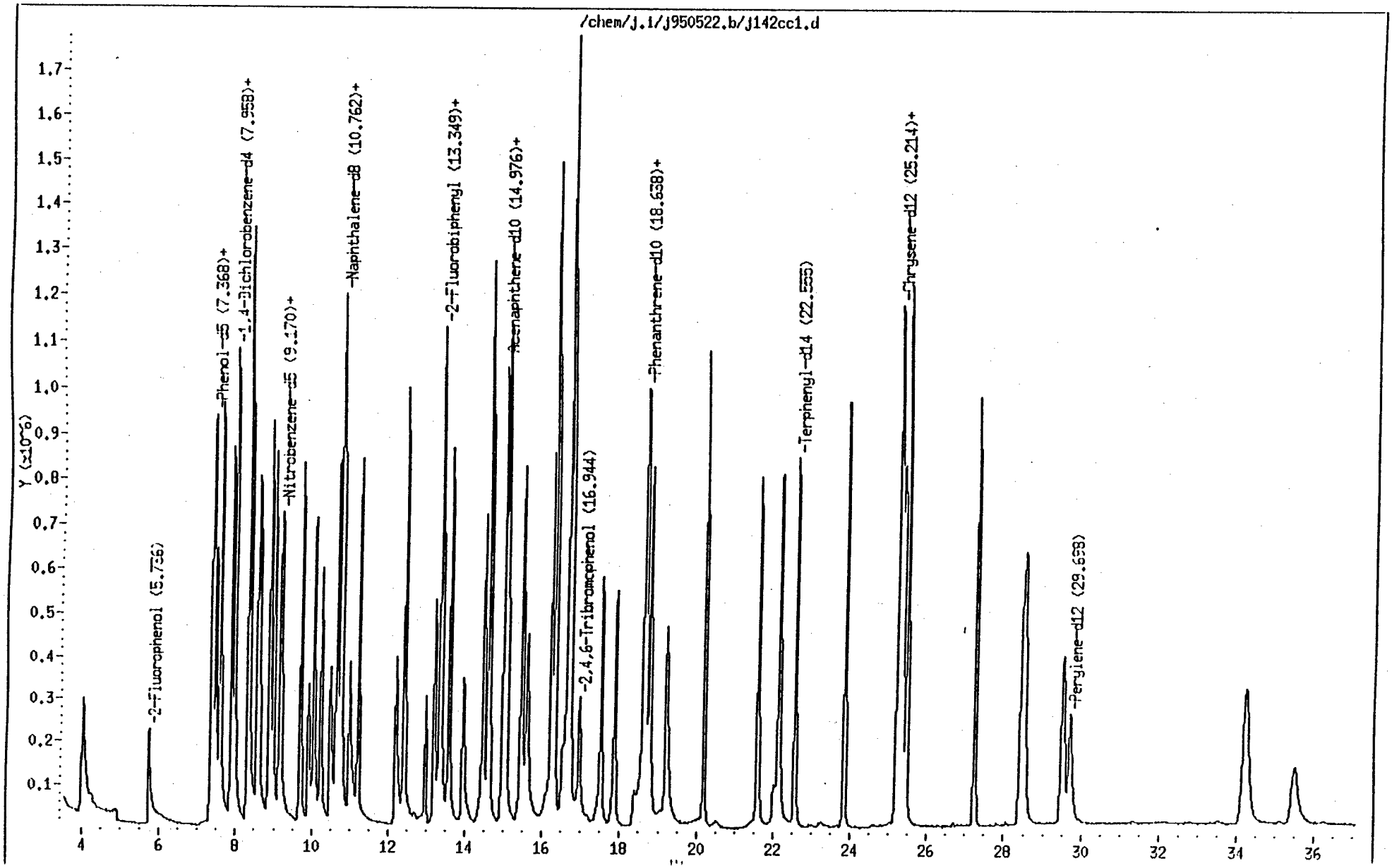
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	336862	168431	673724	336862	0.00
2 Naphthalene-d8	1268035	634018	2536070	1268035	0.00
48 Acenaphthene-d10	679432	339716	1358864	679432	0.00
65 Phenanthrene-d10	946155	473078	1892310	946155	0.00
5 Chrysene-d12	813677	406838	1627354	813677	0.00
83 Perylene-d12	478967	239484	957934	478967	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.94	0.00
2 Naphthalene-d8	10.72	10.22	11.22	10.72	0.00
48 Acenaphthene-d10	14.98	14.48	15.48	14.98	0.00
65 Phenanthrene-d10	18.59	18.09	19.09	18.59	0.00
5 Chrysene-d12	25.25	24.75	25.75	25.25	0.00
83 Perylene-d12	29.70	29.20	30.20	29.70	0.00

EA UPPER LIMIT = +100% of internal standard area.
EA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950522.b/j142cc1.d
Date : 22-MAY-1995 10:47
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i
Operator: PC
Column diameter: 0.25



SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: h.i
Lab File ID: h145cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 25-MAY-1995 14:51
Init. Calibration Date(s): 05/24/95 05/24/95
Init. Calibration Times: 15:37 17:27
Method File: /chem/h.i/h950525.b/hclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	2.247	2.489	0.010	10.8	40.0
5	Phenol	2.191	2.134	0.800	2.6	25.0
6	Aniline	2.148	2.083	0.010	3.0	40.0
7	bis(2-Chloroethyl)ether	1.915	1.779	0.700	7.1	25.0
9	2-Chlorophenol	1.478	1.488	0.800	0.7	25.0
10	1,3-Dichlorobenzene	1.567	1.626	0.600	3.7	25.0
12	1,4-Dichlorobenzene	1.574	1.618	0.500	2.8	25.0
13	Benzyl alcohol	0.864	0.815	0.010	5.7	40.0
15	1,2-Dichlorobenzene	1.414	1.445	0.400	2.2	25.0
16	2-Methylphenol	1.441	1.143	0.700	20.7	25.0
18	bis(2-chloroisopropyl)ether	2.543	2.250	0.010	11.5	100.0
19	4-Methylphenol	1.373	1.110	0.600	19.2	25.0
21	N-Nitroso-di-n-propylamine	1.069	0.838	0.500	21.7	25.0
22	Hexachloroethane	0.680	0.672	0.300	1.1	25.0
24	Nitrobenzene	0.441	0.482	0.200	9.1	25.0
25	Isophorone	0.851	0.760	0.400	10.7	25.0
26	2-Nitrophenol	0.205	0.218	0.100	6.7	25.0
27	2,4-Dimethylphenol	0.379	0.355	0.200	6.3	25.0
28	Benzoic acid	0.093	0.142	0.010	52.9	100.0
29	bis(2-Chloroethoxy)methane	0.520	0.483	0.300	7.2	25.0
30	2,4-Dichlorophenol	0.249	0.225	0.200	9.5	25.0
31	1,2,4-Trichlorobenzene	0.261	0.264	0.200	1.1	25.0
33	Naphthalene	1.067	1.106	0.700	3.7	25.0
34	4-Chloroaniline	0.375	0.300	0.010	20.0	40.0
35	Hexachlorobutadiene	0.109	0.107	0.010	1.8	40.0
36	4-Chloro-3-methylphenol	0.294	0.240	0.200	18.4	25.0
37	2-Methylnaphthalene	0.601	0.544	0.400	9.6	25.0
38	Hexachlorocyclopentadiene	0.249	0.260	0.010	4.1	40.0
39	2,4,6-Trichlorophenol	0.317	0.337	0.200	6.3	25.0
40	2,4,5-Trichlorophenol	0.367	0.327	0.200	10.9	25.0
42	2-Chloronaphthalene	1.209	1.318	0.800	9.0	25.0
43	2-Nitroaniline	0.489	0.513	0.010	4.9	40.0
44	Dimethylphthalate	1.391	1.286	0.010	7.5	40.0
45	2,6-Dinitrotoluene	0.342	0.316	0.200	7.4	25.0
46	Acenaphthylene	2.038	2.096	1.300	2.8	25.0
47	3-Nitroaniline	0.381	0.364	0.010	4.5	40.0
49	Acenaphthene	1.213	1.207	0.800	0.5	25.0
50	2,4-Dinitrophenol	0.086	0.130	0.010	51.2	100.0
51	4-Nitrophenol	0.144	0.149	0.010	3.4	40.0
52	Dibenzofuran	1.574	1.535	0.800	2.5	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: h.i
Lab File ID: h145cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 25-MAY-1995 14:51
Init. Calibration Date(s): 05/24/95 05/24/95
Init. Calibration Times: 15:37 17:27
Method File: /chem/h.i/h950525.b/hclpw.m

	COMPOUND	RRF	RRF2	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.421	0.388	0.200	7.8	25.0
	54 Diethylphthalate	1.464	1.284	0.010	12.3	40.0
	55 4-Chlorophenyl-phenylether	0.487	0.481	0.400	1.2	25.0
	56 Fluorene	1.188	1.196	0.900	0.7	25.0
	57 4-Nitroaniline	0.348	0.308	0.010	11.3	40.0
	58 4,6-Dinitro-2-methylphenol	0.136	0.157	0.010	15.2	40.0
	59 n-Nitrosodiphenylamine	0.620	0.618	0.010	0.5	40.0
	60 1,2-Diphenylhydrazine	2.948	3.508	0.010	19.0	40.0
	62 4-Bromophenyl-phenylether	0.187	0.182	0.100	2.8	25.0
	63 Hexachlorobenzene	0.182	0.169	0.100	7.3	25.0
	64 Pentachlorophenol	0.085	0.108	0.050	27.7	25.0
	66 Phenanthrene	1.332	1.283	0.700	3.7	25.0
	67 Anthracene	1.249	1.311	0.700	4.9	25.0
	68 Carbazole	1.152	1.150	0.010	0.2	40.0
	69 Di-n-butylphthalate	2.115	1.922	0.010	9.1	40.0
	70 Fluoranthene	1.015	1.003	0.600	1.3	25.0
	71 Pyrene	2.081	2.061	0.600	1.0	25.0
	73 Butylbenzylphthalate	1.430	1.352	0.010	5.5	40.0
	74 3,3'-Dichlorobenzidine	0.385	0.373	0.010	3.0	40.0
	75 Benzo[a]anthracene	1.281	1.283	0.800	0.2	25.0
	77 Chrysene	1.159	1.174	0.700	1.3	25.0
	78 bis(2-Ethylhexyl)phthalate	1.996	1.844	0.010	7.6	40.0
	79 Di-n-octylphthalate	5.917	5.607	0.010	5.2	40.0
	80 Benzo[b]fluoranthene	1.916	1.823	0.700	4.9	25.0
	81 Benzo[k]fluoranthene	1.963	1.951	0.700	0.6	25.0
	82 Benzo[a]pyrene	1.540	1.484	0.700	3.6	25.0
	84 Indeno[1,2,3-cd]pyrene	1.337	1.252	0.500	6.4	25.0
	85 Dibenz[a,h]anthracene	1.096	1.032	0.400	5.8	25.0
	86 Benzo[g,h,i]perylene	1.083	0.983	0.500	9.2	25.0
$	3 2-Fluorophenol	1.562	1.848	0.600	18.3	25.0
$	4 Phenol-d5	1.994	1.969	0.800	1.2	25.0
$	61 2,4,6-Tribromophenol	0.070	0.069	0.010	1.7	40.0
$	23 Nitrobenzene-d5	0.443	0.479	0.200	8.1	25.0
$	41 2-Fluorobiphenyl	1.310	1.413	0.700	7.9	25.0
$	72 Terphenyl-d14	1.108	1.072	0.500	3.3	25.0
	17 ortho-Cresol	1.433	1.143	0.700	20.2	25.0
	20 meta,para-Cresol	1.373	1.110	0.600	19.2	25.0
	96 Benzidine	0.016	0.017	0.010	3.1	40.0

SPL Houston Labs

Data file : /chem/h.i/h950525.b/h145cc1.d
Lab Smp Id:
Inj Date : 25-MAY-1995 14:51
Operator : LH Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950525 STD050
Comment :
Method : /chem/h.i/h950525.b/hclpw.m
Meth Date : 25-May-1995 15:11 liping Quant Type: ISTD
Cal Date : 25-MAY-1995 14:51 Cal File: h145cc1.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
2 Pyridine	79.00	2.266	2.266	(0.551)	663914	50	55
5 Phenol	94.00	3.866	3.866	(0.940)	569097	50	49
6 Aniline	93.00	3.866	3.866	(0.940)	555618	50	48 (M)
7 bis(2-Chloroethyl)ether	93.00	3.902	3.902	(0.948)	474480	50	46
9 2-Chlorophenol	128.00	3.973	3.973	(0.965)	396888	50	50
10 1,3-Dichlorobenzene	146.00	4.091	4.091	(0.994)	433708	50	52
12 1,4-Dichlorobenzene	146.00	4.139	4.139	(1.006)	431652	50	51
13 Benzyl alcohol	108.00	4.257	4.257	(1.035)	217455	50	47
15 1,2-Dichlorobenzene	146.00	4.304	4.304	(1.046)	385347	50	51
16 2-Methylphenol	108.00	4.376	4.376	(1.063)	304935	50	40
18 bis(2-chloroisopropyl)ether	45.00	4.387	4.387	(1.066)	600072	50	44
19 4-Methylphenol	108.00	4.506	4.506	(1.095)	296031	50	40
21 N-Nitroso-di-n-propylamine	70.00	4.506	4.506	(1.095)	223387	50	39
22 Hexachloroethane	117.00	4.589	4.589	(1.115)	179338	50	49
24 Nitrobenzene	77.00	4.648	4.648	(0.877)	355551	50	54
25 Isophorone	82.00	4.873	4.873	(0.919)	561207	50	45
26 2-Nitrophenol	139.00	4.956	4.956	(0.935)	161100	50	53
27 2,4-Dimethylphenol	107.00	5.004	5.004	(0.944)	262191	50	47
28 Benzoic acid	122.00	5.110	5.110	(0.964)	105070	50	76 (M)
29 bis(2-Chloroethoxy)methane	93.00	5.075	5.075	(0.958)	356253	50	46
30 2,4-Dichlorophenol	162.00	5.193	5.193	(0.980)	166339	50	45
31 1,2,4-Trichlorobenzene	180.00	5.264	5.264	(0.993)	194533	50	50
33 Naphthalene	128.00	5.324	5.324	(1.004)	816729	50	52
34 4-Chloroaniline	127.00	5.395	5.395	(1.018)	221231	50	40
35 Hexachlorobutadiene	225.00	5.501	5.501	(1.038)	79142	50	49
36 4-Chloro-3-methylphenol	107.00	5.892	5.892	(1.112)	177043	50	41
37 2-Methylnaphthalene	142.00	5.999	5.999	(1.132)	401514	50	45
38 Hexachlorocyclopentadiene	237.00	6.236	6.236	(0.883)	60405	50	52
39 2,4,6-Trichlorophenol	196.00	6.319	6.319	(0.894)	78483	50	53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40	2,4,5-Trichlorophenol	196.00	6.366	6.366	(0.901)	76076	50	44
42	2-Chloronaphthalene	162.00	6.485	6.485	(0.918)	306583	50	54
43	2-Nitroaniline	65.00	6.615	6.615	(0.936)	119375	50	52
44	Dimethylphthalate	163.00	6.829	6.829	(0.966)	299279	50	46
45	2,6-Dinitrotoluene	165.00	6.900	6.900	(0.977)	73579	50	46
46	Acenaphthylene	152.00	6.912	6.912	(0.978)	487701	50	51
47	3-Nitroaniline	138.00	7.042	7.042	(0.997)	84725	50	48(a)
49	Acenaphthene	153.00	7.101	7.101	(1.005)	280973	50	50
50	2,4-Dinitrophenol	184.00	7.137	7.137	(1.010)	30159	50	76
51	4-Nitrophenol	109.00	7.267	7.267	(1.028)	34745	50	52
52	Dibenzofuran	168.00	7.255	7.255	(1.027)	357170	50	49
53	2,4-Dinitrotoluene	165.00	7.291	7.291	(1.032)	90273	50	46
54	Diethylphthalate	149.00	7.540	7.540	(1.067)	298767	50	44
55	4-Chlorophenyl-phenylether	204.00	7.611	7.611	(1.077)	111860	50	49
56	Fluorene	166.00	7.611	7.611	(1.077)	278227	50	50
57	4-Nitroaniline	138.00	7.670	7.670	(1.086)	71731	50	44(a)
58	4,6-Dinitro-2-methylphenol	198.00	7.705	7.705	(0.900)	38607	50	58
59	n-Nitrosodiphenylamine	169.00	7.729	7.729	(0.903)	152289	50	50
60	1,2-Diphenylhydrazine	77.00	7.765	7.765	(0.907)	865052	50	59
62	4-Bromophenyl-phenylether	248.00	8.097	8.097	(0.946)	44832	50	48
63	Hexachlorobenzene	283.70	8.251	8.251	(0.964)	41576	50	46
64	Pentachlorophenol	265.50	8.440	8.440	(0.986)	26702	50	64
66	Phenanthrene	178.00	8.571	8.571	(1.001)	316482	50	48
67	Anthracene	178.00	8.618	8.618	(1.007)	323246	50	52
68	Carbazole	167.00	8.796	8.796	(1.028)	283604	50	50
69	Di-n-butylphthalate	149.00	9.199	9.199	(1.075)	474086	50	45
70	Fluoranthene	202.00	9.791	9.791	(1.144)	247295	50	49
71	Pyrene	202.00	10.016	10.016	(0.885)	244176	50	50
73	Butylbenzylphthalate	149.00	10.715	10.715	(0.947)	160136	50	47
74	3,3'-Dichlorobenzidine	252.00	11.296	11.296	(0.998)	44239	50	48
75	Benzo[a]anthracene	228.00	11.308	11.308	(0.999)	152025	50	50
77	Chrysene	228.00	11.355	11.355	(1.003)	139078	50	51
78	bis(2-Ethylhexyl)phthalate	149.00	11.415	11.415	(1.008)	218410	50	46
79	Di-n-octylphthalate	149.00	12.232	12.232	(0.914)	342430	50	47
80	Benzo[b]fluoranthene	252.00	12.777	12.777	(0.955)	111324	50	48
81	Benzo[k]fluoranthene	252.00	12.825	12.825	(0.958)	119152	50	50
82	Benzo[a]pyrene	252.00	13.287	13.287	(0.993)	90608	50	48
84	Indeno[1,2,3-cd]pyrene	276.00	15.147	15.147	(1.132)	76443	50	47
85	Dibenz[a,h]anthracene	278.00	15.183	15.183	(1.135)	63011	50	47
86	Benzo[g,h,i]perylene	276.00	15.610	15.610	(1.166)	60014	50	45
$ 3	2-Fluorophenol	112.00	3.131	3.131	(0.761)	492993	50	59
$ 4	Phenol-d5	99.00	3.854	3.854	(0.937)	525248	50	49
$ 61	2,4,6-Tribromophenol	329.70	7.871	7.871	(0.920)	16908	50	49
$ 23	Nitrobenzene-d5	82.00	4.636	4.636	(0.875)	353833	50	54
$ 41	2-Fluorobiphenyl	172.00	6.390	6.390	(0.904)	328782	50	54
$ 72	Terphenyl-d14	244.00	10.194	10.194	(0.901)	126947	50	48
* 11	1,4-Dichlorobenzene-d4	152.00	4.115	4.115	(1.000)	213376	40	
* 32	Naphthalene-d8	136.00	5.300	5.300	(1.000)	590600	40	
* 48	Acenaphthene-d10	164.00	7.066	7.066	(1.000)	186159	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng
* 65 Phenanthrene-d10	188.00	8.559	8.559	(1.000)	197293	40	
* 76 Chrysene-d12	240.00	11.320	11.320	(1.000)	94767	40	
* 83 Perylene-d12	264.00	13.382	13.382	(1.000)	48855	40	
17 ortho-Cresol	108.00	4.376	4.376	(1.063)	304935	50	40
20 meta,para-Cresol	108.00	4.506	4.506	(1.095)	296031	50	40
96 Benzidine	184.00	10.419	10.419	(0.920)	1978	50	52

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h145cc1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950525.b/hclpw.m
Misc Info: 950525 STD050

Calibration Date: 05/25/95
Calibration Time: 1451

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	213376	106688	426752	213376	0.00
32 Naphthalene-d8	590600	295300	1181200	590600	0.00
48 Acenaphthene-d10	186159	93080	372318	186159	0.00
65 Phenanthrene-d10	197293	98646	394586	197293	0.00
76 Chrysene-d12	94767	47384	189534	94767	0.00
83 Perylene-d12	48855	24428	97710	48855	0.00

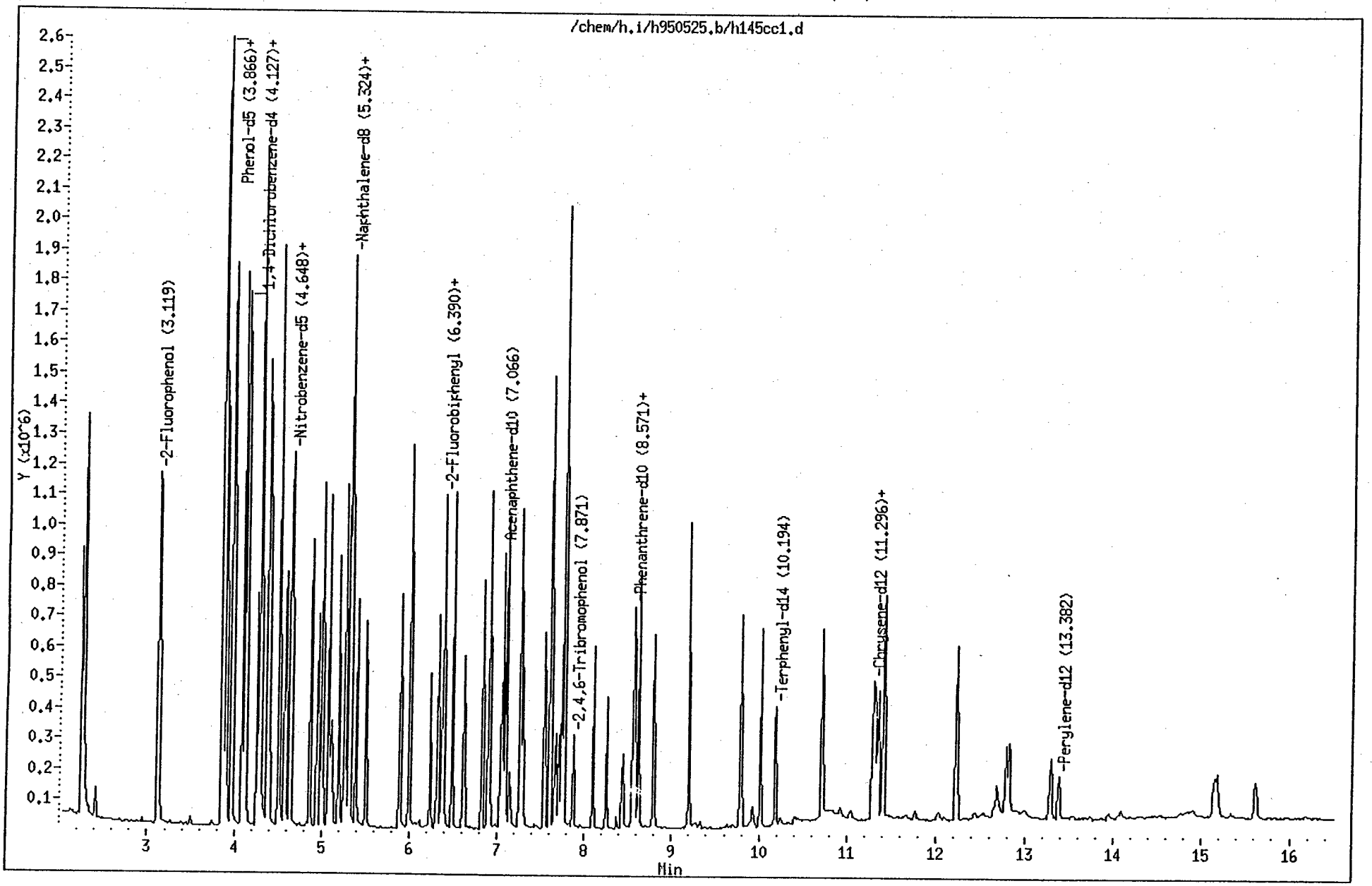
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.11	3.61	4.61	4.11	0.00
32 Naphthalene-d8	5.30	4.80	5.80	5.30	0.00
48 Acenaphthene-d10	7.07	6.57	7.57	7.07	0.00
65 Phenanthrene-d10	8.56	8.06	9.06	8.56	0.00
76 Chrysene-d12	11.32	10.82	11.82	11.32	0.00
83 Perylene-d12	13.38	12.88	13.88	13.38	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950525.b/h145cc1.d
Date : 25-MAY-1995 14:51
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



Data File: /chem/h.i/h950526.b/h146cc1.d
Report Date: 01-Jun-1995 09:34

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: h.i
Lab File ID: h146cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 26-MAY-1995 13:43
Init. Calibration Date(s): 05/24/95 05/24/95
Init. Calibration Times: 15:37 17:27
Method File: /chem/h.i/h950526.b/hclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	2.247	1.860	0.010	17.2	40.0
5	Phenol	2.191	1.962	0.800	10.5	25.0
6	Aniline	2.148	1.839	0.010	14.4	40.0
7	bis(2-Chloroethyl)ether	1.915	1.667	0.700	12.9	25.0
9	2-Chlorophenol	1.478	1.499	0.800	1.4	25.0
10	1,3-Dichlorobenzene	1.567	1.578	0.600	0.7	25.0
12	1,4-Dichlorobenzene	1.574	1.566	0.500	0.5	25.0
13	Benzyl alcohol	0.864	0.957	0.010	10.7	40.0
15	1,2-Dichlorobenzene	1.414	1.383	0.400	2.2	25.0
16	2-Methylphenol	1.441	1.379	0.700	4.3	25.0
18	bis(2-chloroisopropyl)ether	2.543	1.367	0.010	46.2	100.0
19	4-Methylphenol	1.373	1.288	0.600	6.2	25.0
21	N-Nitroso-di-n-propylamine	1.069	0.795	0.500	25.6	25.0
22	Hexachloroethane	0.680	0.663	0.300	2.5	25.0
24	Nitrobenzene	0.441	0.365	0.200	17.3	25.0
25	Isophorone	0.851	0.739	0.400	13.2	25.0
26	2-Nitrophenol	0.205	0.237	0.100	16.1	25.0
27	2,4-Dimethylphenol	0.379	0.404	0.200	6.5	25.0
28	Benzoic acid	0.093	0.203	0.010	118.5	100.0
29	bis(2-Chloroethoxy)methane	0.520	0.434	0.300	16.5	25.0
30	2,4-Dichlorophenol	0.249	0.277	0.200	11.1	25.0
31	1,2,4-Trichlorobenzene	0.261	0.274	0.200	5.2	25.0
33	Naphthalene	1.067	1.026	0.700	3.8	25.0
34	4-Chloroaniline	0.375	0.397	0.010	6.0	40.0
35	Hexachlorobutadiene	0.109	0.129	0.010	17.9	40.0
36	4-Chloro-3-methylphenol	0.294	0.298	0.200	1.5	25.0
37	2-Methylnaphthalene	0.601	0.605	0.400	0.7	25.0
38	Hexachlorocyclopentadiene	0.249	0.273	0.010	9.6	40.0
39	2,4,6-Trichlorophenol	0.317	0.372	0.200	17.3	25.0
40	2,4,5-Trichlorophenol	0.367	0.382	0.200	4.1	25.0
42	2-Chloronaphthalene	1.209	1.251	0.800	3.5	25.0
43	2-Nitroaniline	0.489	0.363	0.010	25.7	40.0
44	Dimethylphthalate	1.391	1.371	0.010	1.4	40.0
45	2,6-Dinitrotoluene	0.342	0.356	0.200	4.4	25.0
46	Acenaphthylene	2.038	2.030	1.300	0.4	25.0
47	3-Nitroaniline	0.381	0.356	0.010	6.7	40.0
49	Acenaphthene	1.213	1.174	0.800	3.2	25.0
50	2,4-Dinitrophenol	0.086	0.116	0.010	34.9	40.0
51	4-Nitrophenol	0.144	0.152	0.010	5.1	40.0
52	Dibenzofuran	1.574	1.514	0.800	3.8	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: h.i
Lab File ID: h146cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 26-MAY-1995 13:43
Init. Calibration Date(s): 05/24/95 05/24/95
Init. Calibration Times: 15:37 17:27
Method File: /chem/h.i/h950526.b/hclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.421	0.406	0.200	3.6	25.0
	54 Diethylphthalate	1.464	1.367	0.010	6.6	40.0
	55 4-Chlorophenyl-phenylether	0.487	0.425	0.400	12.7	25.0
	56 Fluorene	1.188	0.990	0.900	16.6	25.0
	57 4-Nitroaniline	0.348	0.271	0.010	21.9	40.0
	58 4,6-Dinitro-2-methylphenol	0.136	0.173	0.010	27.6	40.0
	59 n-Nitrosodiphenylamine	0.620	0.638	0.010	2.9	40.0
	60 1,2-Diphenylhydrazine	2.948	2.261	0.010	23.3	40.0
	62 4-Bromophenyl-phenylether	0.187	0.214	0.100	14.5	25.0
	63 Hexachlorobenzene	0.182	0.206	0.100	13.1	25.0
	64 Pentachlorophenol	0.085	0.098	0.050	15.0	25.0
	66 Phenanthrene	1.332	1.238	0.700	7.1	25.0
	67 Anthracene	1.249	1.134	0.700	9.2	25.0
	68 Carbazole	1.152	0.977	0.010	15.2	40.0
	69 Di-n-butylphthalate	2.115	1.802	0.010	14.8	40.0
	70 Fluoranthene	1.015	0.825	0.600	18.7	25.0
	71 Pyrene	2.081	1.913	0.600	8.1	25.0
	73 Butylbenzylphthalate	1.430	1.398	0.010	2.3	40.0
	74 3,3'-Dichlorobenzidine	0.385	0.420	0.010	9.1	40.0
	75 Benzo[a]anthracene	1.281	1.317	0.800	2.8	25.0
	77 Chrysene	1.159	1.114	0.700	3.9	25.0
	78 bis(2-Ethylhexyl)phthalate	1.996	1.802	0.010	9.7	40.0
	79 Di-n-octylphthalate	5.917	4.725	0.010	20.2	40.0
	80 Benzo[b]fluoranthene	1.916	1.791	0.700	6.5	25.0
	81 Benzo[k]fluoranthene	1.963	1.787	0.700	8.9	25.0
	82 Benzo[a]pyrene	1.540	1.397	0.700	9.3	25.0
	84 Indeno[1,2,3-cd]pyrene	1.337	1.276	0.500	4.5	25.0
	85 Dibenz[a,h]anthracene	1.096	1.080	0.400	1.4	25.0
	86 Benzo[g,h,i]perylene	1.083	1.056	0.500	2.5	25.0
$	3 2-Fluorophenol	1.562	1.799	0.600	15.2	25.0
$	4 Phenol-d5	1.994	1.853	0.800	7.0	25.0
$	61 2,4,6-Tribromophenol	0.070	0.096	0.010	37.1	40.0
$	23 Nitrobenzene-d5	0.443	0.388	0.200	12.4	25.0
$	41 2-Fluorobiphenyl	1.310	1.396	0.700	6.6	25.0
$	72 Terphenyl-d14	1.108	1.122	0.500	1.3	25.0
	17 ortho-Cresol	1.433	1.379	0.700	3.8	25.0
	20 meta,para-Cresol	1.373	1.288	0.600	6.2	25.0
	96 Benzidine	0.016	0.019	0.010	20.2	40.0

SPL Houston Labs

Data file : /chem/h.i/h950526.b/h146cc1.d
Lab Smp Id:
Inj Date : 26-MAY-1995 13:43
Operator : LH Inst ID: h.i
Smp Info : STD-8270W/1X
Misc Info : 950526 STD050
Comment :
Method : /chem/h.i/h950526.b/hclpw.m
Meth Date : 26-May-1995 14:06 liping Quant Type: ISTD
Cal Date : 26-MAY-1995 13:43 Cal File: h146cc1.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
2	Pyridine	79.00	2.220	2.220	(0.544)	577494	50	41
5	Phenol	94.00	3.819	3.819	(0.936)	609090	50	45
6	Aniline	93.00	3.819	3.819	(0.936)	570875	50	43(M)
7	bis(2-Chloroethyl)ether	93.00	3.855	3.855	(0.945)	517675	50	44
9	2-Chlorophenol	128.00	3.926	3.926	(0.962)	465309	50	51
10	1,3-Dichlorobenzene	146.00	4.044	4.044	(0.991)	490052	50	50
12	1,4-Dichlorobenzene	146.00	4.092	4.092	(1.003)	486142	50	50
13	Benzyl alcohol	108.00	4.210	4.210	(1.032)	297173	50	55
15	1,2-Dichlorobenzene	146.00	4.258	4.258	(1.044)	429401	50	49
16	2-Methylphenol	108.00	4.341	4.341	(1.064)	428127	50	48
18	bis(2-chloroisopropyl)ether	45.00	4.341	4.341	(1.064)	424486	50	27
19	4-Methylphenol	108.00	4.471	4.471	(1.096)	399851	50	47
21	N-Nitroso-di-n-propylamine	70.00	4.471	4.471	(1.096)	246914	50	37
22	Hexachloroethane	117.00	4.530	4.530	(1.110)	205780	50	49
24	Nitrobenzene	77.00	4.613	4.613	(0.876)	385216	50	41
25	Isophorone	82.00	4.827	4.827	(0.917)	779888	50	43
26	2-Nitrophenol	139.00	4.910	4.910	(0.932)	250721	50	58
27	2,4-Dimethylphenol	107.00	4.957	4.957	(0.941)	426043	50	53
28	Benzoic acid	122.00	5.111	5.111	(0.971)	214739	50	110
29	bis(2-Chloroethoxy)methane	93.00	5.028	5.028	(0.955)	458503	50	42
30	2,4-Dichlorophenol	162.00	5.158	5.158	(0.980)	292089	50	56
31	1,2,4-Trichlorobenzene	180.00	5.218	5.218	(0.991)	289467	50	52
33	Naphthalene	128.00	5.277	5.277	(1.002)	1083554	50	48
34	4-Chloroaniline	127.00	5.348	5.348	(1.016)	419391	50	53
35	Hexachlorobutadiene	225.00	5.455	5.455	(1.036)	135906	50	59
36	4-Chloro-3-methylphenol	107.00	5.846	5.846	(1.110)	314876	50	51
37	2-Methylnaphthalene	142.00	5.964	5.964	(1.133)	639156	50	50
38	Hexachlorocyclopentadiene	237.00	6.189	6.189	(0.882)	108292	50	55
39	2,4,6-Trichlorophenol	196.00	6.272	6.272	(0.894)	147579	50	59

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40	2,4,5-Trichlorophenol	196.00	6.332	6.332	(0.902)	151302	50	52
42	2-Chloronaphthalene	162.00	6.438	6.438	(0.917)	495864	50	52
43	2-Nitroaniline	65.00	6.569	6.569	(0.936)	143834	50	37(a)
44	Dimethylphthalate	163.00	6.782	6.782	(0.966)	543378	50	49
45	2,6-Dinitrotoluene	165.00	6.853	6.853	(0.976)	141261	50	52
46	Acenaphthylene	152.00	6.865	6.865	(0.978)	804551	50	50
47	3-Nitroaniline	138.00	6.995	6.995	(0.997)	140946	50	47(a)
49	Acenaphthene	153.00	7.054	7.054	(1.005)	465417	50	48
50	2,4-Dinitrophenol	184.00	7.114	7.114	(1.014)	45824	50	67(M)
51	4-Nitrophenol	109.00	7.220	7.220	(1.029)	60095	50	52
52	Dibenzofuran	168.00	7.208	7.208	(1.027)	599973	50	48
53	2,4-Dinitrotoluene	165.00	7.256	7.256	(1.034)	160779	50	48
54	Diethylphthalate	149.00	7.505	7.505	(1.069)	541836	50	47
55	4-Chlorophenyl-phenylether	204.00	7.564	7.564	(1.078)	168476	50	44
56	Fluorene	166.00	7.564	7.564	(1.078)	392442	50	42
57	4-Nitroaniline	138.00	7.623	7.623	(1.086)	107553	50	39(a)
58	4,6-Dinitro-2-methylphenol	198.00	7.683	7.683	(0.898)	70161	50	64
59	n-Nitrosodiphenylamine	169.00	7.694	7.694	(0.899)	258230	50	51
60	1,2-Diphenylhydrazine	77.00	7.718	7.718	(0.902)	914727	50	38
62	4-Bromophenyl-phenylether	248.00	8.050	8.050	(0.940)	86646	50	57
63	Hexachlorobenzene	283.70	8.216	8.216	(0.960)	83228	50	56
64	Pentachlorophenol	265.50	8.405	8.405	(0.987)	39459	50	58(M)
66	Phenanthrene	178.00	8.536	8.536	(1.003)	500860	50	46(M)
67	Anthracene	178.00	8.583	8.583	(1.003)	458643	50	45
68	Carbazole	167.00	8.749	8.749	(1.022)	395170	50	42
69	Di-n-butylphthalate	149.00	9.152	9.152	(1.069)	728896	50	43
70	Fluoranthene	202.00	9.744	9.744	(1.138)	333862	50	41
71	Pyrene	202.00	9.981	9.981	(0.885)	324258	50	46
73	Butylbenzylphthalate	149.00	10.669	10.669	(0.946)	236973	50	49
74	3,3'-Dichlorobenzidine	252.00	11.238	11.238	(0.997)	71185	50	54
75	Benzo[a]anthracene	228.00	11.261	11.261	(0.999)	223306	50	51(M)
77	Chrysene	228.00	11.309	11.309	(1.003)	188823	50	48
78	bis(2-Ethylhexyl)phthalate	149.00	11.356	11.356	(1.007)	305476	50	45
79	Di-n-octylphthalate	149.00	12.162	12.162	(0.913)	141289	50	40
80	Benzo[b]fluoranthene	252.00	12.731	12.731	(0.956)	167281	50	47
81	Benzo[k]fluoranthene	252.00	12.766	12.766	(0.958)	166945	50	46
82	Benzo[a]pyrene	252.00	13.228	13.228	(0.993)	130489	50	45
84	Indeno[1,2,3-cd]pyrene	276.00	15.089	15.089	(1.133)	119186	50	48
85	Dibenz[a,h]anthracene	278.00	15.113	15.113	(1.134)	100897	50	49
86	Benzo[g,h,i]perylene	276.00	15.551	15.551	(1.167)	98648	50	49
$ 3	2-Fluorophenol	112.00	3.085	3.085	(0.756)	558461	50	58
$ 4	Phenol-d5	99.00	3.807	3.807	(0.933)	575406	50	46
$ 61	2,4,6-Tribromophenol	329.70	7.837	7.837	(0.916)	38656	50	68
$ 23	Nitrobenzene-d5	82.00	4.590	4.590	(0.872)	410068	50	44
$ 41	2-Fluorobiphenyl	172.00	6.343	6.343	(0.904)	553246	50	53
$ 72	Terphenyl-d14	244.00	10.147	10.147	(0.900)	190256	50	51
* 11	1,4-Dichlorobenzene-d4	152.00	4.080	4.080	(1.000)	248407	40	
* 32	Naphthalene-d8	136.00	5.265	5.265	(1.000)	844661	40	
* 48	Acenaphthene-d10	164.00	7.019	7.019	(1.000)	317019	40	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 65 Phenanthrene-d10	188.00	8.512	8.512	(1.000)	323627	40	(M)
* 76 Chrysene-d12	240.00	11.273	11.273	(1.000)	135631	40	
* 83 Perylene-d12	264.00	13.323	13.323	(1.000)	74718	40	
17 ortho-Cresol	108.00	4.341	4.341	(1.064)	428127	50	48
20 meta,para-Cresol	108.00	4.471	4.471	(1.096)	399851	50	47
96 Benzidine	184.00	10.373	10.373	(0.920)	3303	50	50(M)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

Data File: /chem/h.i/h950526.b/h146cc1.d
Report Date: 26-May-1995 14:09

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h146cc1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950526.b/hclps.m
Misc Info: 950526 STD050

Calibration Date: 05/26/95
Calibration Time: 1343

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	248407	124204	496814	248407	0.00
32 Naphthalene-d8	844661	422330	1689322	844661	0.00
48 Acenaphthene-d10	317019	158510	634038	317019	0.00
65 Phenanthrene-d10	323627	161814	647254	323627	0.00
76 Chrysene-d12	135631	67816	271262	135631	0.00
83 Perylene-d12	74718	37359	149436	74718	0.00

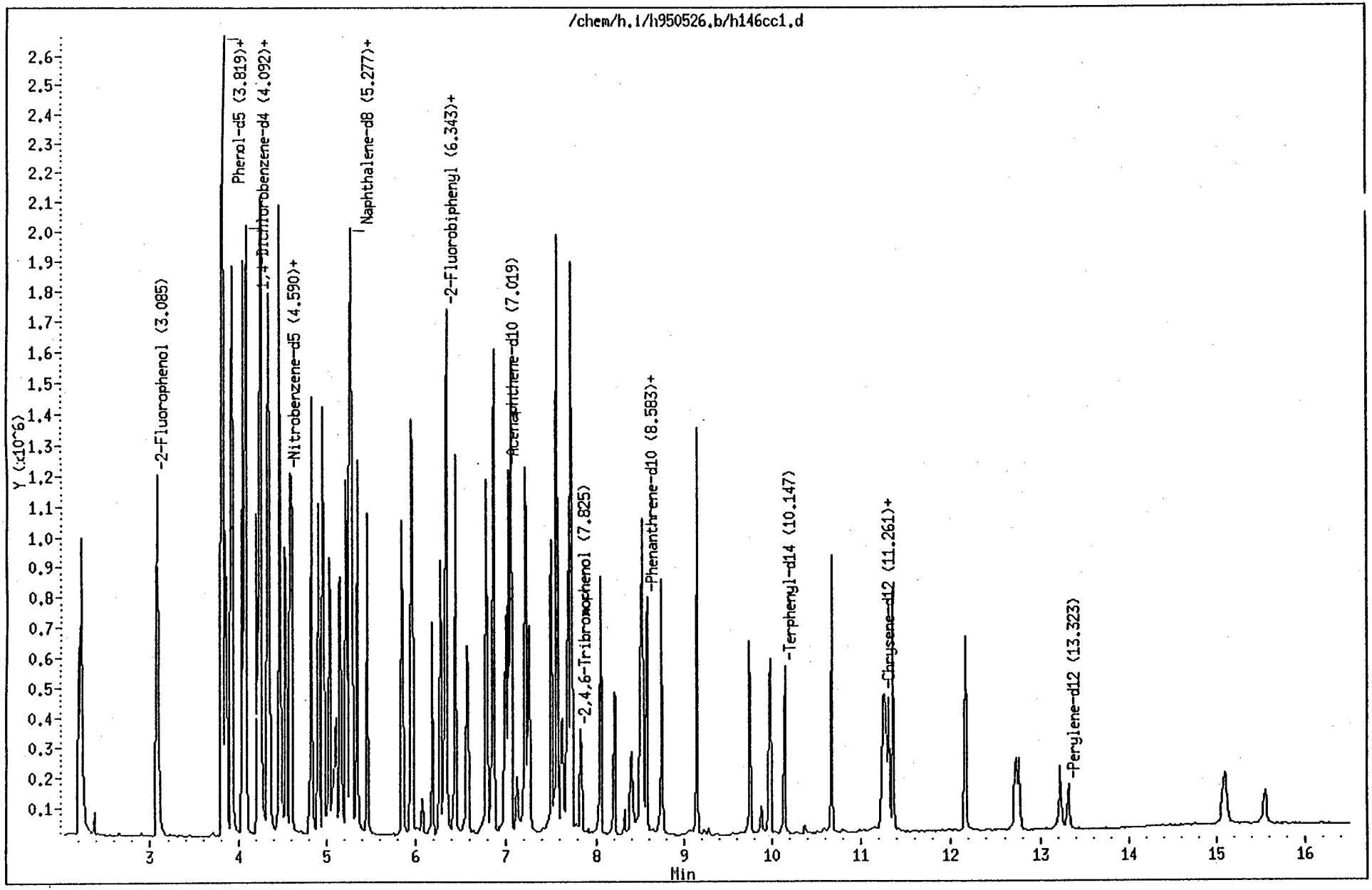
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.08	3.58	4.58	4.08	0.00
32 Naphthalene-d8	5.27	4.77	5.77	5.27	0.00
48 Acenaphthene-d10	7.02	6.52	7.52	7.02	0.00
65 Phenanthrene-d10	8.51	8.01	9.01	8.51	0.00
76 Chrysene-d12	11.27	10.77	11.77	11.27	0.00
83 Perylene-d12	13.32	12.82	13.82	13.32	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950526.b/h146cc1.d
Date : 26-MAY-95 13:43
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



ICP Spectroscopy Method 6010 Quality Control Report

Matrix: Water Units: mg/L Analyst: DQ

Date:051895 Time:1028 File Name:51895DQ2 Checked: J. Marrero 5/19/95

Laboratory Control Sample

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver	ND	2.00	1.891	95	1.60	2.40
Aluminum						
Arsenic	ND	4.00	3.972	99	3.20	4.80
Barium	ND	4.00	3.963	99	3.20	4.80
Beryllium	ND	2.00	1.995	100	1.60	2.40
Calcium						
Cadmium	ND	2.00	1.911	96	1.60	2.40
Cobalt	ND	2.00	1.908	95	1.60	2.40
Chromium	ND	2.00	1.920	96	1.60	2.40
Copper						
Iron						
Potassium						
Magnesium						
Manganese						
Sodium						
Nickel	ND	2.00	1.933	97	1.60	2.40
Lead	ND	2.00	1.950	98	1.60	2.40
Antimony	ND	2.00	1.956	98	1.60	2.40
Selenium	ND	4.00	3.798	95	3.20	4.80
Thallium						
Vanadium	ND	2.00	1.833	92	1.60	2.40
Zinc	ND	2.00	1.871	94	1.60	2.40

Work Orders in Batch

Work Order	Fractions
95-04-972	31D
95-04-973	30D
95-05-612	02C

Matrix Spike - Spike Duplicate Results

Work Order Spiked: 95-04-972 31D

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	QC Limits % Recovery		Spike RPD %	QC Limits %
Silver	ND	1.0	0.9446	94	0.9437	94	80	120	0.1	20.0
Aluminum										
Arsenic	ND	2.0	1.988	99	1.989	99	80	120	0.1	20.0
Barium	ND	2.0	1.958	98	1.965	98	80	120	0.4	20.0
Beryllium	ND	1.0	0.9813	98	0.9974	100	80	120	1.6	20.0
Calcium										
Cadmium	ND	1.0	0.9631	96	0.9644	96	80	120	0.1	20.0
Cobalt	ND	1.0	0.9568	96	0.9617	96	80	120	0.5	20.0
Chromium	ND	1.0	0.9603	96	0.965	97	80	120	0.5	20.0
Copper										
Iron										
Potassium										
Magnesium										
Manganese										
Sodium										
Nickel	ND	1.0	0.9805	98	0.984	98	80	120	0.4	20.0
Lead	ND	1.0	0.9979	100	0.9972	100	80	120	0.1	20.0
Antimony	ND	1.0	0.971	97	0.983	98	80	120	1.2	20.0
Selenium	ND	2.0	1.888	94	1.896	95	80	120	0.4	20.0
Thallium										
Vanadium	ND	1.0	0.9058	91	0.9112	91	80	120	0.6	20.0
Zinc	0.0613	1.0	0.9901	93	0.9821	92	80	120	0.9	20.0

Idelis Williams, QC Officer 5/19/95

ICP Spectroscopy Method 6010 Quality Control Report

Matrix: Soil Units: mg/Kg Analyst: RSC

Date:053095 Time:0852 File Name:053095RC Checked J. Marroz 5/30/95

Laboratory Control Sample Lot #224

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver	ND	65.4	71	109	29.4	95.5
Barium	ND	238	228	96	138	311
Cadmium	ND	90	95	105	51.3	130
Chromium	ND	167	166	99	90.3	236
Sodium	14.39	502	465	93	885	118
Nickel	ND	135	119	88	74.3	197
Lead	ND	162	157	97	85.8	230

Work Orders in Batch

Work Order	Fractions
95-05-612	03C, 04C, 05C, 06C
95-05-774	04B
95-05-673	02C, 03C, 04C

Matrix Spike - Spike Duplicate Results **Work Order Spiked: 95-05-673 (02C)**

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	Q.C. Limits % Recovery		Spike RPD %	QC Limits %
Silver	ND	100	86.4	86	85.45	85	80	120	1.1	20.0
Barium	40.48	200	224.6	92	224	92	80	120	0.3	20.0
Cadmium	ND	100	89.82	90	89.11	89	80	120	0.8	20.0
Chromium	14.67	100	109.9	95	109.7	95	80	120	0.2	20.0
Sodium	167.6	1000	1249	108	1290	112	80	120	3.7	20.0
Nickel	15.17	100	109.1	94	109.5	94	80	120	0.4	20.0
Lead	6.89	100	95.54	89	95.3	88	80	120	0.3	20.0

I. J. Williams 5/30/95

Idelis Williams, QC Officer

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: CR

Test Code: CRSG

Method: P3050G

Instrument: A

Date: 5/27/95

Time: 09:03

File #: 0527A

Analyst WPC

Matrix: Soil ☒ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units mg/Kg

Sample #'s in Batch

05512-2c				
05612-3c - 6c				
05673-2c - 4c				
05581-1D - 5D				
05599-6D - 9D				

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05704-3D MD	167.0	92.8%	17.0	20.0	40.9	39.7	119.5%	113.5%	5	
LCS 5/22 MD	167.0	95.2%	MA	20.0						

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☒ Soil LCS % Rec. Range 54.1% - 141.3%

☒ Sample used for QA/QC only

Analyst Wallace Ward Date 5/27/95

Approved By [illegible] Date 5/30/95

[illegible] Date 5/30/95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: CR

Test Code: CRQG

Method: 3020 WFC

Instrument: B

Date: 5/22/95

Time: 10:45

File #: 0522A

Analyst WFC

Units ug/L

Matrix: Soil ☐ Water ☑

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05612-2C				

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
#05533-1C	ND	20.0	82.5%	ND	20.0	18.4	18.9	92.0%	94.5%	3

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range _____

Sample used for QA/QC only

Analyst William F Caswell Date 5/22/95

Approved By [signature] Date 5-22-95

[signature] Date 5/22/95

QC Officer

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: PB

Test Code: PBSG

Method: P3050GR

Instrument: B

Date: 5/30/95

Time: 11:31

File #: 0530A

Analyst: WFC

Units: mg/kg

Matrix: Soil ☒ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05704-1A-6A	05685-1A-6A	
05612-3c-6c	05581-1D-5D	
05673-2c-4c	05599-6D-9D	
04972-1A-5A		
04973-1A-3A, 7A, 9A, 11A		

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
*04973-1A	MB	162.0	91.0%	18.3	50.0	54.2	54.0	71.8%*	71.4%*	1
05704-3A	MB	162.0	91.0%	30.8	50.0	72.6	72.5	83.6%	83.4%	0

Analyst: Walley F Ward Date: 5/30/95

Approved By: [signature] Date: 5/31/95

• FLAGS •

☒ • = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Sol[illegible] % Rec. Ran[illegible]

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: PB

Test Code: PBQG

Method: P3020

Instrument: B

Date: 5/20/95

Time: 10:28

File #: 0520A

Analyst WFC

Matrix: Soil ☐ Water ☑

Units ug/L

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05533-1c	05629-1c			
05558-2c	05612-2c			
05624-1c				
05625-1c				
05627-1c				

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
*05533-1c	ND	50.0	94.0%	ND	50.0	21.4	20.5	42.8%	41.0%	4

• FLAGS •

☑ • = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range _____

☐ _____ for QA/QC only

Analyst Wallace F Guevara Date 5/20/95

Approved By [signature] Date 5-22-95

[signature] Date 5/22/95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: Hg
Test Code: Hg QC
Method: 7470
Instrument: 3030B

Date: 5/25/95
Time: 14:43
File #: C525C

Analyst T. B.

Matrix: Soil ☐ Water ☑

Units mg/L

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

9504974-26D	9504975-26D	9505612-2C		

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05612-2C	ND	2.00	#3 99.5	ND	2.00	2.26	2.08	113.0	104.0	8

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range _____

☐ Sample used for QA/QC only

☐ See Case Narrative

Analyst Tet Bumpus Date 5/25/95

Approved By Joan Marros Date 5/25/95

Idelis Williams, QC Officer Date 5/25/95

QUALITY CONTROL SUMMARY

Rev. 9/94

Atomic Absorption Analysis

Element: Hg | Date: 5/24/95 | Analyst: T. B. | Units: ug/L

Test Code: HGSC | Time: 11:01 | Matrix: Soil ☑ Water ☐

Method: 7471 | File #: C524A | Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Instrument: 3030B

Sample #'s in Batch

9504702-16D, 18D	9505759-1B	9505512-2C-13C	9505556-2C-5C	9505676-1C, 4C, 7C
9505612-3C-6C	9505774-4B			

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05512-1C	#1 ND	1.92	#1 96.0	ND	2.00	2.26	2.12	113.0	106.0	6
05676-4C	#2 ND	↓	#2 99.8	↓	↓	1.99	2.21	99.5	111.5	10

* FLAGS * * = Values Outside QC Range

- ☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)
- ☐ RPD out of QA/QC Limits (20 %)
- ☐ Soil LCS % Rec. Range _____
- ☐ Sample used for QA/QC only
- ☐ See Case Narrative

Analyst: T. B. Williams Date: 5/24/95

Approved By: Joan Manes Date: 5/24/95

Idelis Williams, QC Officer Date: 5/24/95

WETDUPQA.RC Rev. 4/94

Wet Chemistry QA/QC Validation Report

Test Name: Moist-e

SAM Test Code: Moisep Date: 5/18/95 Analyst: CA

Method CLP Time: 9:30am Matrix ☐ Liquid ☑ Soil ☐ Other

# of Samples in Batch: 21 Reporting Units: %weight

SPL Sample #'s in Batch:

9505588 - 3D, 4D	9504974 - 1A - 4A	
9505550 - 1B, 2B	9504975 - 1A - 4A	
9505557 - 1B - 9B	9505612 - 3C - 6C	
9505571 - 5B		

Standards	Actual Concentration	Theoretical Concentration	Percent Recovery	QC Limits (**) (Mandatory) Upper Limit	Lower Limit
Blank					
Check Standard 1					
Check Standard 2					
Check Standard 3					
QC (Outside Source)					

DUPLICATES

QA/QC Duplicate SPL Sample ID	Sample Result <1>	Sample Result <2>	Relative Percent Difference	QC LIMITS (**) (Advisory) Relative Percent Difference Max.
9505550 - 1B	26	26	0	23.0
9505547 - 10B	14	15	6.90	
9505557 - 9B	13	12	8.00	
9504974 - 4A	21	21	0	
9504975 - 4A	21	21	0	
9505612 - 6C	10	9	10.53	

Relative Percent Difference (RPD) Calculation:

$$RPD = \frac{|<1> - <2>|}{(<1> + <2>) \times 0.5} \times 100$$

(**) = Source: SPL Houston Historical Data

* = Indicates Value Outside QA/QC Range

Reviewed By: [signature] Date: 5/19/95

Approved By: [signature] Date: 5/19/95

Idelis Williams, QC Officer Date: 5/19/95

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Provided by SPL
SAMPLE ID: 025-001 TB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/15/95
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
total-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methylene Chloride	ND	5	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L

METHOD: 8240, Volatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-01

Operational Tech

SAMPLE ID: 025-001 TB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	98	76	114
Toluene-d8	50 ug/L	100	88	110
4-Bromofluorobenzene	50 ug/L	94	86	115

ANALYZED BY: JC DATE/TIME: 05/16/95 14:51:00
METHOD: 8240, Volatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950516.b/l136s02.d
Lab Smp Id:
Inj Date : 16-MAY-1995 14:51
Operator : JC Inst ID: l.i
Smp Info : 9505556-01A-8240W/1X
Misc Info : L136W1/L136B01/L136CW1
Comment :
Method : /chem/l.i/l950516.b/lvoclpw.m
Meth Date : 17-May-1995 08:01 jimmy Quant Type: ISTD
Cal Date : 16-MAY-1995 12:00 Cal File: l136cw1.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
23 Bromochloromethane	128.00	5.245	5.246	(1.000)	60243	250	
1,4-Difluorobenzene	114.00	6.947	6.948	(1.000)	335722	250	
Chlorobenzene-d5	117.00	11.119	11.111	(1.000)	261481	250	
26 1,2-Dichloroethane-d4	102.00	6.020	6.012	(1.148)	24892	240	49
Toluene-d8	98.00	9.167	9.168	(0.824)	347121	250	50
Bromofluorobenzene	95.00	12.795	12.787	(1.151)	124287	240	47

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l136s02.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/l950516.b/lvoclpw.m
Misc Info: L136W1/L136B01/L136CW1

Calibration Date: 05/16/95
Calibration Time: 1200

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65458	32729	130916	60243	-7.97
32 1,4-Difluorobenzene	368339	184170	736678	335722	-8.86
50 Chlorobenzene-d5	287836	143918	575672	261481	-9.16

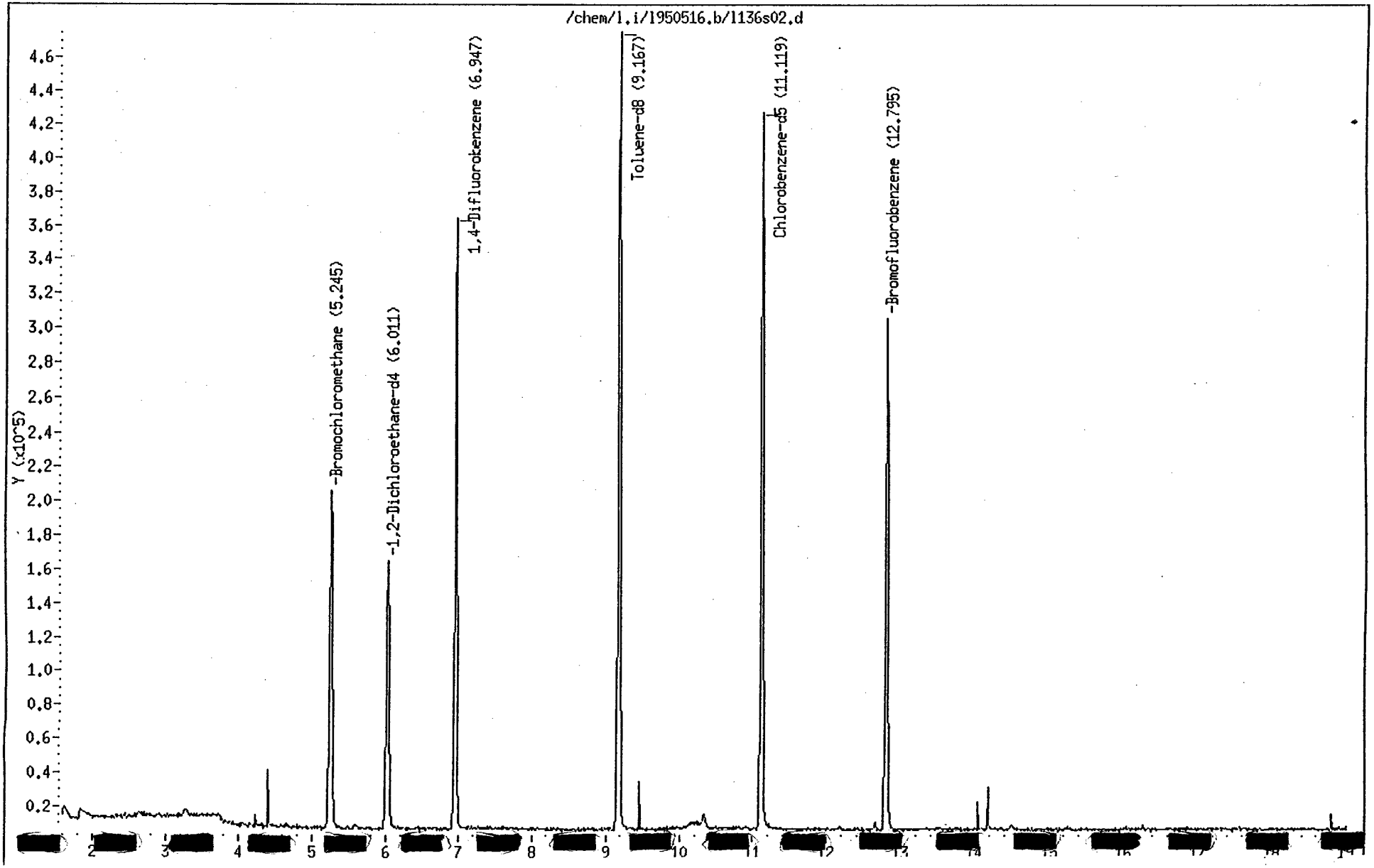
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.25	4.75	5.75	5.24	-0.02
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.95	-0.01
50 Chlorobenzene-d5	11.11	10.61	11.61	11.12	0.07

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950516.b/l136s02.d
Date : 16-MAY-95 14:51
Client ID:
Sample Info: 9505556-01A-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i

Operator: JC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-BH 6.5-7.0'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 15:42:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	ND	0.4	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/22/95	9	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/17/95	9	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	25	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-BH 6.5-7.0'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 15:42:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/19/95	05/19/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/19/95	05/19/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/20/95	3.2	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-BH 6.5-7.0'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 15:42:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	250000	ug/Kg
Benzene	84000	12000	ug/Kg
Bromodichloromethane	ND	12000	ug/Kg
Bromoform	ND	12000	ug/Kg
Bromomethane	ND	25000	ug/Kg
2-Butanone	ND	50000	ug/Kg
Carbon Disulfide	ND	12000	ug/Kg
Carbon Tetrachloride	ND	12000	ug/Kg
Chlorobenzene	ND	12000	ug/Kg
Chloroethane	ND	25000	ug/Kg
2-Chloroethylvinylether	ND	25000	ug/Kg
Chloroform	ND	12000	ug/Kg
Chloromethane	ND	25000	ug/Kg
Dibromochloromethane	ND	12000	ug/Kg
1,1-Dichloroethane	ND	12000	ug/Kg
1,1-Dichloroethene	ND	12000	ug/Kg
1,2-Dichloroethane	ND	12000	ug/Kg
total-1,2-Dichloroethene	ND	12000	ug/Kg
1,2-Dichloropropane	ND	12000	ug/Kg
cis-1,3-Dichloropropene	ND	12000	ug/Kg
trans-1,3-Dichloropropene	ND	12000	ug/Kg
Ethylbenzene	140000	12000	ug/Kg
2-Hexanone	ND	25000	ug/Kg
Methylene Chloride	ND	12000	ug/Kg
4-Methyl-2-Pentanone	ND	25000	ug/Kg
Styrene	ND	12000	ug/Kg
1,1,2,2-Tetrachloroethane	ND	12000	ug/Kg
Tetrachloroethene	ND	12000	ug/Kg
Toluene	460000	12000	ug/Kg
1,1,1-Trichloroethane	ND	12000	ug/Kg
1,1,2-Trichloroethane	ND	12000	ug/Kg
Trichloroethene	ND	12000	ug/Kg
Trichlorofluoromethane	ND	12000	ug/Kg
Vinyl Acetate	ND	25000	ug/Kg
Vinyl Chloride	ND	25000	ug/Kg
Xylenes (total)	680000	12000	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech

SAMPLE ID: 025-001-BH 6.5-7.0'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	98	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	102	59	113

ANALYZED BY: JC DATE/TIME: 05/19/95 11:33:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/9

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-BH 6.5-7.0'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 15:42:0
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech

SAMPLE ID: 025-001-BH 6.5-7.0'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	12000	3300	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	14000	3300	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	350	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-02

Operational Tech

SAMPLE ID: 025-001-BH 6.5-7.0'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	104	23	120
2-Fluorobiphenyl	1600 ug/Kg	94	30	115
Terphenyl-d14	1600 ug/Kg	88	18	137
Phenol-d5	2500 ug/Kg	117 «	24	113
2-Fluorophenol	2500 ug/Kg	90	25	121
2,4,6-Tribromophenol	2500 ug/Kg	84	19	122

ANALYZED BY: PC DATE/TIME: 05/23/95 12:11:00
EXTRACTED BY: JK DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« - Recovery outside of control limits.

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950519.b/l139s01.d
Lab Smp Id:
Inj Date : 19-MAY-1995 11:33
Operator : JC Inst ID: l.i
Smp Info : 9505556-02A-8240S/2500X
Misc Info : L139W1/L139B01/L139CW1
Comment :
Method : /chem/l.i/l950519.b/lvoclpw.m
Meth Date : 22-May-1995 15:34 jimmy Quant Type: ISTD
Cal Date : 19-MAY-1995 09:41 Cal File: l139cw1.d
Als bottle: 6
Dil Factor: 2500.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	30 Benzene	78.00	6.476	6.474	(0.933)	320211	170	84000
	44 Toluene	92.00	9.257	9.255	(0.834)	965687	920	460000
M	53 Xylene (Total)	106.00				968056	1400	680000
	54 Ethylbenzene	106.00	11.450	11.448	(1.031)	160755	280	140000
	55 m,p-Xylene(s)	106.00	11.619	11.617	(1.047)	706374	1000	500000
	59 o-Xylene	106.00	12.145	12.143	(1.094)	261682	370	180000
*	23 Bromochloromethane	128.00	5.228	5.226	(1.000)	62790	250	
*	32 1,4-Difluorobenzene	114.00	6.940	6.938	(1.000)	351942	250	
*	50 Chlorobenzene-d5	117.00	11.102	11.100	(1.000)	279239	250	
$	26 1,2-Dichloroethane-d4	102.00	6.004	6.002	(1.148)	26304	240	49
$	43 Toluene-d8	98.00	9.159	9.157	(0.825)	392924	260	51
$	61 Bromofluorobenzene	95.00	12.778	12.776	(1.151)	149352	260	51

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l139s01.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/l950519.b/lvoclpw.m
Misc Info: L139W1/L139B01/L139CW1

Calibration Date: 05/19/95
Calibration Time: 0941

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65811	32906	131622	62790	-4.59
32 1,4-Difluorobenzene	366990	183495	733980	351942	-4.10
50 Chlorobenzene-d5	287816	143908	575632	279239	-2.98

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.23	4.73	5.73	5.23	0.04
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.03
50 Chlorobenzene-d5	11.10	10.60	11.60	11.10	0.02

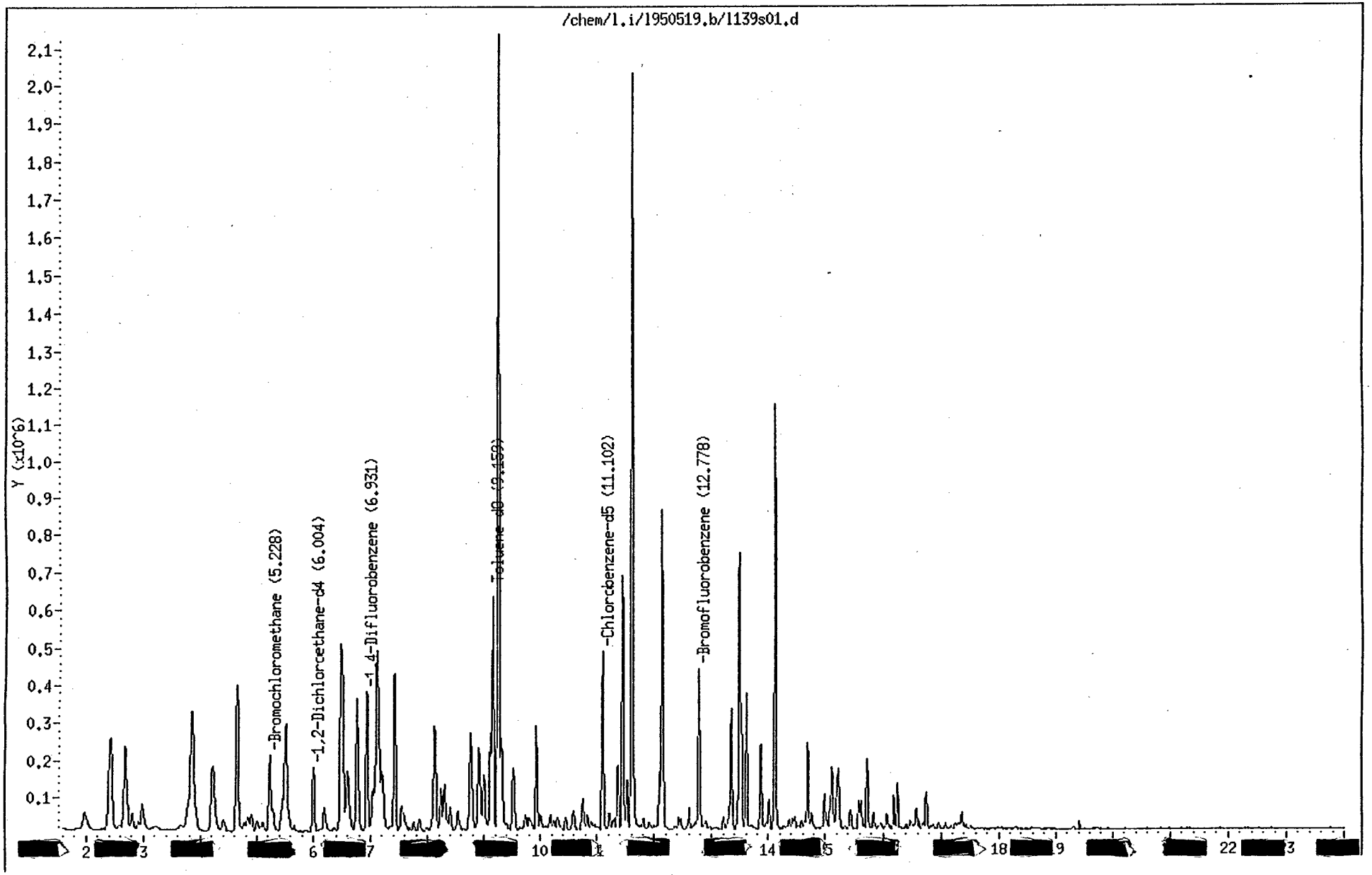
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950519.b/l139s01.d
Date : 19-MAY-1995 11:33
Client ID:
Sample Info: 9505556-02A-8240S/2500X

Instrument: l.i

Operator: JC
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df

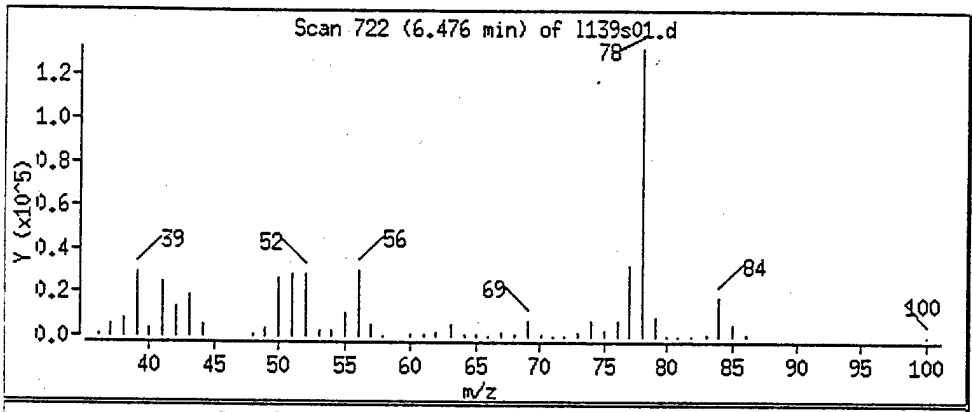


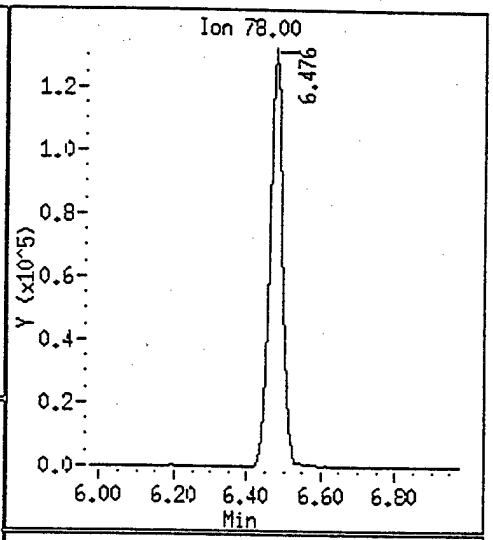
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Sample Info: 9505556-02A-8240S/2500X

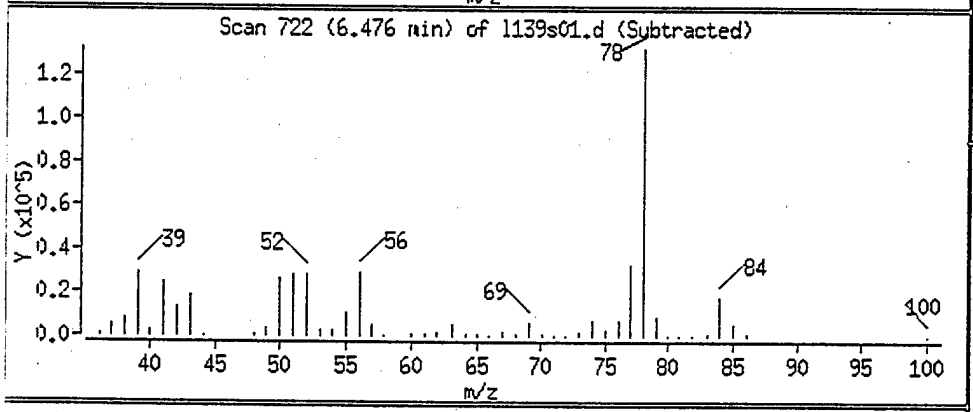
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Operator: JC
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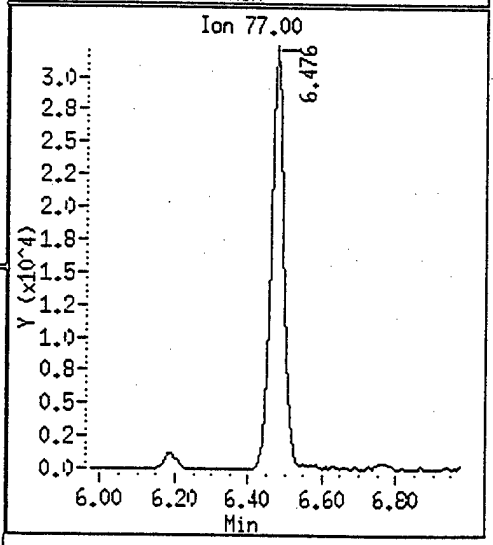
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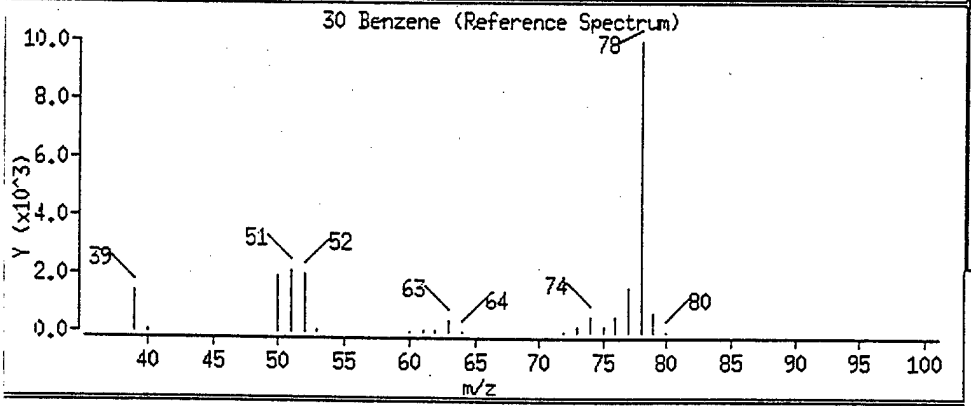
30 Benzene

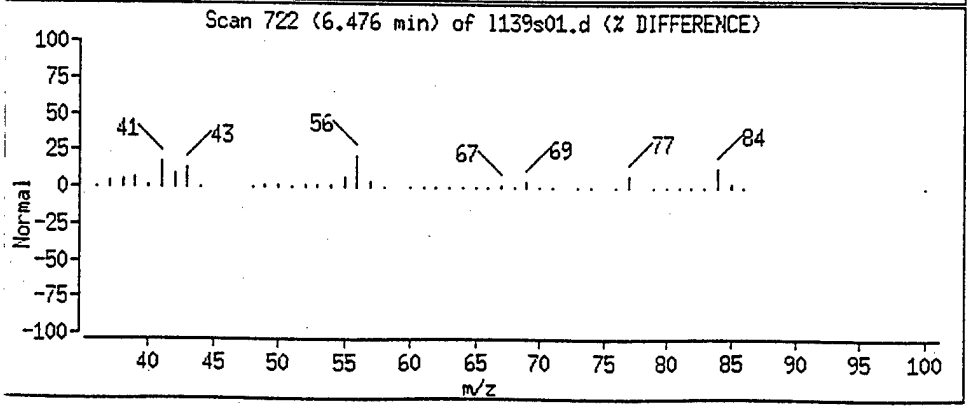












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Client ID:

Instrument: l.i

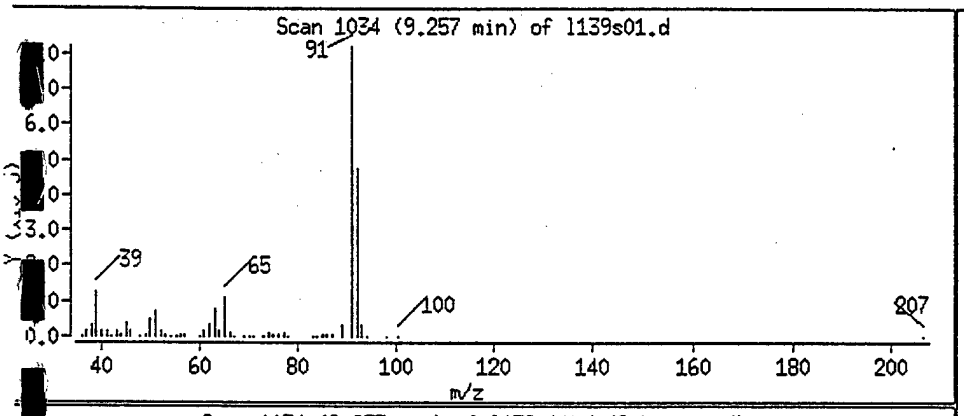
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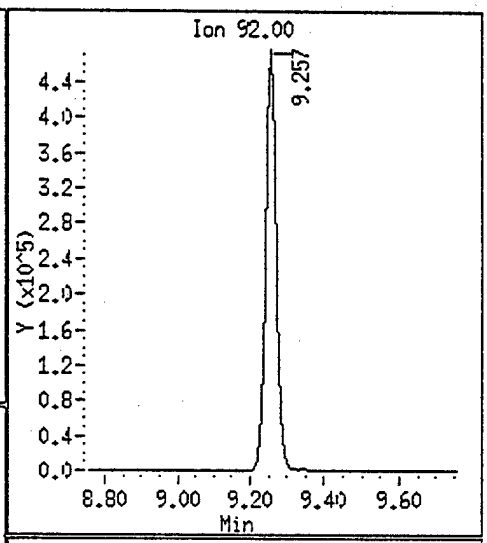
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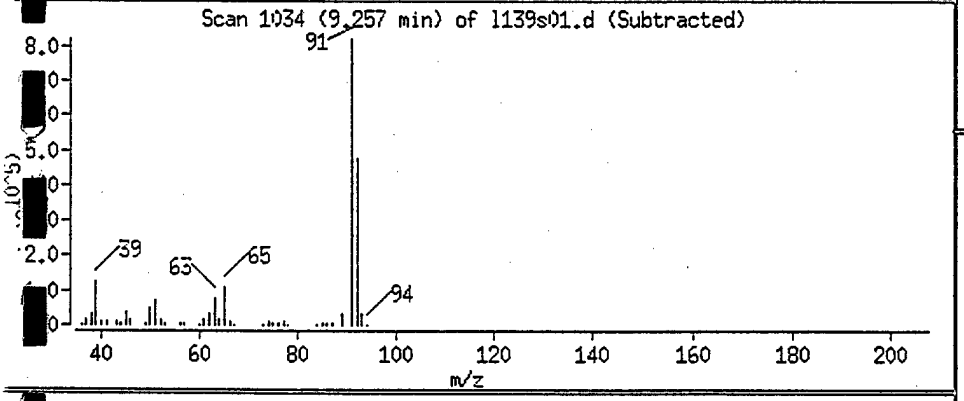
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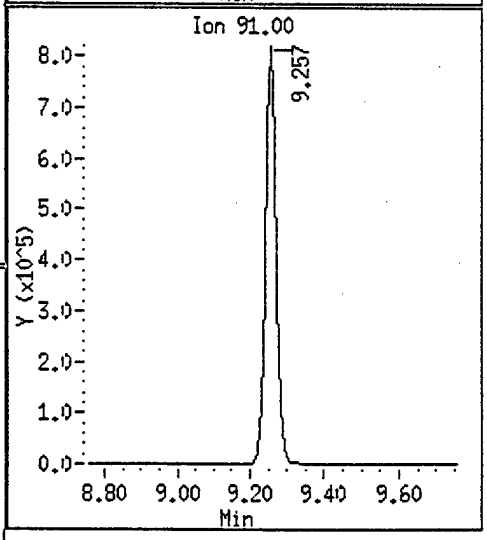
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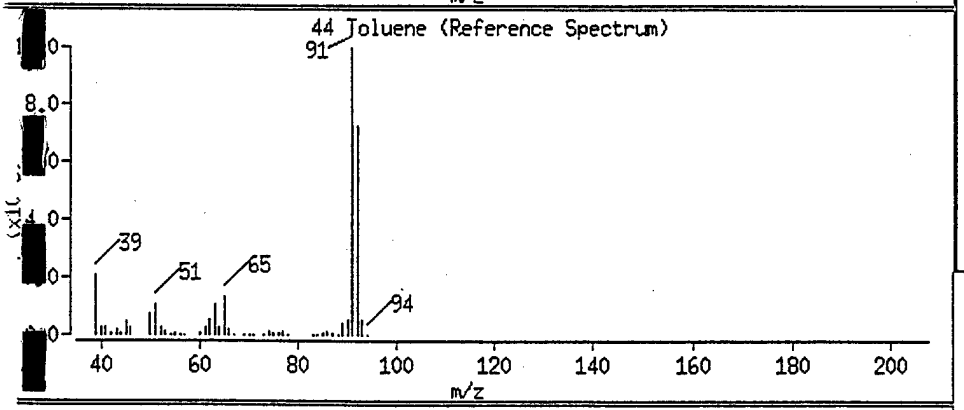
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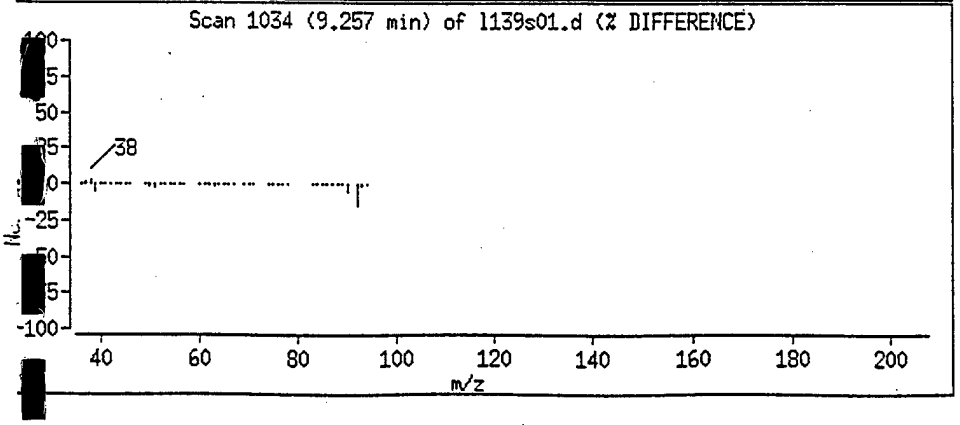












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Date : 19-MAY-1995 11:33

Client ID:

Sample Info: 9505556-02A-8240S/2500X

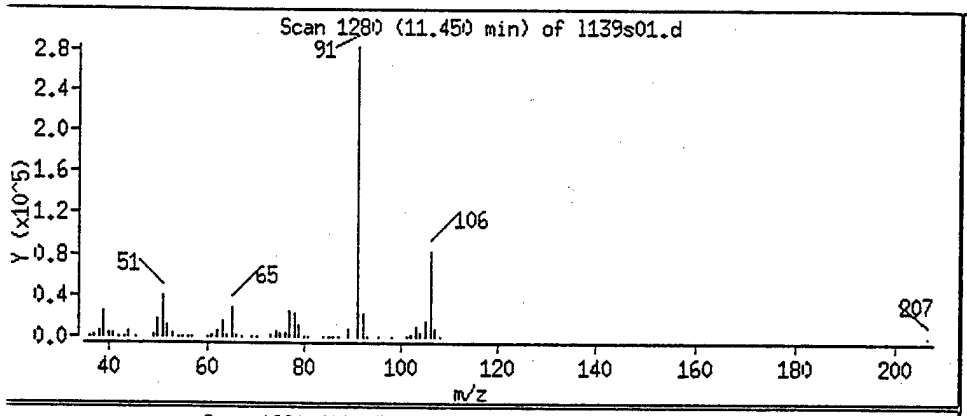
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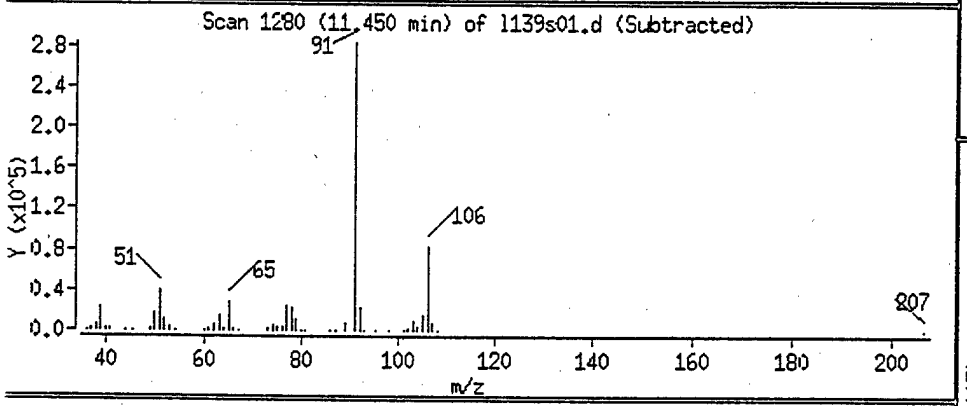
Operator: JC

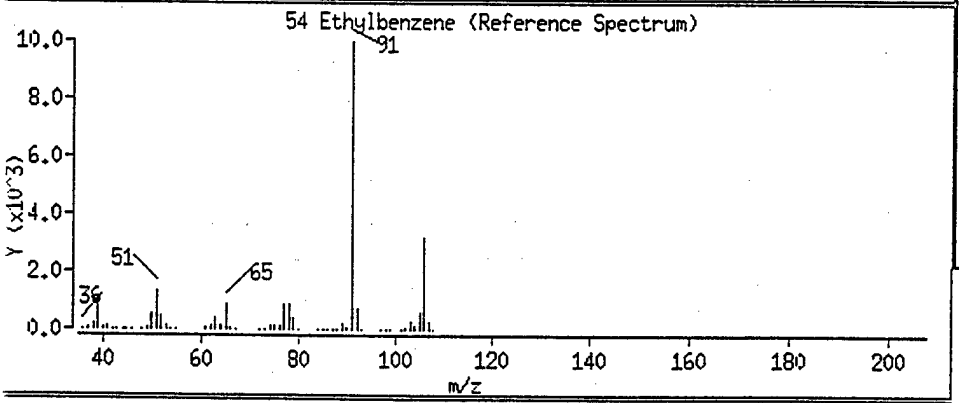
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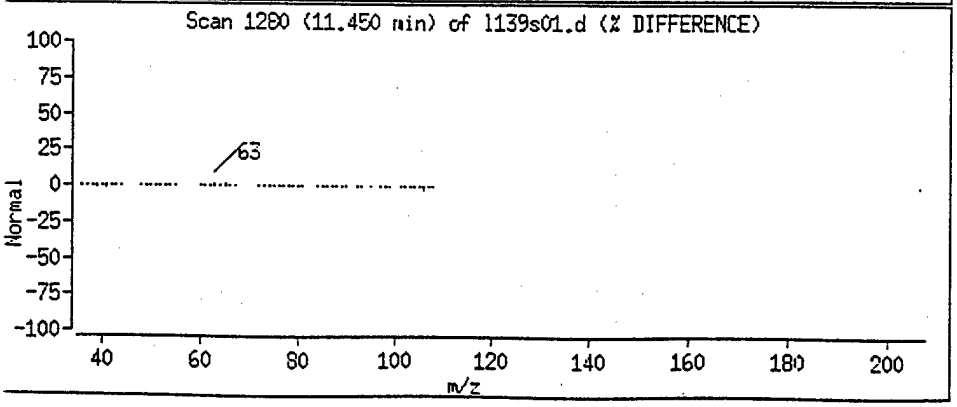
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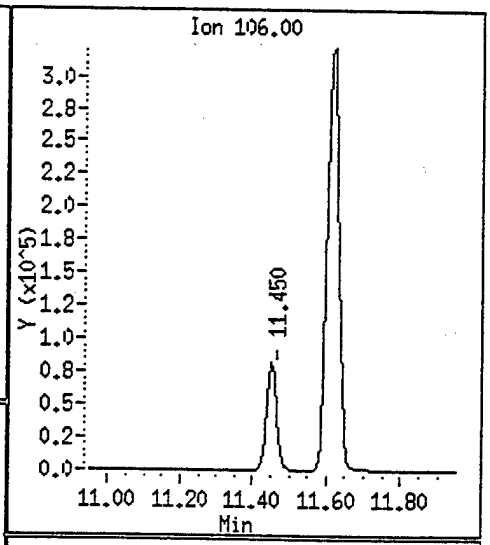
54 Ethylbenzene

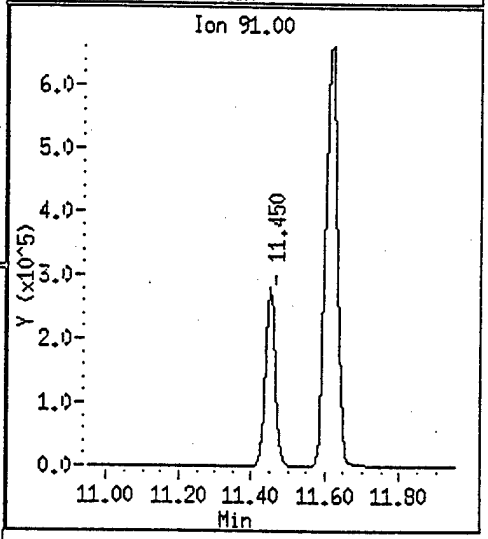








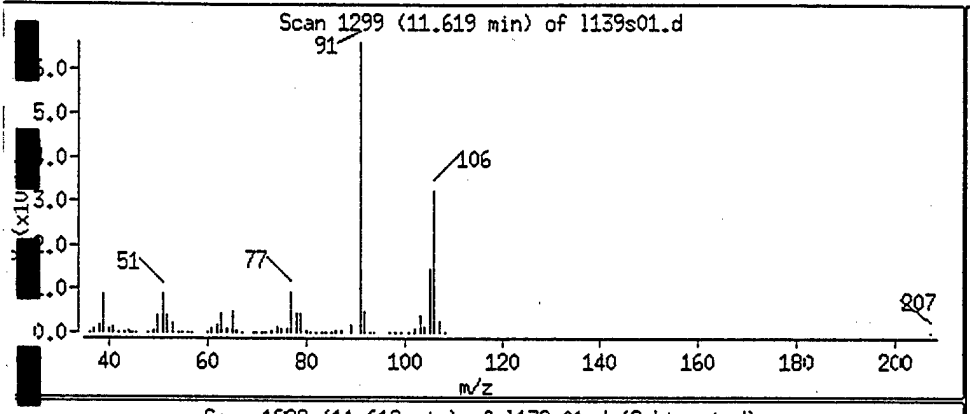


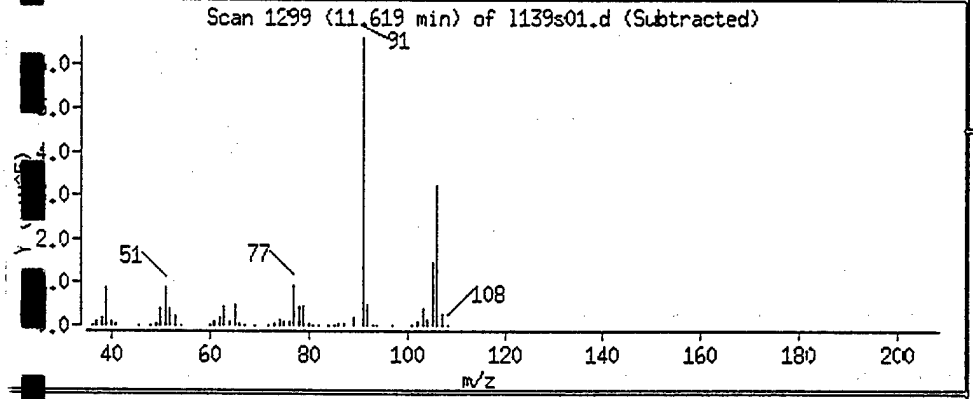


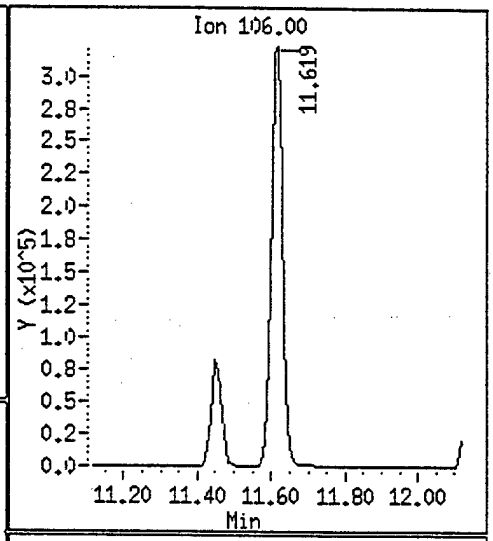
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Date : 19-MAY-1995 11:33
Client ID:
Sample Info: 9505556-02A-8240S/2500X

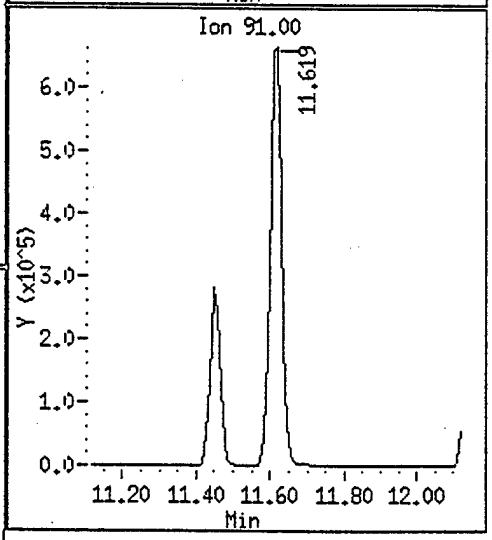
Instrument: l.i
Operator: JC
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

55 m,p-Xylene(s)









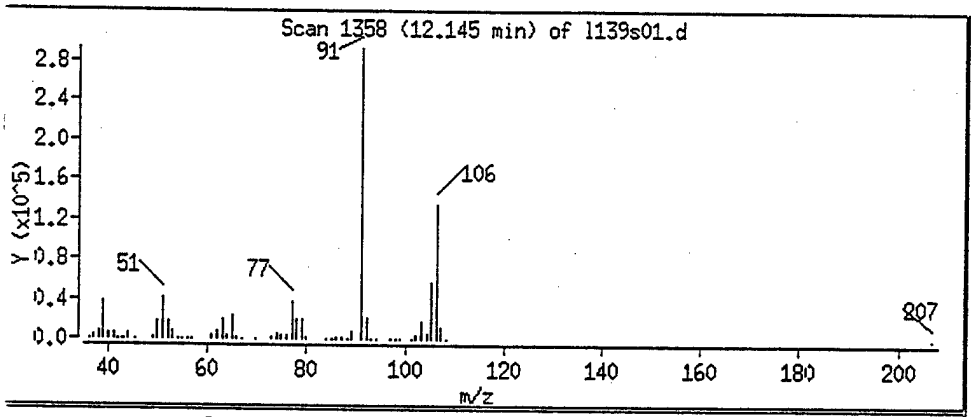
Data File: /chem/l.i/1950519.b/l139s01.d
Date : 19-MAY-1995 11:33
Client ID:
Sample Info: 9505556-02A-8240S/2500X

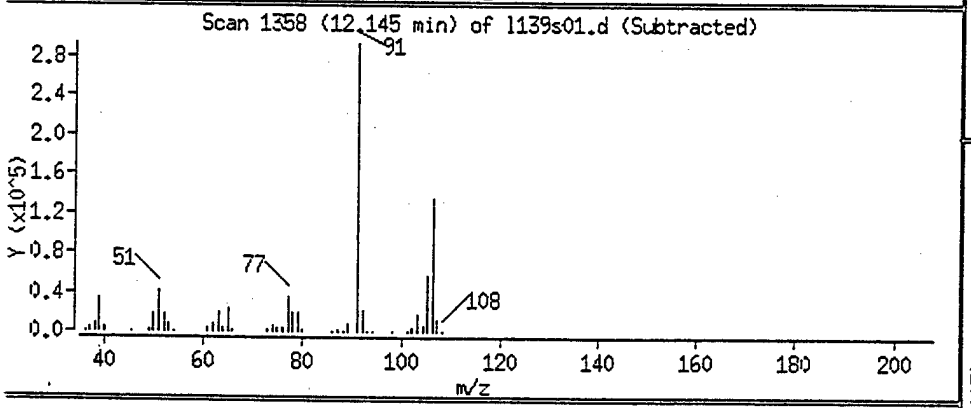
Instrument: l.i

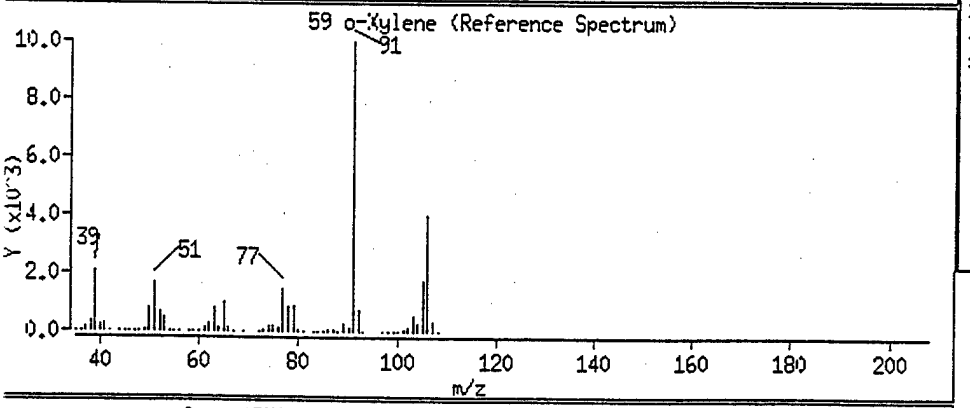
Operator: JC
Column diameter: 0.25

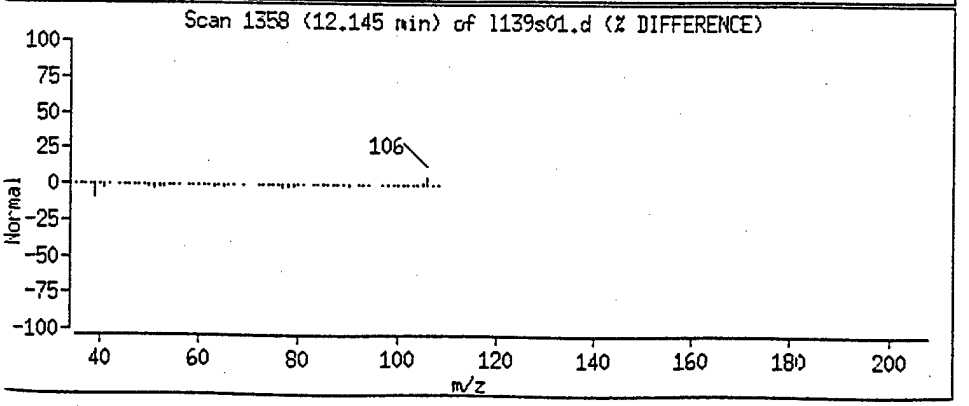
Column phase: 30m,hp5ms,0.25u df

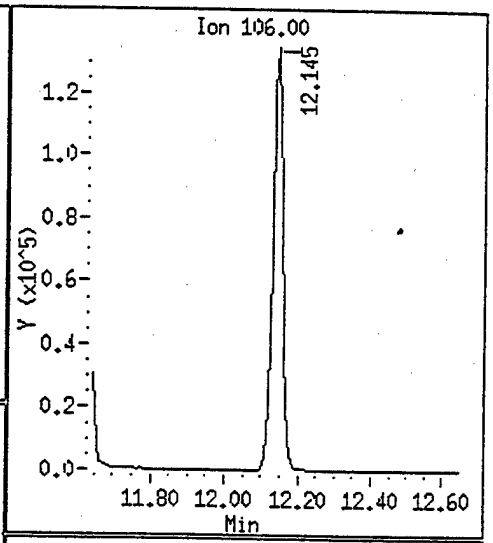
59 o-Xylene

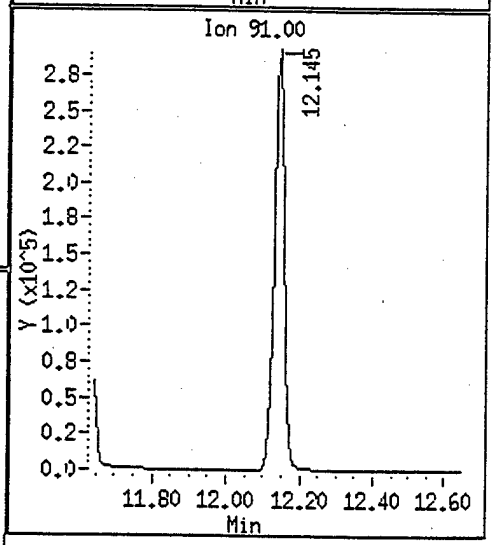












a[redacted]a File: /chem/j.i/j950523.b/j143s03.d
[redacted]ort Date: 23-May-1995 13:45

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[redacted]a file : /chem/j.i/j950523.b/j143s03.d
ab Smp Id: 9505556-02B
n[redacted] Date : 23-MAY-1995 12:11
[redacted]rator : PC pc Inst ID: j.i
[redacted]p Info : 9505556-02B-8270S/1X
isc Info : E142S1/H142B02/J143CC1
[redacted]ment :
[redacted]thod : /chem/j.i/j950523.b/jclps.m
eth Date : 23-May-1995 13:29 patti Quant Type: ISTD
a[redacted] Date : 23-MAY-1995 09:08 Cal File: j143cc1.d
[redacted] bottle: 4
[redacted]l Factor: 1.000
[redacted]egrator: HP RTE Compound Sublist: 8270.sub
[redacted]get Version: 3.10

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
[redacted]Phenol	94.00	7.476	7.358	(0.925)	233727	21	350	pc
33 Naphthalene	128.00	10.876	10.763	(1.007)	22639839	870	14000	pc
3[redacted]2-Methylnaphthalene	142.00	12.481	12.410	(1.156)	13891799	760	13000	pc
[redacted]1,4-Dichlorobenzene-d4	152.00	8.079	7.937	(1.000)	280403	40		
32 Naphthalene-d8	136.00	10.799	10.719	(1.000)	1009942	40		
48 Acenaphthene-d10	164.00	14.968	14.975	(1.000)	619403	40		
6[redacted]Phenanthrene-d10	188.00	18.581	18.593	(1.000)	906320	40		
[redacted]Chrysene-d12	240.00	25.248	25.255	(1.000)	740780	40		
83 Perylene-d12	264.00	29.691	29.715	(1.000)	467782	40		
2[redacted]Nitrobenzene-d5	82.00	9.295	9.149	(0.861)	940377	100	1700 (Q)	
[redacted]2-Fluorobiphenyl	172.00	13.361	13.359	(0.893)	1857618	91	1500	
72 Terphenyl-d14	244.00	22.558	22.563	(0.893)	1557323	84	1400	
[redacted]Phenol-d5	99.00	7.454	7.336	(0.923)	1700437	170	2900 (R)	
[redacted]2-Fluorophenol	112.00	5.877	5.737	(0.727)	854921	130	2200 (QH)	
1 2,4,6-Tribromophenol	329.70	16.951	16.954	(0.912)	342935	130	2100	

[redacted]lag Legend

[redacted]Qualifier signal failed the ratio test.
[redacted]Spike/Surrogate failed recovery limits.
- Operator selected an alternate compound hit.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
ab File ID: j143s03.d
ab Smp Id: 9505556-02B
nalysis Type: SV
uant Type: ISTD
perator: PC
ethod File: /chem/j.i/j950523.b/jclps.m
isc Info: E142S1/H142B02/J143CC1

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

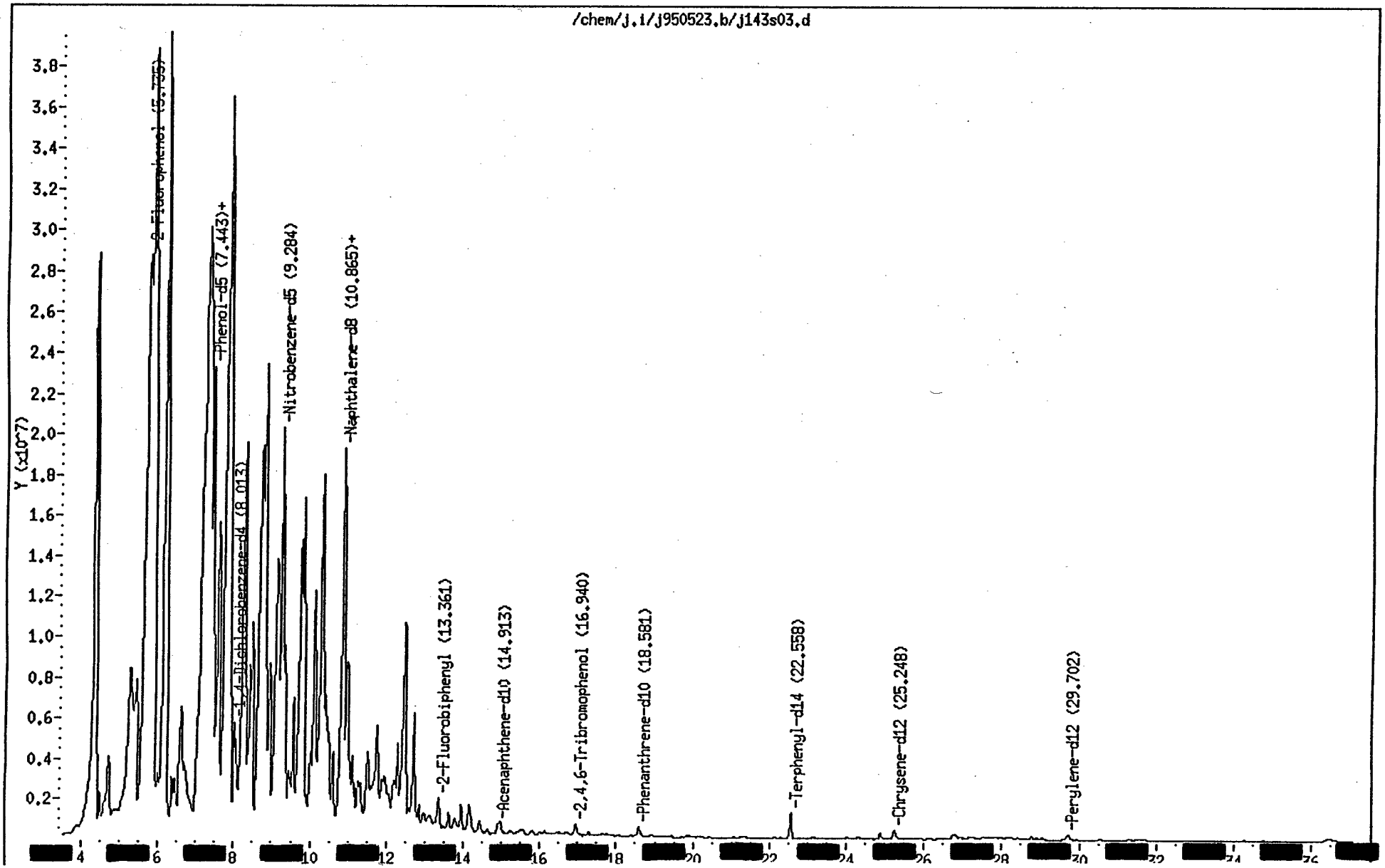
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	309222	154611	618444	280403	-9.32
32 Naphthalene-d8	1160307	580154	2320614	1009942	-12.96
48 Acenaphthene-d10	648094	324047	1296188	619403	-4.43
65 Phenanthrene-d10	1005266	502633	2010532	906320	-9.84
76 Chrysene-d12	792658	396329	1585316	740780	-6.54
83 Perylene-d12	434959	217480	869918	467782	7.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	8.08	1.79
32 Naphthalene-d8	10.72	10.22	11.22	10.80	0.75
48 Acenaphthene-d10	14.98	14.48	15.48	14.97	-0.05
65 Phenanthrene-d10	18.59	18.09	19.09	18.58	-0.06
76 Chrysene-d12	25.25	24.75	25.75	25.25	-0.03
83 Perylene-d12	29.71	29.21	30.21	29.69	-0.08

EA UPPER LIMIT = +100% of internal standard area.
EA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950523.b/j143s03.d
Date : 23-MAY-1995 12:11
Client ID:
Sample Info: 9505556-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

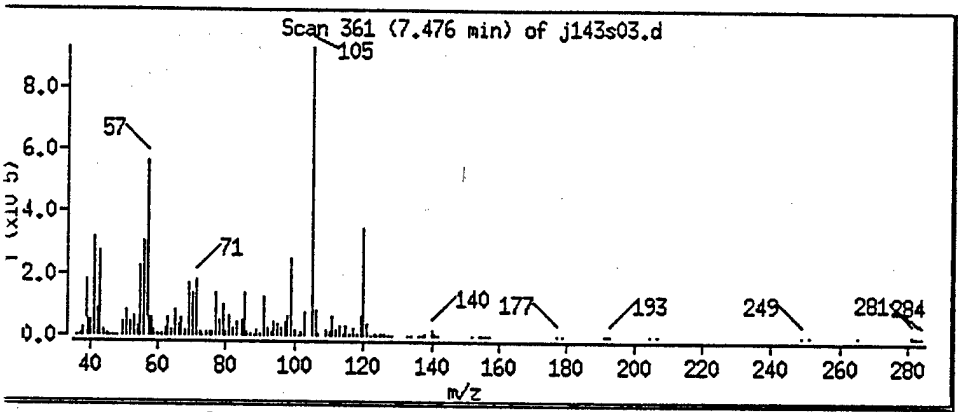
Instrument: j.i
Operator: PC
Column diameter: 0.25

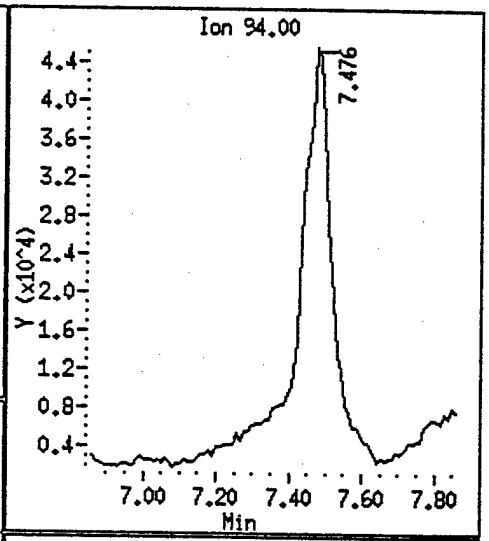


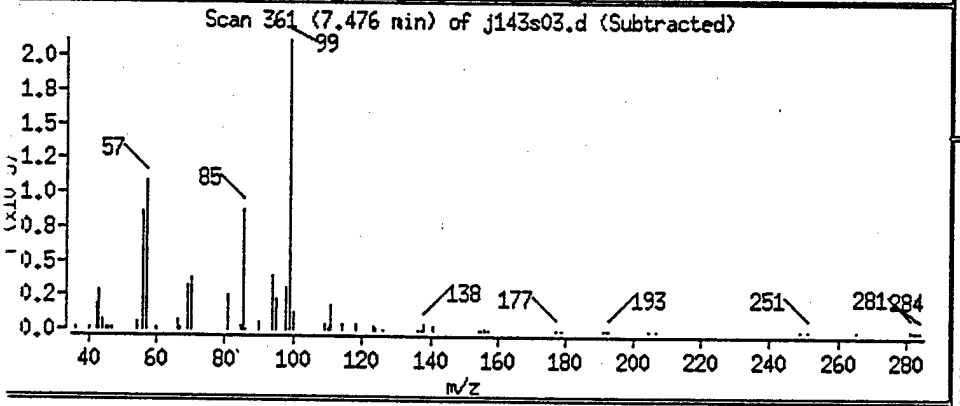
Data File: /chem/j.i/j950523.b/j143s03.d
Date : 23-MAY-1995 12:11
Client ID:
Sample Info: 9505556-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

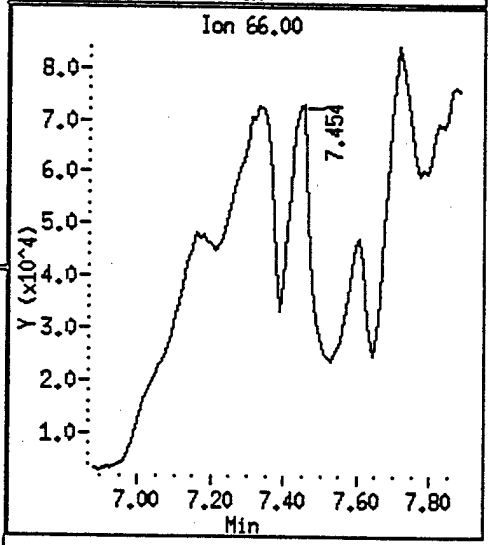
Instrument: j.i
Operator: PC
Column diameter: 0.25

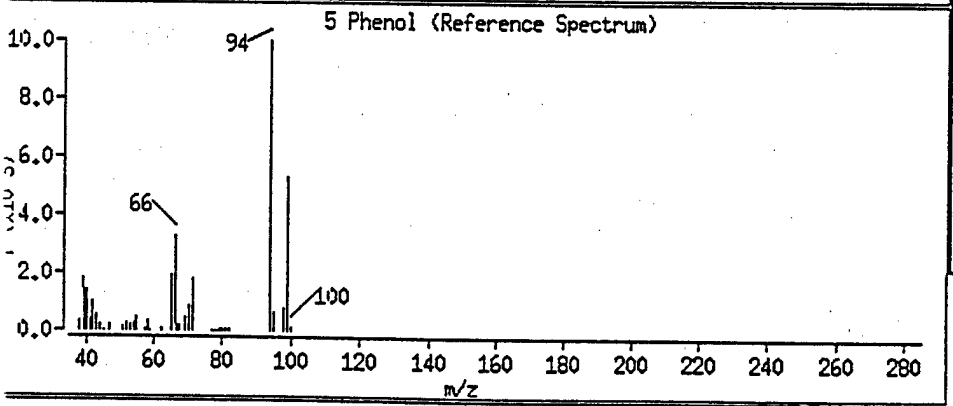
5 Phenol

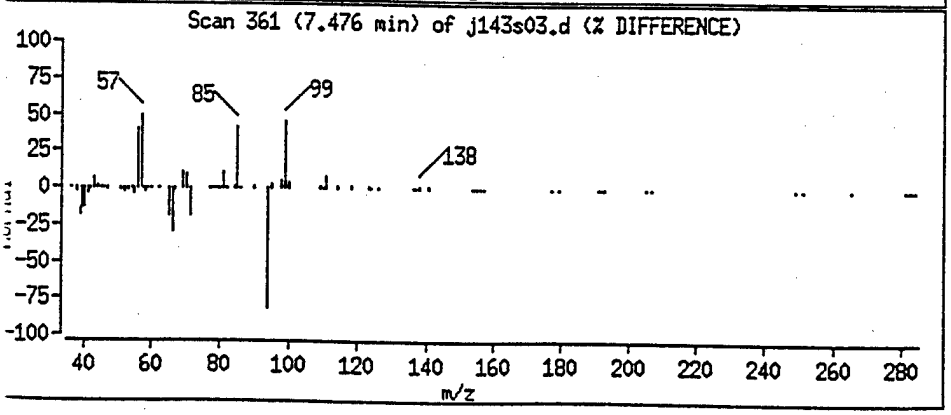






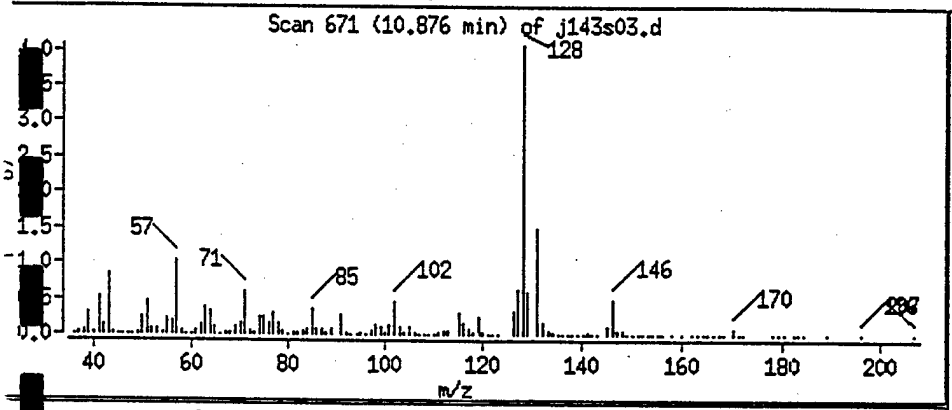


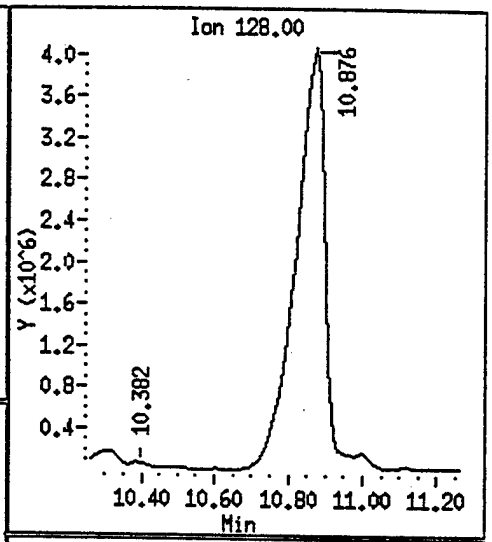


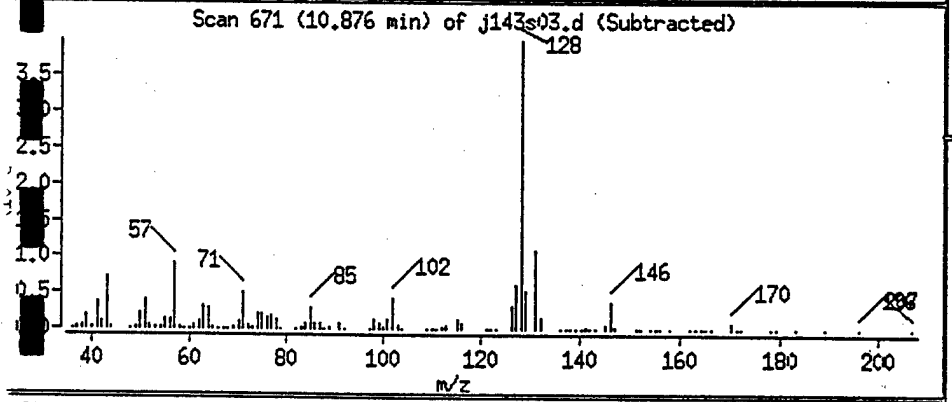


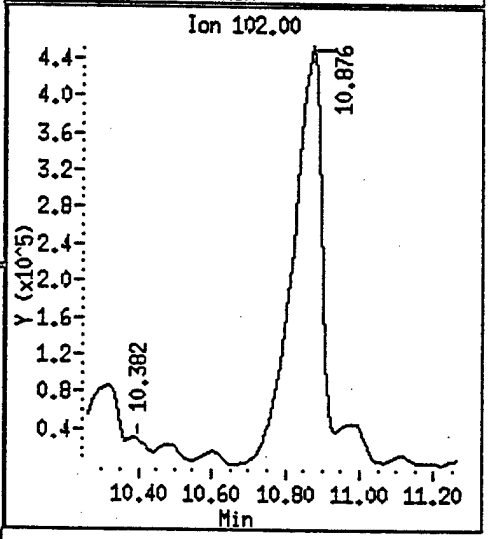
Data File: /chem/j.i/j950523.b/j143s03.d
Date : 23-MAY-1995 12:11
Client ID:
Sample Info: 9505556-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:
Naphthalene

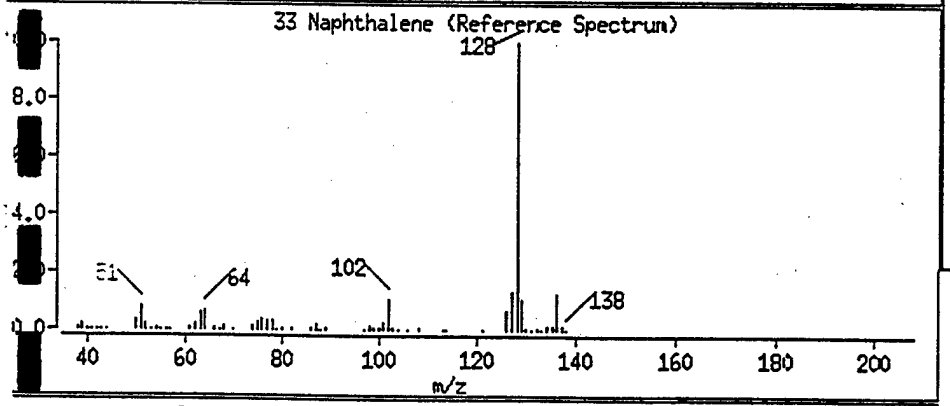
Instrument: j.i
Operator: PC
Column diameter: 0.25

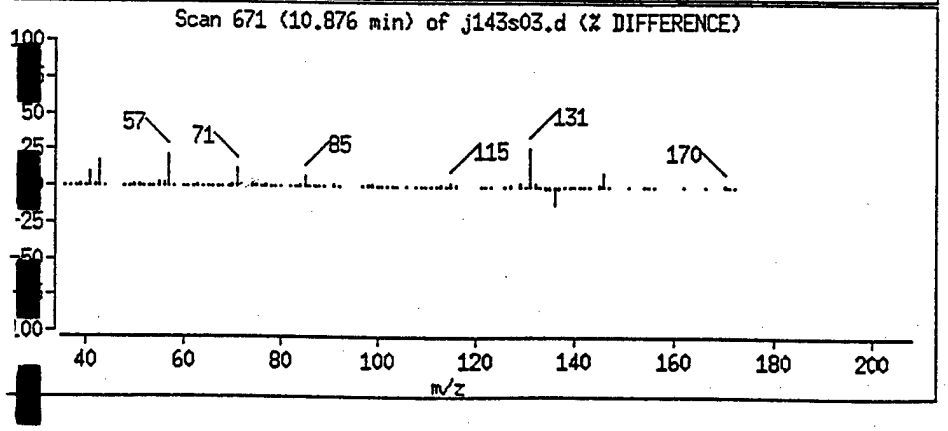








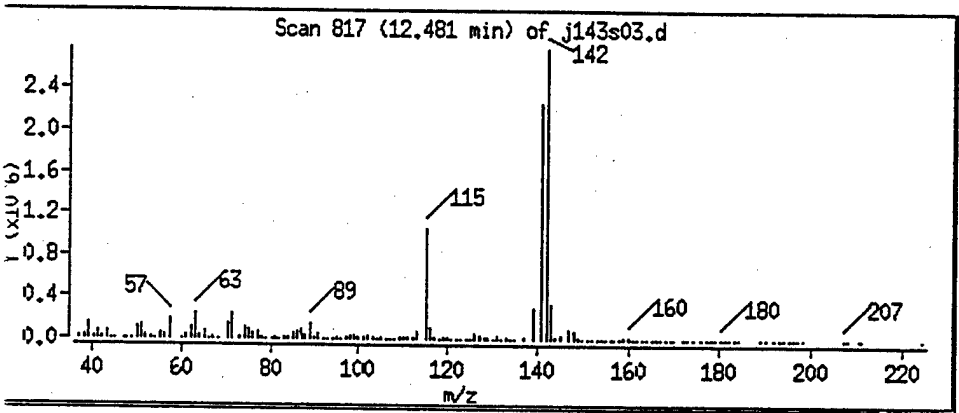


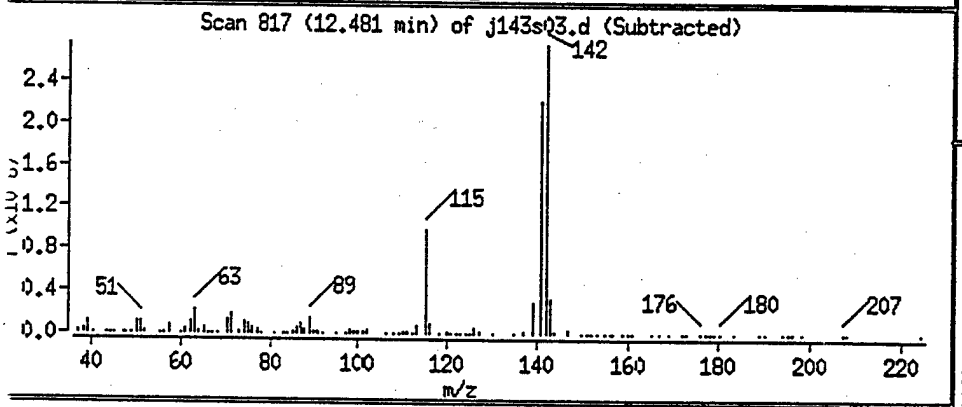


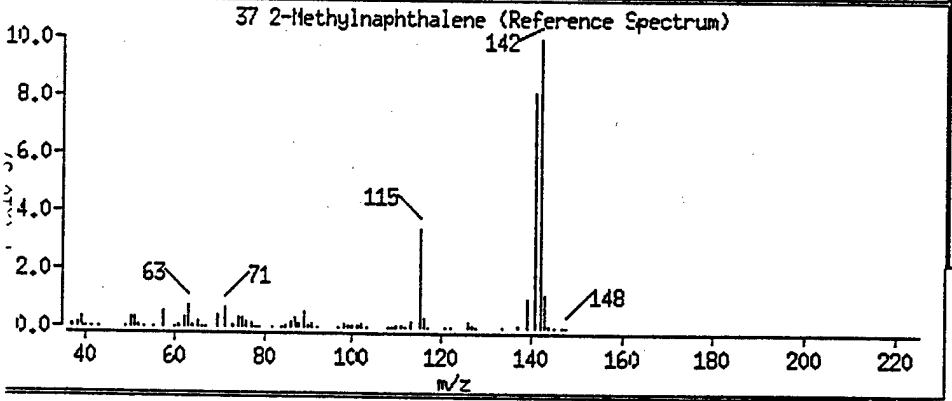
Data File: /chem/j.i/j950523.b/j143s03.d
Date : 23-MAY-1995 12:11
Client ID:
Sample Info: 9505556-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

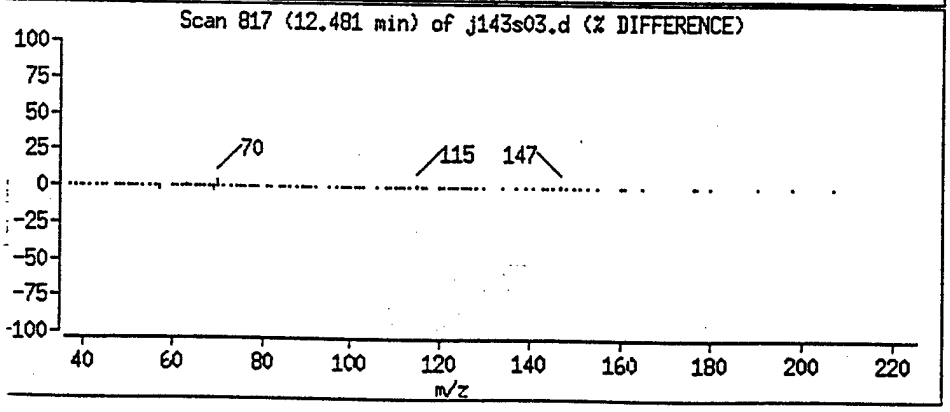
Instrument: j.i
Operator: PC
Column diameter: 0.25

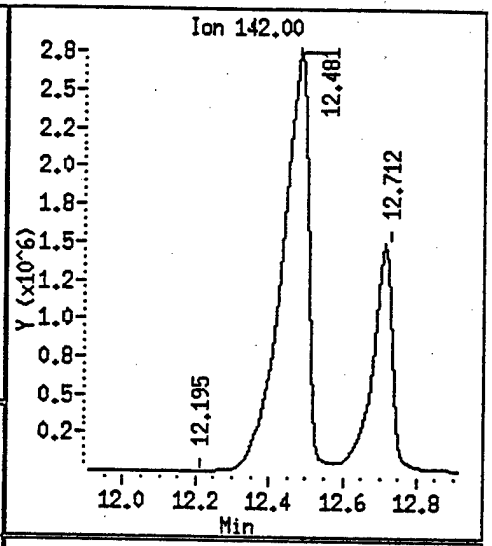
37 2-Methylnaphthalene

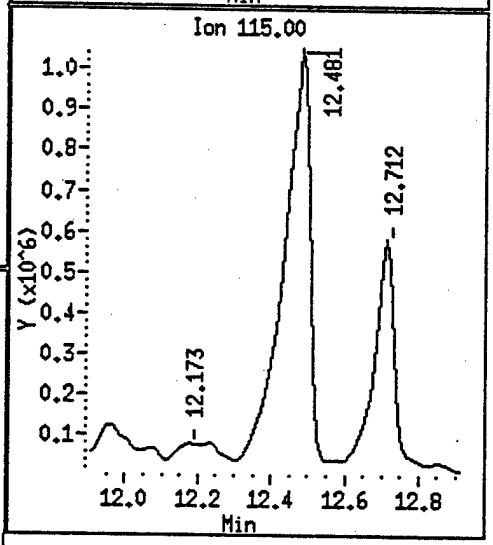












Data File: /chem/j.i/j950523.b/j143s10.d
Report Date: 31-May-1995 15:40

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Data file : /chem/j.i/j950523.b/j143s10.d
Lab Smp Id: 9505576-02B
Inj Date : 23-MAY-1995 17:28
Operator : PC PC
Smp Info : 9505556-02B-8270S/10X
Misc Info : E142S1/H142B02/J143CC1
Comment :
Method : /chem/j.i/j950523.b/jclps.m
Meth Date : 23-May-1995 16:34 patti
Cal Date : 23-MAY-1995 09:08
Cal bottle: 11
Dil Factor: 10.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j143cc1.d

Compound Sublist: 8270.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)	
[redacted]	Naphthalene	128.00	10.774	10.763	(1.004)	1957650	81	14000	PC
37	2-Methylnaphthalene	142.00	12.418	12.410	(1.157)	1197817	71	12000	PC
11	1,4-Dichlorobenzene-d4	152.00	7.950	7.937	(1.000)	269479	40		
[redacted]	Naphthalene-d8	136.00	10.730	10.719	(1.000)	937688	40		
[redacted]	Acenaphthene-d10	164.00	14.978	14.975	(1.000)	621271	40		
65	Phenanthrene-d10	188.00	18.602	18.593	(1.000)	980255	40		
[redacted]	Chrysene-d12	240.00	25.251	25.255	(1.000)	795840	40		
[redacted]	Perylene-d12	264.00	29.709	29.715	(1.000)	515165	40		

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j143s10.d
Lab Smp Id: 9505576-02B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950523.b/jclps.m
Misc Info: E142S1/H142B02/J143CC1

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	309222	154611	618444	269479	-12.85
32 Naphthalene-d8	1160307	580154	2320614	937688	-19.19
48 Acenaphthene-d10	648094	324047	1296188	621271	-4.14
65 Phenanthrene-d10	1005266	502633	2010532	980255	-2.49
76 Chrysene-d12	792658	396329	1585316	795840	0.40
83 Perylene-d12	434959	217480	869918	515165	18.44

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.95	0.17
32 Naphthalene-d8	10.72	10.22	11.22	10.73	0.11
48 Acenaphthene-d10	14.98	14.48	15.48	14.98	0.02
65 Phenanthrene-d10	18.59	18.09	19.09	18.60	0.05
76 Chrysene-d12	25.25	24.75	25.75	25.25	-0.01
83 Perylene-d12	29.71	29.21	30.21	29.71	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

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RECOVERY REPORT

lient Name:
ample Matrix: SOLID
o Smp Id: 9505576-02B
evel: LOW
ata Type: MS DATA
ikeList File: 8270w.spk
ethod File: /chem/j.i/j950523.b/jclps.m
isc Info: E142S1/H142B02/J143CC1

Client SDG: j950523
Fraction: SV

Operator: PC
SampleType: SAMPLE
Quant Type: ISTD

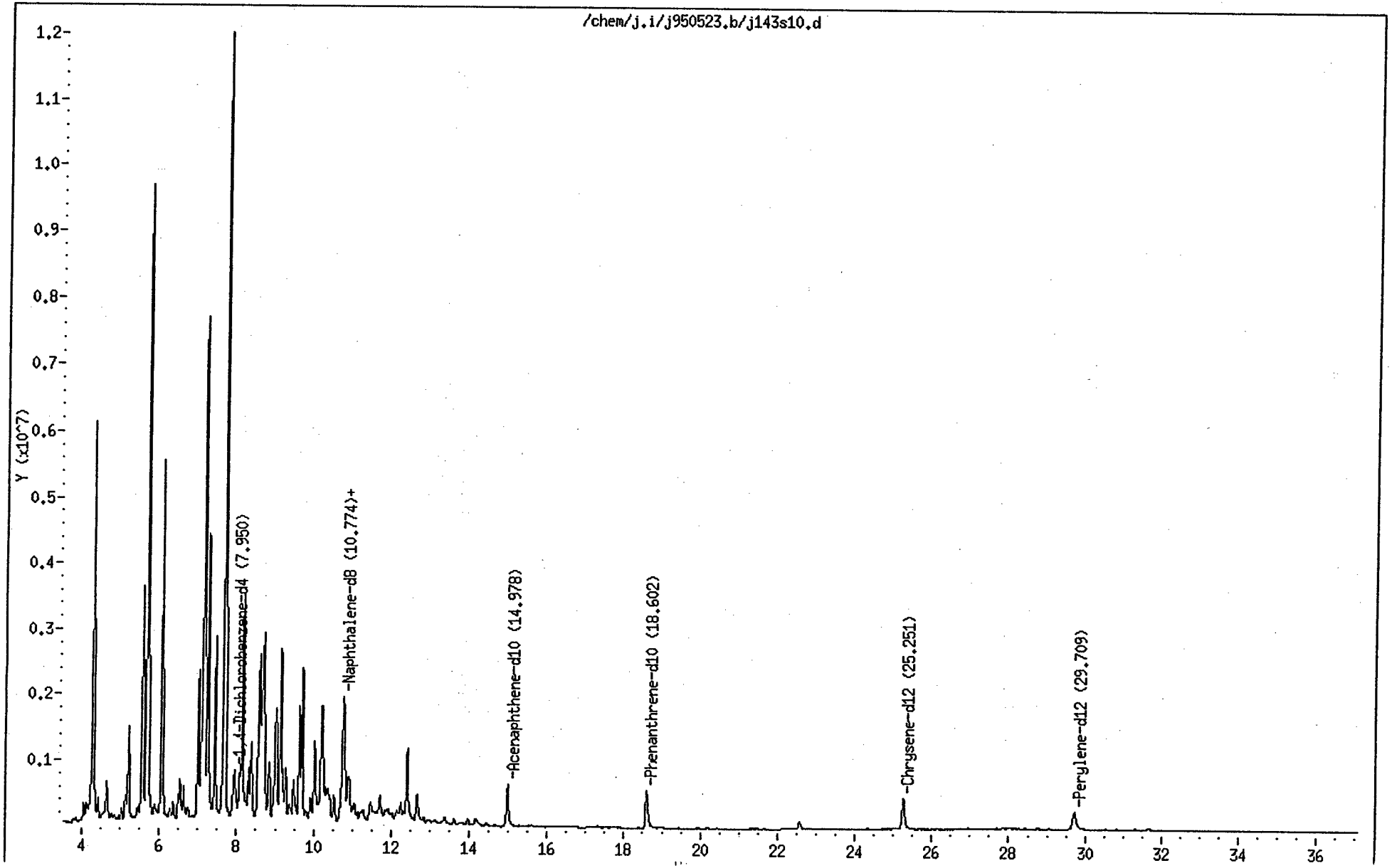
	SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$	23 Nitrobenzene-d5	1600	0.0	*	23-120
$	41 2-Fluorobiphenyl	1600	0.0	*	30-115
$	72 Terphenyl-d14	1600	0.0	*	18-137
$	4 Phenol-d5	2500	0.0	*	24-113
$	3 2-Fluorophenol	2500	0.0	*	25-121
$	61 2,4,6-Tribromophe	2500	0.0	*	19-122

surr were diluted out

Data File: /chem/j.i/j950523.b/j143s10.d
Date : 23-MAY-1995 17:28
Client ID:
Sample Info: 9505556-02B-8270S/10X
Volume Injected (uL): 2.0
Column phase:

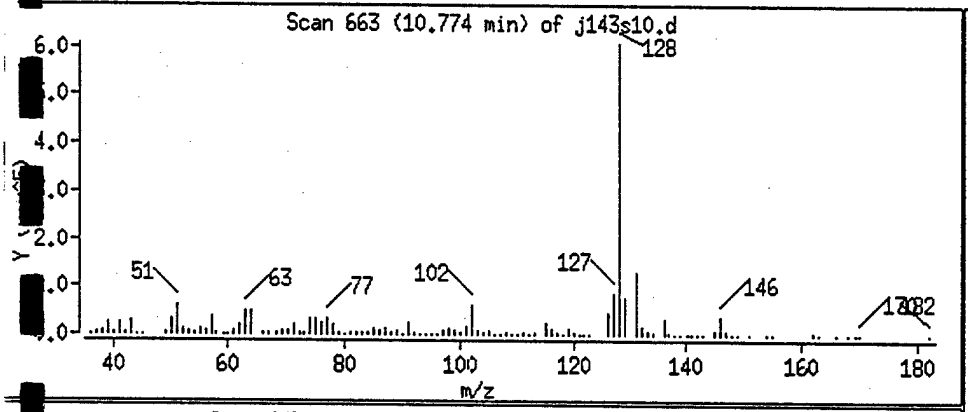
Instrument: j.i

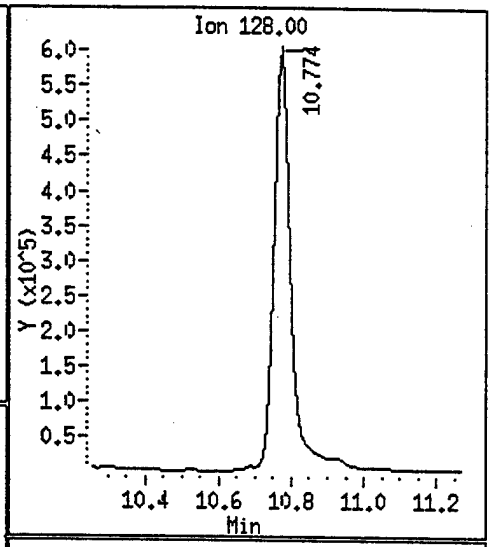
Operator: PC
Column diameter: 0.25

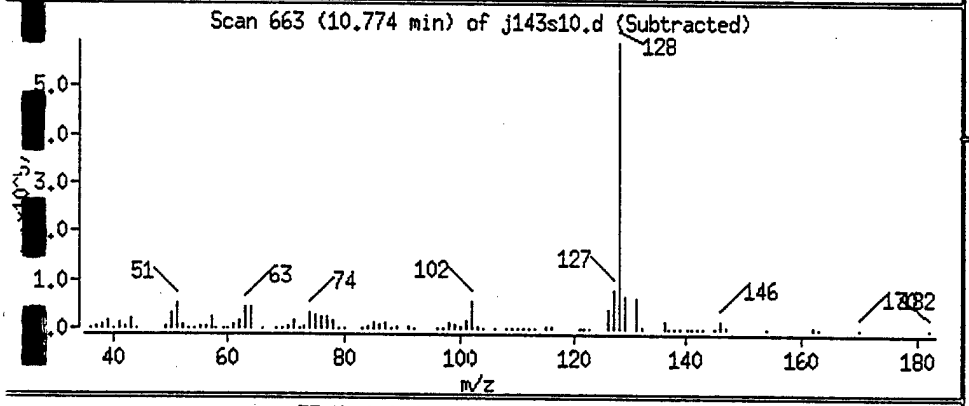


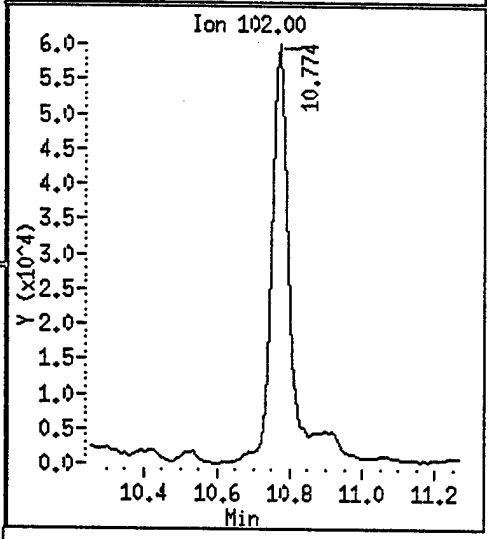
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Date : 23-MAY-1995 17:28
Client ID:
Instrument: j.i
Sample Info: 9505556-02B-8270S/10X
Volume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 0.25

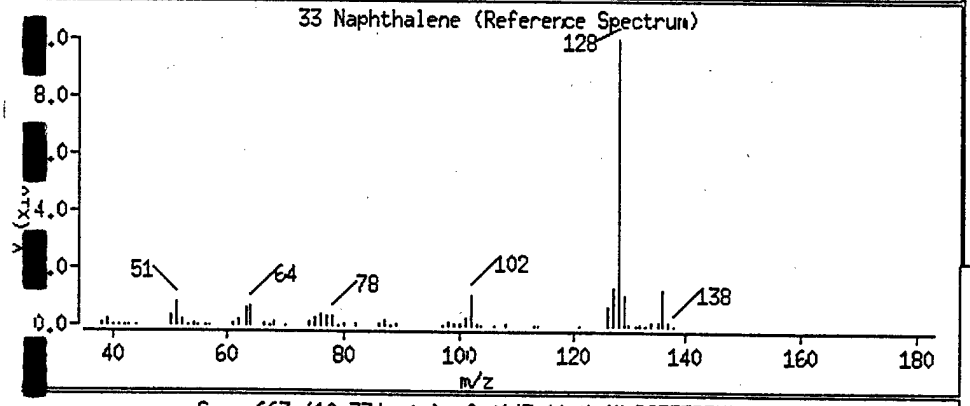
33 Naphthalene

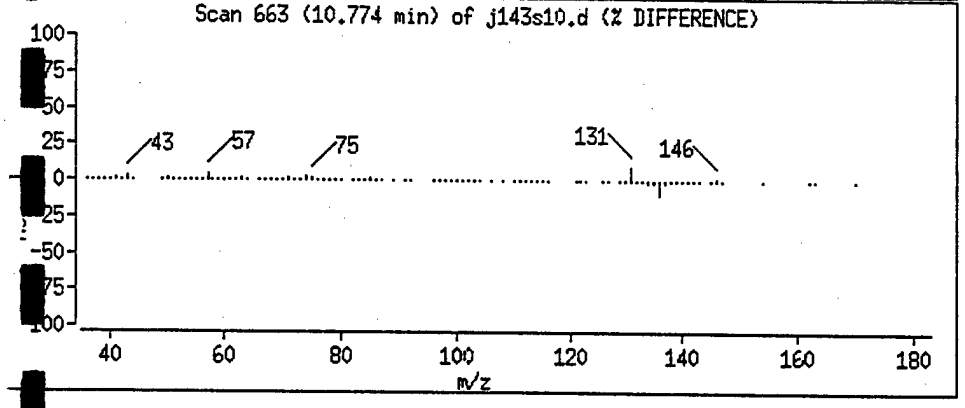








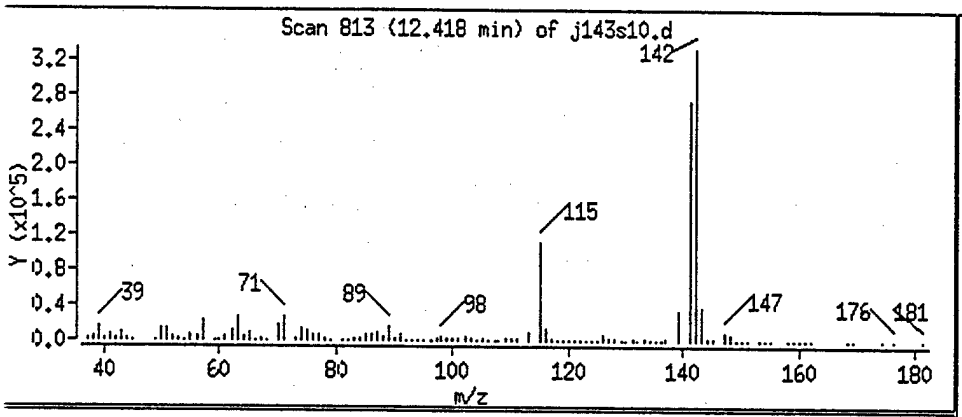


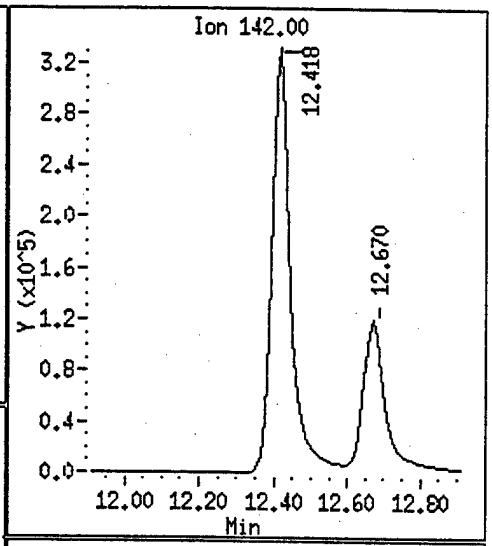


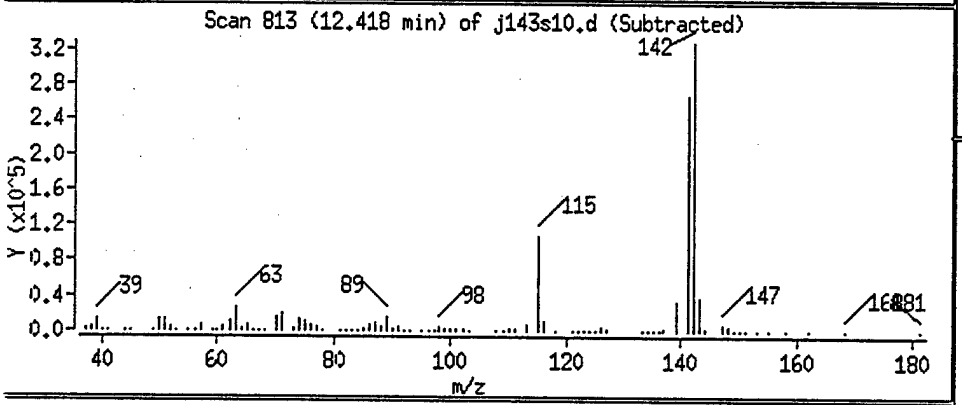
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Date : 23-MAY-1995 17:28
Client ID:
Sample Info: 9505556-02B-8270S/10X
Volume Injected (uL): 2.0
Column phase:

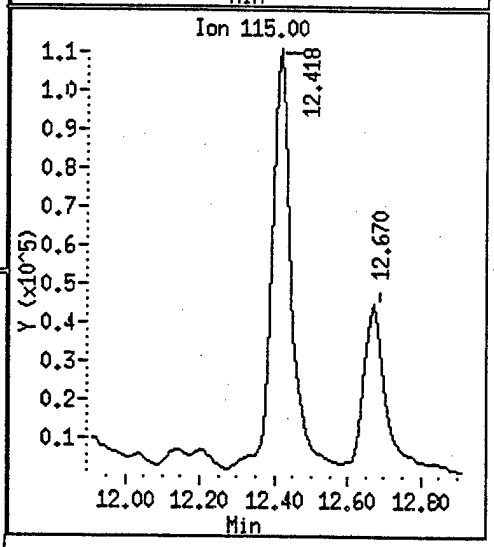
Instrument: j.i
Operator: PC
Column diameter: 0.25

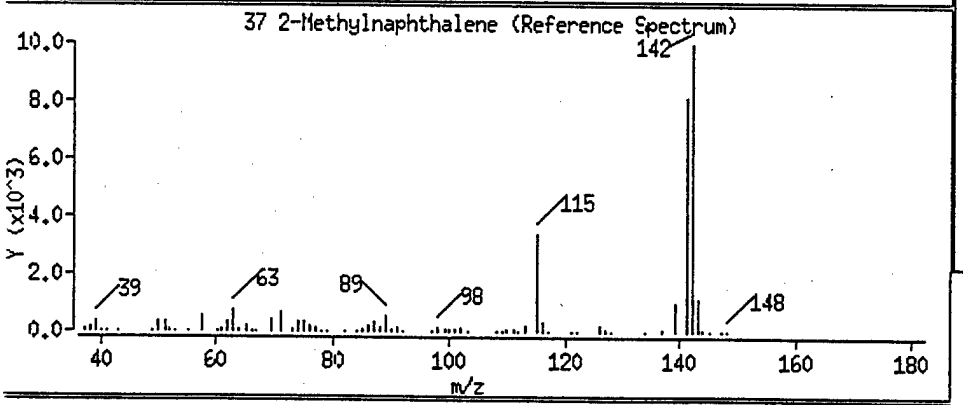
37 2-Methylnaphthalene

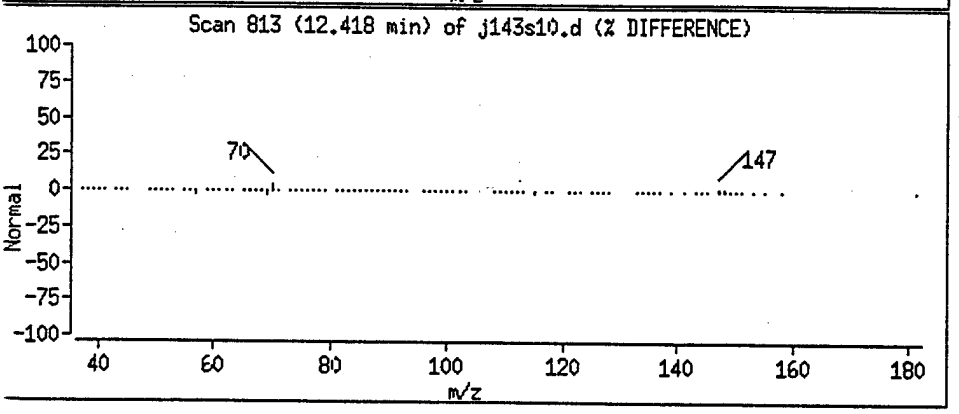












HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 13:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	ND	0.4	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/22/95	6	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/17/95	10	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	21	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 13:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/19/95	05/19/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/19/95	05/19/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/20/95	1.7	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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San Antonio, TX 78229
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05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 13:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	25000	ug/Kg
Benzene	1700	1200	ug/Kg
Bromodichloromethane	ND	1200	ug/Kg
Bromoform	ND	1200	ug/Kg
Bromomethane	ND	2500	ug/Kg
2-Butanone	ND	5000	ug/Kg
Carbon Disulfide	ND	1200	ug/Kg
Carbon Tetrachloride	ND	1200	ug/Kg
Chlorobenzene	ND	1200	ug/Kg
Chloroethane	ND	2500	ug/Kg
2-Chloroethylvinylether	ND	2500	ug/Kg
Chloroform	ND	1200	ug/Kg
Chloromethane	ND	2500	ug/Kg
Dibromochloromethane	ND	1200	ug/Kg
1,1-Dichloroethane	ND	1200	ug/Kg
1,1-Dichloroethene	ND	1200	ug/Kg
1,2-Dichloroethane	ND	1200	ug/Kg
total-1,2-Dichloroethene	ND	1200	ug/Kg
1,2-Dichloropropane	ND	1200	ug/Kg
cis-1,3-Dichloropropene	ND	1200	ug/Kg
trans-1,3-Dichloropropene	ND	1200	ug/Kg
Ethylbenzene	9700	1200	ug/Kg
2-Hexanone	ND	2500	ug/Kg
Methylene Chloride	ND	1200	ug/Kg
4-Methyl-2-Pentanone	ND	2500	ug/Kg
Styrene	ND	1200	ug/Kg
1,1,2,2-Tetrachloroethane	ND	1200	ug/Kg
Tetrachloroethene	ND	1200	ug/Kg
Toluene	26000	1200	ug/Kg
1,1,1-Trichloroethane	ND	1200	ug/Kg
1,1,2-Trichloroethane	ND	1200	ug/Kg
Trichloroethene	ND	1200	ug/Kg
Trichlorofluoromethane	ND	1200	ug/Kg
Vinyl Acetate	ND	2500	ug/Kg
Vinyl Chloride	ND	2500	ug/Kg
Xylenes (total)	52000	1200	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-03

Operational Tech

SAMPLE ID: 025-002-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	104	70	121
Toluene-d8	50 ug/Kg	104	84	138
4-Bromofluorobenzene	50 ug/Kg	102	59	113

ANALYZED BY: JC DATE/TIME: 05/19/95 12:33:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505556-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-002-BH 11.5-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 13:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-03

Operational Tech

SAMPLE ID: 025-002-BH 11.5-12'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	2300	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	2100	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-03

Operational Tech

SAMPLE ID: 025-002-BH 11.5-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	95	23	120
2-Fluorobiphenyl	1600 ug/Kg	87	30	115
Terphenyl-d14	1600 ug/Kg	88	18	137
Phenol-d5	2500 ug/Kg	97	24	113
2-Fluorophenol	2500 ug/Kg	117	25	121
2,4,6-Tribromophenol	2500 ug/Kg	82	19	122

ANALYZED BY: PC DATE/TIME: 05/23/95 12:57:00
EXTRACTED BY: JK DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950519.b/l139s02.d
Lab Smp Id:
Inj Date : 19-MAY-1995 12:33
Operator : JC Inst ID: l.i
Smp Info : 9505556-03A-8240S/250X
Misc Info : L139W1/L139B01/L139CW1
Comment :
Method : /chem/l.i/l950519.b/lvoclpw.m
Meth Date : 22-May-1995 15:34 jimmy Quant Type: ISTD
Cal Date : 19-MAY-1995 09:41 Cal File: l139cw1.d
Als bottle: 8
Dil Factor: 250.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	30 Benzene	78.00	6.475	6.474	(0.933)	66198	34	1700
	44 Toluene	92.00	9.257	9.255	(0.834)	553440	520	26000
M	53 Xylene (Total)	106.00				752289	1000	52000
	54 Ethylbenzene	106.00	11.449	11.448	(1.031)	112632	190	9700
	55 m,p-Xylene(s)	106.00	11.619	11.617	(1.047)	546792	760	38000
	59 o-Xylene	106.00	12.145	12.143	(1.094)	205497	280	14000
*	23 Bromochloromethane	128.00	5.236	5.226	(1.000)	61960	250	
*	32 1,4-Difluorobenzene	114.00	6.939	6.938	(1.000)	362095	250	
*	50 Chlorobenzene-d5	117.00	11.102	11.100	(1.000)	285146	250	
$	26 1,2-Dichloroethane-d4	102.00	6.003	6.002	(1.146)	27400	260	52
$	43 Toluene-d8	98.00	9.159	9.157	(0.825)	403766	260	52
$	61 Bromofluorobenzene	95.00	12.778	12.776	(1.151)	151651	260	51

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l139s02.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950519.b/lvoclpw.m
Misc Info: L139W1/L139B01/L139CW1

Calibration Date: 05/19/95
Calibration Time: 0941

Level: LOW
Sample Type: SOIL

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65811	32906	131622	61960	-5.85
32 1,4-Difluorobenzene	366990	183495	733980	362095	-1.33
50 Chlorobenzene-d5	287816	143908	575632	285146	-0.93

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.23	4.73	5.73	5.24	0.20
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.02
50 Chlorobenzene-d5	11.10	10.60	11.60	11.10	0.01

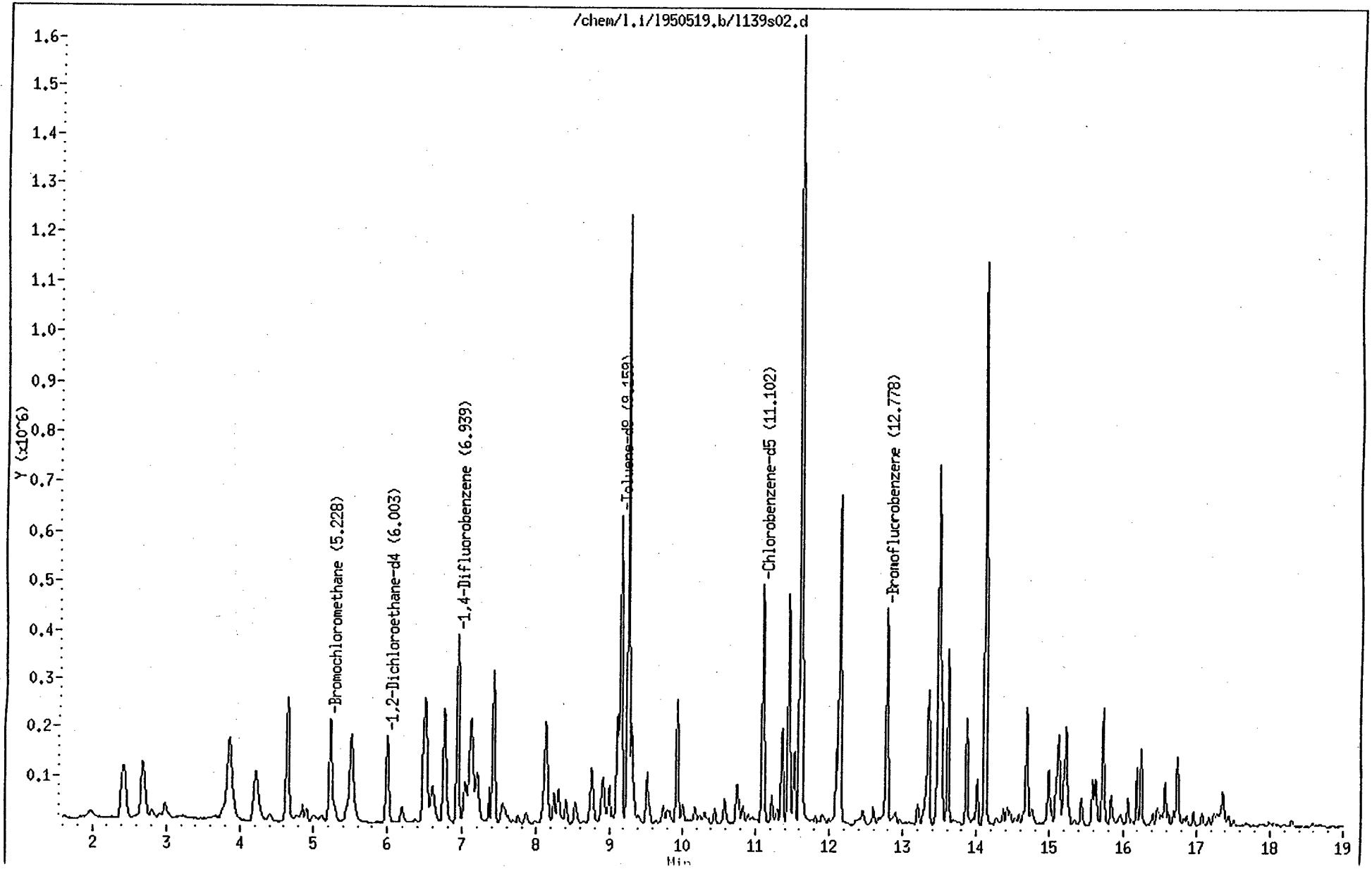
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950519.b/1139s02.d
Date : 19-MAY-1995 12:33
Client ID:
Sample Info: 9505556-03A-8240S/250X

Instrument: 1.i

Operator: JC
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



[redacted]

Data File: /chem/l.i/1950519.b/1139s02.d

Date : 19-MAY-1995 12:33

Client ID:

Instrument: l.i

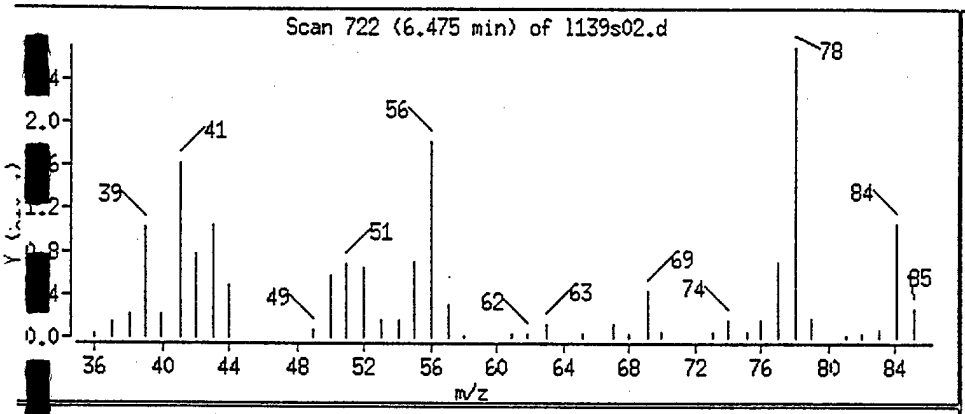
Sample Info: 9505556-03A-8240S/250X

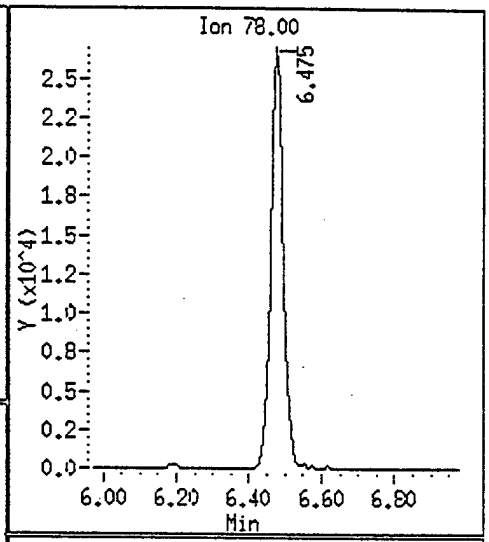
Operator: JC

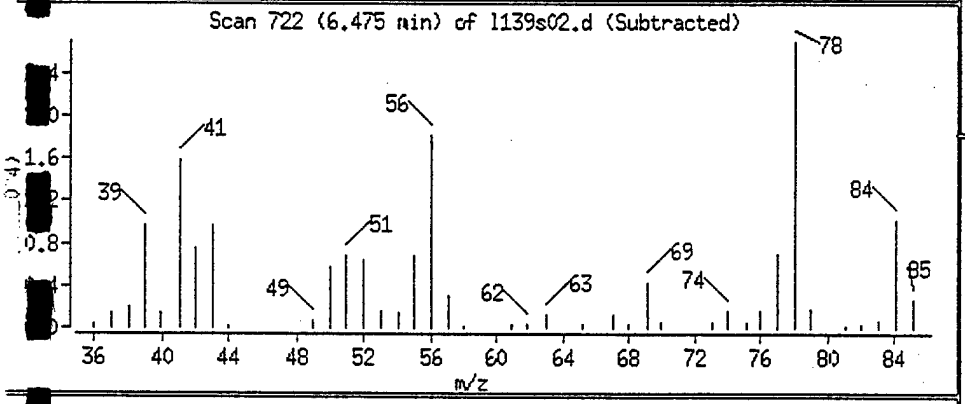
Column phase: 30m,hp5ms,0.25u df

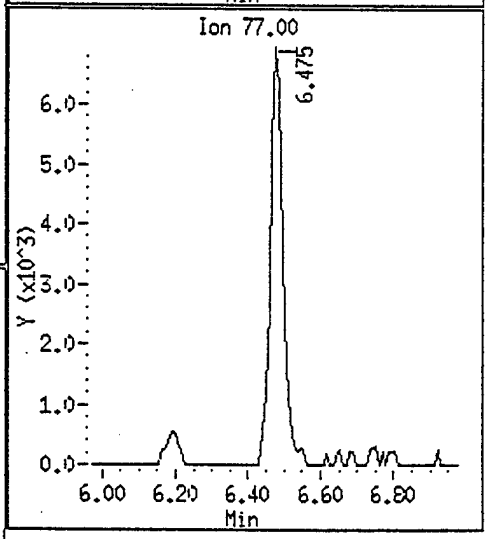
Column diameter: 0.25

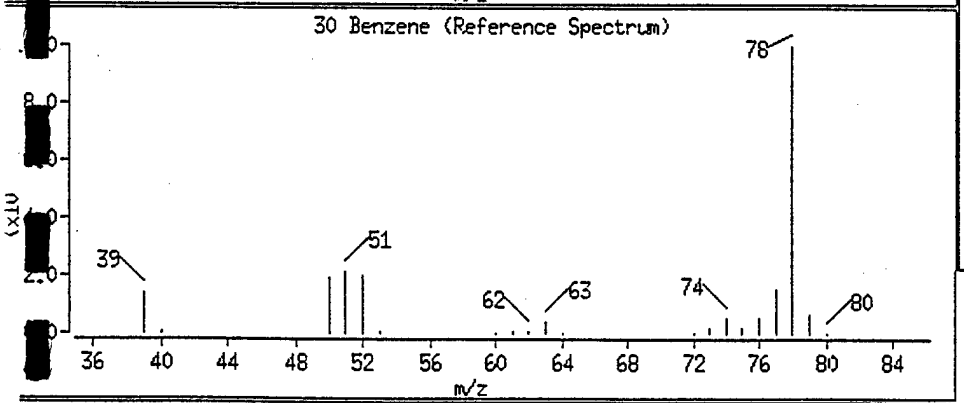
30 Benzene

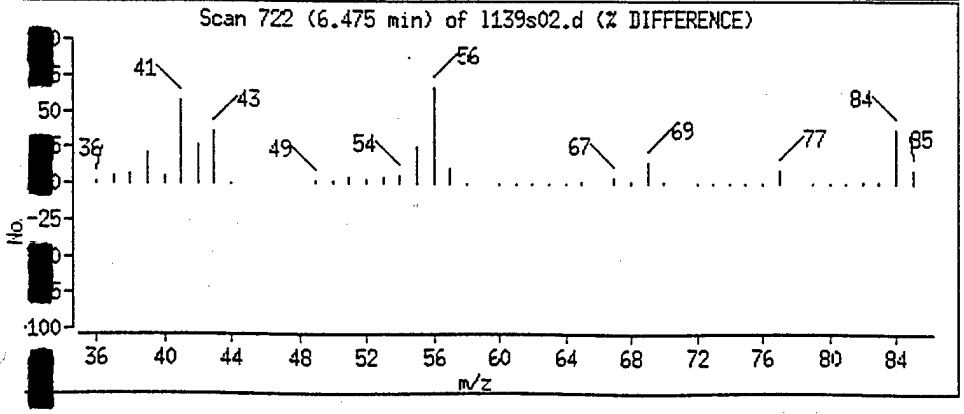












Data File: /chem/1.i/1950519.b/1139s02.d

Date : 19-MAY-1995 12:33

Client ID:

Instrument: 1.i

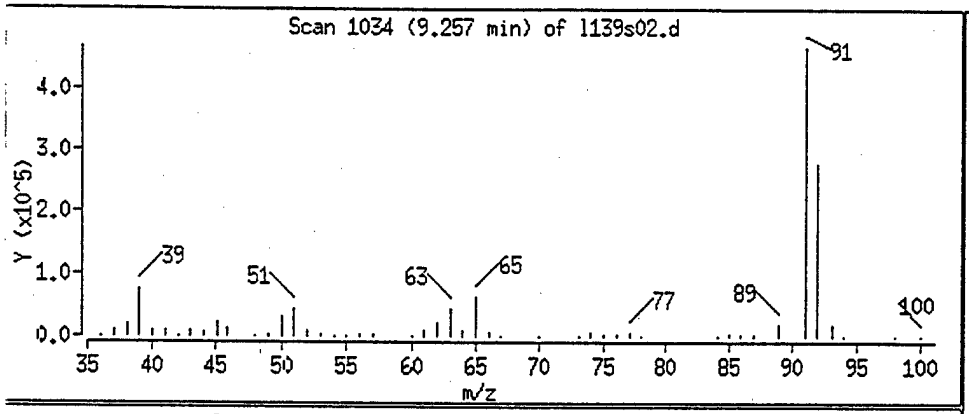
Sample Info: 9505556-03A-8240S/250X

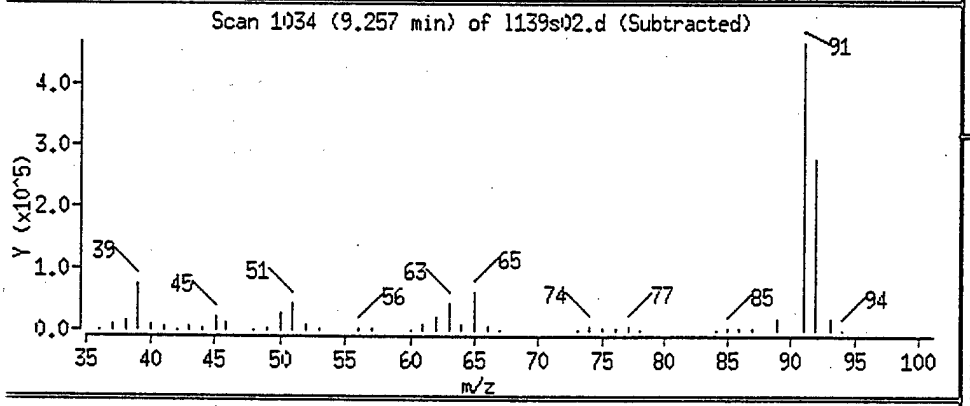
Operator: JC

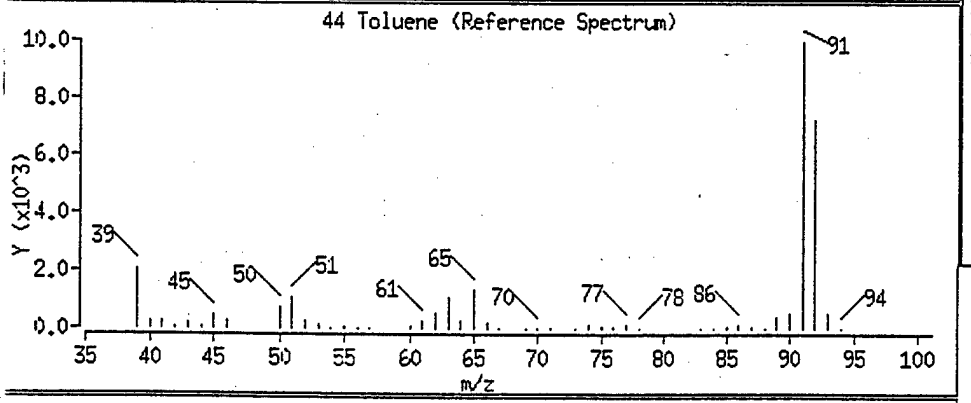
Column phase: 30m,hp5ms,0.25u df

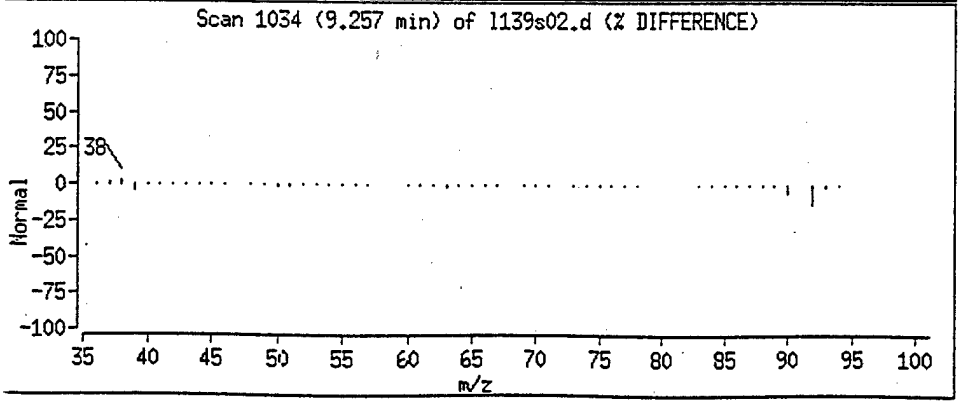
Column diameter: 0.25

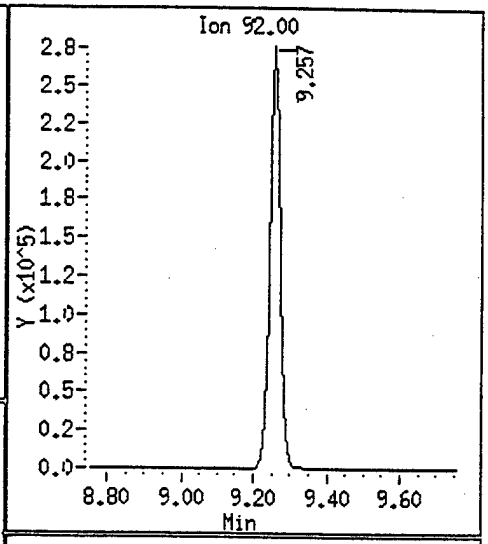
44 Toluene

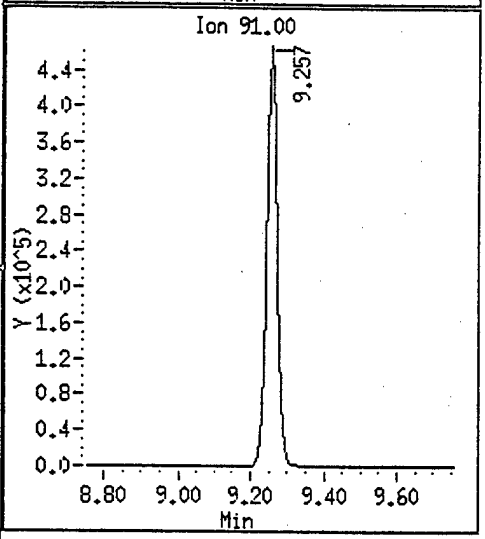












[redacted]

Data File: /chem/1.i/1950519.b/1139s02.d

Date : 19-MAY-1995 12:33

Client ID:

Instrument: 1.i

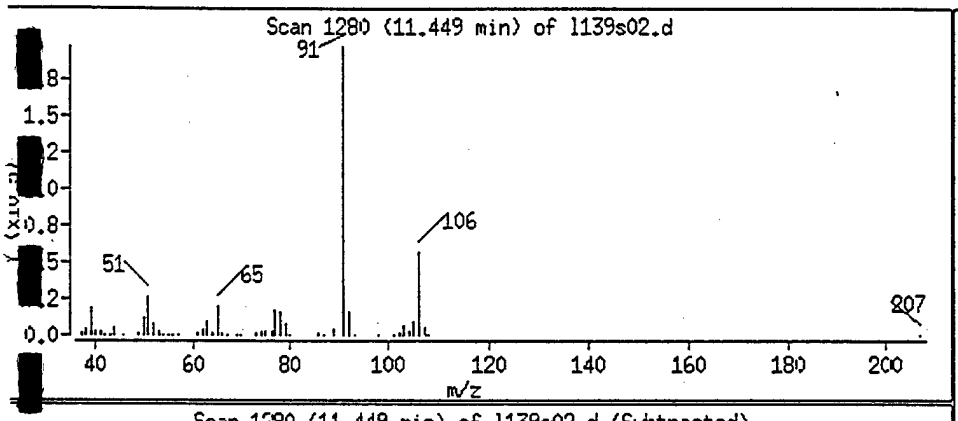
Sample Info: 9505556-03A-8240S/250X

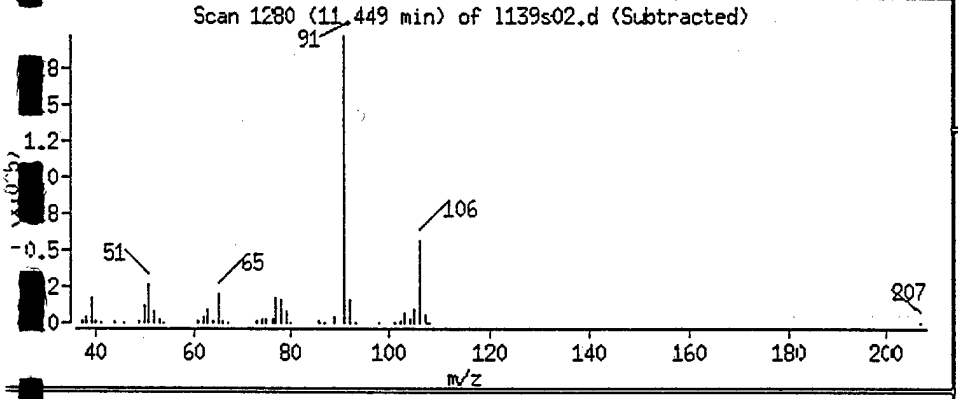
Operator: JC

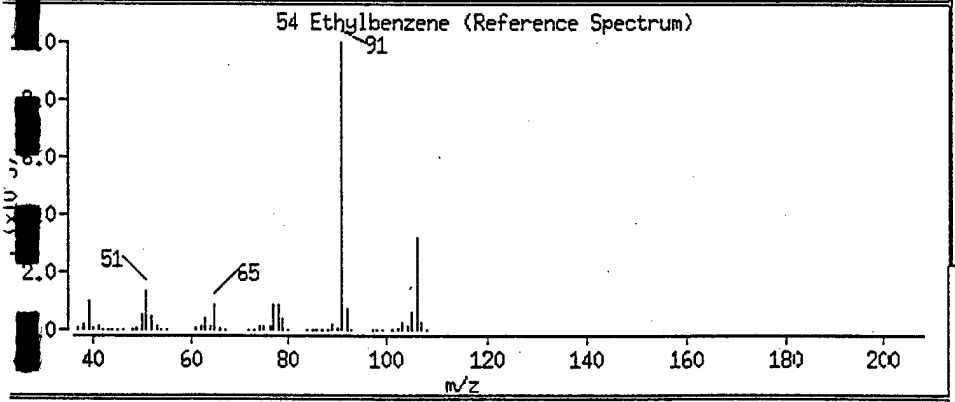
Column phase: 30m,hp5ms,0.25u df

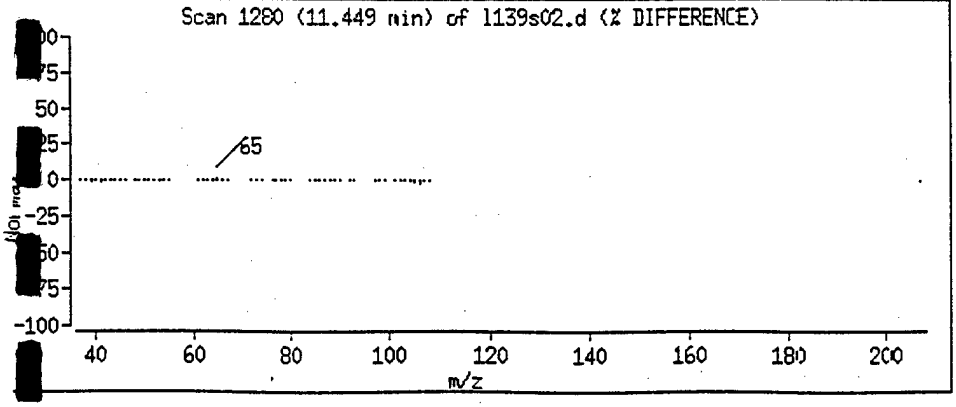
Column diameter: 0.25

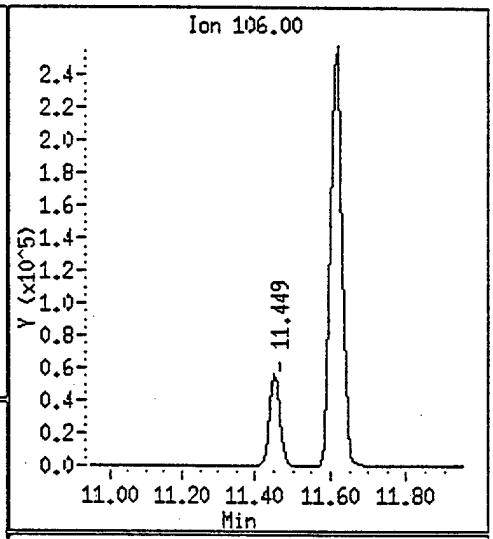
54 Ethylbenzene

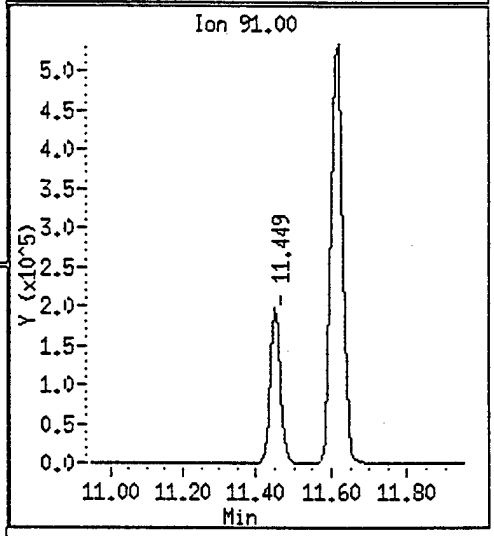












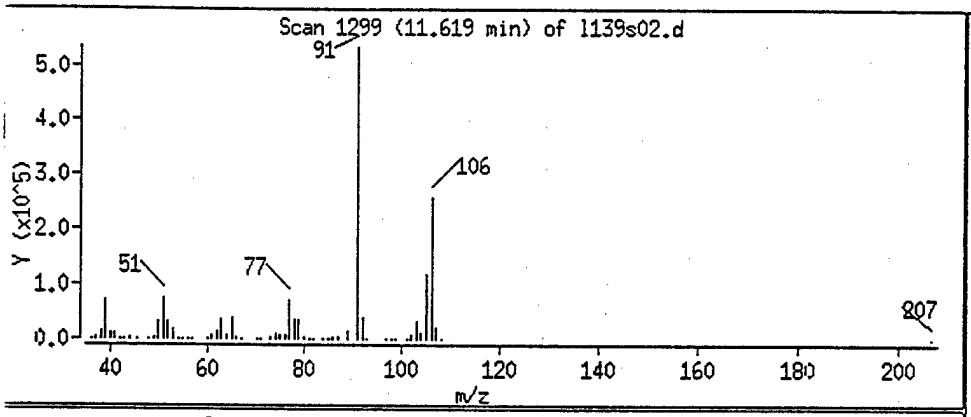
Data File: /chem/l.i/1950519.b/l139s02.d
Date : 19-MAY-1995 12:33
Client ID:
Sample Info: 9505556-03A-8240S/250X

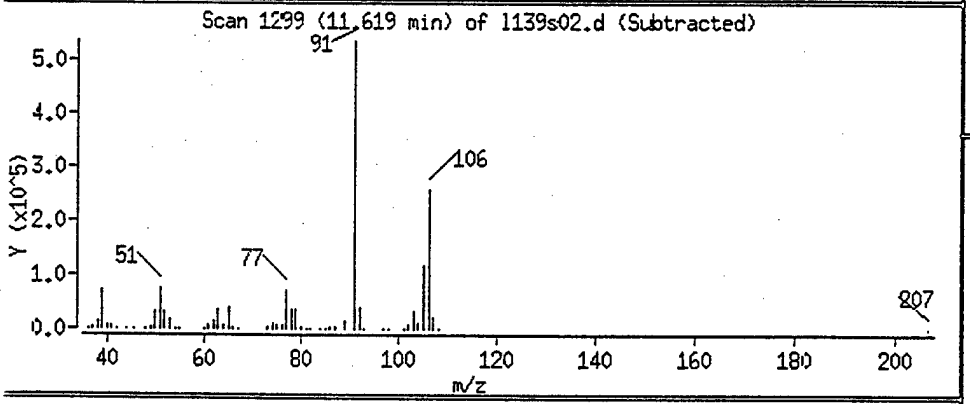
Instrument: l.i

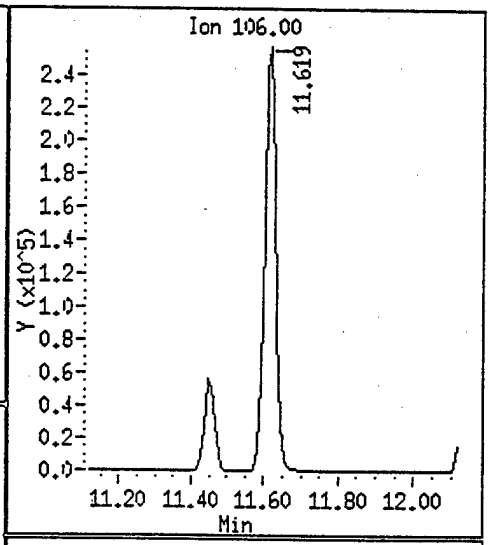
Operator: JC
Column diameter: 0.25

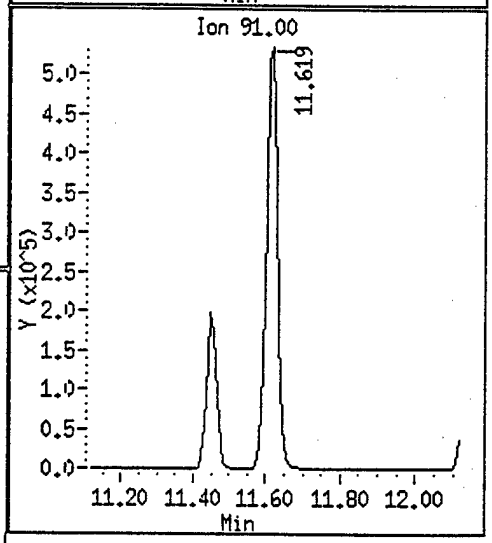
Column phase: 30m,hp5ms,0.25u df

55 m,p-Xylene(s)









Data File: /chem/1.i/1950519.b/1139s02.d

Date : 19-MAY-1995 12:33

Client ID:

Instrument: 1.i

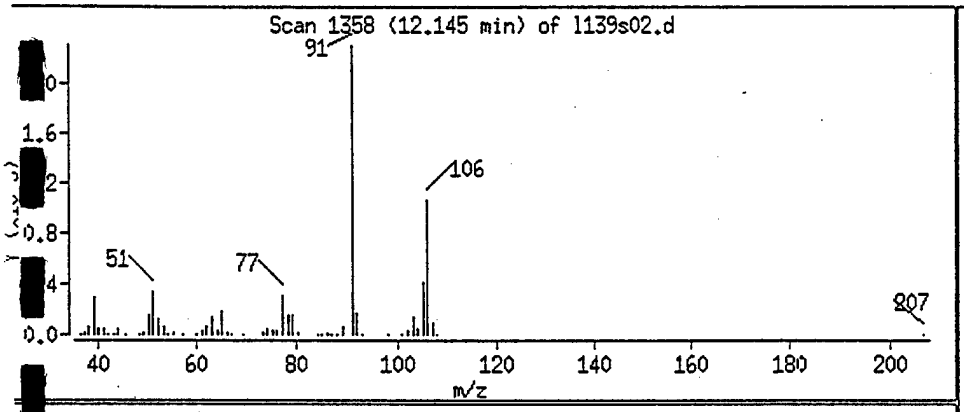
Sample Info: 9505556-03A-8240S/250X

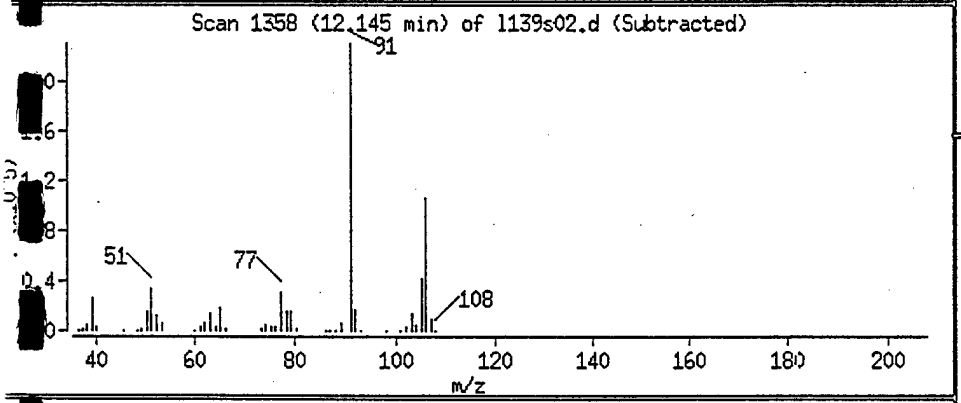
Operator: JC

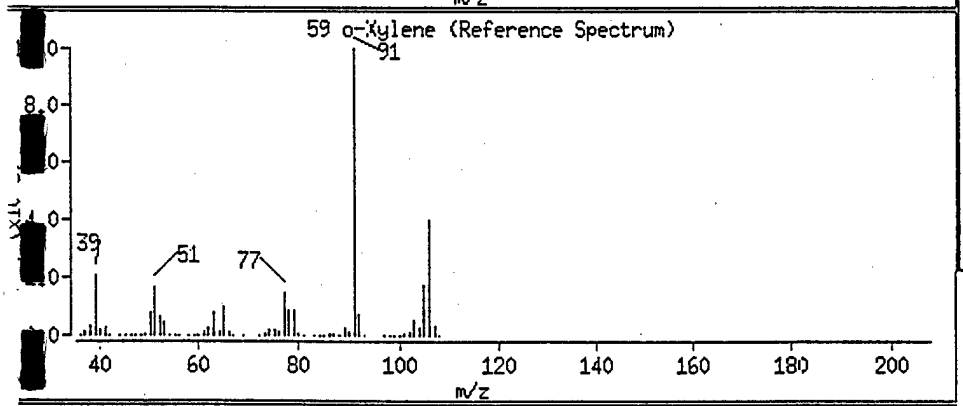
Column phase: 30m,hp5ms,0.25u df

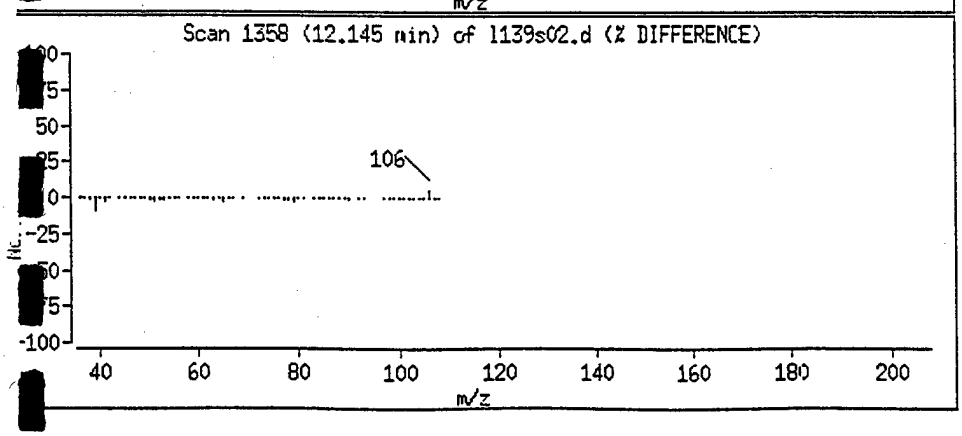
Column diameter: 0.25

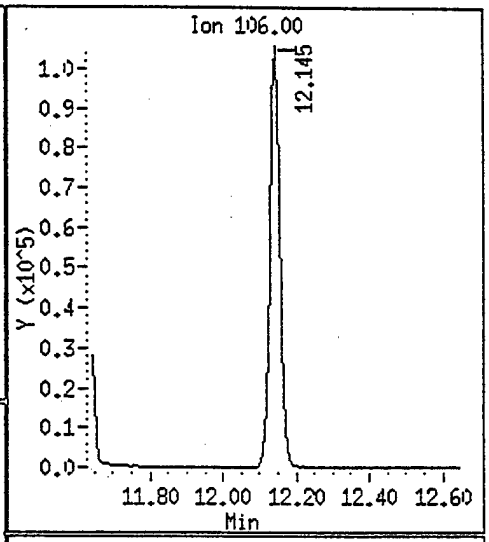
o-Xylene

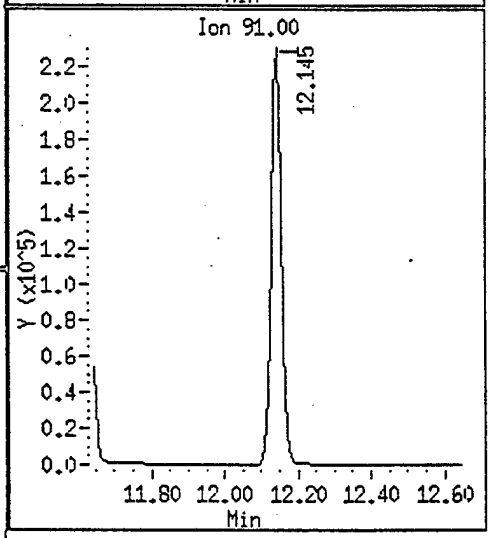












SPL Houston Labs

Data file : /chem/j.i/j950523.b/j143s04.d
Lab Smp Id: 9505556-03B
Inj Date : 23-MAY-1995 12:57
Operator : PC PC
Inst ID: j.i
Smp Info : 9505556-03B-8270S/1X
Misc Info : E142S1/H142B02/J143CC1
Comment :
Method : /chem/j.i/j950523.b/jclps.m
Meth Date : 23-May-1995 13:29 patti
Quant Type: ISTD
Cal Date : 23-MAY-1995 09:08
Cal File: j143cc1.d
Als bottle: 5
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
33 Naphthalene	128.00	10.769	10.763	(1.005)	3576009	120	2100	PC
37 2-Methylnaphthalene	142.00	12.415	12.410	(1.159)	2850525	140	2300	PC
11 1,4-Dichlorobenzene-d4	152.00	7.941	7.937	(1.000)	339856	40		
32 Naphthalene-d8	136.00	10.714	10.719	(1.000)	1119203	40		
48 Acenaphthene-d10	164.00	14.972	14.975	(1.000)	648144	40		
65 Phenanthrene-d10	188.00	18.591	18.593	(1.000)	999110	40		
76 Chrysene-d12	240.00	25.251	25.255	(1.000)	769119	40		
83 Perylene-d12	264.00	29.695	29.715	(1.000)	491277	40		
23 Nitrobenzene-d5	82.00	9.157	9.149	(0.855)	947546	91	1500	
41 2-Fluorobiphenyl	172.00	13.348	13.359	(0.892)	1792792	84	1400	
72 Terphenyl-d14	244.00	22.556	22.563	(0.893)	1627839	85	1400	
4 Phenol-d5	99.00	7.339	7.336	(0.924)	1711311	140	2400	
3 2-Fluorophenol	112.00	5.732	5.737	(0.722)	1355558	180	2900 (Q)	
61 2,4,6-Tribromophenol	329.70	16.957	16.954	(0.912)	366900	120	2000	

PC Flag Legend

Q - Qualifier signal failed the ratio test.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

trument ID: j.i
File ID: j143s04.d
ab Smp Id: 9505556-03B
lysis Type: SV
nt Type: ISTD
perator: PC
thod File: /chem/j.i/j950523.b/jclps.m
c Info: E142S1/H142B02/J143CC1

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

OMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	309222	154611	618444	339856	9.91
2 Naphthalene-d8	1160307	580154	2320614	1119203	-3.54
48 Acenaphthene-d10	648094	324047	1296188	648144	0.01
65 Phenanthrene-d10	1005266	502633	2010532	999110	-0.61
6 Chrysene-d12	792658	396329	1585316	769119	-2.97
3 Perylene-d12	434959	217480	869918	491277	12.95

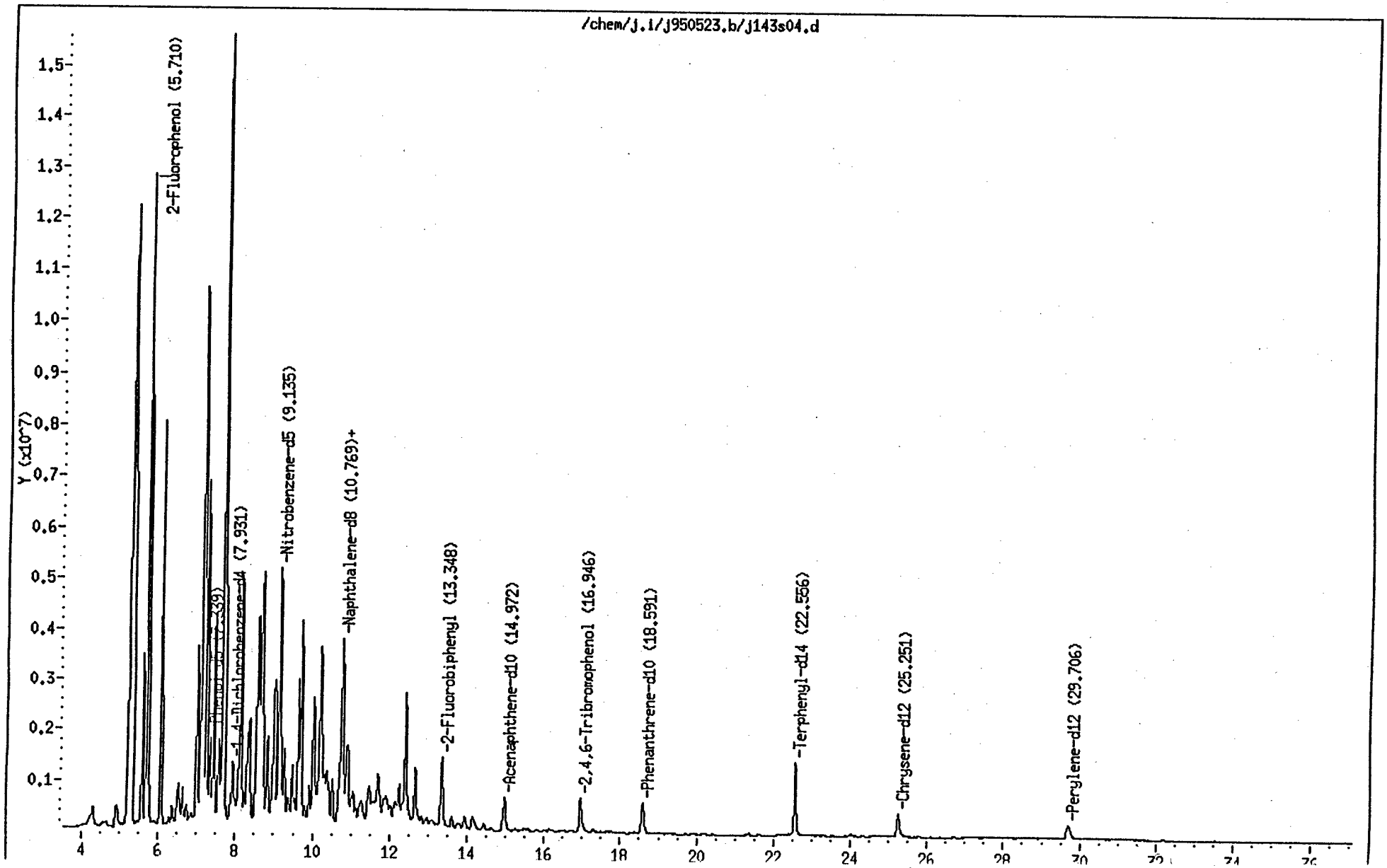
OMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.94	0.06
2 Naphthalene-d8	10.72	10.22	11.22	10.71	-0.05
8 Acenaphthene-d10	14.98	14.48	15.48	14.97	-0.02
65 Phenanthrene-d10	18.59	18.09	19.09	18.59	-0.01
6 Chrysene-d12	25.25	24.75	25.75	25.25	-0.01
3 Perylene-d12	29.71	29.21	30.21	29.69	-0.07

EA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950523.b/j143s04.d
Date : 23-MAY-1995 12:57
Client ID:
Sample Info: 9505556-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

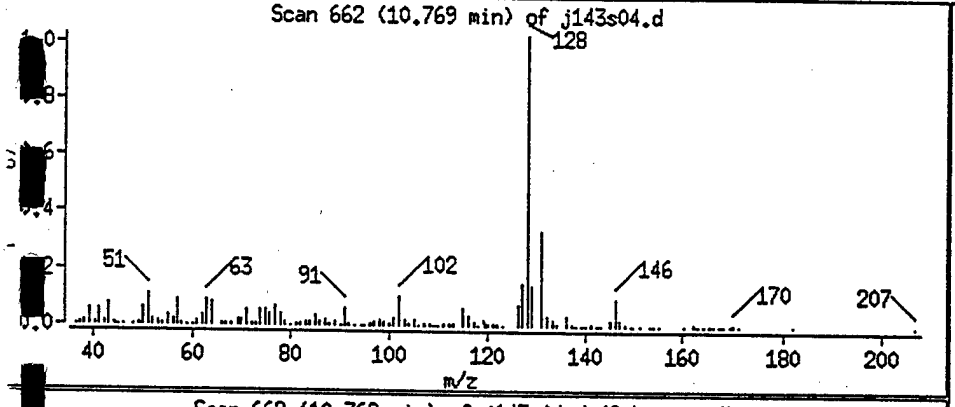
Instrument: j.i

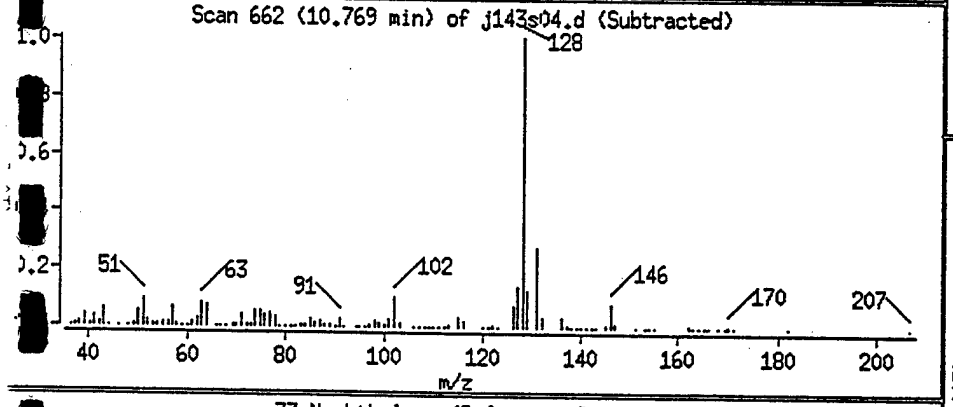
Operator: PC
Column diameter: 0.25

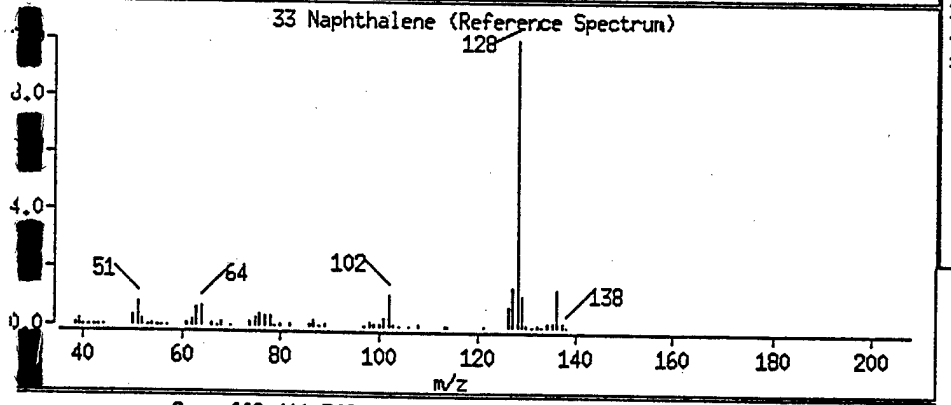


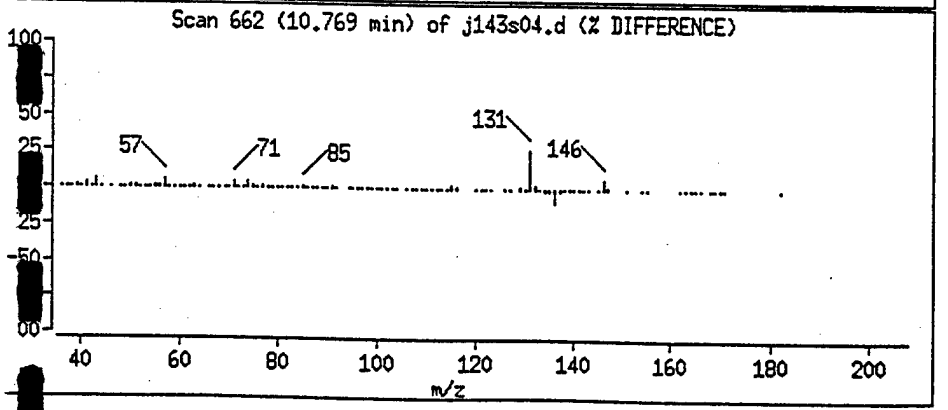
Data File: /chem/j.i/j950523.b/j143s04.d
Date : 23-MAY-1995 12:57
Client ID:
Sample Info: 9505556-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:
Naphthalene

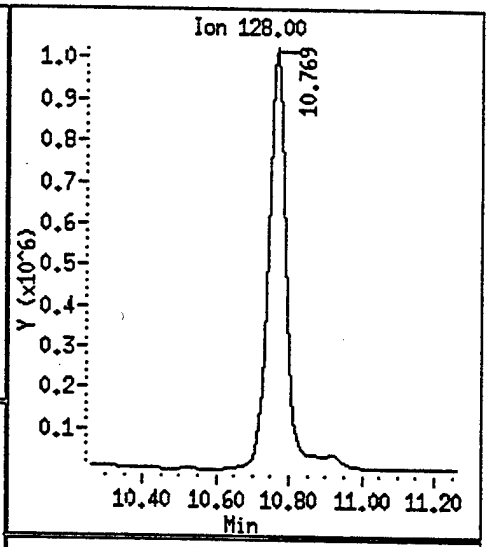
Instrument: j.i
Operator: PC
Column diameter: 0.25

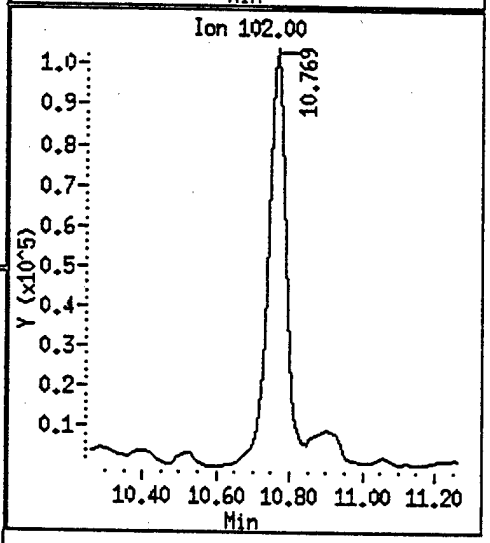








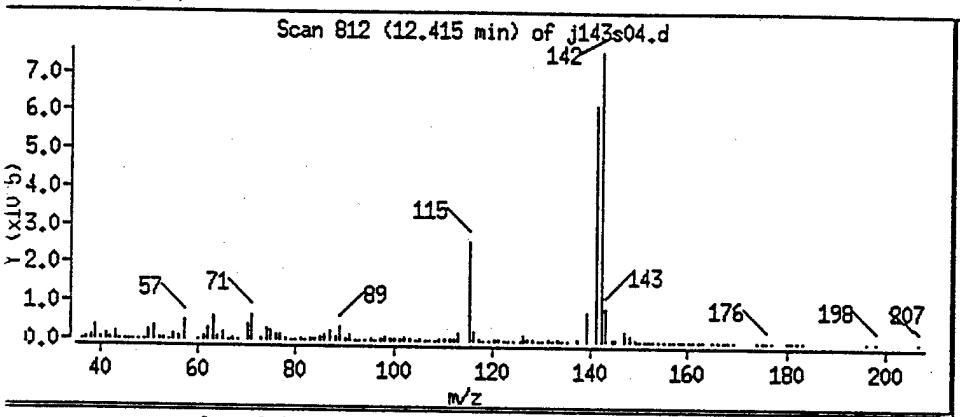


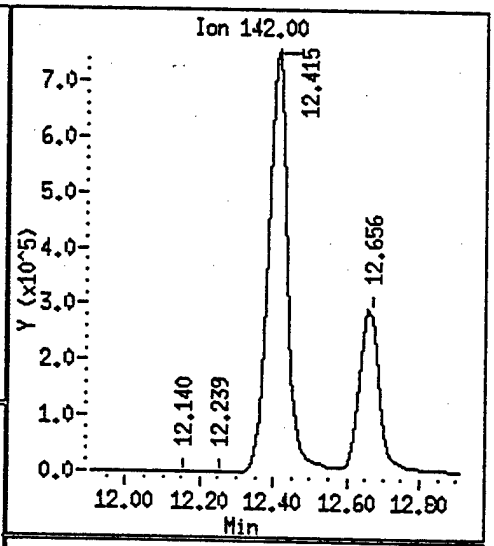


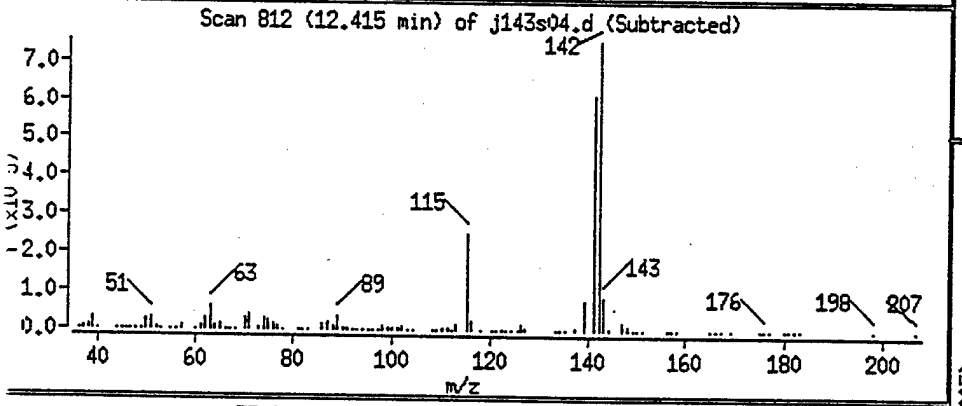
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Date : 23-MAY-1995 12:57
Client ID:
Sample Info: 9505556-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

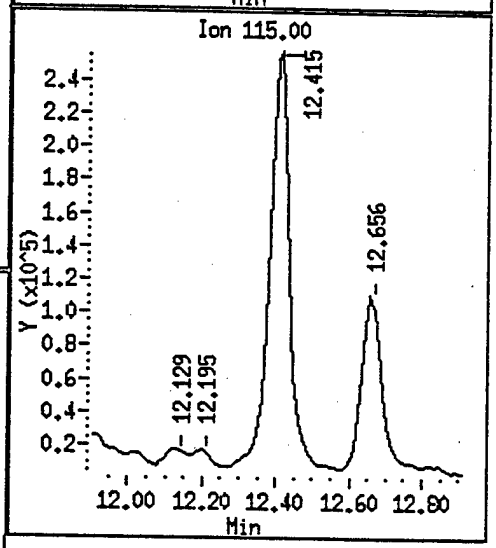
Instrument: j.i
Operator: PC
Column diameter: 0.25

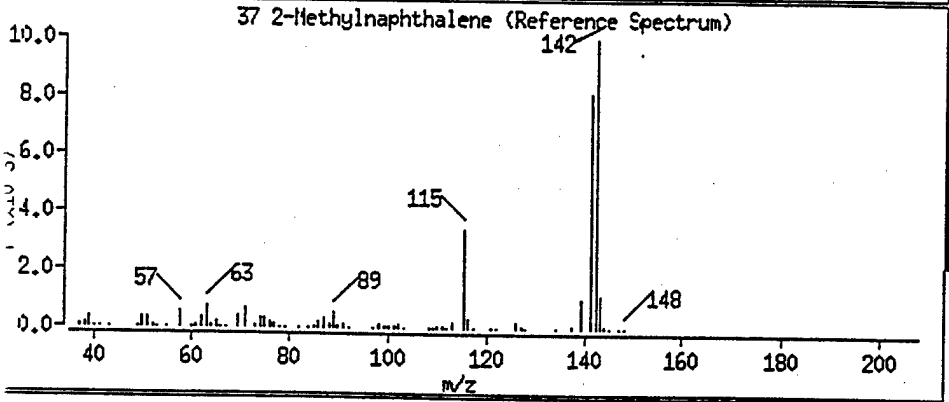
37 2-Methylnaphthalene

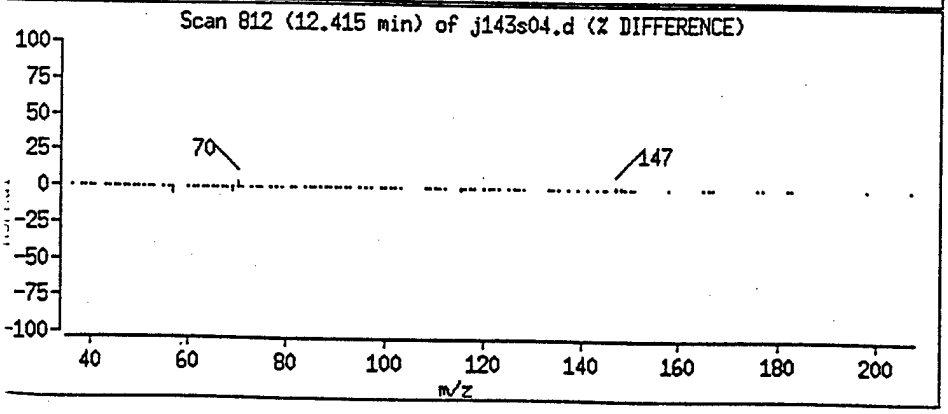












SPL Houston Labs

ata file : /chem/j.i/j950523.b/j143s05.d
ab Smp Id: 9505556-04B
Date : 23-MAY-1995 13:42
erator : PC PC Inst ID: j.i
mp Info : 9505556-04B-8270S/1X
c Info : E142S1/H142B02/J143CC1
ment :
ethod : /chem/j.i/j950523.b/jclps.m
h Date : 23-May-1995 13:29 patti Quant Type: ISTD
Date : 23-MAY-1995 09:08 Cal File: j143cc1.d
s bottle: 6
il Factor: 1.000
egrator: HP RTE Compound Sublist: 8270.sub
get Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
11	1,4-Dichlorobenzene-d4	152.00	7.921	7.937	(1.000)	364933	40	
32	Naphthalene-d8	136.00	10.704	10.719	(1.000)	1253657	40	
	Acenaphthene-d10	164.00	14.972	14.975	(1.000)	701446	40	
	Phenanthrene-d10	188.00	18.581	18.593	(1.000)	1034726	40	
76	Chrysene-d12	240.00	25.240	25.255	(1.000)	792369	40	
	Perylene-d12	264.00	29.693	29.715	(1.000)	478125	40	
	Nitrobenzene-d5	82.00	9.133	9.149	(0.853)	1050326	90	1500
41	2-Fluorobiphenyl	172.00	13.357	13.359	(0.892)	2051815	88	1500
72	Terphenyl-d14	244.00	22.557	22.563	(0.894)	1742658	88	1500
	Phenol-d5	99.00	7.320	7.336	(0.924)	1872010	150	2500
3	2-Fluorophenol	112.00	5.728	5.737	(0.723)	1472697	180	3000 (Q)
61	2,4,6-Tribromophenol	329.70	16.945	16.954	(0.912)	389485	120	2100

: Flag Legend

Qualifier signal failed the ratio test.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 11-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:00:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	ND	0.4	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/22/95	15	2	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/17/95	10	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	22	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 11-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:00:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/19/95	05/19/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/19/95	05/19/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/20/95	3.0	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
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Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 11-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:00:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	500	ug/Kg
Benzene	ND	25	ug/Kg
Bromodichloromethane	ND	25	ug/Kg
Bromoform	ND	25	ug/Kg
Bromomethane	ND	50	ug/Kg
2-Butanone	ND	100	ug/Kg
Carbon Disulfide	ND	25	ug/Kg
Carbon Tetrachloride	ND	25	ug/Kg
Chlorobenzene	ND	25	ug/Kg
Chloroethane	ND	50	ug/Kg
2-Chloroethylvinylether	ND	50	ug/Kg
Chloroform	ND	25	ug/Kg
Chloromethane	ND	50	ug/Kg
Dibromochloromethane	ND	25	ug/Kg
1,1-Dichloroethane	ND	25	ug/Kg
1,1-Dichloroethene	ND	25	ug/Kg
1,2-Dichloroethane	ND	25	ug/Kg
total-1,2-Dichloroethene	ND	25	ug/Kg
1,2-Dichloropropane	ND	25	ug/Kg
cis-1,3-Dichloropropene	ND	25	ug/Kg
trans-1,3-Dichloropropene	ND	25	ug/Kg
Ethylbenzene	120	25	ug/Kg
2-Hexanone	ND	50	ug/Kg
Methylene Chloride	ND	25	ug/Kg
4-Methyl-2-Pentanone	ND	50	ug/Kg
Styrene	ND	25	ug/Kg
1,1,2,2-Tetrachloroethane	ND	25	ug/Kg
Tetrachloroethene	ND	25	ug/Kg
Toluene	ND	25	ug/Kg
1,1,1-Trichloroethane	ND	25	ug/Kg
1,1,2-Trichloroethane	ND	25	ug/Kg
Trichloroethene	ND	25	ug/Kg
Trichlorofluoromethane	ND	25	ug/Kg
Vinyl Acetate	ND	50	ug/Kg
Vinyl Chloride	ND	50	ug/Kg
Xylenes (total)	800	25	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech

SAMPLE ID: 025-003-BH 11-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	94	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	106	59	113

ANALYZED BY: HLW DATE/TIME: 05/17/95 21:49:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 11-12'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:00:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech

SAMPLE ID: 025-003-BH 11-12'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-04

Operational Tech

SAMPLE ID: 025-003-BH 11-12'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	94	23	120
2-Fluorobiphenyl	1600 ug/Kg	92	30	115
Terphenyl-d14	1600 ug/Kg	92	18	137
Phenol-d5	2500 ug/Kg	99	24	113
2-Fluorophenol	2500 ug/Kg	119	25	121
2,4,6-Tribromophenol	2500 ug/Kg	84	19	122

ANALYZED BY: PC DATE/TIME: 05/23/95 13:42:00
EXTRACTED BY: JK DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950517.b/k137s16.d
Lab Smp Id: 9505556-04A-8240S/5X
Inj Date : 17-MAY-1995 21:49
Operator : HLW Inst ID: k.i
Smp Info : 9505556-04A-8240S/5X
Misc Info : K137S1/K137B02/K137CS2
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 22-May-1995 10:44 hillery Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22 Cal File: k137cs1.d
Als bottle: 30
Dil Factor: 5.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	43 Toluene	92.00	4.650	4.650	(0.687)	31583	24	24 (a)
M	2 Xylene (Total)	106.00				671167	800	800
	53 Ethylbenzene	106.00	7.272	7.256	(1.074)	85251	120	120
	54 m,p-Xylene(s)	106.00	7.484	7.468	(1.105)	537839	630	630
	58 o-Xylene	106.00	8.090	8.074	(1.195)	133328	160	160
*	20 Bromochloromethane	128.00	2.120	2.119	(1.000)	65437	250	
*	31 1,4-Difluorobenzene	114.00	2.802	2.801	(1.000)	382828	250	
*	51 Chlorobenzene-d5	117.00	6.772	6.771	(1.000)	294250	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.121)	27882	240	47
$	40 Toluene-d8	98.00	4.559	4.543	(0.673)	442014	250	50
$	61 Bromofluorobenzene	95.00	8.878	8.877	(1.311)	178675	260	53

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k137s16.d
Lab Smp Id: 9505556-04A-8240S/5X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950517.b/kvoclps.m
Misc Info: K137S1/K137B02/K137CS2

Calibration Date: 05/17/95
Calibration Time: 1122

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	62852	31426	125704	65437	4.11
31 1,4-Difluorobenzene	396843	198422	793686	382828	-3.53
51 Chlorobenzene-d5	295653	147826	591306	294250	-0.47

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.04
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.03
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.01

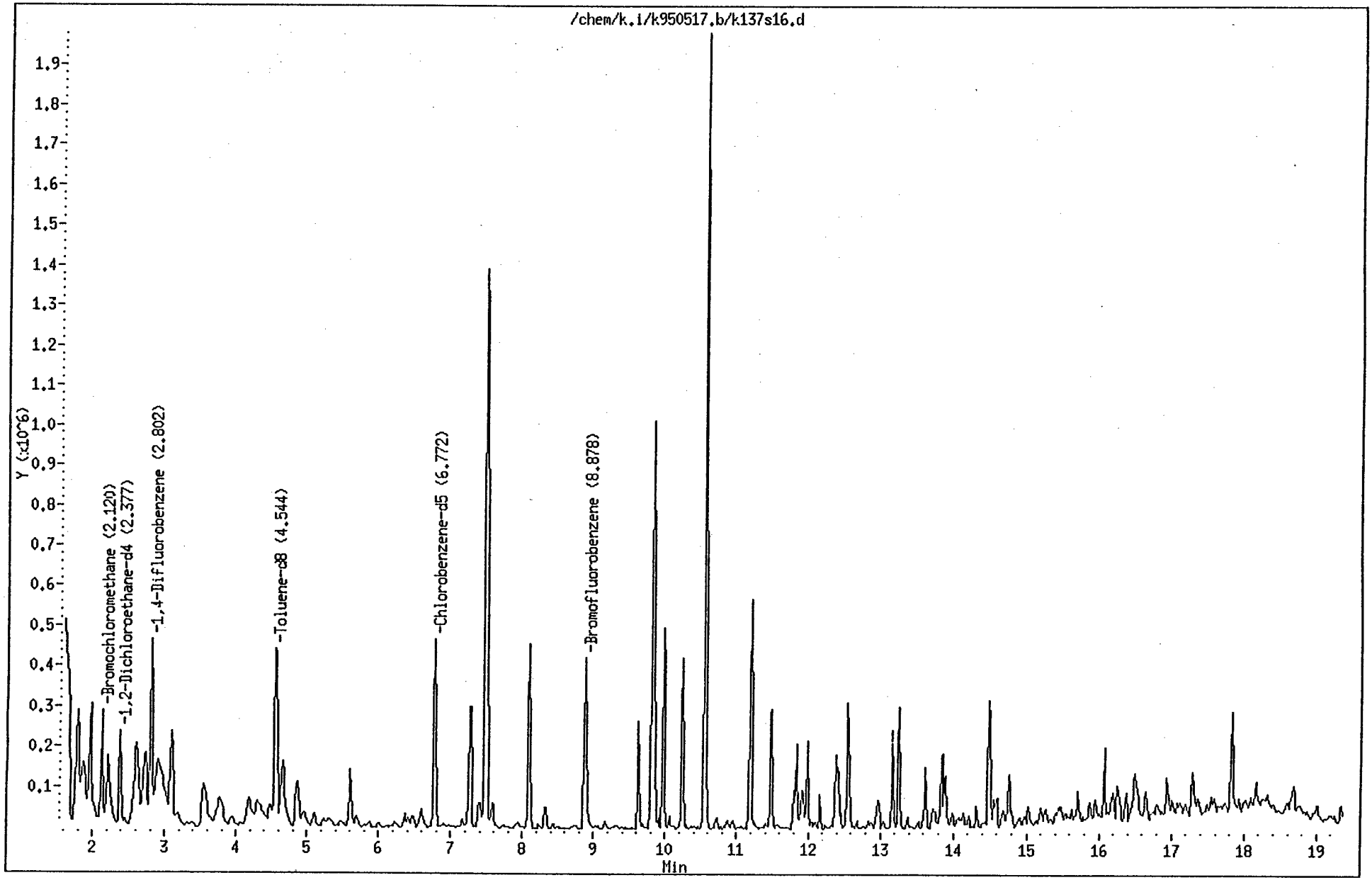
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950517.b/k137s16.d
Date : 17-MAY-95 21:49
Client ID:
Sample Info: 9505556-04A-8240S/5X

Column phase: 30m,hp5ms,0.25u df

Instrument: k.i

Operator: HLW
Column diameter: 0.25

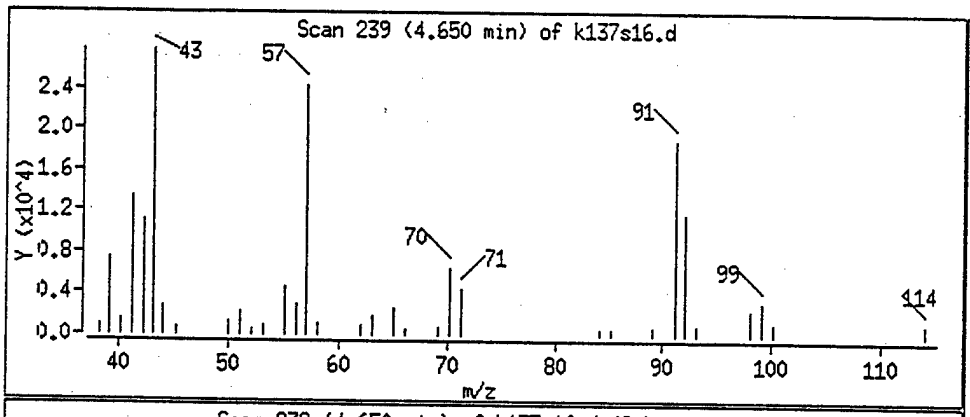


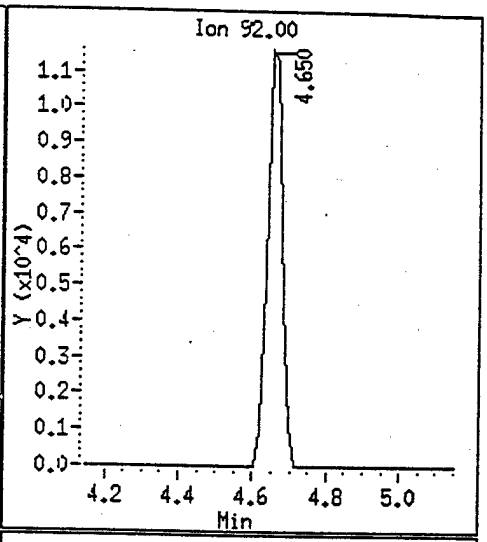
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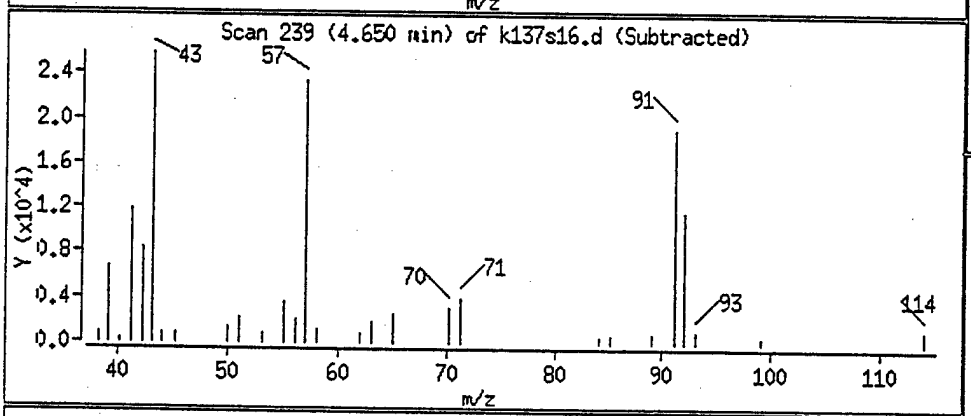
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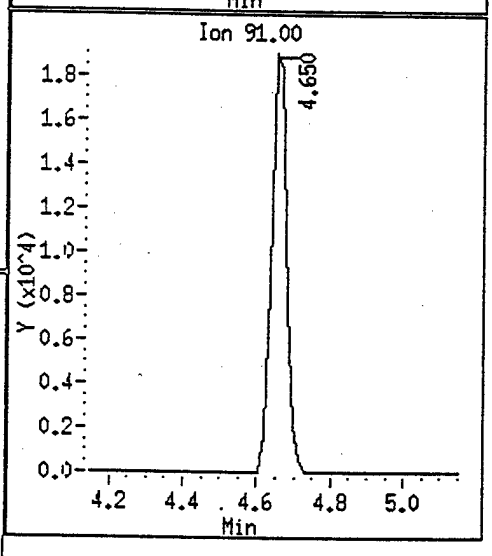
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Column diameter: 0.25

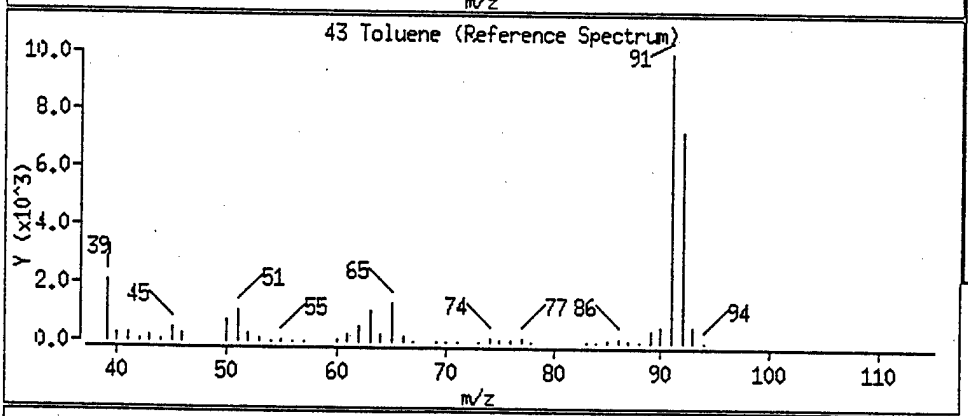
43 Toluene

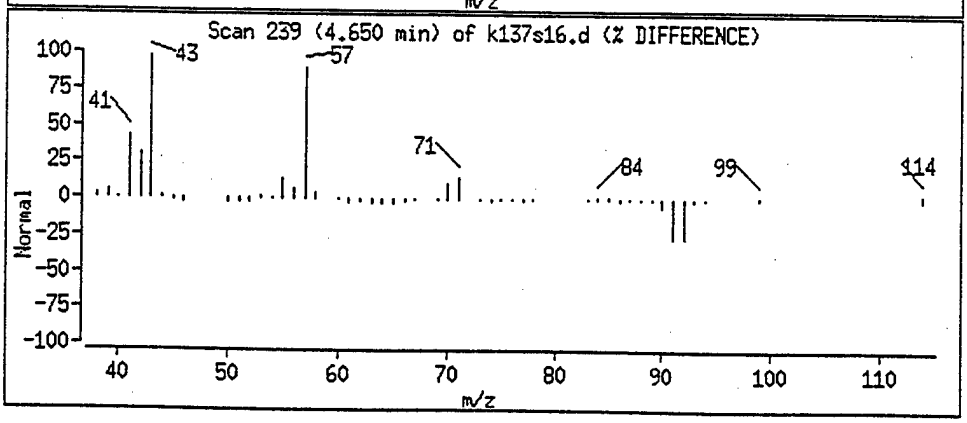












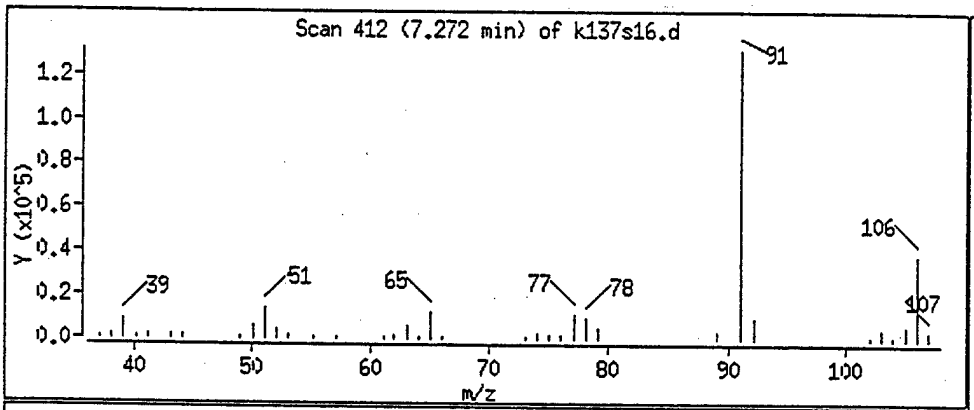
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Date : 17-MAY-95 21:49
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Sample Info: 9505556-04A-8240S/5X

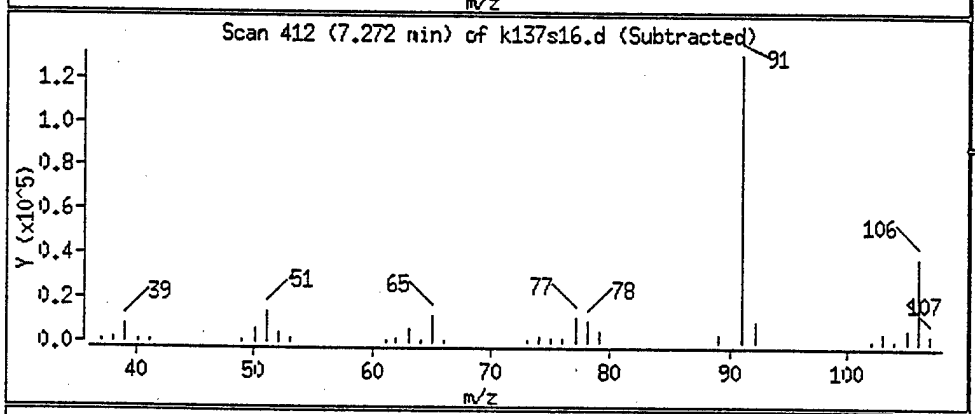
Instrument: k.i

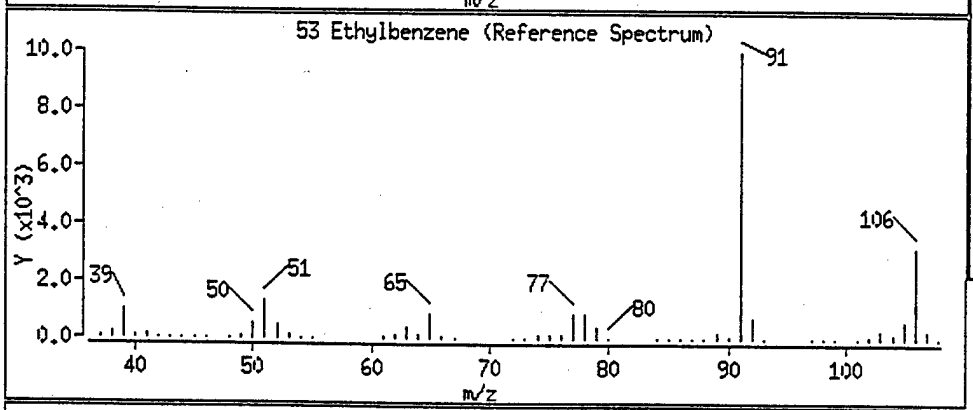
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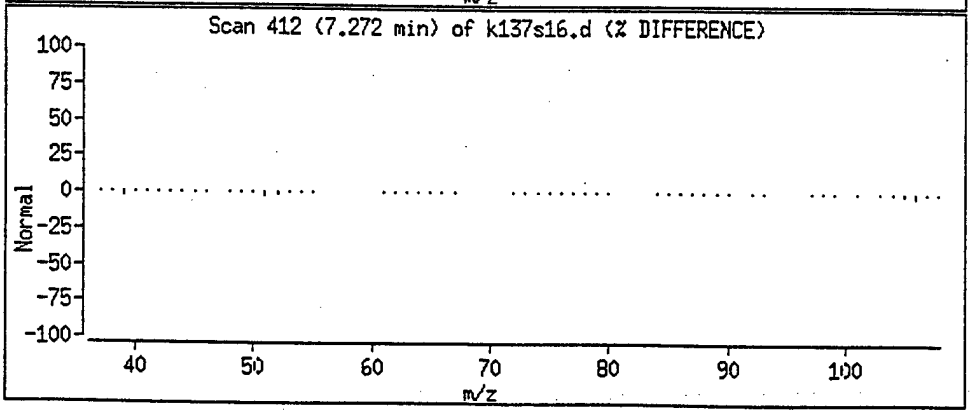
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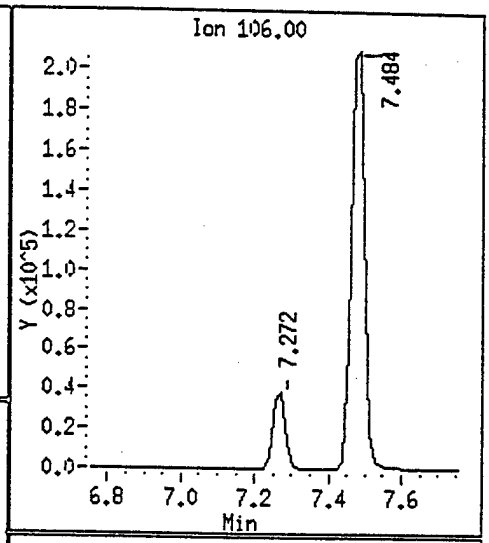
53 Ethylbenzene

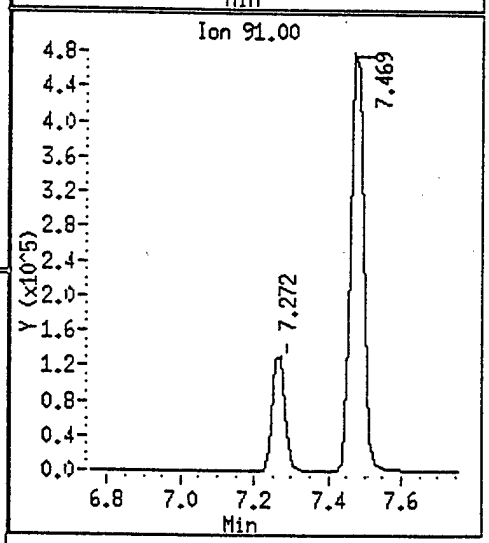










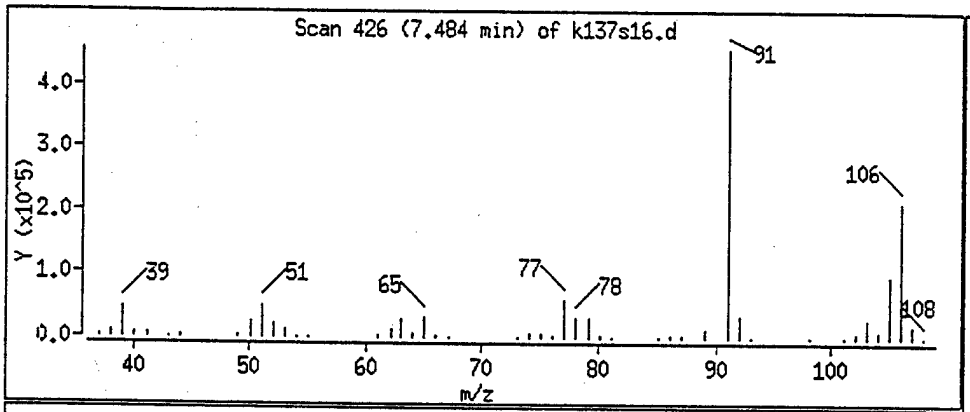


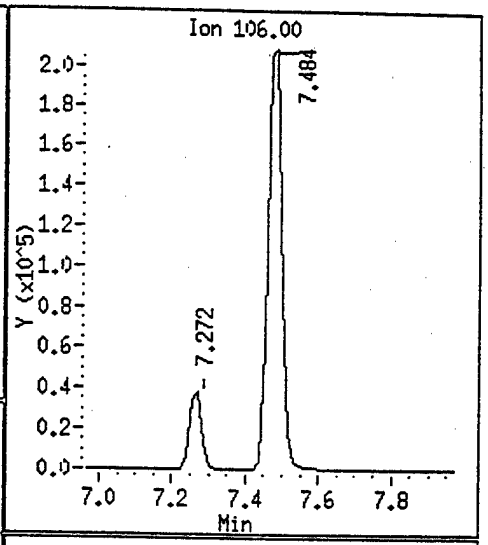
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Date : 17-MAY-95 21:49
Client ID:
Sample Info: 9505556-04A-8240S/5X

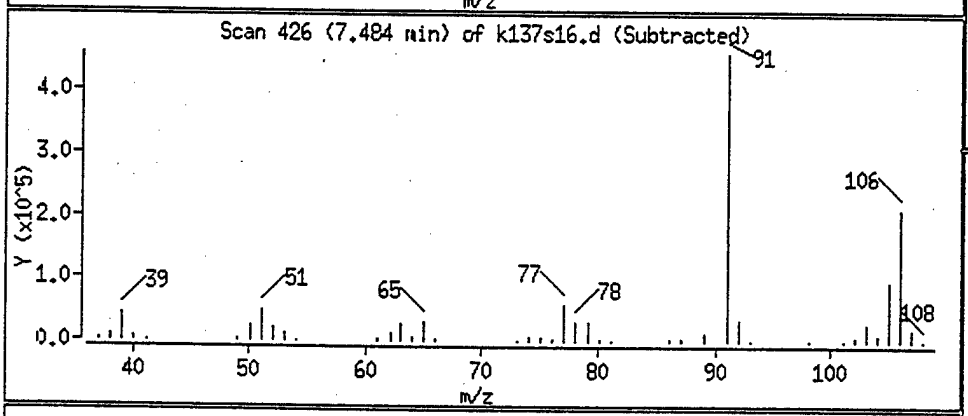
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Operator: HLW
Column diameter: 0.25

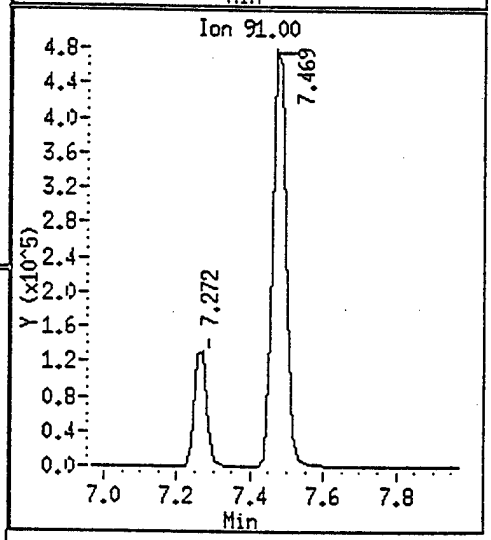
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54 m,p-Xylene(s)





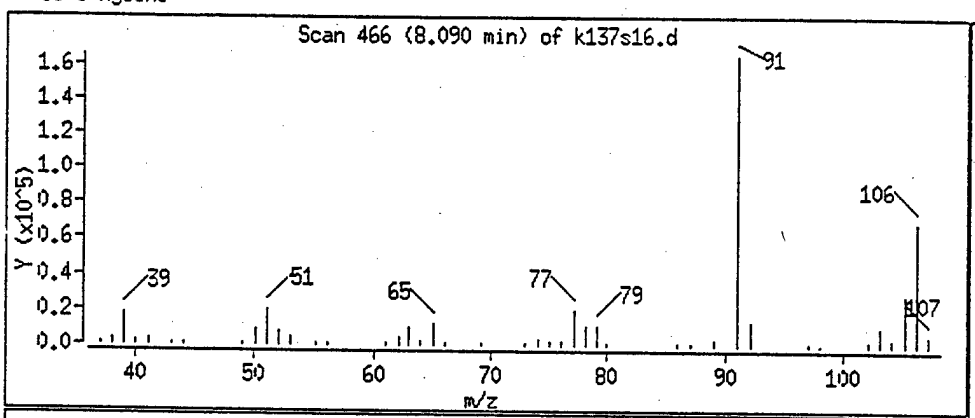


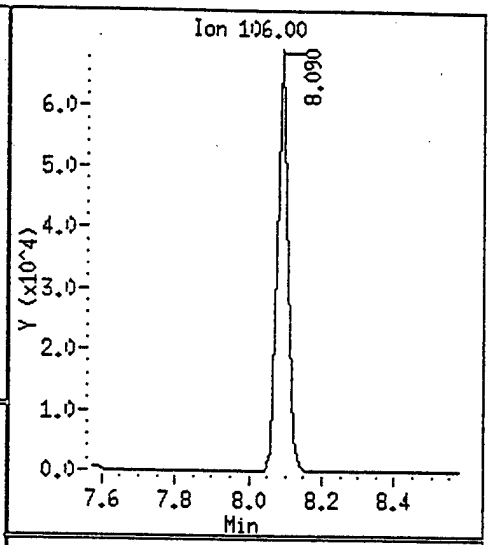


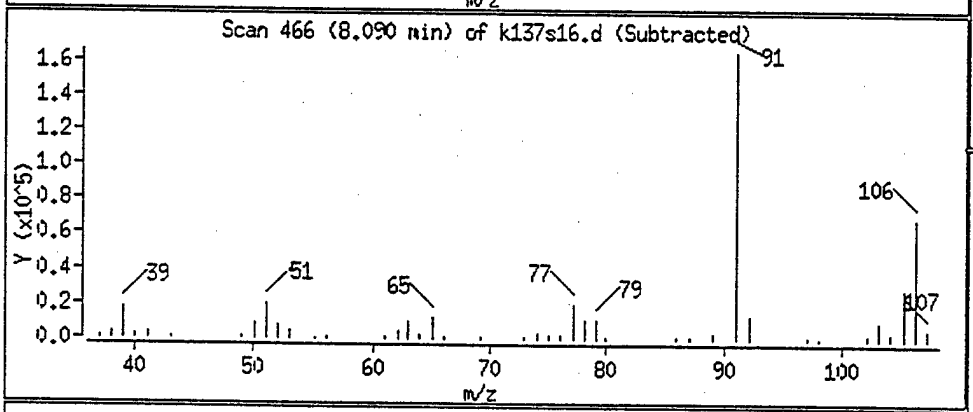
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Date : 17-MAY-95 21:49
Client ID:
Sample Info: 9505556-04A-8240S/5X

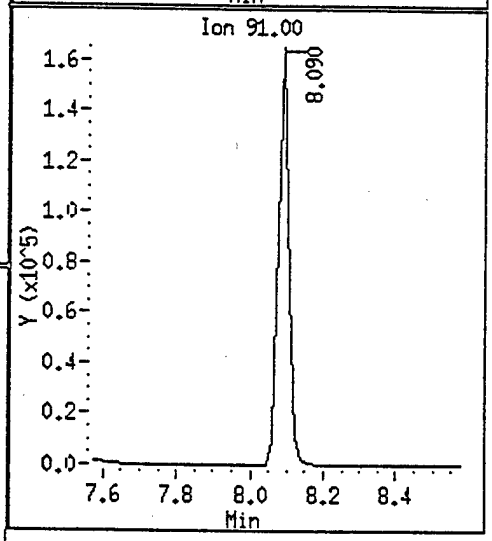
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

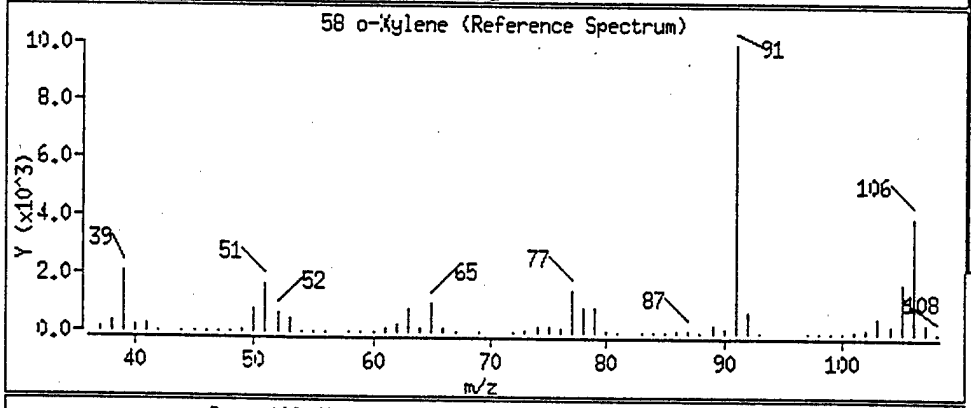
58 o-Xylene

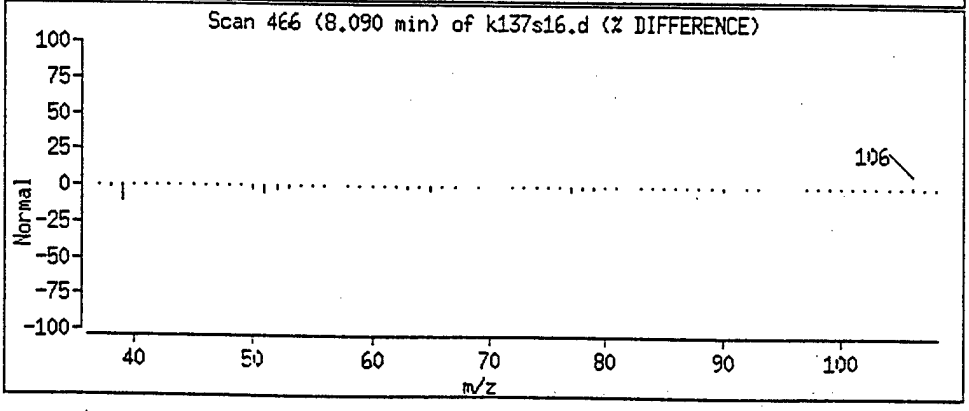












SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
ab File ID: j143s05.d
ab Smp Id: 9505556-04B
nalysis Type: SV
uant Type: ISTD
perator: PC
ethod File: /chem/j.i/j950523.b/jclps.m
isc Info: E142S1/H142B02/J143CC1

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	309222	154611	618444	364933	18.02
32 Naphthalene-d8	1160307	580154	2320614	1253657	8.05
48 Acenaphthene-d10	648094	324047	1296188	701446	8.23
65 Phenanthrene-d10	1005266	502633	2010532	1034726	2.93
76 Chrysene-d12	792658	396329	1585316	792369	-0.04
83 Perylene-d12	434959	217480	869918	478125	9.92

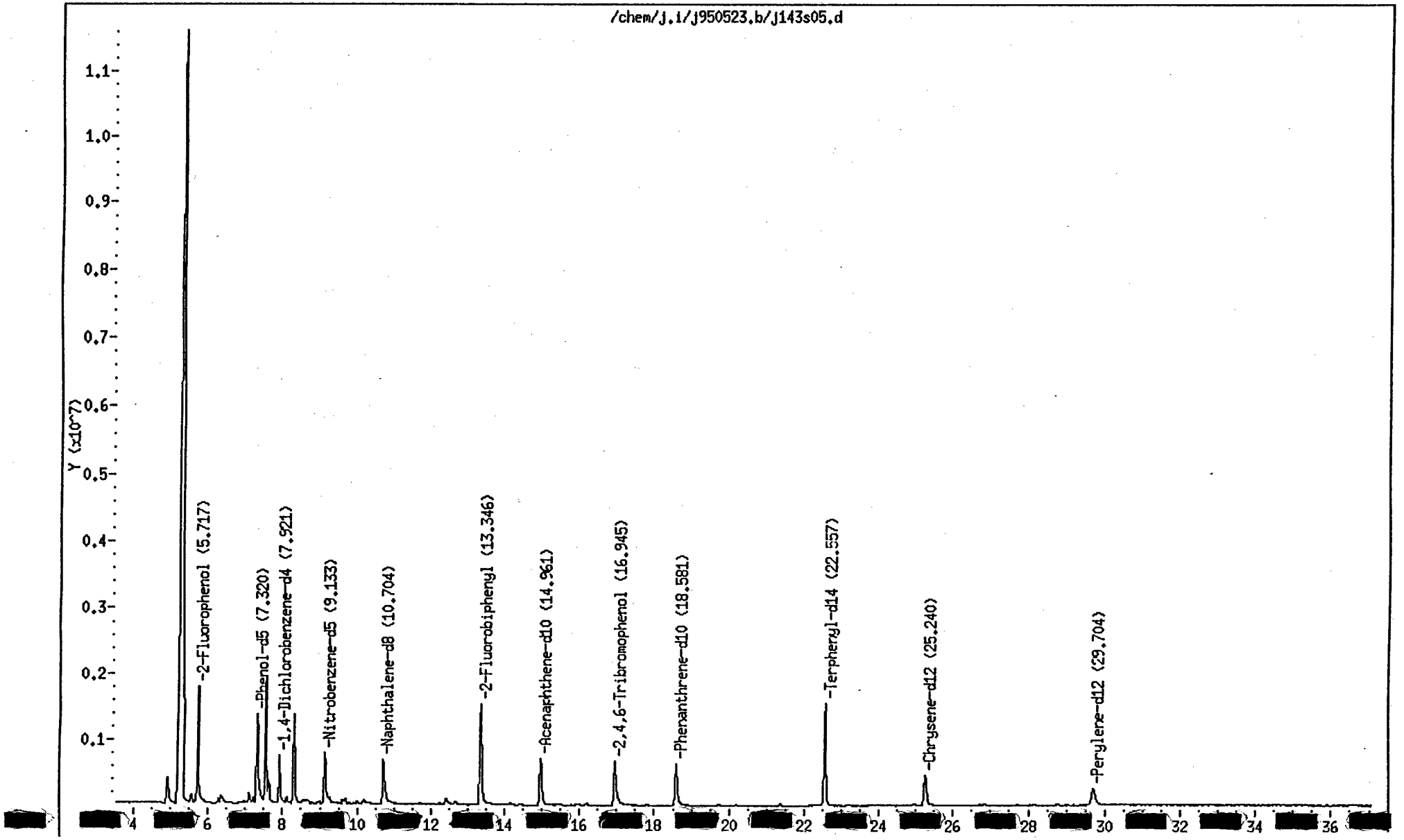
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.92	-0.20
32 Naphthalene-d8	10.72	10.22	11.22	10.70	-0.14
48 Acenaphthene-d10	14.98	14.48	15.48	14.97	-0.02
65 Phenanthrene-d10	18.59	18.09	19.09	18.58	-0.06
76 Chrysene-d12	25.25	24.75	25.75	25.24	-0.06
83 Perylene-d12	29.71	29.21	30.21	29.69	-0.07

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950523.b/j143s05.d
Date : 23-MAY-1995 13:42
Client ID:
Sample Info: 9505556-04B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 10-11'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/22/95	05/22/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	0.5	0.4	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/22/95	11	2	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/17/95	10	1	wt. %
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/22/95	26	2	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
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Operational Tech
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ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 10-11'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/19/95	05/19/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/19/95	05/19/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/20/95	2.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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Certificate of Analysis No. H9-9505556-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 10-11'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	25000	ug/Kg
Benzene	ND	1200	ug/Kg
Bromodichloromethane	ND	1200	ug/Kg
Bromoform	ND	1200	ug/Kg
Bromomethane	ND	2500	ug/Kg
2-Butanone	ND	5000	ug/Kg
Carbon Disulfide	ND	1200	ug/Kg
Carbon Tetrachloride	ND	1200	ug/Kg
Chlorobenzene	ND	1200	ug/Kg
Chloroethane	ND	2500	ug/Kg
2-Chloroethylvinylether	ND	2500	ug/Kg
Chloroform	ND	1200	ug/Kg
Chloromethane	ND	2500	ug/Kg
Dibromochloromethane	ND	1200	ug/Kg
1,1-Dichloroethane	ND	1200	ug/Kg
1,1-Dichloroethene	ND	1200	ug/Kg
1,2-Dichloroethane	ND	1200	ug/Kg
total-1,2-Dichloroethene	ND	1200	ug/Kg
1,2-Dichloropropane	ND	1200	ug/Kg
cis-1,3-Dichloropropene	ND	1200	ug/Kg
trans-1,3-Dichloropropene	ND	1200	ug/Kg
Ethylbenzene	5300	1200	ug/Kg
2-Hexanone	ND	2500	ug/Kg
Methylene Chloride	ND	1200	ug/Kg
4-Methyl-2-Pentanone	ND	2500	ug/Kg
Styrene	ND	1200	ug/Kg
1,1,2,2-Tetrachloroethane	ND	1200	ug/Kg
Tetrachloroethene	ND	1200	ug/Kg
Toluene	ND	1200	ug/Kg
1,1,1-Trichloroethane	ND	1200	ug/Kg
1,1,2-Trichloroethane	ND	1200	ug/Kg
Trichloroethene	ND	1200	ug/Kg
Trichlorofluoromethane	ND	1200	ug/Kg
Vinyl Acetate	ND	2500	ug/Kg
Vinyl Chloride	ND	2500	ug/Kg
Xylenes (total)	29000	1200	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-05

Operational Tech

SAMPLE ID: 025-003-BH 10-11'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	101	70	121
Toluene-d8	50 ug/Kg	101	84	138
4-Bromofluorobenzene	50 ug/Kg	100	59	113

ANALYZED BY: JC DATE/TIME: 05/19/95 13:28:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth ANG/Duluth SI
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-003-BH 10-11'

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/15/95 10:05:00
DATE RECEIVED: 05/16/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-05

Operational Tech

SAMPLE ID: 025-003-BH 10-11'

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	330	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505556-05

Operational Tech

SAMPLE ID: 025-003-BH 10-11'

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	94	23	120
2-Fluorobiphenyl	1600 ug/Kg	94	30	115
Terphenyl-d14	1600 ug/Kg	85	18	137
Phenol-d5	2500 ug/Kg	100	24	113
2-Fluorophenol	2500 ug/Kg	119	25	121
2,4,6-Tribromophenol	2500 ug/Kg	75	19	122

ANALYZED BY: PC DATE/TIME: 05/23/95 14:27:00
EXTRACTED BY: JK DATE/TIME: 05/22/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950519.b/l139s03.d
Lab Smp Id:
Inj Date : 19-MAY-1995 13:28
Operator : JC Inst ID: l.i
Smp Info : 9505556-05A-8240S/250X
Misc Info : L139W1/L139B01/L139CW1
Comment :
Method : /chem/l.i/l950519.b/lvoclpw.m
Meth Date : 22-May-1995 15:34 jimmy Quant Type: ISTD
Cal Date : 19-MAY-1995 09:41 Cal File: l139cw1.d
Als bottle: 10
Dil Factor: 250.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	44 Toluene	92.00	9.256	9.255	(0.834)	21502	21	1000(a)
M	53 Xylene (Total)	106.00				415517	590	29000
	54 Ethylbenzene	106.00	11.449	11.448	(1.031)	60214	110	5300
	55 m,p-Xylene(s)	106.00	11.618	11.617	(1.047)	324040	460	23000
	59 o-Xylene	106.00	12.144	12.143	(1.094)	91477	130	6400
*	23 Bromochloromethane	128.00	5.227	5.226	(1.000)	62834	250	
*	32 1,4-Difluorobenzene	114.00	6.938	6.938	(1.000)	357725	250	
*	50 Chlorobenzene-d5	117.00	11.101	11.100	(1.000)	277551	250	
$	26 1,2-Dichloroethane-d4	102.00	6.002	6.002	(1.148)	27107	250	50
$	43 Toluene-d8	98.00	9.158	9.157	(0.825)	385665	250	51
$	61 Bromofluorobenzene	95.00	12.777	12.776	(1.151)	145352	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l139s03.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950519.b/lvoclpw.m
Misc Info: L139W1/L139B01/L139CW1

Calibration Date: 05/19/95
Calibration Time: 0941

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65811	32906	131622	62834	-4.52
32 1,4-Difluorobenzene	366990	183495	733980	357725	-2.52
50 Chlorobenzene-d5	287816	143908	575632	277551	-3.57

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.23	4.73	5.73	5.23	0.01
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.01
50 Chlorobenzene-d5	11.10	10.60	11.60	11.10	0.01

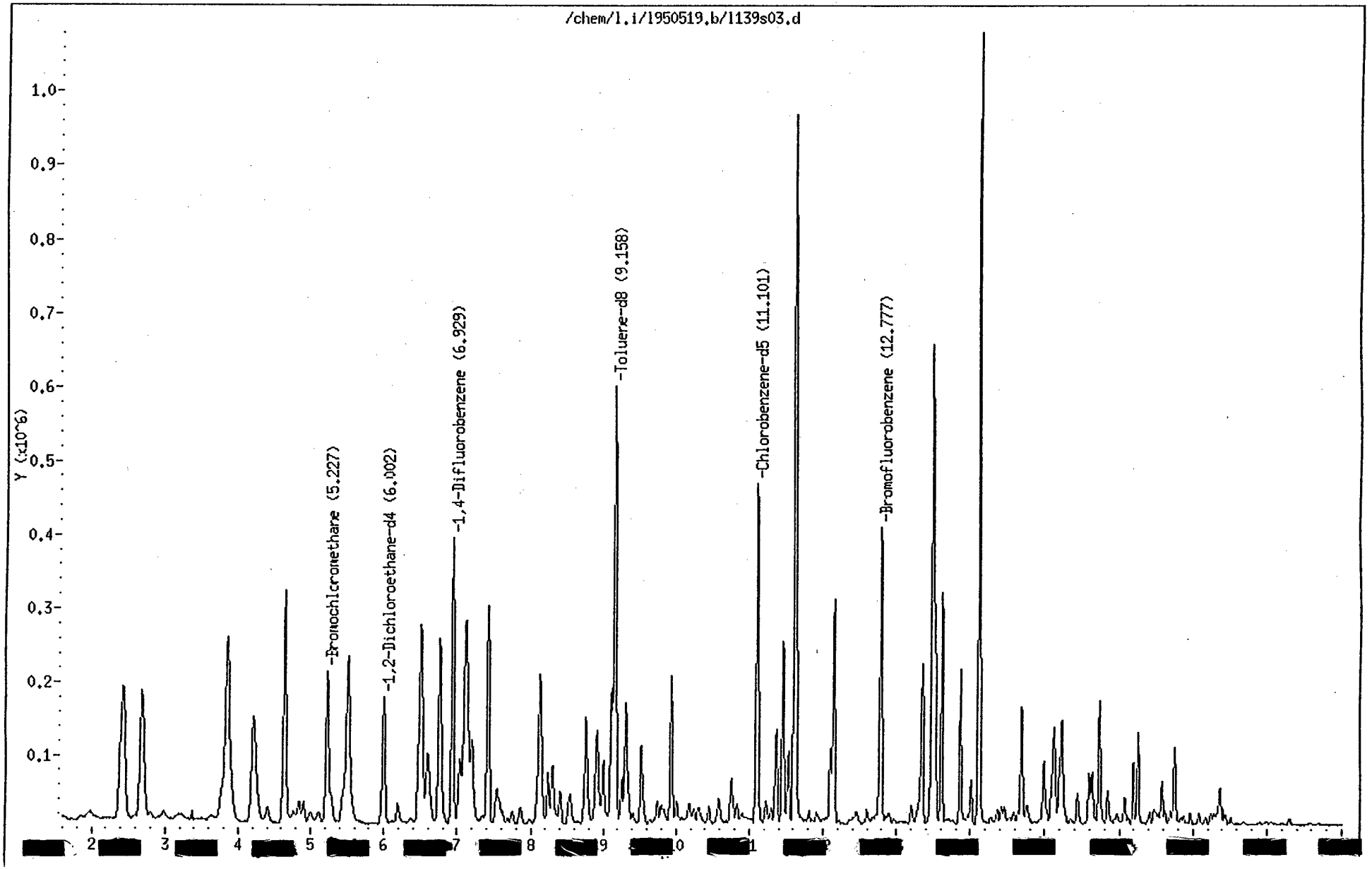
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950519.b/l139s03.d
Date : 19-MAY-1995 13:28
Client ID:
Sample Info: 9505556-05A-8240S/250X

Instrument: l.i

Operator: JC
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/1.i/1950519.b/1139s03.d

Date : 19-MAY-1995 13:28

Client ID:

Instrument: 1.i

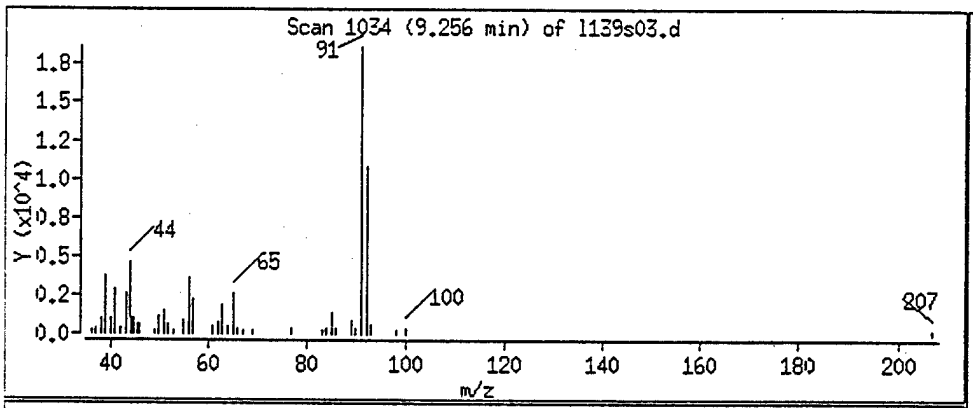
Sample Info: 9505556-05A-8240S/250X

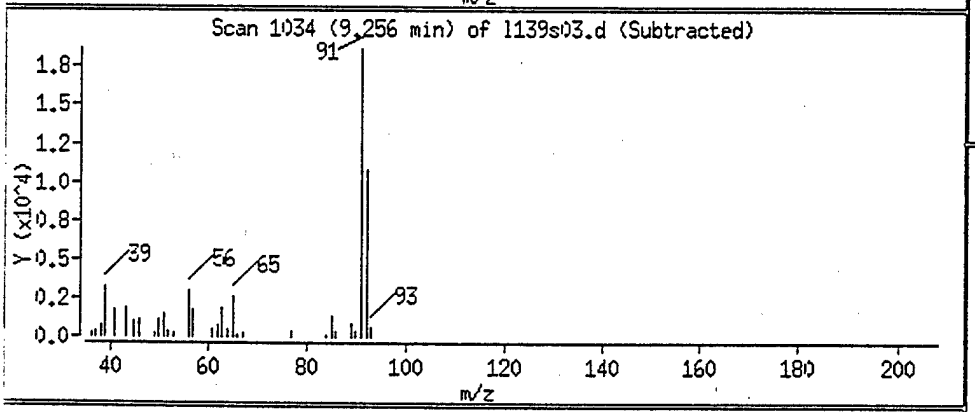
Operator: JC

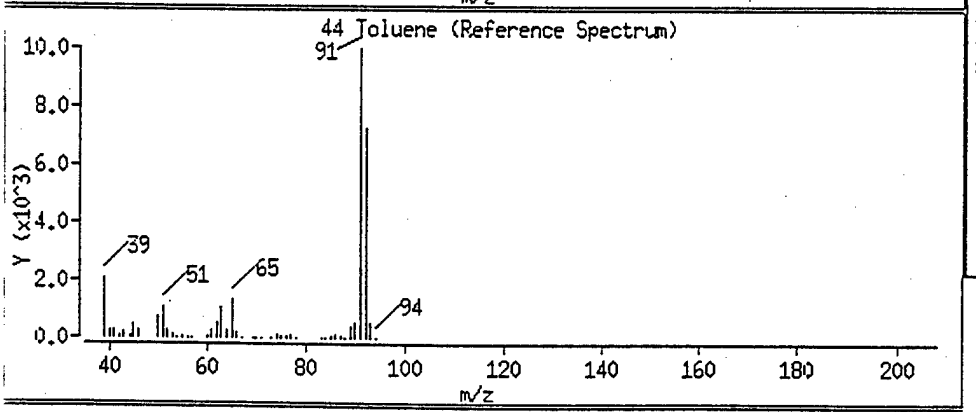
Column phase: 30m,hp5ms,0.25u df

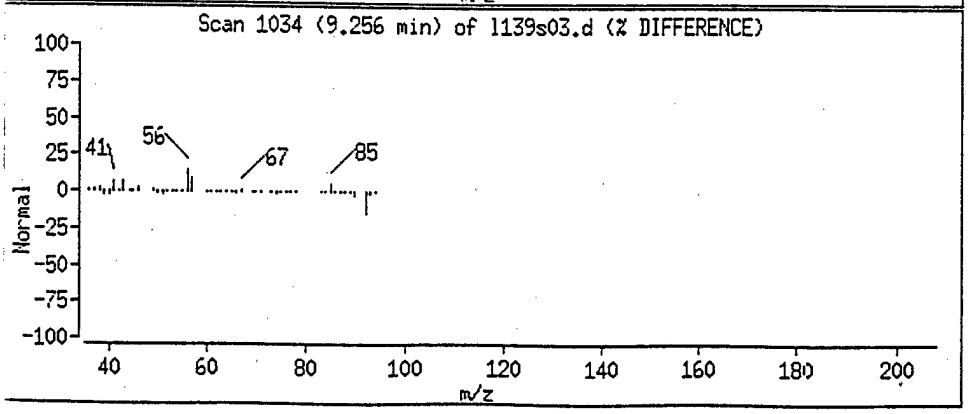
Column diameter: 0.25

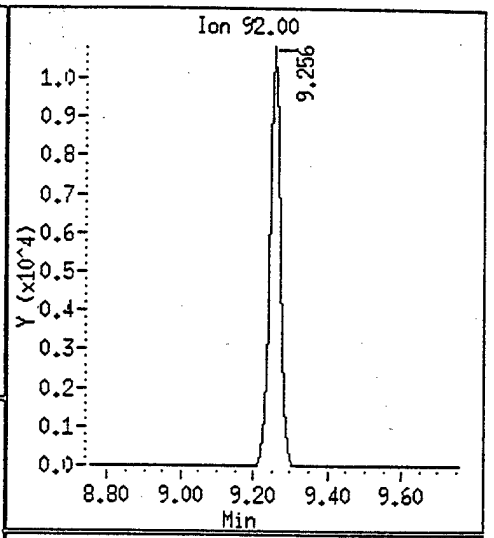
44 Toluene

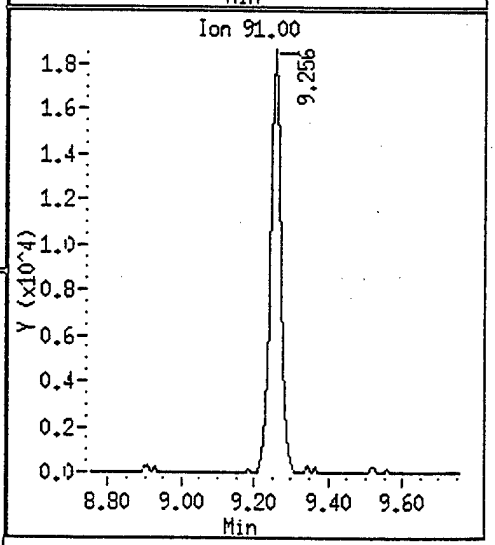








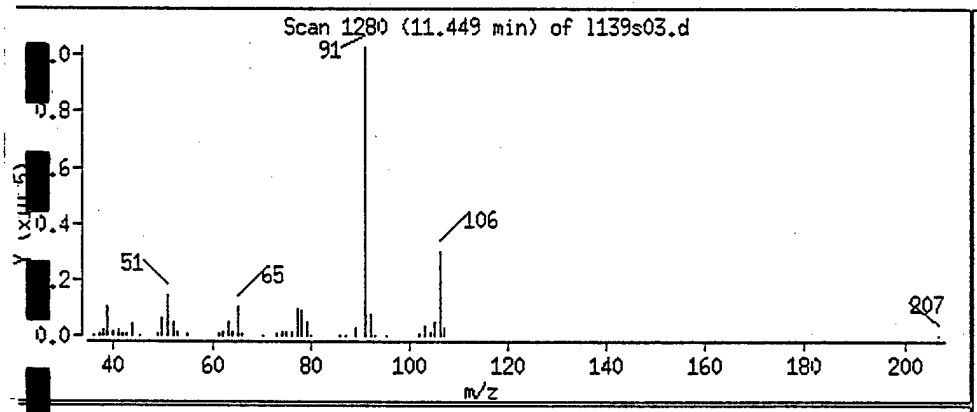


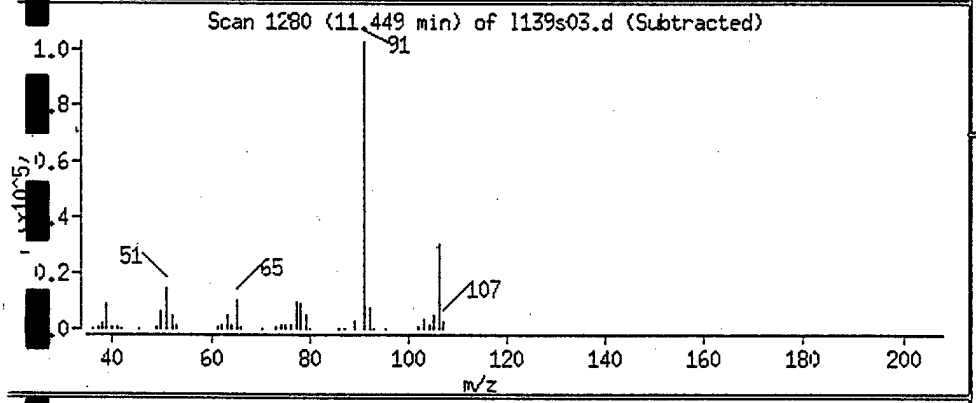


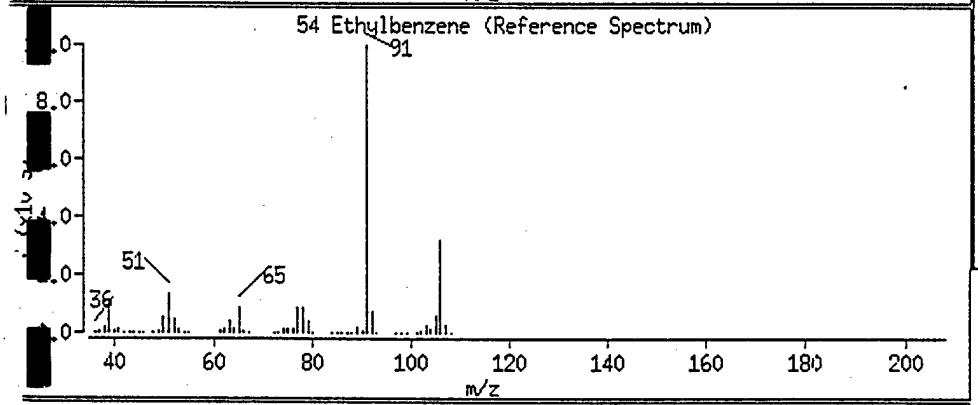
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Date : 19-MAY-1995 13:28
Client ID:
Sample Info: 9505556-05A-8240S/250X

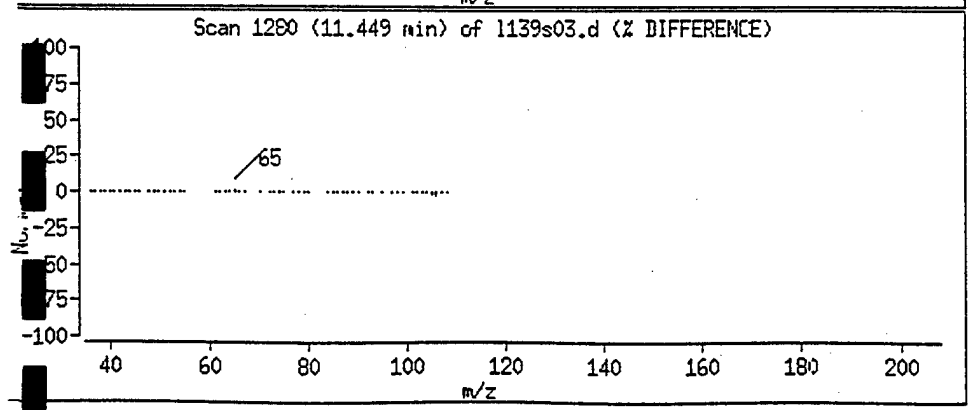
Instrument: 1.i
Operator: JC
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

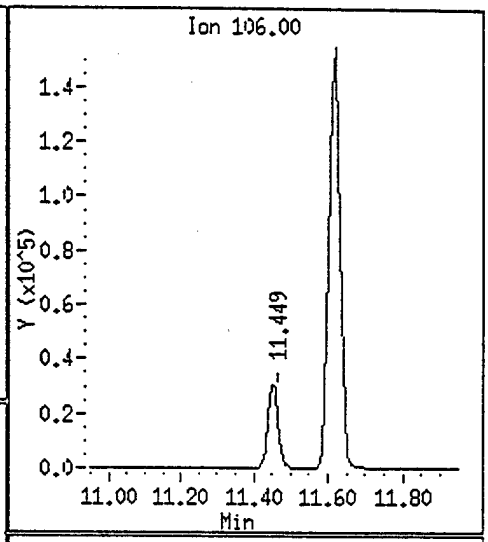
4 Ethylbenzene

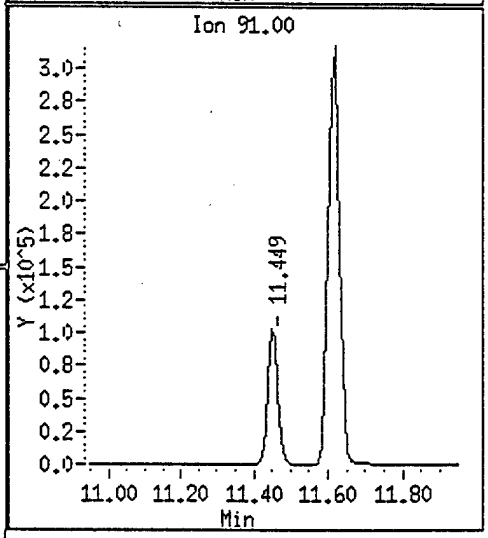










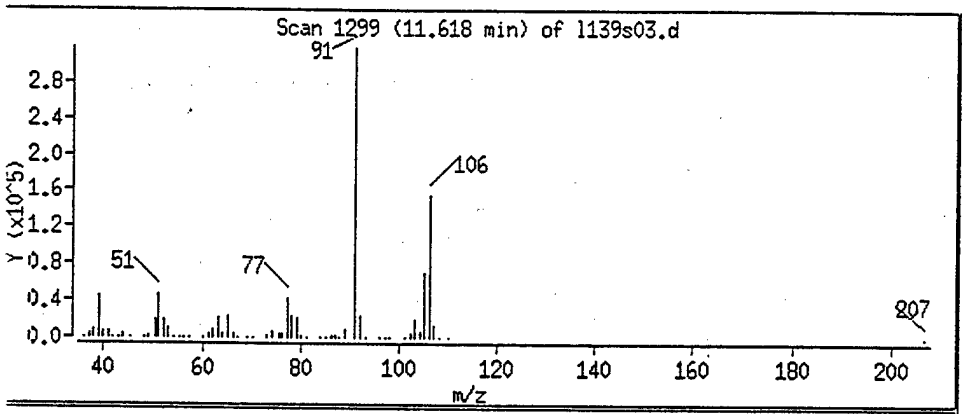


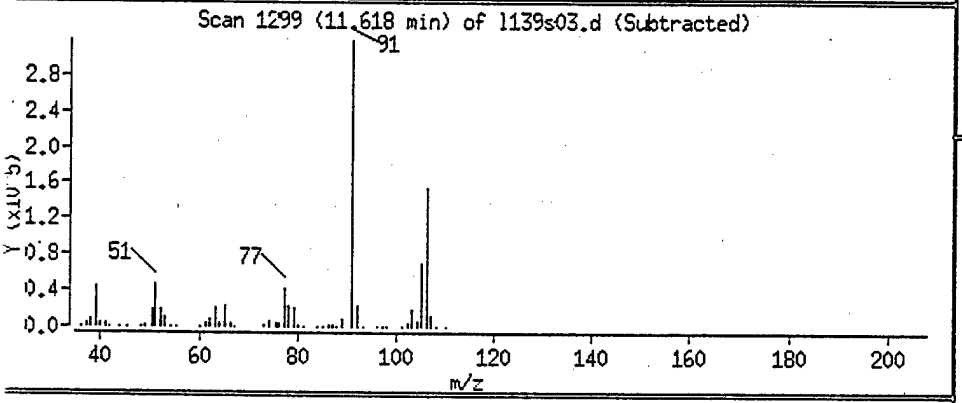
Data File: /chem/l.i/1950519.b/l139s03.d
Date : 19-MAY-1995 13:28
Client ID:
Sample Info: 9505556-05A-8240S/250X

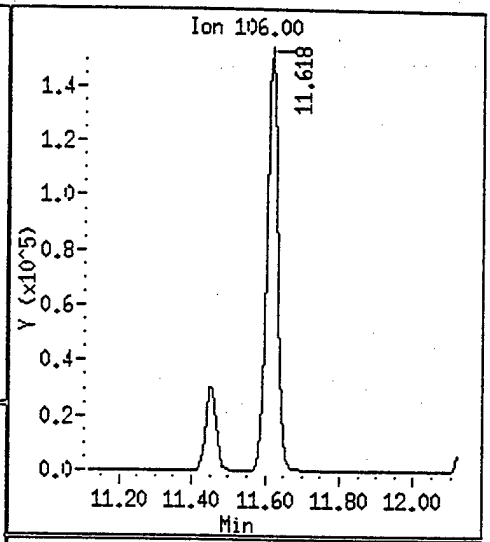
Instrument: l.i

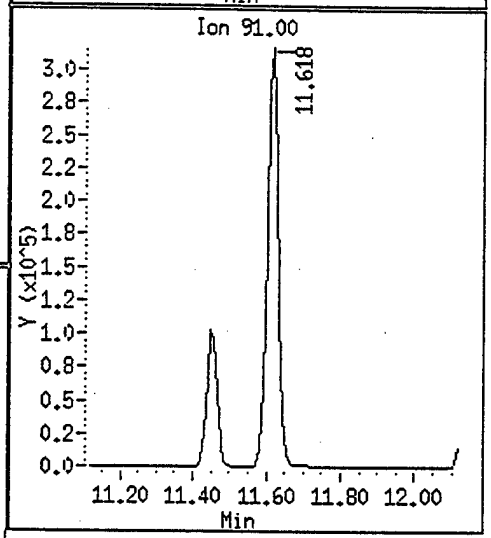
Operator: JC
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

55 m,p-Xylene(s)



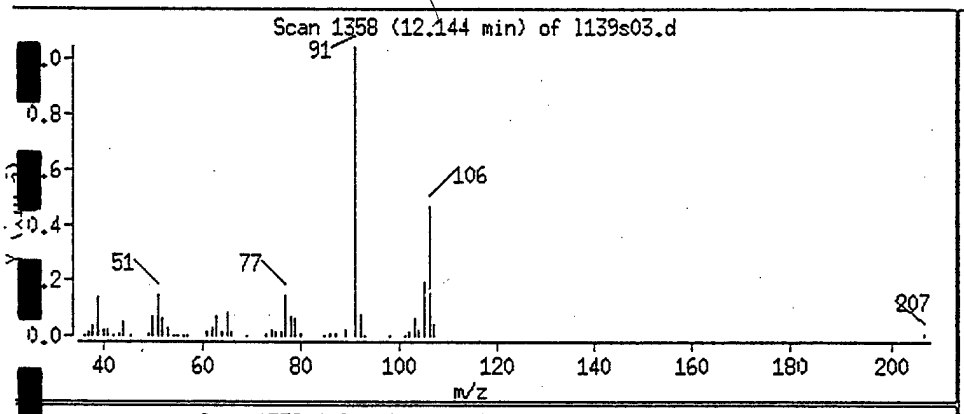


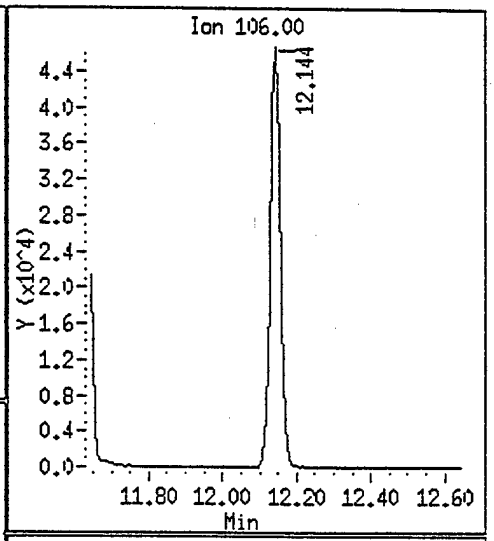


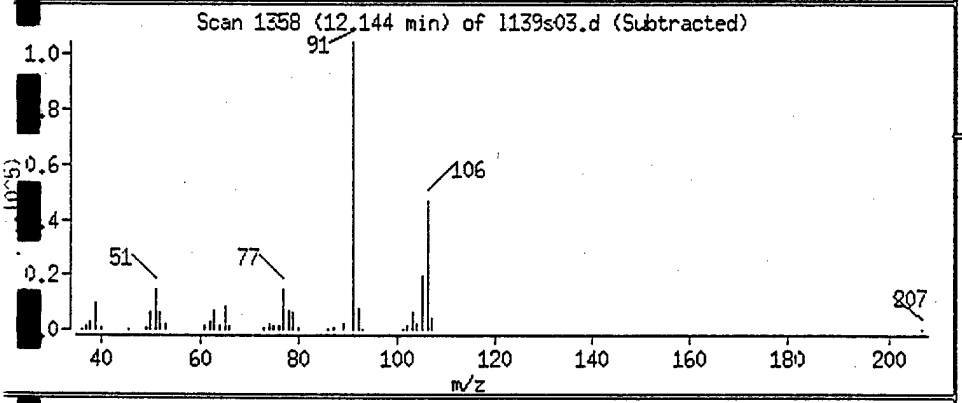


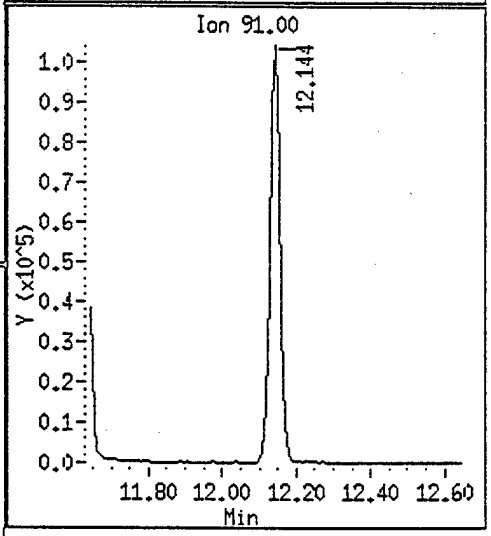
Data File: /chem/l.i/1950519.b/l139s03.d
Date : 19-MAY-1995 13:28
Client ID:
Instrument: l.i
Sample Info: 9505556-05A-8240S/250X
Operator: JC
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

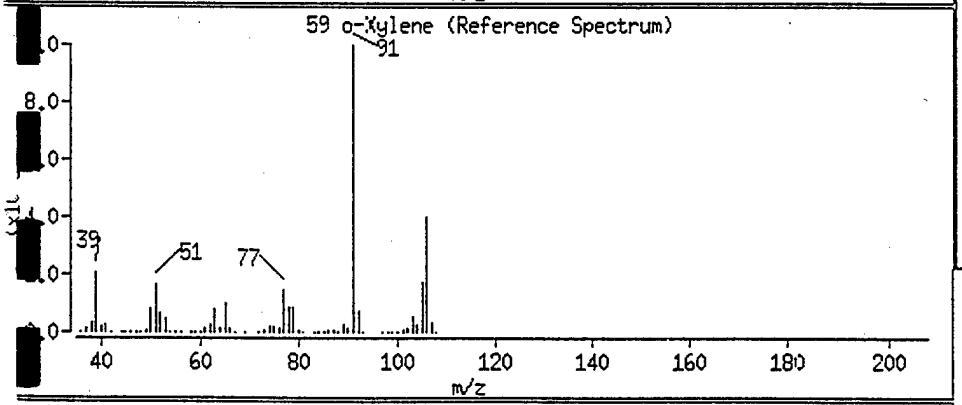
9 o-Xylene

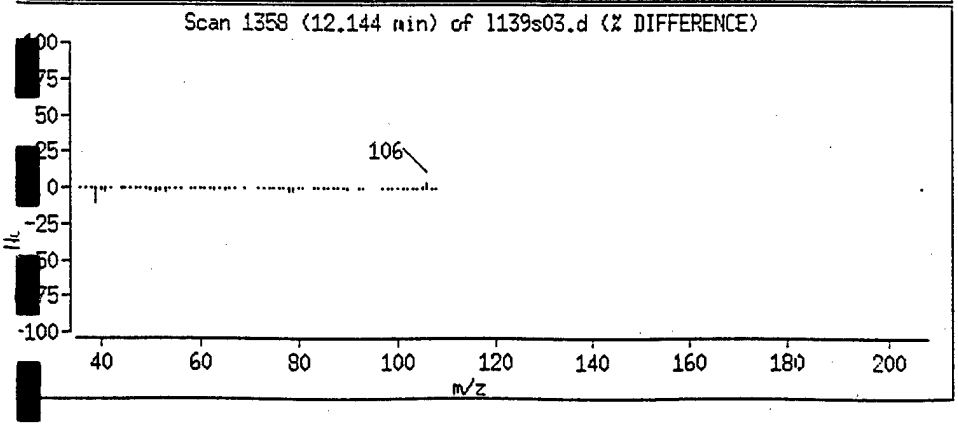












SPL Houston Labs

Data file : /chem/j.i/j950523.b/j143s06.d
Lab Smp Id: 9505556-05B
Inj Date : 23-MAY-1995 14:27
Operator : PC PC
Smp Info : 9505556-05B-8270S/1X
Misc Info : E142S1/H142B02/J143CC1
Comment :
Method : /chem/j.i/j950523.b/jclps.m
Meth Date : 23-May-1995 13:29 patti
Cal Date : 23-MAY-1995 09:08
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j143cc1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)	
37 2-Methylnaphthalene	142.00	12.403	12.410	(1.159)	438810	20	330	PC
11 1,4-Dichlorobenzene-d4	152.00	7.926	7.937	(1.000)	361278	40		
32 Naphthalene-d8	136.00	10.705	10.719	(1.000)	1223635	40		
48 Acenaphthene-d10	164.00	14.964	14.975	(1.000)	687303	40		
65 Phenanthrene-d10	188.00	18.584	18.593	(1.000)	1009479	40		
76 Chrysene-d12	240.00	25.244	25.255	(1.000)	837767	40		
83 Perylene-d12	264.00	29.689	29.715	(1.000)	559247	40		
23 Nitrobenzene-d5	82.00	9.129	9.149	(0.853)	1030295	91	1500	
41 2-Fluorobiphenyl	172.00	13.356	13.359	(0.892)	2042483	90	1500	
72 Terphenyl-d14	244.00	22.558	22.563	(0.894)	1707093	81	1400	
4 Phenol-d5	99.00	7.324	7.336	(0.924)	1876845	150	2500	
3 2-Fluorophenol	112.00	5.730	5.737	(0.723)	1461081	180	3000 (Q)	
61 2,4,6-Tribromophenol	329.70	16.955	16.954	(0.912)	340735	110	1900	

C Flag Legend

- Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

n trument ID: j.i
ab File ID: j143s06.d
ab Smp Id: 9505556-05B
n lysis Type: SV
nt Type: ISTD
perator: PC
e hod File: /chem/j.i/j950523.b/jclps.m
i c Info: E142S1/H142B02/J143CC1

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	309222	154611	618444	361278	16.83
2 Naphthalene-d8	1160307	580154	2320614	1223635	5.46
48 Acenaphthene-d10	648094	324047	1296188	687303	6.05
65 Phenanthrene-d10	1005266	502633	2010532	1009479	0.42
6 Chrysene-d12	792658	396329	1585316	837767	5.69
83 Perylene-d12	434959	217480	869918	559247	28.57

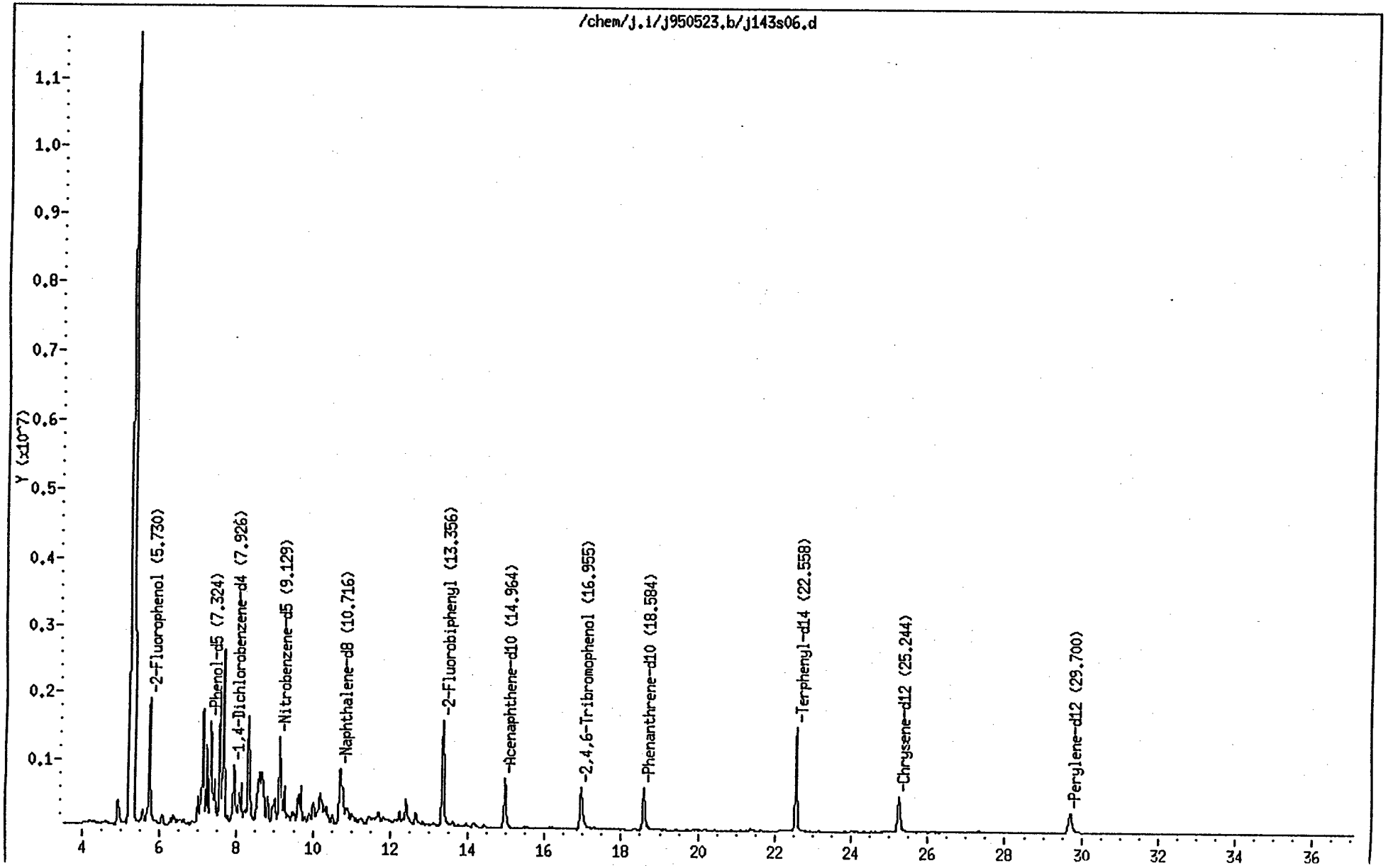
OMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.93	-0.14
2 Naphthalene-d8	10.72	10.22	11.22	10.71	-0.13
48 Acenaphthene-d10	14.98	14.48	15.48	14.96	-0.07
65 Phenanthrene-d10	18.59	18.09	19.09	18.58	-0.05
6 Chrysene-d12	25.25	24.75	25.75	25.24	-0.04
3 Perylene-d12	29.71	29.21	30.21	29.69	-0.09

EA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950523.b/j143s06.d
Date : 23-MAY-1995 14:27
Client ID:
Sample Info: 9505556-05B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

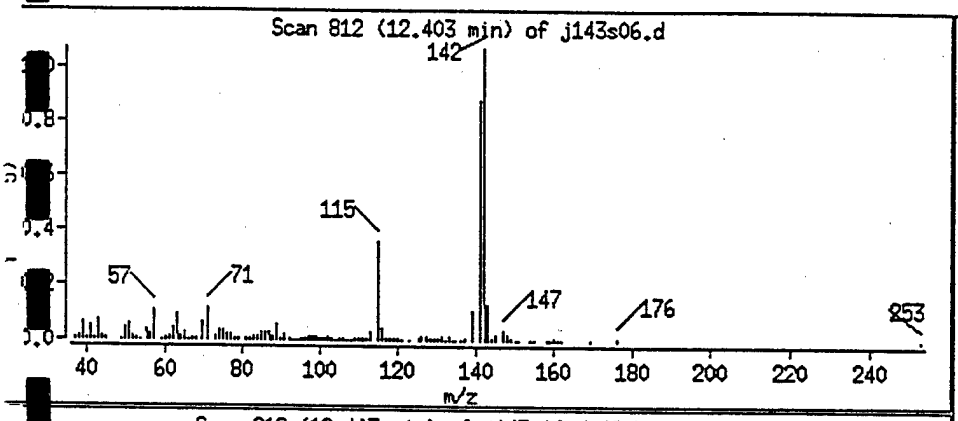
Instrument: j.i

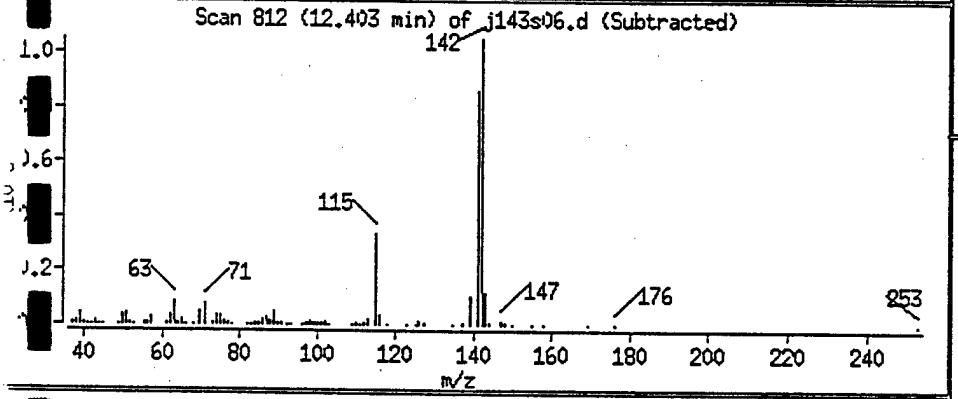
Operator: PC
Column diameter: 0.25

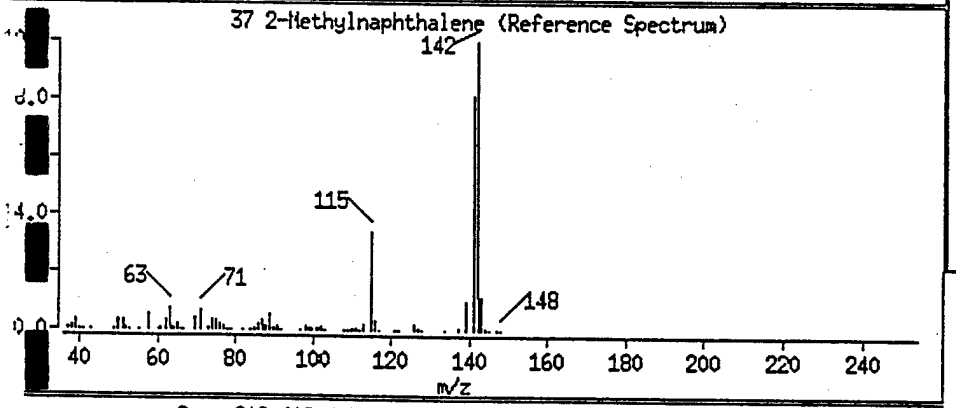


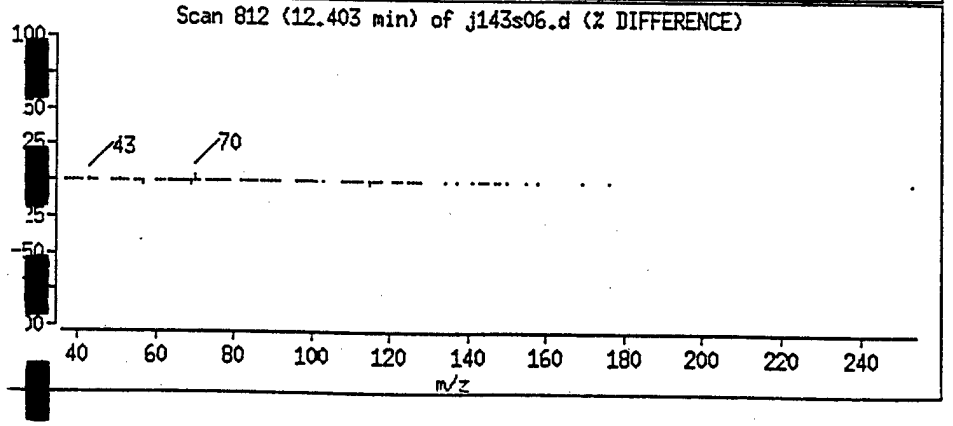
Data File: /chem/j.i/j950523.b/j143s06.d
Date : 23-MAY-1995 14:27
Client ID:
Instrument: j.i
Sample Info: 9505556-05B-8270S/1X
Volume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 0.25

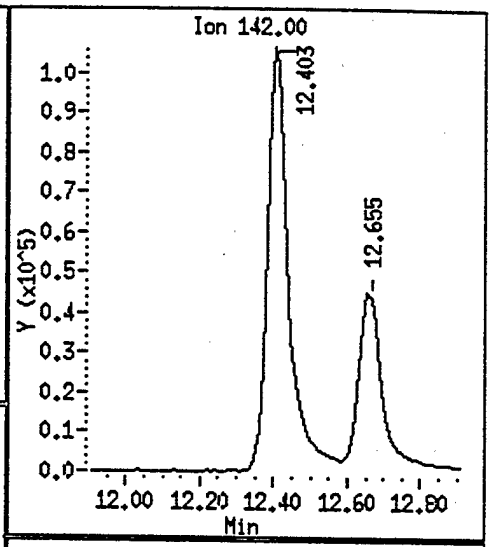
2-Methylnaphthalene

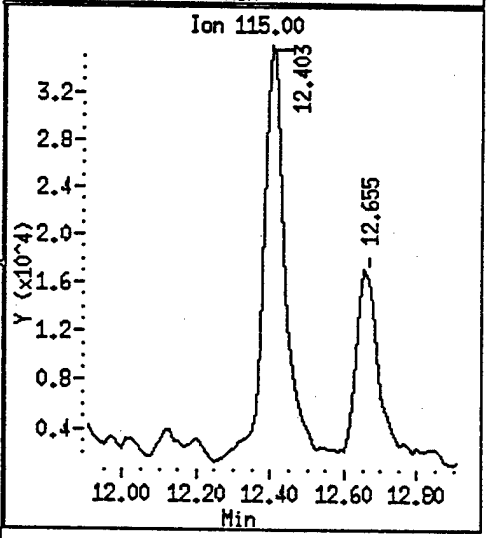












HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 95 - 05 - 556

Approved for release by:

M. Scott Sample Date: 6/5/95

M. Scott Sample, Laboratory Director

Karen Satterfield Date: 6/5/95

Karen Satterfield, Project Manager

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

CASE NARRATIVE

WORK ORDER NO.: 9505556

Southern Petroleum Laboratories (SPL) is pleased to present the results of laboratory analyses to Operational Technologies. The samples were received at our laboratory on May 16, 1995 at a temperature of 2 degrees Celsius. The following is a brief narrative of the laboratory analyses.

Based on the conditions of the samples, procedures performed and the quality controls implemented for this project, the following exceptions were noted for this data package:

1) All surrogates were acceptable for the semi-volatile analysis except for phenol-d5 in samples 025-001BH 6.5 - 7.0'.

If I can be of further assistance or answer any questions, please do not hesitate to contact me at (713)660-0901 ext 103.

Karen Satterfield
Project Manager

QUALITY CONTROL

DOCUMENTATION

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 504285 SAS No.: ____ SDG NO.: 505556

Matrix Spike - EPA Sample No.: EFFLUENT

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	52	104	61-145
Trichloroethene	50.0	0	52	104	71-120
Benzene	50.0	0	53	106	76-127
Toluene	50.0	0	50	100	76-125
Chlorobenzene	50.0	0	52	104	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	50	100	4	14	61-145
Trichloroethene	50.0	50	100	4	14	71-120
Benzene	50.0	51	102	4	11	76-127
Toluene	50.0	51	102	2	13	76-125
Chlorobenzene	50.0	51	102	2	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 1

Idelis Williams, Q C Officer

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 505512 SAS No.: ____ SDG NO.: 505556

Matrix Spike - EPA Sample No.: 025-009BH 14-14.5

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	49	98	59-172
Trichloroethene	50.0	0	43	86	62-137
Benzene	50.0	0	46	92	66-142
Toluene	50.0	0	47	94	59-139
Chlorobenzene	50.0	0	43	86	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	48	96	2	22	59-172
Trichloroethene	50.0	43	86	0	24	62-137
Benzene	50.0	46	92	0	21	66-142
Toluene	50.0	46	92	2	21	59-139
Chlorobenzene	50.0	42	84	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 2

Idelis Williams, QC Officer

3A

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 505043 SAS No.: ____ SDG NO.: 505556

Matrix Spike - EPA Sample No.: #17 SLOP OIL UST PIT(7')

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	6200	0	6600	106	59-172
Trichloroethene	6200	0	6200	100	62-137
Benzene	6200	0	6600	106	66-142
Toluene	6200	0	6300	102	59-139
Chlorobenzene	6200	0	6300	102	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	6200	6600	106	0	22	59-172
Trichloroethene	6200	6100	98	2	24	62-137
Benzene	6200	6400	103	3	21	66-142
Toluene	6200	6200	100	2	21	59-139
Chlorobenzene	6200	6200	100	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 1

Idella Williams, Q C Officer

SPL Blank QC Report

Matrix: Soil
Sample ID: BLANK
Batch: K950517094856

Reported on: 05/24/95 16:33
Analyzed on: 05/17/95 13:36
Analyst: HLW

METHOD 8240 **K137B02**

Compound	Result	Detection Limit	Units
1,2-Dichloroethene (total)	ND	5	ug/Kg
Xylene (Total)	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Chloroethane	ND	10	ug/Kg
Bromomethane	ND	10	ug/Kg
Acetone	ND	100	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
Methylene Chloride	ND	5	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Chloroform	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
Benzene	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: K950517094856

Reported on: 05/24/95 16:33
Analyzed on: 05/17/95 13:36
Analyst: HLW

METHOD 8240 **K137B02**

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	95	70-121	% Recovery
Toluene-d8	99	84-138	% Recovery
Bromofluorobenzene	102	59-113	% Recovery

Samples in Batch 9505556-04

Notes

ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950517.b/k137b02.d
Lab Smp Id: BLANK-8240S/1X
Inj Date : 17-MAY-1995 13:36
Operator : HLW Inst ID: k.i
Smp Info : BLANK-8240S/1X
Misc Info : K137S1//K137CS2
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 17-May-1995 13:34 hillery Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22 Cal File: k137cs1.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.123	2.119	(1.000)	64436	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.380	2.377	(1.121)	27639	240	48
* 31 1,4-Difluorobenzene	114.00	2.805	2.801	(1.000)	377177	250	
$ 40 Toluene-d8	98.00	4.547	4.543	(0.671)	414022	250	50
* 51 Chlorobenzene-d5	117.00	6.775	6.771	(1.000)	277392	250	
$ 61 Bromofluorobenzene	95.00	8.881	8.877	(1.311)	161818	250	51

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k137b02.d
Lab Smp Id: BLANK-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950517.b/kvoclps.m
Misc Info: K137S1//K137CS2

Calibration Date: 05/17/95
Calibration Time: 1122

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	62852	31426	125704	64436	2.52
31 1,4-Difluorobenzene	396843	198422	793686	377177	-4.96
51 Chlorobenzene-d5	295653	147826	591306	277392	-6.18

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.18
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.14
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.06

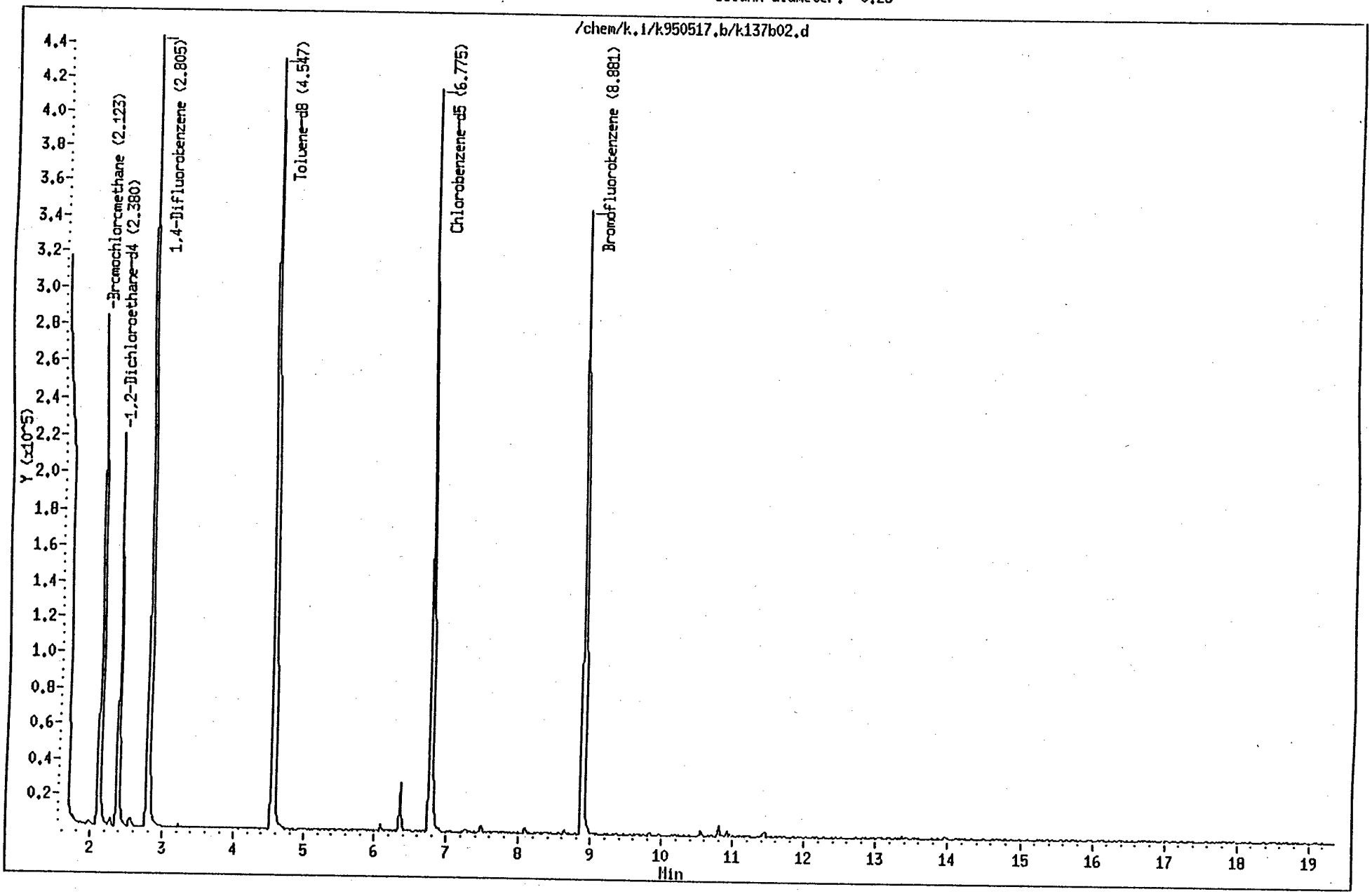
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950517.b/k137b02.d
Date : 17-MAY-1995 13:36
Client ID:
Sample Info: BLANK-8240S/1X

Instrument: k.1

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Matrix: Aqueous
Sample ID: BLANK
Batch: L950516104642

Reported on: 05/24/95 16:33
Analyzed on: 05/16/95 12:28
Analyst: JC

METHOD 8240/624 L136B01

Compound	Result	Detection Limit	Units
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: L950516104642

Reported on: 05/24/95 16:33
Analyzed on: 05/16/95 12:28
Analyst: JC

METHOD 8240/624 L136B01

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	103	76-114	% Recovery
Toluene-d8	100	88-110	% Recovery
Bromofluorobenzene	96	86-115	% Recovery

Samples in Batch 9505556-01

Notes

ND - Not detected.

Idelis Williams, QC Officer

Data File: /chem/l.i/1950516.b/l136b01.d
Report Date: 16-May-1995 12:59

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/1950516.b/l136b01.d
Lab Smp Id:
Inj Date : 16-MAY-1995 12:28
Operator : JC Inst ID: l.i
Smp Info : BLANK-8240W/1X
Misc Info : L136W1//L136CW1
Comment :
Method : /chem/l.i/1950516.b/lvoclpw.m
Meth Date : 16-May-1995 12:26 jimmy Quant Type: ISTD
Cal Date : 16-MAY-1995 12:00 Cal File: l136cw1.d
Cal bottle: 3
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL ug/L)
23 Bromochloromethane	128.00	5.237	5.246	(1.000)	60433	250	
26 1,2-Dichloroethane-d4	102.00	6.004	6.012	(1.146)	26092	260	51
3 1,4-Difluorobenzene	114.00	6.940	6.948	(1.000)	343501	250	
4 Toluene-d8	98.00	9.168	9.168	(0.825)	354353	250	50
50 Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	267613	250	
6 Bromofluorobenzene	95.00	12.787	12.787	(1.151)	130233	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: 1.i
ab File ID: 1136b01.d
ab Smp Id:
nalysis Type: VOA
uant Type: ISTD
perator: JC
ethod File: /chem/1.i/1950516.b/1voc1pw.m
isc Info: L136W1//L136CW1

Calibration Date: 05/16/95
Calibration Time: 1200

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65458	32729	130916	60433	-7.68
32 1,4-Difluorobenzene	368339	184170	736678	343501	-6.74
50 Chlorobenzene-d5	287836	143918	575672	267613	-7.03

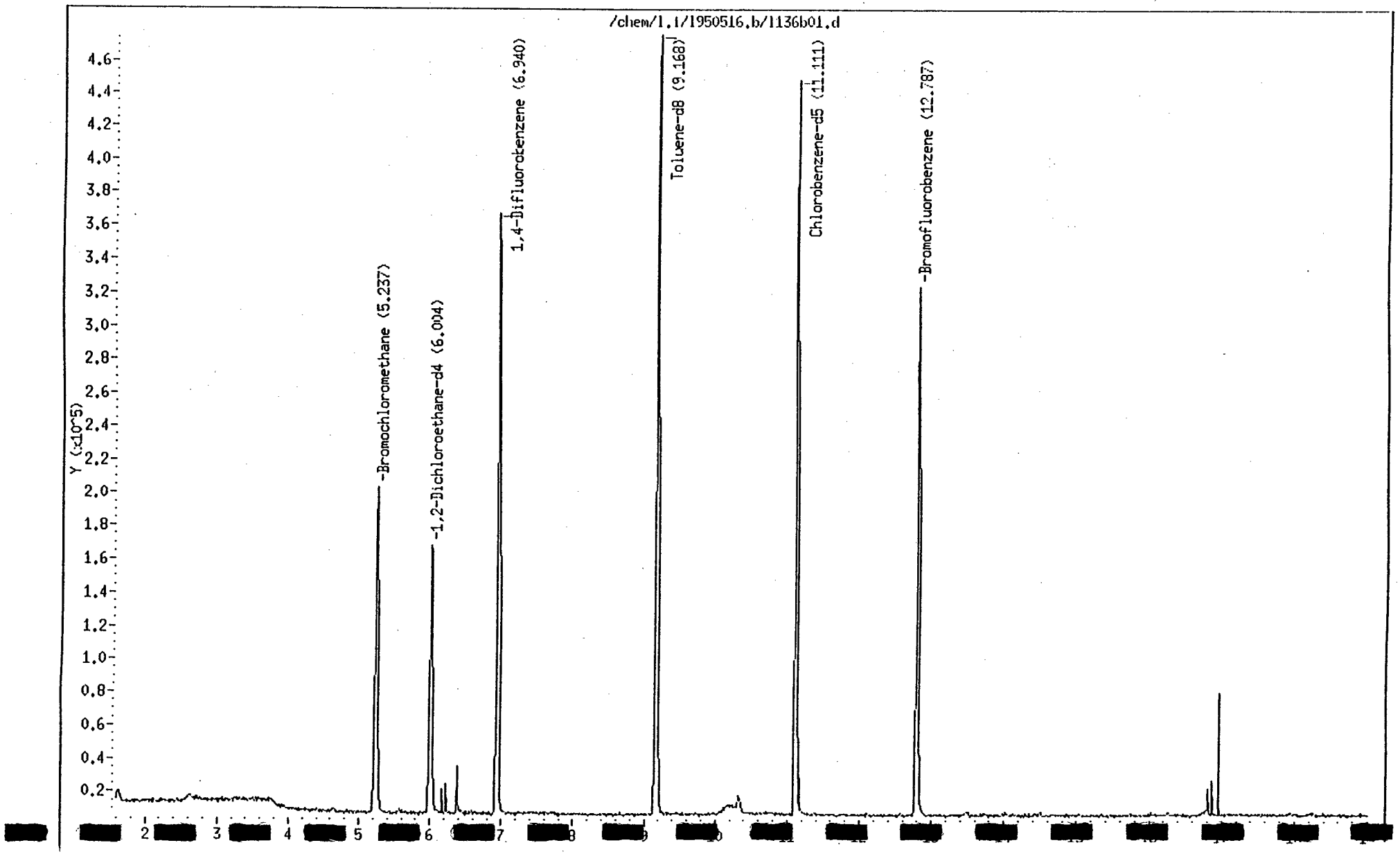
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.25	4.75	5.75	5.24	-0.16
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.94	-0.12
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950516.b/1136b01.d
Date : 16-MAY-1995 12:28
Client ID:
Sample Info: BLANK-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i

Operator: JC
Column diameter: 0.25



Matrix: Aqueous
Sample ID: BLANK
Batch: L950519104642

Reported on: 05/24/95 16:33
Analyzed on: 05/19/95 10:09
Analyst: JC

METHOD 8240/624 L139B01

Compound	Result	Detection Limit	Units
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: L950519104642

Reported on: 05/24/95 16:33
Analyzed on: 05/19/95 10:09
Analyst: JC

METHOD 8240/624 L139B01

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	101	76-114	% Recovery
Toluene-d8	102	88-110	% Recovery
Bromofluorobenzene	94	86-115	% Recovery

Samples in Batch 9505556-02 9505556-03 9505556-05

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/1950519.b/l139b01.d
Lab Smp Id:
Inj Date : 19-MAY-1995 10:09
Operator : JC
Smp Info : BLANK-8240W/1X
Misc Info : L139W1//L139CW1
Comment :
Method : /chem/l.i/1950519.b/lvoclpw.m
Meth Date : 19-May-1995 10:10 jimmy
Cal Date : 19-MAY-1995 09:41
Als bottle: 3
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: l.i

Quant Type: ISTD
Cal File: l139cw1.d

Compound Sublist: all.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 23 Bromochloromethane	128.00	5.226	5.226	(1.000)	62312	250	
$ 26 1,2-Dichloroethane-d4	102.00	6.002	6.002	(1.148)	26902	250	50
* 32 1,4-Difluorobenzene	114.00	6.938	6.938	(1.000)	354368	250	
$ 43 Toluene-d8	98.00	9.157	9.157	(0.825)	379816	250	51
* 50 Chlorobenzene-d5	117.00	11.101	11.100	(1.000)	272826	250	
$ 61 Bromofluorobenzene	95.00	12.777	12.776	(1.151)	134166	240	47

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

strument ID: l.i
ab File ID: l139b01.d
Lab Smp Id:
nalysis Type: VOA
ient Type: ISTD
perator: JC
ethod File: /chem/l.i/1950519.b/lvoclpw.m
ic Info: L139W1//L139CW1

Calibration Date: 05/19/95
Calibration Time: 0941

Level: LOW
Sample Type: WATER

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65811	32906	131622	62312	-5.32
2 1,4-Difluorobenzene	366990	183495	733980	354368	-3.44
0 Chlorobenzene-d5	287816	143908	575632	272826	-5.21

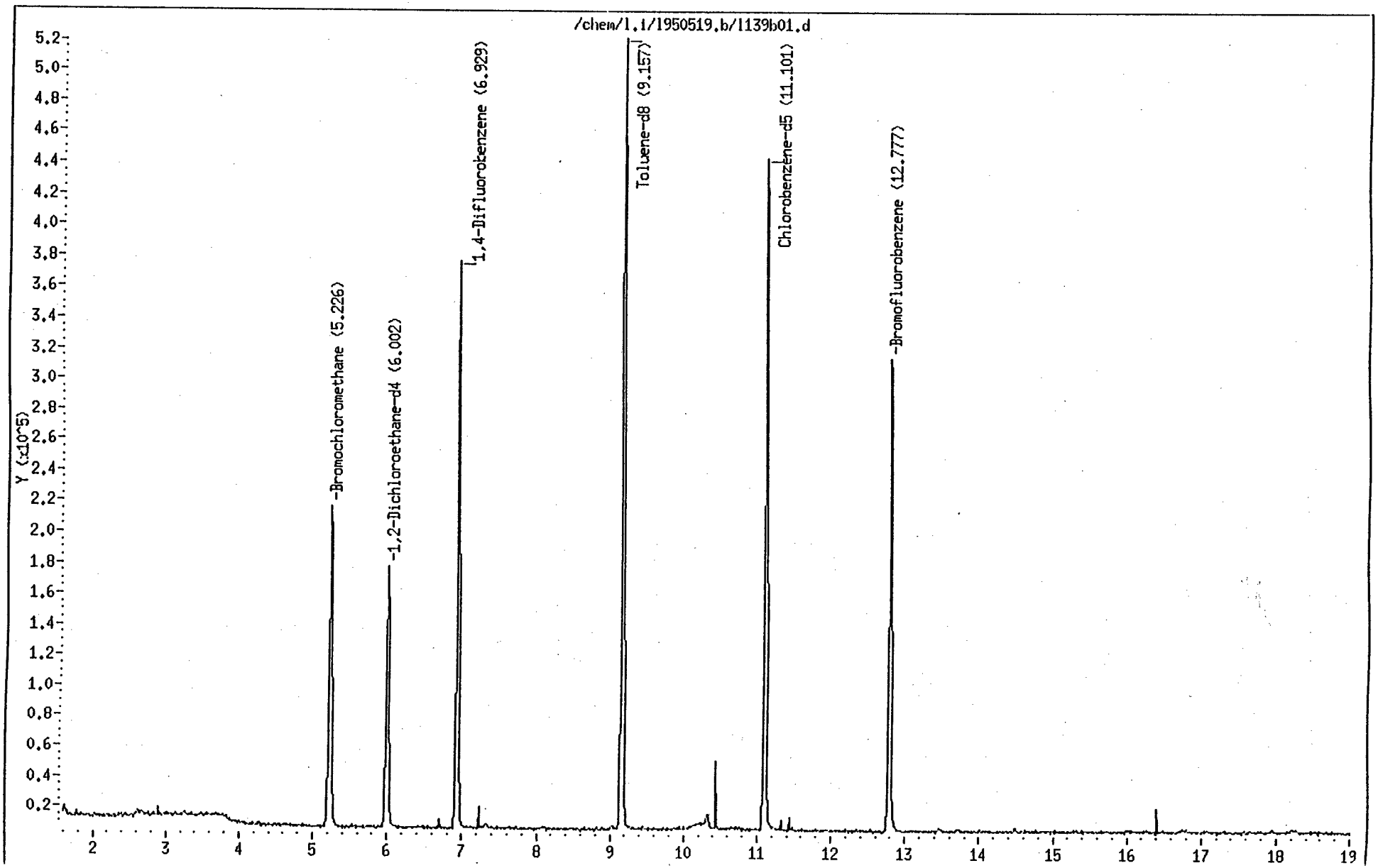
		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
3 Bromochloromethane	5.23	4.73	5.73	5.23	0.01
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
0 Chlorobenzene-d5	11.10	10.60	11.60	11.10	0.00

RE A UPPER LIMIT = +100% of internal standard area.
A LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950519.b/1139b01.d
Date : 19-MAY-1995 10:09
Client ID:
Sample Info: BLANK-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i

Operator: JC
Column diameter: 0.25

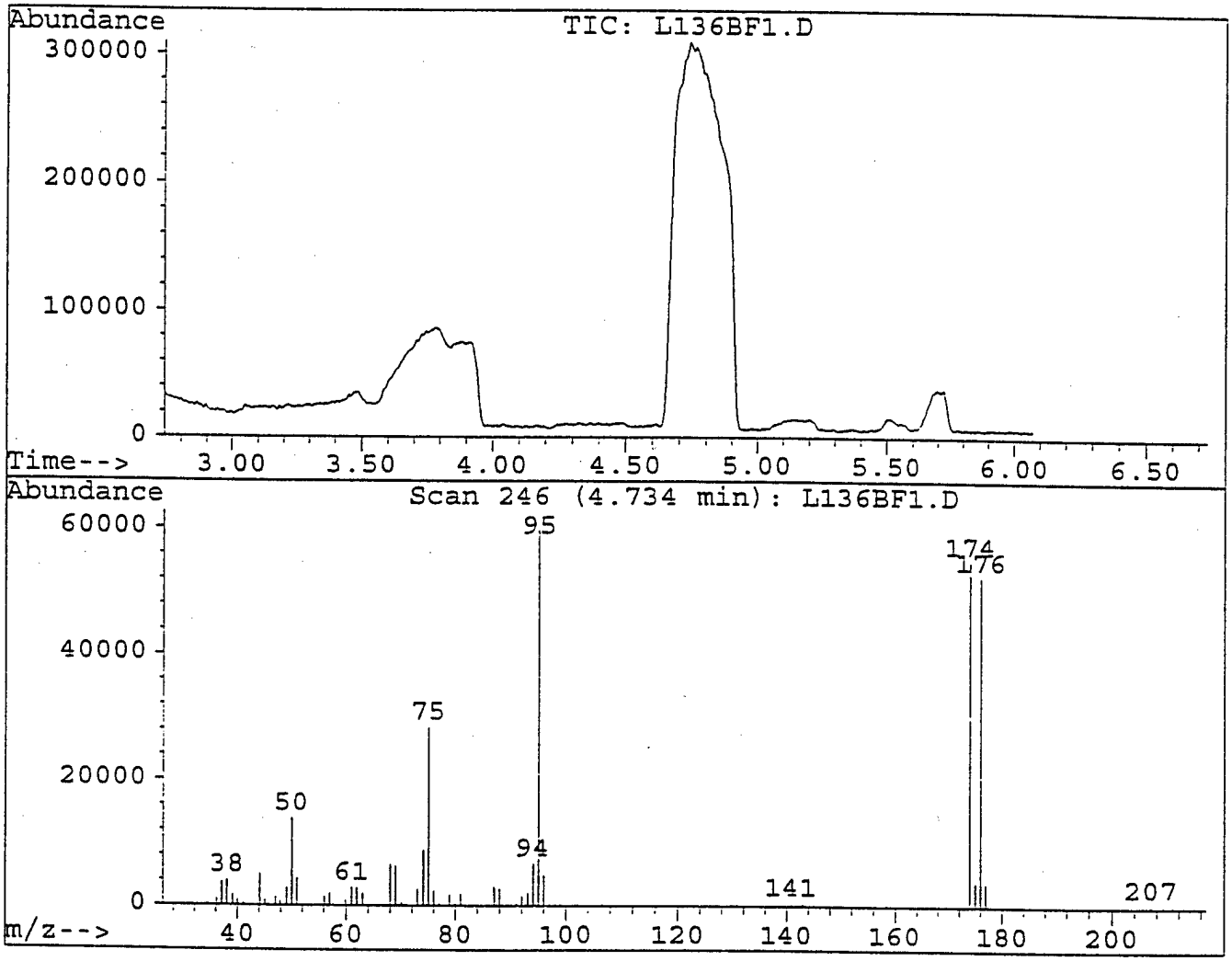


BFB

Data File : C:\HPCHEM\1\DATA\L950516\L136BF1.D
Acq On : 16 May 95 11:45 am
Sample : 50 NG BFB
Misc : PURGING INJECTION

Vial: 1
Operator:
Inst : 1
Multiplr: 1.00

Method : C:\HPCHEM\1\METHODS\ENVDEF.M
Title :



Peak Apex is scan: 246

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.2	13845	PASS
75	95	30	60	47.5	28344	PASS
95	95	100	100	100.0	59648	PASS
96	95	5	9	8.1	4821	PASS
173	174	0	2	0.0	0	PASS
174	95	50	120	91.9	54816	PASS
175	174	5	9	7.0	3857	PASS
176	174	95	101	95.5	52336	PASS
177	176	5	9	7.1	3695	PASS

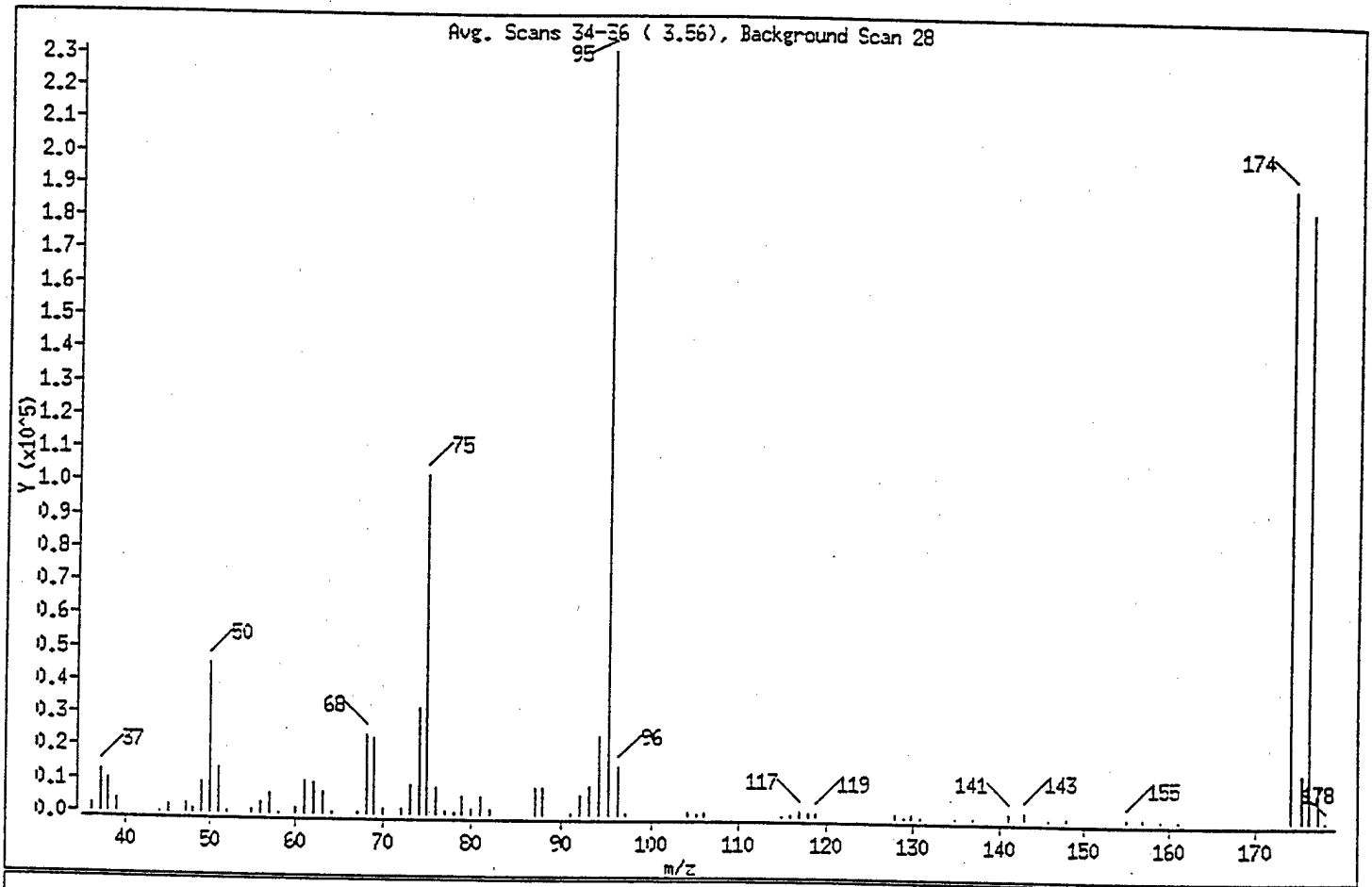
Data File: /chem/k.i/k950517.b/k137bf1.d
Date : 17-MAY-95 10:51
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i

Operator:

Column phase:
1 bfb

Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.64
75	30.00 - 60.00% of mass 95	44.28
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	82.74
175	5.00 - 9.00% of mass 174	6.06 (7.32)
176	95.00 - 101.00% of mass 174	79.74 (96.37)
177	5.00 - 9.00% of mass 176	5.04 (6.32)

Data File: /chem/k.i/k950517.b/k137bf1.d
Date : 17-MAY-95 10:51
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i
Operator:
Column phase:
Column diameter: 2.00

Data File: k137bf1.d
Spectrum : Avg. Scans 34-36 (3.56), Background Scan 28
Largest m/z: 95.10
Number of peaks: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	2256	63.05	6474	91.00	574	134.90	204
37.10	12862	64.15	744	92.10	5984	136.90	221
38.10	10080	67.05	386	93.10	8824	141.05	1468
39.10	3628	68.05	24232	94.10	23976	142.95	2229
44.05	109	69.05	22744	95.10	231552	145.95	221
45.05	2275	70.05	1663	96.10	15009	147.85	710
47.05	2971	72.10	1402	97.00	527	155.00	469
48.05	1262	73.10	8868	104.05	1041	156.90	402
49.05	9557	74.10	32024	105.05	547	158.90	192
50.05	45488	75.10	102544	105.95	1096	160.95	167
51.10	13883	76.10	8447	115.00	177	174.00	191616
52.10	745	77.00	1115	116.00	770	175.10	14034
55.10	877	78.10	754	117.00	1374	176.00	184640
56.10	3208	79.00	5222	118.00	875	177.00	11672
57.10	6014	80.00	1442	118.90	1147	177.90	220
58.10	169	81.05	5380	127.95	907		
60.10	1898	82.05	1381	128.95	222		
61.05	9877	87.05	8353	129.95	956		
62.05	9471	87.95	8235	131.00	185		

Data File: /chem/k.i/k950517.b/k137bf1.d

Date : 17-MAY-95 10:51

Client ID:

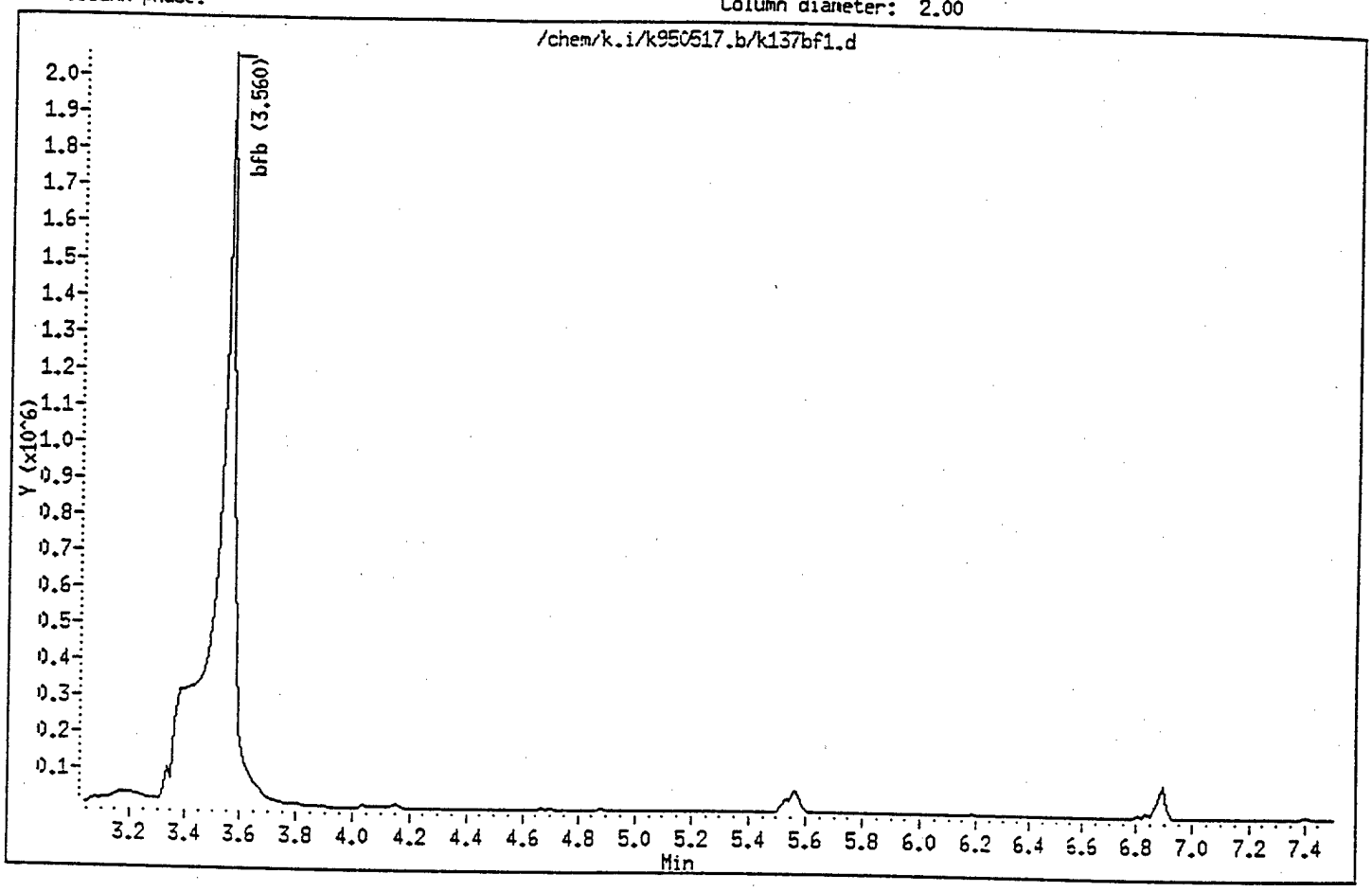
Sample Info: BFB 50 NG

Instrument: k.i

Operator:

Column phase:

Column diameter: 2.00



Data File: /chem/1.i/1950519.b/1139bf1.d

Date : 19-MAY-95 09:26

Client ID:

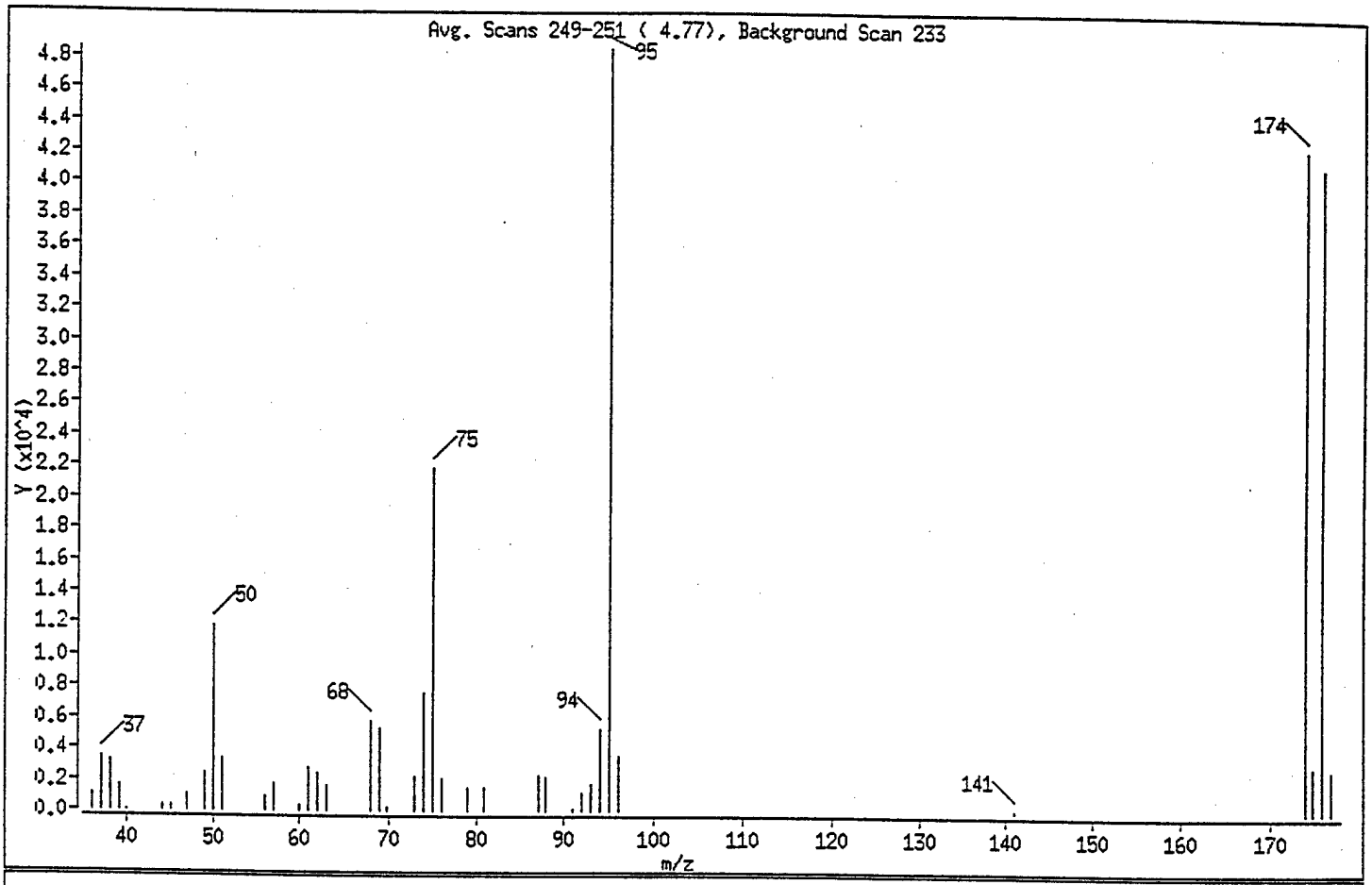
Sample Info: 50 NG BFB

Instrument: 1.i

Operator:

Column phase:
1 bfb

Column diameter: 0.25



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	24.32
75	30.00 - 60.00% of mass 95	44.87
96	5.00 - 9.00% of mass 95	7.37
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	87.30
175	5.00 - 9.00% of mass 174	6.16 (7.06)
176	95.00 - 101.00% of mass 174	84.95 (97.31)
177	5.00 - 9.00% of mass 176	5.73 (6.74)

Data File: /chem/1.i/1950519.b/1139bf1.d
Date : 19-MAY-95 09:26
Client ID:
Sample Info: 50 NG BFB

Instrument: 1.i
Operator:
Column phase:
Column diameter: 0.25

Data File: 1139bf1.d
Spectrum : Avg. Scans 249-251 (4.77), Background Scan 233
Largest m/z: 95.05
Number of peaks: 39

m/z	Y	m/z	Y	m/z	Y	m/z	Y
35.95	1090	51.00	3330	73.05	2134	92.95	1778
37.05	3493	55.95	954	74.05	7519	94.05	5302
38.05	3162	57.05	1708	75.05	21776	95.05	48544
39.05	1622	59.95	364	76.05	2063	96.05	3578
39.95	35	61.05	2754	78.95	1463	140.95	170
44.00	313	61.95	2403	80.85	1458	173.95	42376
45.00	400	63.00	1617	87.00	2318	174.95	2991
47.00	984	68.00	5719	87.90	2173	175.95	41240
49.00	2429	69.00	5307	90.90	65	176.95	2781
50.00	11804	69.90	183	91.90	1150		

Data File: /chem/l.i/1950519.b/l139bf1.d

Date : 19-MAY-95 09:26

Client ID:

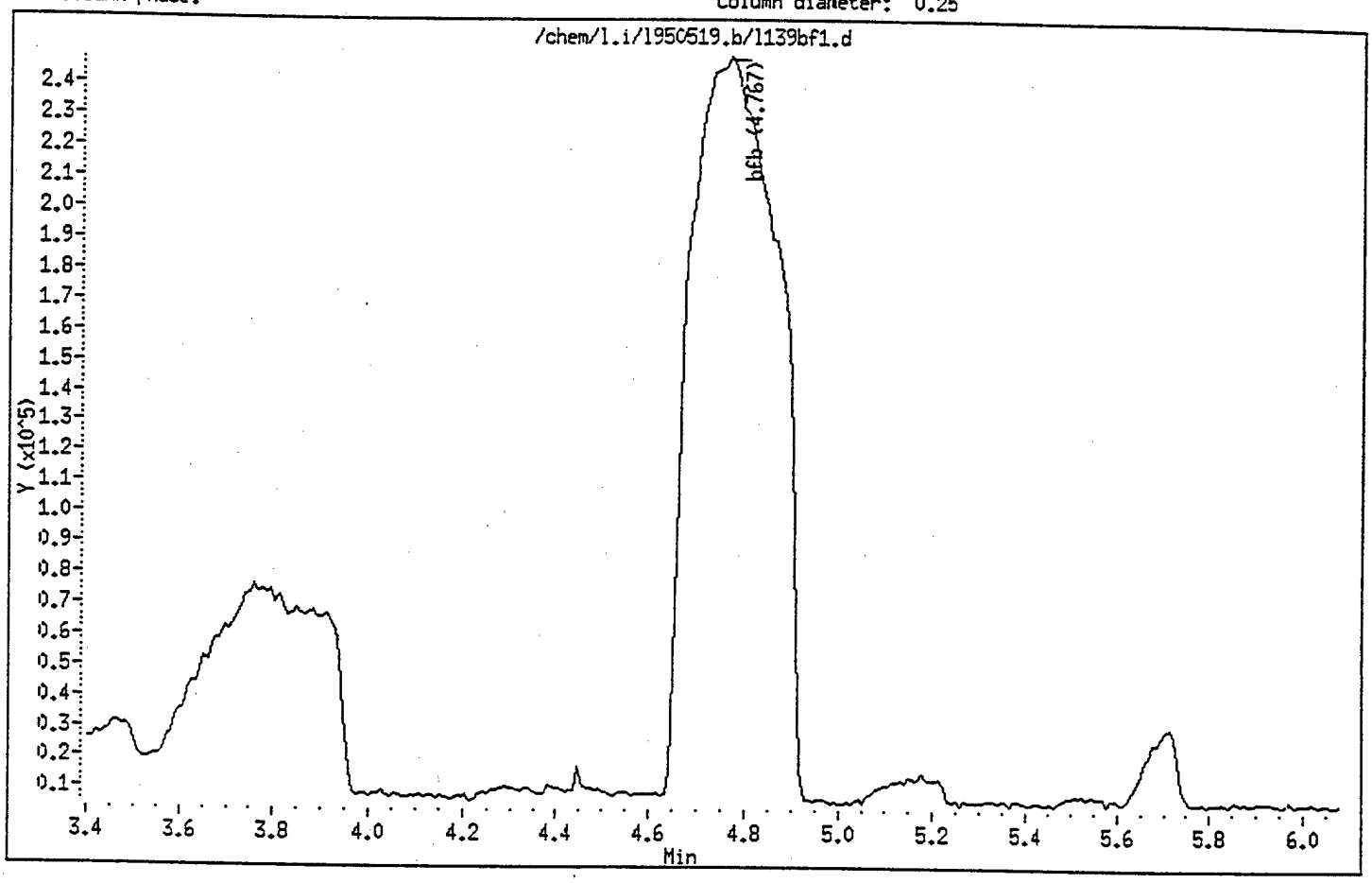
Sample Info: 50 NG BFB

Instrument: l.i

Operator:

Column phase:

Column diameter: 0.25



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:01
End Cal Date : 15-MAY-1995 16:50
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/l.i/l950515.b/lvoclpw.m
Cal Date : 15-May-1995 18:03 jimmy
Curve Type : Average

Calibration File Names:
Level 1: /chem/l.i/l950515.b/l135iw1.d
Level 2: /chem/l.i/l950515.b/l135iw2.d
Level 3: /chem/l.i/l950515.b/l135iw3.d
Level 4: /chem/l.i/l950515.b/l135iw4.d
Level 5: /chem/l.i/l950515.b/l135iw5.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	1 Chloromethane	2.53469	2.46842	2.40993	2.24270	2.13410	2.35797	7.018
	2 Vinyl Chloride	2.15588	2.05812	1.92853	1.72484	1.50591	1.87466	13.963
	3 Bromomethane	1.57635	1.46649	1.43809	1.36195	1.27968	1.42451	7.840
	4 Chloroethane	1.32315	1.25666	1.23000	1.17009	1.14698	1.22538	5.736
	7 Trichlorofluoromethane	1.77615	1.87700	1.92740	1.88929	1.98661	1.89129	4.083
	8 Acetone	0.35473	0.34636	0.41881	0.38295	0.40077	0.38073	8.003
	11 1,1-Dichloroethene	1.36689	1.36051	1.37007	1.31370	1.34237	1.35071	1.725
	13 Methylene Chloride	1.58139	1.57589	1.57776	1.53741	1.55025	1.56454	1.249
	14 Carbon Disulfide	5.08861	4.88442	5.08749	5.01579	5.10478	5.03622	1.818
	15 trans-1,2-Dichloroethene	1.81130	1.76068	1.76382	1.71541	1.73350	1.75694	2.070
	17 1,1-Dichloroethane	3.81133	3.80219	3.81689	3.72452	3.79535	3.79006	0.991
M	18 1,2-Dichloroethene (total)	1.88696	1.86736	1.89304	1.83662	1.86102	1.86900	1.201
	19 Vinyl Acetate	6.71971	6.47589	6.30870	6.32029	6.30748	6.42641	2.781
	20 2-Butanone	1.77204	2.19596	2.84855	3.00350	2.82041	2.52809	20.706
	21 cis-1,2-Dichloroethene	1.96261	1.97404	2.02226	1.95783	1.98853	1.98105	1.307
	24 Chloroform	3.20496	3.10773	3.20887	3.10154	3.15704	3.15603	1.623
	27 1,1,1-Trichloroethane	0.42972	0.41276	0.42102	0.42257	0.42505	0.42222	1.476
	28 1,2-Dichloroethane	2.83567	2.73248	2.83571	2.81633	2.84749	2.81353	1.659
	30 Benzene	1.36785	1.32782	1.33242	1.33179	1.32646	1.33727	1.292
	31 Carbon Tetrachloride	0.35796	0.34490	0.33517	0.34949	0.35190	0.34789	2.451
	34 1,2-Dichloropropane	0.40309	0.40066	0.40018	0.39582	0.39982	0.39991	0.656
	35 Trichloroethene	0.29675	0.29862	0.30518	0.30173	0.30592	0.30164	1.325
	37 Bromodichloromethane	0.37488	0.37240	0.39115	0.40234	0.40478	0.38911	3.869
	39 2-Chloroethylvinylether	0.14751	0.14946	0.16067	0.18324	0.18712	0.16560	11.244
	40 4-Methyl-2-Pentanone	0.51047	0.50945	0.63860	0.70627	0.69005	0.61097	15.636
	41 cis-1,3-Dichloropropene	0.44699	0.46624	0.48409	0.49904	0.50912	0.48110	5.197
	42 trans-1,3-Dichloropropene	0.39062	0.41017	0.42873	0.44118	0.45047	0.42423	5.681

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:01
End Cal Date : 15-MAY-1995 16:50
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/l.i/l950515.b/lvoclpw.m
Cal Date : 15-May-1995 18:03 jimmy
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	44 Toluene	0.92066	0.92819	0.96125	0.93556	0.95211	0.93955	1.789
	45 1,1,2-Trichloroethane	0.25924	0.25896	0.25902	0.25981	0.25844	0.25909	0.190
	46 2-Hexanone	0.38933	0.51386	0.77985	0.87032	0.85399	0.68147	31.859
	47 Dibromochloromethane	0.25671	0.25558	0.27075	0.28453	0.29659	0.27283	6.513
	49 Tetrachloroethene	0.34146	0.33321	0.34043	0.32876	0.33693	0.33616	1.562
	52 Chlorobenzene	0.99545	0.99207	1.02427	1.01530	1.02623	1.01066	1.585
M	53 Xylene (Total)	0.61228	0.63114	0.64334	0.64105	0.65059	0.63568	2.330
	54 Ethylbenzene	0.49960	0.51225	0.52525	0.52490	0.53471	0.51934	2.623
	55 m,p-Xylene(s)	0.62089	0.63223	0.65070	0.64644	0.65428	0.64091	2.181
	56 Bromoform	0.20330	0.21650	0.23402	0.25781	0.27995	0.23832	12.990
	57 Styrene	0.92546	0.96177	1.01847	1.05438	1.07478	1.00697	6.215
	59 o-Xylene	0.59507	0.62895	0.62862	0.63029	0.64320	0.62522	2.865
	60 1,1,2,2-Tetrachloroethane	0.48853	0.50657	0.50606	0.52504	0.51171	0.50758	2.584
$	26 1,2-Dichloroethane-d4	0.42347	0.41892	0.43981	0.41437	0.42888	0.42509	2.312
$	43 Toluene-d8	1.29950	1.32463	1.35216	1.33757	1.35179	1.33313	1.649
$	61 Bromofluorobenzene	0.50362	0.49600	0.51360	0.52340	0.53569	0.51446	3.058

Data File: /chem/l.i/l950515.b/l135iw1.d
Report Date: 15-May-1995 17:20

SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950515.b/l135iw1.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:01
Operator : JC Inst ID: l.i
Smp Info : 10 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/l950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:20 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 3 Calibration Sample, Level: 1
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

						AMOUNTS	
	QUANT SIG					CAL-AMT	ON-COL
Compounds	MASS	RT	EXP RT	REL RT	RESPONSE	(ng)	(ng)
1 Chloromethane	50.00	1.795	1.795	(0.343)	35698	50	54
2 Vinyl Chloride	62.00	1.902	1.902	(0.363)	30363	50	58
Bromomethane	94.00	2.143	2.143	(0.409)	22201	50	55
Chloroethane	64.00	2.205	2.205	(0.421)	18635	50	54
7 Trichlorofluoromethane	101.00	2.562	2.562	(0.489)	25015	50	47
8 Acetone	58.00	2.615	2.615	(0.499)	4996	50	46(a)
11 1,1-Dichloroethene	96.00	3.008	3.008	(0.574)	19251	50	50
13 Methylene Chloride	84.00	3.248	3.248	(0.620)	22272	50	50
18 1,2-Dichloroethene (total)	96.00				53151	100	100
14 Carbon Disulfide	76.00	3.373	3.373	(0.644)	71667	50	50
15 trans-1,2-Dichloroethene	96.00	3.837	3.837	(0.733)	25510	50	52
17 1,1-Dichloroethane	63.00	4.175	4.175	(0.797)	53678	50	50
19 Vinyl Acetate	43.00	4.264	4.264	(0.814)	94639	50	52
20 2-Butanone	43.00	4.639	4.639	(0.886)	24957	50	35(a)
21 cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.949)	27641	50	50
24 Chloroform	83.00	5.245	5.245	(1.002)	45138	50	51
27 1,1,1-Trichloroethane	97.00	6.029	6.029	(0.869)	34137	50	51
28 1,2-Dichloroethane	62.00	6.118	6.118	(1.169)	39937	50	50
30 Benzene	78.00	6.484	6.484	(0.934)	108663	50	51
31 Carbon Tetrachloride	117.00	6.511	6.511	(0.938)	28437	50	51
34 1,2-Dichloropropane	63.00	7.464	7.464	(1.076)	32022	50	50
35 Trichloroethene	130.00	7.491	7.491	(1.080)	23574	50	49
37 Bromodichloromethane	83.00	7.687	7.687	(1.108)	29781	50	48
39 2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	11718	50	44(a)
40 4-Methyl-2-Pentanone	43.00	8.507	8.507	(1.226)	40552	50	42(a)
41 cis-1,3-Dichloropropene	75.00	8.543	8.543	(1.231)	35509	50	46
42 trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	31031	50	46
44 Toluene	92.00	9.256	9.256	(0.833)	57707	50	49
45 1,1,2-Trichloroethane	83.00	9.345	9.345	(1.347)	20594	50	50

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2-Hexanone	43.00	9.711	9.711	(0.874)	24403	50	28 (a)
Dibromochloromethane	129.00	9.969	9.969	(1.437)	20393	50	47
49 Tetrachloroethene	164.00	10.317	10.317	(0.929)	21403	50	51
Chlorobenzene	112.00	11.155	11.155	(1.004)	62395	50	49
Xylene (Total)	106.00				115134	150	140
54 Ethylbenzene	106.00	11.458	11.458	(1.031)	31315	50	48
55 m,p-Xylene(s)	106.00	11.618	11.618	(1.046)	77835	100	97
Bromoform	173.00	12.037	12.037	(1.083)	12743	50	43
Styrene	104.00	12.082	12.082	(1.087)	58008	50	46
59 o-Xylene	106.00	12.144	12.144	(1.093)	37299	50	48
60 1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	30621	50	48
Bromochloromethane	128.00	5.236	5.236	(1.000)	70419	250	
1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	397204	250	
50 Chlorobenzene-d5	117.00	11.110	11.110	(1.000)	313401	250	
1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.146)	5964	50	50
Toluene-d8	98.00	9.158	9.158	(0.824)	81453	50	49
Bromofluorobenzene	95.00	12.786	12.786	(1.151)	31567	50	49

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw1.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/l950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70419	-0.24
32 1,4-Difluorobenzene	406982	203491	813964	397204	-2.40
50 Chlorobenzene-d5	313180	156590	626360	313401	0.07

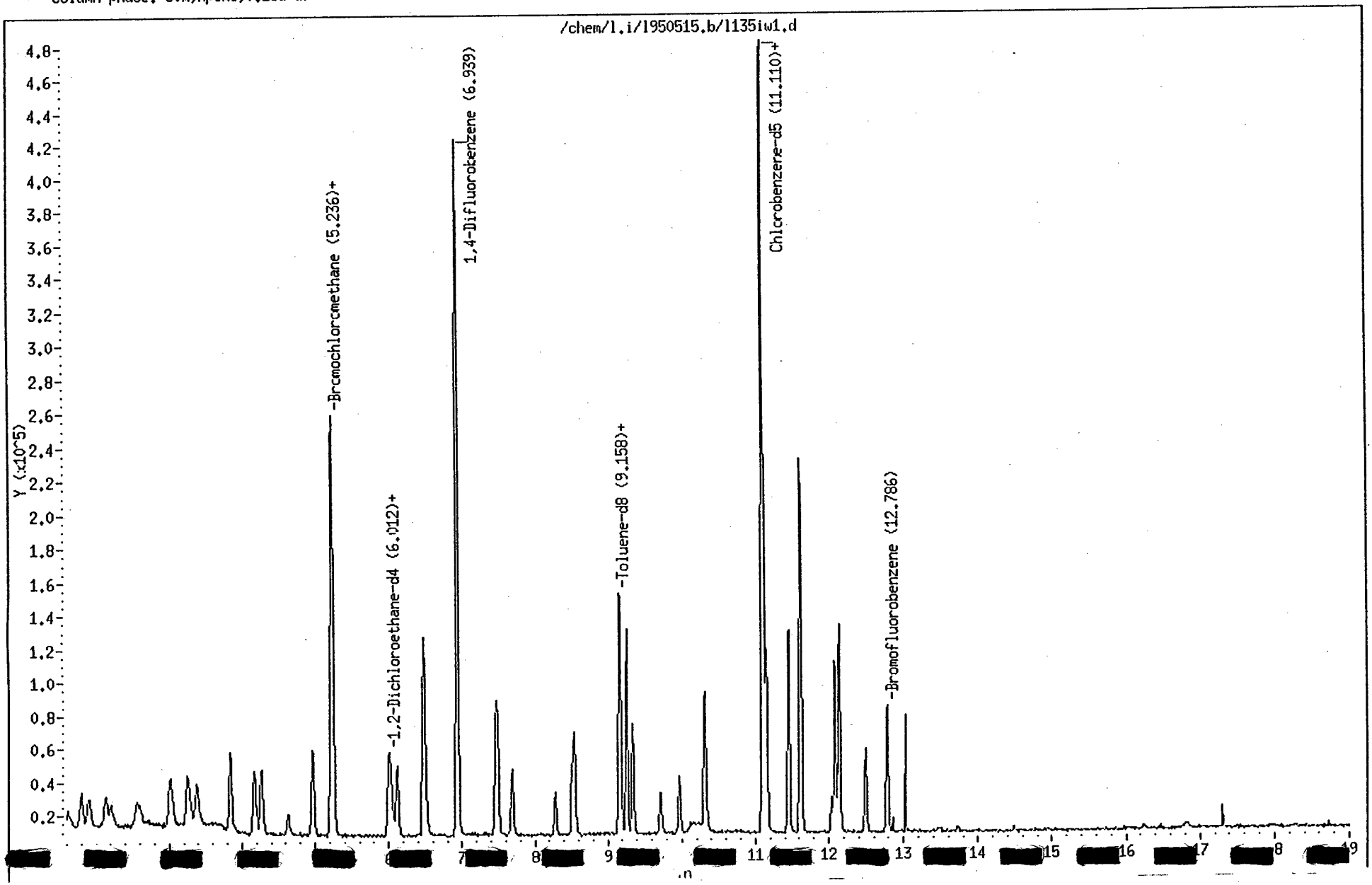
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	-0.01
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	-0.01
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950515.b/l135iw1.d
Date : 15-MAY-1995 15:01
Client ID:
Sample Info: 10 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i

Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950515.b/l135iw2.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:28
Operator : JC Inst ID: l.i
Smp Info : 20 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/l950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:20 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1 Chloromethane	50.00	1.795	1.795	(0.343)	69877	100	100
2 Vinyl Chloride	62.00	1.902	1.902	(0.363)	58262	100	110
Bromomethane	94.00	2.134	2.134	(0.408)	41514	100	100
Chloroethane	64.00	2.205	2.205	(0.421)	35574	100	100
7 Trichlorofluoromethane	101.00	2.562	2.562	(0.489)	53135	100	99
8 Acetone	58.00	2.606	2.606	(0.498)	9805	100	91(a)
11 1,1-Dichloroethene	96.00	3.016	3.016	(0.576)	38514	100	100
13 Methylene Chloride	84.00	3.248	3.248	(0.620)	44611	100	100
18 1,2-Dichloroethene (total)	96.00				105724	200	200
14 Carbon Disulfide	76.00	3.373	3.373	(0.644)	138270	100	97
15 trans-1,2-Dichloroethene	96.00	3.836	3.836	(0.733)	49842	100	100
17 1,1-Dichloroethane	63.00	4.175	4.175	(0.797)	107634	100	100
19 Vinyl Acetate	43.00	4.264	4.264	(0.814)	183322	100	100
20 2-Butanone	43.00	4.630	4.630	(0.884)	62164	100	87(a)
21 cis-1,2-Dichloroethene	96.00	4.968	4.968	(0.949)	55882	100	100
24 Chloroform	83.00	5.245	5.245	(1.002)	87975	100	98
27 1,1,1-Trichloroethane	97.00	6.029	6.029	(0.869)	65648	100	98
28 1,2-Dichloroethane	62.00	6.118	6.118	(1.169)	77352	100	97
30 Benzene	78.00	6.475	6.475	(0.933)	211187	100	99
31 Carbon Tetrachloride	117.00	6.502	6.502	(0.937)	54855	100	99
34 1,2-Dichloropropane	63.00	7.464	7.464	(1.076)	63724	100	100
35 Trichloroethene	130.00	7.491	7.491	(1.080)	47495	100	99
37 Bromodichloromethane	83.00	7.687	7.687	(1.108)	59229	100	96
39 2-Chloroethylvinylether	63.00	8.284	8.284	(1.194)	23771	100	90
40 4-Methyl-2-Pentanone	43.00	8.507	8.507	(1.226)	81027	100	83
41 cis-1,3-Dichloropropene	75.00	8.552	8.552	(1.233)	74154	100	97
42 trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	65237	100	97
44 Toluene	92.00	9.256	9.256	(0.833)	115972	100	99
45 1,1,2-Trichloroethane	83.00	9.345	9.345	(1.347)	41187	100	100

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	2-Hexanone	43.00	9.711	9.711	(0.874)	64204	100	75
	Dibromochloromethane	129.00	9.969	9.969	(1.437)	40650	100	94
49	Tetrachloroethene	164.00	10.308	10.308	(0.928)	41633	100	99
52	Chlorobenzene	112.00	11.155	11.155	(1.004)	123953	100	98
	Xylene (Total)	106.00				236570	300	300
	Ethylbenzene	106.00	11.458	11.458	(1.031)	64002	100	99
55	m,p-Xylene(s)	106.00	11.618	11.618	(1.046)	157987	200	200
56	Bromoform	173.00	12.037	12.037	(1.083)	27050	100	91
	Styrene	104.00	12.091	12.091	(1.088)	120167	100	96
	o-Xylene	106.00	12.144	12.144	(1.093)	78583	100	100
60	1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	63293	100	100
	Bromochloromethane	128.00	5.236	5.236	(1.000)	70771	250	
	1,4-Difluorobenzene	114.00	6.938	6.938	(1.000)	397619	250	
50	Chlorobenzene-d5	117.00	11.110	11.110	(1.000)	312360	250	
26	1,2-Dichloroethane-d4	102.00	6.002	6.002	(1.146)	11859	100	98
	Toluene-d8	98.00	9.158	9.158	(0.824)	165505	100	99
	Bromofluorobenzene	95.00	12.786	12.786	(1.151)	61972	100	96

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw2.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/l950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70771	0.26
32 1,4-Difluorobenzene	406982	203491	813964	397619	-2.30
50 Chlorobenzene-d5	313180	156590	626360	312360	-0.26

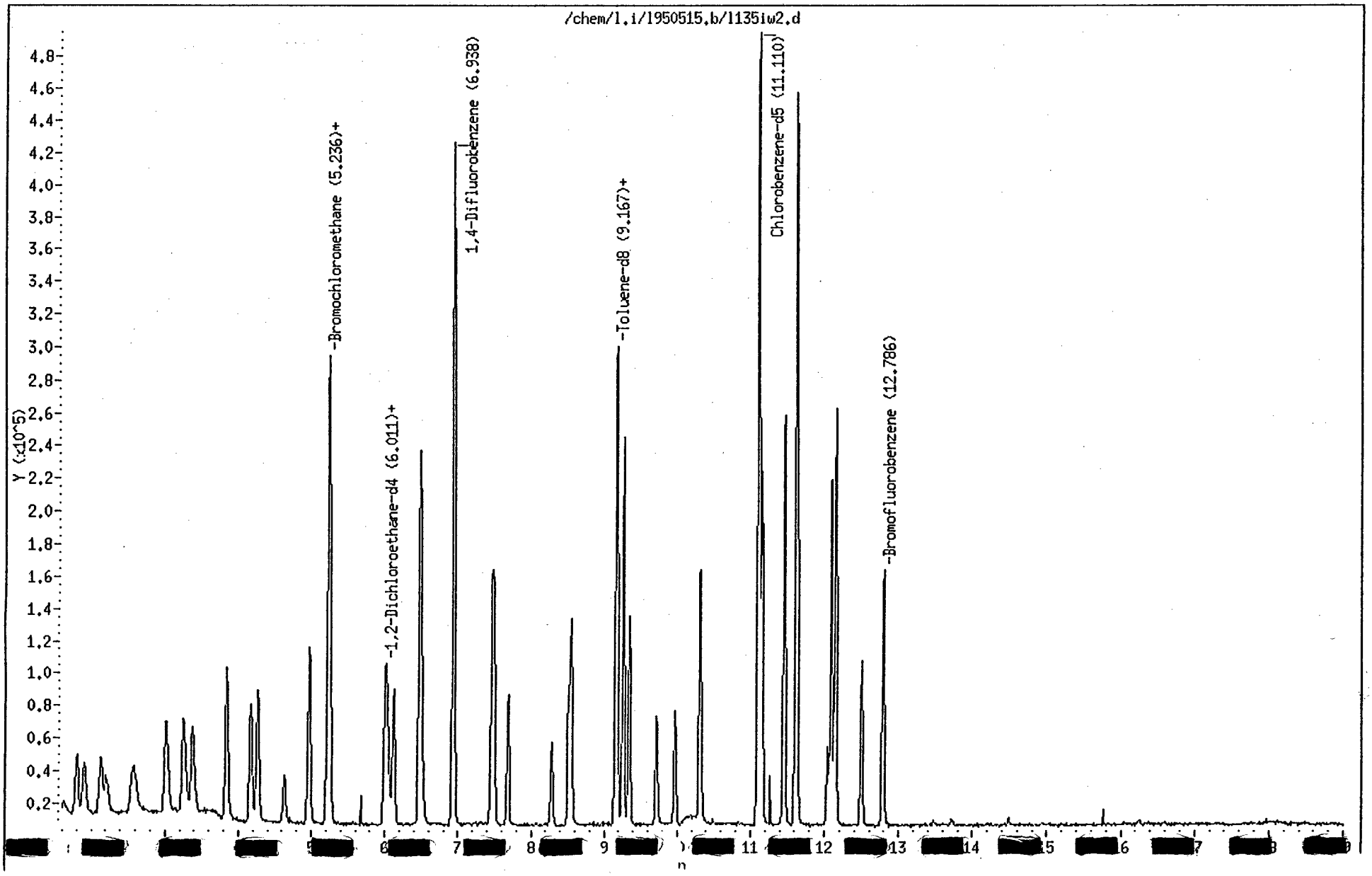
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	-0.02
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	-0.01
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950515.b/1135iw2.d
Date : 15-MAY-1995 15:28
Client ID:
Sample Info: 20 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i

Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950515.b/l135iw3.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:55
Operator : JC Inst ID: l.i
Smp Info : 50 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/l950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 5 Calibration Sample, Level: 3
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1 Chloromethane	50.00	1.796	1.796	(0.343)	170117	250	260
2 Vinyl Chloride	62.00	1.903	1.903	(0.363)	136135	250	260
Bromomethane	94.00	2.135	2.135	(0.408)	101515	250	250
Chloroethane	64.00	2.206	2.206	(0.421)	86826	250	250
7 Trichlorofluoromethane	101.00	2.563	2.563	(0.489)	136055	250	250
8 Acetone	58.00	2.616	2.616	(0.500)	29564	250	280(a)
11 1,1-Dichloroethene	96.00	3.017	3.017	(0.576)	96713	250	250
13 Methylene Chloride	84.00	3.249	3.249	(0.620)	111374	250	250
18 1,2-Dichloroethene (total)	96.00				267259	500	510
14 Carbon Disulfide	76.00	3.383	3.383	(0.646)	359126	250	250
15 trans-1,2-Dichloroethene	96.00	3.837	3.837	(0.733)	124508	250	250
17 1,1-Dichloroethane	63.00	4.176	4.176	(0.797)	269434	250	250
19 Vinyl Acetate	43.00	4.265	4.265	(0.814)	445331	250	240
20 2-Butanone	43.00	4.631	4.631	(0.884)	201079	250	280
21 cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.949)	142751	250	260
24 Chloroform	83.00	5.255	5.255	(1.003)	226514	250	250
27 1,1,1-Trichloroethane	97.00	6.039	6.039	(0.870)	171347	250	250
28 1,2-Dichloroethane	62.00	6.119	6.119	(1.169)	200173	250	250
30 Benzene	78.00	6.476	6.476	(0.933)	542269	250	250
31 Carbon Tetrachloride	117.00	6.503	6.503	(0.937)	136410	250	240
34 1,2-Dichloropropane	63.00	7.465	7.465	(1.076)	162865	250	250
35 Trichloroethene	130.00	7.492	7.492	(1.080)	124201	250	250
37 Bromodichloromethane	83.00	7.688	7.688	(1.108)	159191	250	250
39 2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	65389	250	240
40 4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	259900	250	260
41 cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	197015	250	250
42 trans-1,3-Dichloropropene	75.00	9.177	9.177	(1.322)	174484	250	250
44 Toluene	92.00	9.266	9.266	(0.834)	301045	250	260
45 1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	105417	250	250

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
46 2-Hexanone	43.00	9.712	9.712	(0.874)	244233	250	290
47 Dibromochloromethane	129.00	9.970	9.970	(1.437)	110190	250	250
49 Tetrachloroethene	164.00	10.318	10.318	(0.929)	106617	250	250
52 Chlorobenzene	112.00	11.156	11.156	(1.004)	320781	250	250
53 Xylene (Total)	106.00				604441	750	760
54 Ethylbenzene	106.00	11.459	11.459	(1.031)	164497	250	250
55 m,p-Xylene(s)	106.00	11.619	11.619	(1.046)	407570	500	510
56 Bromoform	173.00	12.038	12.038	(1.083)	73290	250	240
57 Styrene	104.00	12.092	12.092	(1.088)	318966	250	250
59 o-Xylene	106.00	12.145	12.145	(1.093)	196871	250	250
60 1,1,2,2-Tetrachloroethane	83.00	12.493	12.493	(1.124)	158488	250	250
3 Bromochloromethane	128.00	5.237	5.237	(1.000)	70590	250	
2 1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	406982	250	
50 Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	313180	250	
26 1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.146)	31046	250	260
8 Toluene-d8	98.00	9.159	9.159	(0.824)	423470	250	250
1 Bromofluorobenzene	95.00	12.778	12.778	(1.150)	160849	250	250

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw3.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

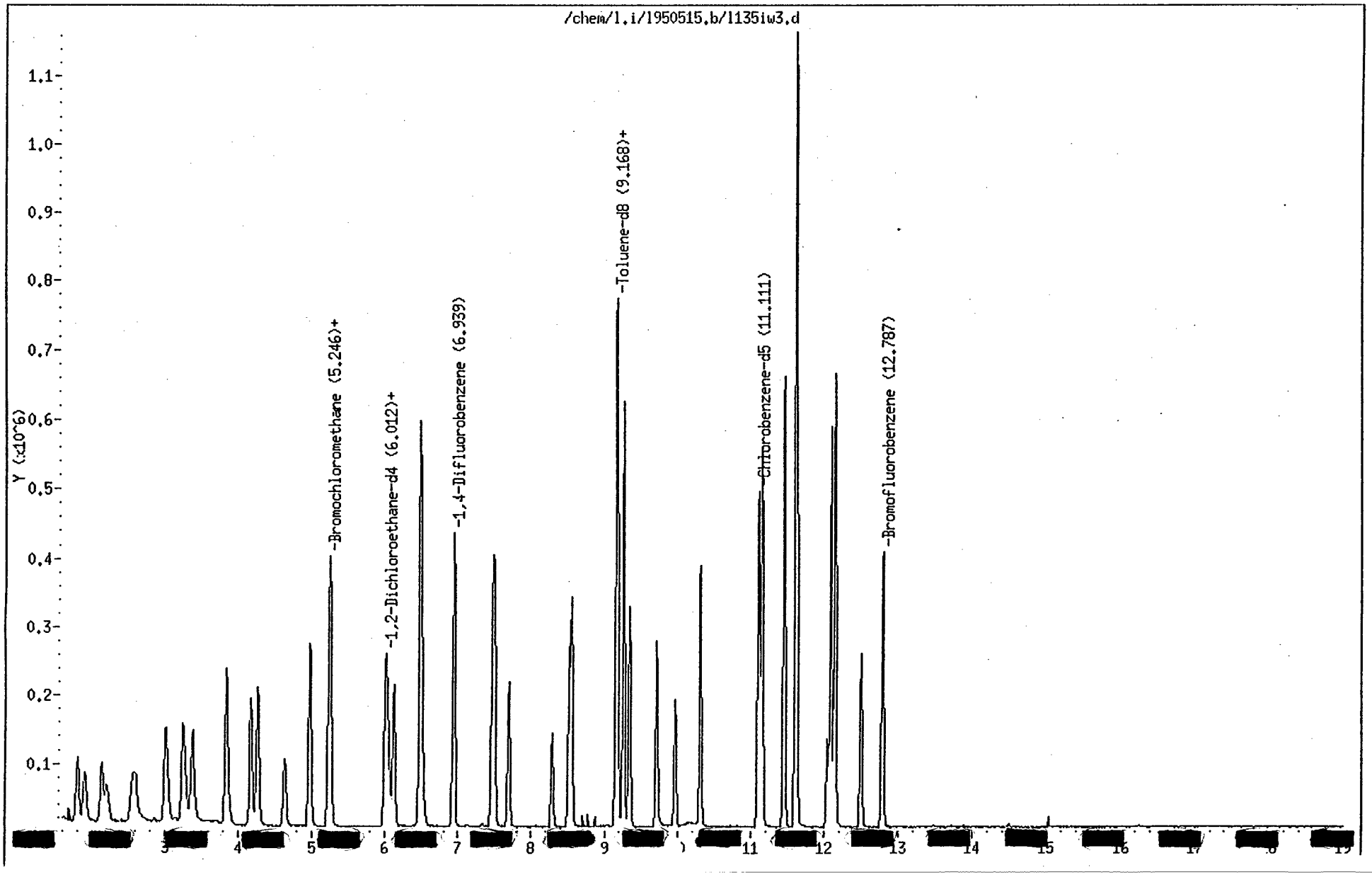
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	70590	0.00
32 1,4-Difluorobenzene	406982	203491	813964	406982	0.00
50 Chlorobenzene-d5	313180	156590	626360	313180	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.24	0.00
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950515.b/l135iw3.d
Date : 15-MAY-1995 15:55
Client ID:
Sample Info: 50 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i
Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950515.b/l135iw4.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:23
Operator : JC Inst ID: l.i
Smp Info : 100 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/l950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 6 Calibration Sample, Level: 4
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
1 Chloromethane	50.00	1.796	1.796	(0.343)	306183	500	480
2 Vinyl Chloride	62.00	1.903	1.903	(0.363)	235482	500	460
Bromomethane	94.00	2.135	2.135	(0.408)	185939	500	480
Chloroethane	64.00	2.206	2.206	(0.421)	159745	500	480
7 Trichlorofluoromethane	101.00	2.572	2.572	(0.491)	257933	500	500
8 Acetone	58.00	2.616	2.616	(0.500)	52282	500	500
11 1,1-Dichloroethene	96.00	3.018	3.018	(0.576)	179351	500	490
13 Methylene Chloride	84.00	3.258	3.258	(0.622)	209894	500	490
18 1,2-Dichloroethene (total)	96.00				501486	1000	980
14 Carbon Disulfide	76.00	3.383	3.383	(0.646)	684776	500	500
15 trans-1,2-Dichloroethene	96.00	3.838	3.838	(0.733)	234195	500	490
17 1,1-Dichloroethane	63.00	4.176	4.176	(0.797)	508487	500	490
19 Vinyl Acetate	43.00	4.265	4.265	(0.814)	862871	500	490
20 2-Butanone	43.00	4.622	4.622	(0.883)	410050	500	590
21 cis-1,2-Dichloroethene	96.00	4.970	4.970	(0.949)	267291	500	490
24 Chloroform	83.00	5.255	5.255	(1.003)	423434	500	490
27 1,1,1-Trichloroethane	97.00	6.030	6.030	(0.869)	321955	500	500
28 1,2-Dichloroethane	62.00	6.120	6.120	(1.169)	384496	500	500
30 Benzene	78.00	6.476	6.476	(0.933)	1014686	500	500
31 Carbon Tetrachloride	117.00	6.503	6.503	(0.937)	266275	500	500
34 1,2-Dichloropropane	63.00	7.466	7.466	(1.076)	301575	500	490
35 Trichloroethene	130.00	7.492	7.492	(1.080)	229888	500	500
37 Bromodichloromethane	83.00	7.688	7.688	(1.108)	306543	500	520
39 2-Chloroethylvinylether	63.00	8.286	8.286	(1.194)	139610	500	550
40 4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	538108	500	580
41 cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	380219	500	520
42 trans-1,3-Dichloropropene	75.00	9.177	9.177	(1.322)	336137	500	520
44 Toluene	92.00	9.266	9.266	(0.834)	559204	500	500
45 1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	197945	500	500

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	2-Hexanone	43.00	9.712	9.712	(0.874)	520212	500	640
	Dibromochloromethane	129.00	9.970	9.970	(1.437)	216783	500	520
49	Tetrachloroethene	164.00	10.318	10.318	(0.929)	196510	500	490
52	Chlorobenzene	112.00	11.156	11.156	(1.004)	606870	500	500
	Xylene (Total)	106.00				1149517	1500	1500
	Ethylbenzene	106.00	11.459	11.459	(1.031)	313742	500	500
55	m,p-Xylene(s)	106.00	11.619	11.619	(1.046)	772778	1000	1000
56	Bromoform	173.00	12.038	12.038	(1.083)	154100	500	540
	Styrene	104.00	12.092	12.092	(1.088)	630228	500	520
	o-Xylene	106.00	12.145	12.145	(1.093)	376739	500	500
60	1,1,2,2-Tetrachloroethane	83.00	12.493	12.493	(1.124)	313828	500	520
	Bromochloromethane	128.00	5.237	5.237	(1.000)	68262	250	
	1,4-Difluorobenzene	114.00	6.940	6.940	(1.000)	380949	250	
	Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	298861	250	
26	1,2-Dichloroethane-d4	102.00	6.004	6.004	(1.146)	56572	500	490
	Toluene-d8	98.00	9.159	9.159	(0.824)	799498	500	500
	Bromofluorobenzene	95.00	12.787	12.787	(1.151)	312847	500	510

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw4.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/1950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	68262	-3.30
32 1,4-Difluorobenzene	406982	203491	813964	380949	-6.40
50 Chlorobenzene-d5	313180	156590	626360	298861	-4.57

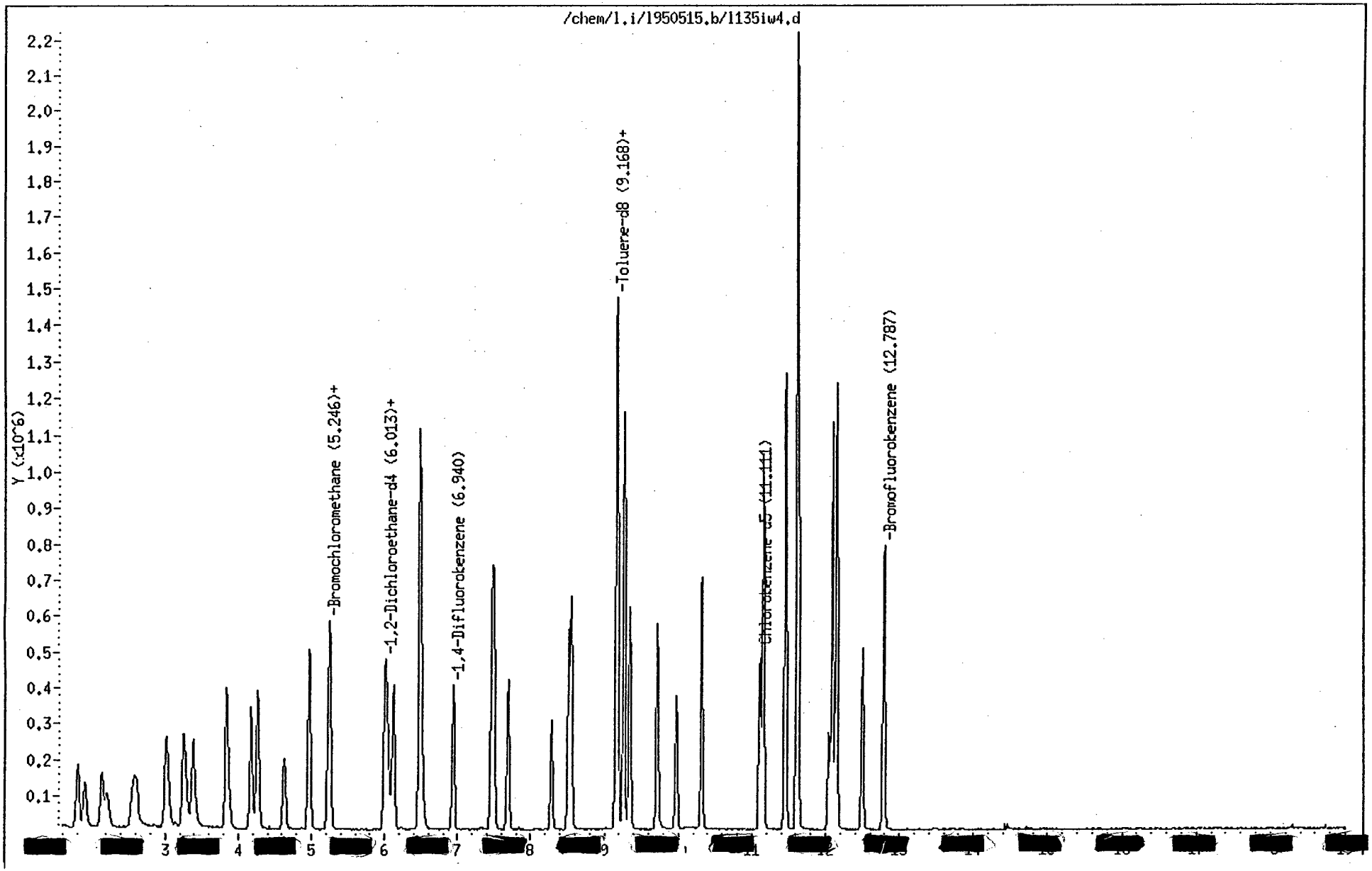
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
`3 Bromochloromethane	5.24	4.74	5.74	5.24	0.01
,2 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950515.b/l135iw4.d
Date : 15-MAY-1995 16:23
Client ID:
Sample Info: 100 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i

Operator: JC
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/l.i/l950515.b/l135iw5.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:50
Operator : JC Inst ID: l.i
Smp Info : 200 UG-L STD-8240W/1X
Misc Info : L135W3//L135IW3
Comment :
Method : /chem/l.i/l950515.b/lvoclpw.m
Meth Date : 15-May-1995 17:21 jimmy Quant Type: ISTD
Cal Date : 15-MAY-1995 15:55 Cal File: l135iw3.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1	Chloromethane	50.00	1.796	1.796	(0.344)	593202	1000	900
2	Vinyl Chloride	62.00	1.894	1.894	(0.362)	418589	1000	800
	Bromomethane	94.00	2.134	2.134	(0.408)	355706	1000	900
	Chloroethane	64.00	2.197	2.197	(0.420)	318820	1000	940
7	Trichlorofluoromethane	101.00	2.562	2.562	(0.490)	552207	1000	1000
8	Acetone	58.00	2.607	2.607	(0.499)	111399	1000	1000
11	1,1-Dichloroethene	96.00	3.008	3.008	(0.575)	373131	1000	990
13	Methylene Chloride	84.00	3.249	3.249	(0.621)	430915	1000	990
1 18	1,2-Dichloroethene (total)	96.00				1034591	2000	2000(A)
14	Carbon Disulfide	76.00	3.374	3.374	(0.645)	1418944	1000	1000
15	trans-1,2-Dichloroethene	96.00	3.828	3.828	(0.732)	481851	1000	990
17	1,1-Dichloroethane	63.00	4.167	4.167	(0.797)	1054970	1000	1000
19	Vinyl Acetate	43.00	4.256	4.256	(0.814)	1753253	1000	980
20	2-Butanone	43.00	4.621	4.621	(0.884)	783972	1000	1100
21	cis-1,2-Dichloroethene	96.00	4.969	4.969	(0.951)	552740	1000	1000
24	Chloroform	83.00	5.245	5.245	(1.003)	877544	1000	1000
27	1,1,1-Trichloroethane	97.00	6.030	6.030	(0.869)	671040	1000	1000
28	1,2-Dichloroethane	62.00	6.119	6.119	(1.171)	791500	1000	1000
30	Benzene	78.00	6.476	6.476	(0.933)	2094131	1000	990
31	Carbon Tetrachloride	117.00	6.502	6.502	(0.937)	555561	1000	1000
34	1,2-Dichloropropane	63.00	7.465	7.465	(1.076)	631209	1000	1000
35	Trichloroethene	130.00	7.492	7.492	(1.080)	482966	1000	1000
37	Bromodichloromethane	83.00	7.688	7.688	(1.108)	639042	1000	1000
39	2-Chloroethylvinylether	63.00	8.285	8.285	(1.194)	295420	1000	1100
40	4-Methyl-2-Pentanone	43.00	8.508	8.508	(1.226)	1089413	1000	1100
41	cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.232)	803771	1000	1000
42	trans-1,3-Dichloropropene	75.00	9.176	9.176	(1.322)	711168	1000	1100
44	Toluene	92.00	9.266	9.266	(0.834)	1166273	1000	1000
45	1,1,2-Trichloroethane	83.00	9.346	9.346	(1.347)	408013	1000	1000

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	2-Hexanone	43.00	9.711	9.711	(0.874)	1046075	1000	1200 (A)
	Dibromochloromethane	129.00	9.970	9.970	(1.437)	468238	1000	1100
49	Tetrachloroethene	164.00	10.317	10.317	(0.929)	412712	1000	1000
52	Chlorobenzene	112.00	11.155	11.155	(1.004)	1257056	1000	1000
M	Xylene (Total)	106.00				2390775	3000	3100
	Ethylbenzene	106.00	11.458	11.458	(1.031)	654989	1000	1000
55	m,p-Xylene(s)	106.00	11.628	11.628	(1.047)	1602901	2000	2000
	Bromoform	173.00	12.038	12.038	(1.083)	342914	1000	1200
	Styrene	104.00	12.091	12.091	(1.088)	1316527	1000	1100
59	o-Xylene	106.00	12.145	12.145	(1.093)	787874	1000	1000
60	1,1,2,2-Tetrachloroethane	83.00	12.492	12.492	(1.124)	626810	1000	1000
	Bromochloromethane	128.00	5.228	5.228	(1.000)	69491	250	
	1,4-Difluorobenzene	114.00	6.939	6.939	(1.000)	394685	250	
50	Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	306233	250	
26	1,2-Dichloroethane-d4	102.00	6.003	6.003	(1.148)	119214	1000	1000
	Toluene-d8	98.00	9.159	9.159	(0.824)	1655854	1000	1000 (A)
	Bromofluorobenzene	95.00	12.787	12.787	(1.151)	656187	1000	1000 (A)

Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: l.i
Lab File ID: l135iw5.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/l.i/l950515.b/lvoclpw.m
Misc Info: L135W3//L135IW3

Calibration Date: 05/15/95
Calibration Time: 1555

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	70590	35295	141180	69491	-1.56
32 1,4-Difluorobenzene	406982	203491	813964	394685	-3.02
50 Chlorobenzene-d5	313180	156590	626360	306233	-2.22

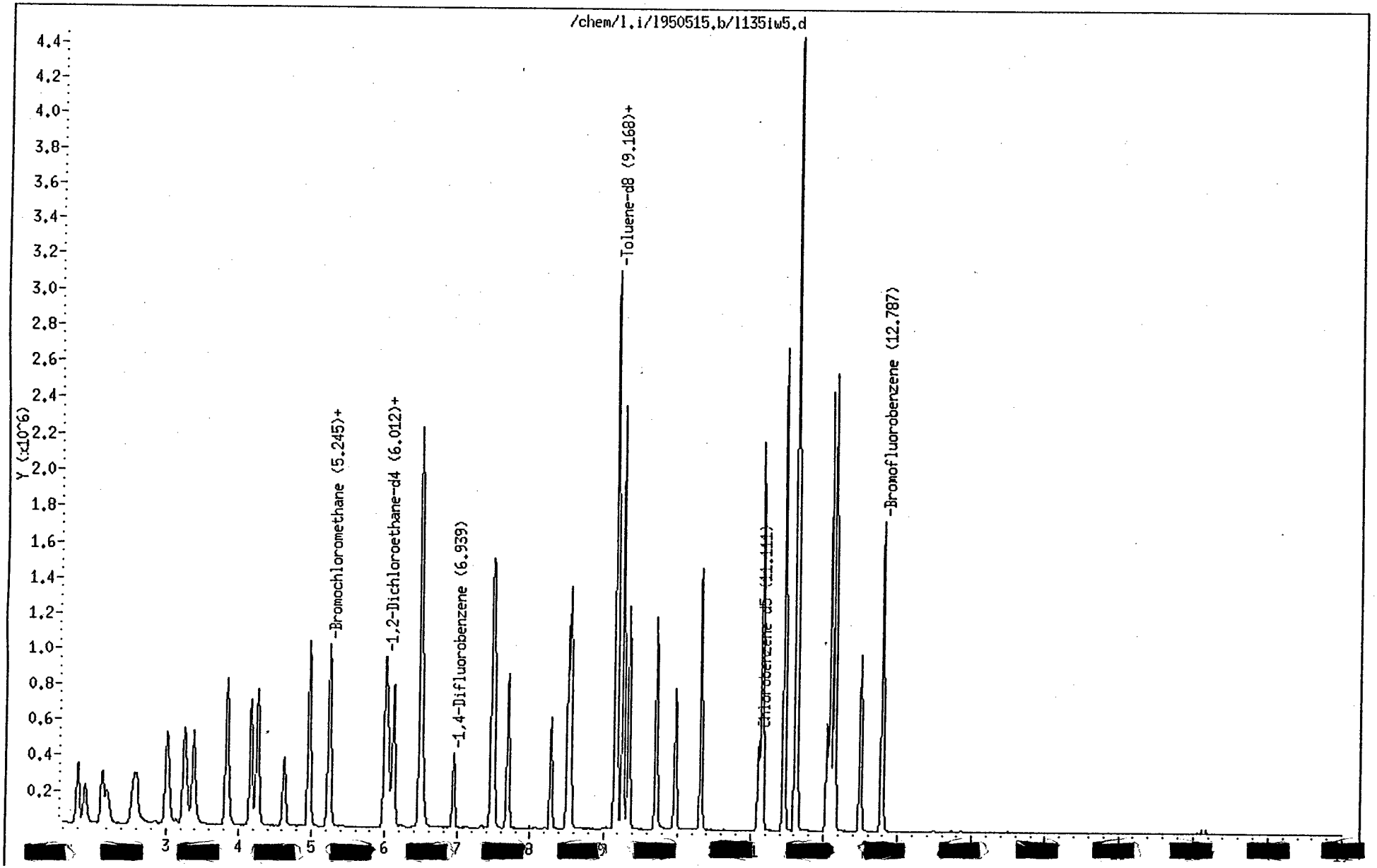
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.24	4.74	5.74	5.23	-0.17
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950515.b/l135iw5.d
Date : 15-MAY-1995 16:50
Client ID:
Sample Info: 200 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i

Operator: JC
Column diameter: 0.25



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvoclps.m
Cal Date : 03-May-1995 10:04 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/k.i/k950502.b/k122is1e.d
Level 2: /chem/k.i/k950502.b/k122is2e.d
Level 3: /chem/k.i/k950502.b/k122cs7.d
Level 4: /chem/k.i/k950502.b/k122is4e.d
Level 5: /chem/k.i/k950502.b/k122is5e.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	4 Chloromethane	2.61598	2.81482	2.12233	2.24403	2.45830	2.45109	11.367
	5 Vinyl Chloride	2.65380	2.94683	2.27075	2.29473	2.52382	2.53798	10.993
	7 Bromomethane	2.11466	2.01524	1.61752	1.66188	1.78547	1.83895	11.862
	6 Chloroethane	1.70772	2.47252	1.96573	1.98068	2.14242	2.05381	13.687
	9 Trichlorofluoromethane	1.49304	2.08578	2.00085	1.92770	2.26966	1.95541	14.741
	8 Acetone	0.27178	0.26116	0.28834	0.18784	0.20866	0.24356	17.700
	10 1,1-Dichloroethene	1.85538	2.17717	2.01911	2.00216	2.12934	2.03663	6.147
	11 Methylene Chloride	2.38104	2.68890	2.40798	2.23657	2.35295	2.41349	6.930
M	1 1,2-Dichloroethene (total)	2.48786	2.60735	2.54327	2.57358	2.54340	2.55109	1.730
	12 Carbon Disulfide	7.61210	8.72426	7.92999	7.84861	8.50089	8.12317	5.767
	13 trans-1,2-Dichloroethene	2.45393	2.74754	2.54113	2.51774	2.65500	2.58307	4.537
	14 1,1-Dichloroethane	4.64531	5.12809	4.72981	4.78124	4.76879	4.81065	3.851
	16 Vinyl Acetate	4.39095	4.67428	4.62771	4.19908	3.81329	4.34106	8.099
	17 2-Butanone	2.07727	1.95040	2.25063	1.42863	1.46330	1.83405	20.182
	19 cis-1,2-Dichloroethene	2.52179	2.46715	2.54541	2.62942	2.43180	2.51911	3.022
	21 Chloroform	4.03686	4.22412	3.99063	3.86111	4.20345	4.06323	3.740
	24 1,1,1-Trichloroethane	3.10851	3.57553	3.17577	3.10886	3.55489	3.30472	7.247
	25 1,2-Dichloroethane	0.46771	0.44242	0.46820	0.45167	0.45093	0.45619	2.487
	27 Benzene	1.45923	1.42676	1.47373	1.47356	1.42845	1.45235	1.608
	28 Carbon Tetrachloride	0.37727	0.36450	0.38452	0.39331	0.40772	0.38546	4.232
	33 1,2-Dichloropropane	0.39723	0.37732	0.40855	0.37269	0.37777	0.38671	3.990
	34 Trichloroethene	0.33210	0.31444	0.34870	0.32128	0.32473	0.32825	3.986
	35 Bromodichloromethane	0.41562	0.40335	0.45507	0.41056	0.44324	0.42557	5.255
	15 2-Chloroethylvinylether	0.76056	0.69309	0.74966	0.77129	0.68699	0.73232	5.381
	38 4-Methyl-2-Pentanone	0.36838	0.41150	0.43019	0.23238	0.26823	0.34214	25.631
	42 cis-1,3-Dichloropropene	0.39013	0.36628	0.41665	0.38134	0.39805	0.39049	4.910
	37 trans-1,3-Dichloropropene	0.66711	0.74886	0.70980	0.62420	0.74084	0.69816	7.498

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvoclps.m
Cal Date : 03-May-1995 10:04 hillery
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	43 Toluene	1.22134	1.32245	1.18326	1.04139	1.17488	1.18866	8.504
	44 1,1,2-Trichloroethane	0.34616	0.33240	0.31910	0.27189	0.31178	0.31627	8.874
	45 2-Hexanone	0.35970	0.60509	0.51642	0.14372	0.31633	0.38825	46.295
	46 Dibromochloromethane	0.36006	0.38294	0.37802	0.33114	0.40668	0.37177	7.573
	48 Tetrachloroethene	0.41111	0.43522	0.40448	0.35990	0.40363	0.40287	6.757
	52 Chlorobenzene	1.13558	1.08935	1.14714	1.12095	1.06593	1.11179	3.019
M	2 Xylene (Total)	0.69398	0.81685	0.69844	0.69500	0.67635	0.71612	7.953
	53 Ethylbenzene	0.59157	0.65401	0.60740	0.59508	0.59898	0.60941	4.204
	54 m,p-Xylene(s)	0.71166	0.83335	0.73199	0.70548	0.65004	0.72650	9.222
	55 Bromoform	0.17950	0.21853	0.21733	0.20692	0.24260	0.21298	10.719
	57 Styrene	1.03398	1.23180	1.04130	1.08557	1.25174	1.12888	9.316
	58 o-Xylene	0.65863	0.78384	0.63135	0.67405	0.72897	0.69537	8.765
	59 1,1,2,2-Tetrachloroethane	0.36578	0.44209	0.33519	0.32841	0.31594	0.35748	14.192
S	23 1,2-Dichloroethane-d4	0.46776	0.54303	0.42892	0.45129	0.52086	0.48237	9.941
S	40 Toluene-d8	1.71636	1.89329	1.54687	1.47209	1.67607	1.66093	9.799
S	61 Bromofluorobenzene	0.65848	0.66793	0.55819	0.46477	0.53858	0.57759	14.826

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122isle.d
Lab Smp Id: 10 PPB STD 8240S
Inj Date : 02-MAY-1995 20:30
Operator : HLW Inst ID: k.i
Smp Info : 10 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	4 Chloromethane	50.00	1.348	1.392	(0.636)	43102	62	12
	5 Vinyl Chloride	62.00	1.394	1.422	(0.657)	43725	58	12(Q)
	7 Bromomethane	94.00	1.424	1.437	(0.671)	34842	65	13
	6 Chloroethane	64.00	1.439	1.437	(0.679)	28137	43	9(aQ)
	9 Trichlorofluoromethane	100.90	1.515	1.528	(0.714)	24600	37	7
	8 Acetone	58.00	1.515	1.513	(0.714)	4478	47	9(aQM)
	10 1,1-Dichloroethane	96.00	1.621	1.619	(0.764)	30570	46	9
	11 Methylene Chloride	84.00	1.667	1.665	(0.786)	39231	49	10
M	1 1,2-Dichloroethene (total)	96.00				81982	98	20
	12 Carbon Disulfide	76.00	1.712	1.710	(0.807)	125420	48	10
	13 trans-1,2-Dichloroethene	96.00	1.773	1.786	(0.836)	40432	48	10
	14 1,1-Dichloroethane	63.00	1.848	1.846	(0.871)	76538	49	10
	16 Vinyl Acetate	43.00	1.863	1.862	(0.879)	72347	47	9(a)
	17 2-Butanone	43.00	1.970	1.952	(0.929)	34226	46	9(a)
	19 cis-1,2-Dichloroethene	96.00	2.045	2.043	(0.964)	41550	50	10
	21 Chloroform	83.00	2.121	2.119	(1.000)	66513	50	10
	24 1,1,1-Trichloroethane	97.00	2.394	2.392	(1.129)	51217	49	10
	25 1,2-Dichloroethane	62.00	2.409	2.407	(0.864)	47068	50	10
	27 Benzene	78.00	2.545	2.543	(0.913)	146848	50	10
	28 Carbon Tetrachloride	117.00	2.576	2.574	(0.924)	37966	49	10
	33 1,2-Dichloropropane	63.00	3.076	3.074	(1.103)	39975	49	10
	34 Trichloroethene	130.00	3.091	3.089	(1.109)	33421	48	10
	35 Bromodichloromethane	83.00	3.212	3.210	(1.152)	41826	46	9
	15 2-Chloroethylvinylether	63.00	1.848	1.846	(0.663)	76538	51	10
	38 4-Methyl-2-Pentanone	43.00	4.061	3.998	(1.457)	37072	43	9(a)
	42 cis-1,3-Dichloropropene	75.00	4.651	4.634	(1.669)	39260	47	9
	37 trans-1,3-Dichloropropene	75.00	3.954	3.953	(0.587)	47187	47	9
	43 Toluene	92.00	4.636	4.634	(0.688)	86390	52	10
	44 1,1,2-Trichloroethane	83.00	4.788	4.771	(0.710)	24485	54	11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
45	2-Hexanone	43.00	5.424	5.347	(0.804)	25443	35	7(a)
46	Dibromochloromethane	129.00	5.394	5.377	(0.800)	25468	48	10
48	Tetrachloroethene	164.00	5.788	5.786	(0.858)	29079	51	10
52	Chlorobenzene	112.00	6.803	6.801	(1.009)	80324	49	10
M 2	Xylene (Total)	106.00				147264	150	30
53	Ethylbenzene	106.00	7.242	7.241	(1.074)	41944	49	10
54	m,p-Xylene(s)	106.00	7.455	7.468	(1.106)	100677	97	19
55	Bromoform	173.00	7.815	7.815	(1.160)	12697	41	8
57	Styrene	104.00	8.015	8.013	(1.189)	73137	50	10
58	o-Xylene	106.00	8.061	8.074	(1.196)	46587	52	10
59	1,1,2,2-Tetrachloroethane	83.00	8.521	8.604	(1.279)	25873	54	[illegible]
20	Bromochloromethane	128.00	2.121	2.119	(1.000)	82382	250	[illegible]
31	1,4-Difluorobenzene	114.00	2.788	2.786	(1.000)	503171	250	[illegible]
51	Chlorobenzene-d5	117.00	6.742	6.756	(1.000)	353668	250	[illegible]
23	1,2-Dichloroethane-d4	102.00	2.364	2.362	(1.114)	7707	54	[illegible]
S 40	Toluene-d8	98.00	4.530	4.528	(0.672)	121404	55	[illegible]
S 61	Bromofluorobenzene	95.00	8.964	8.947	(1.215)	46577	59	[illegible]

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
- Spike/Surrogate failed recovery limits.
- Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is1e.d
Lab Smp Id: 10 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	82382	6.43
31 1,4-Difluorobenzene	488350	244175	976700	503171	3.03
51 Chlorobenzene-d5	357839	178920	715678	353668	-1.17

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.10
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.07
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.19

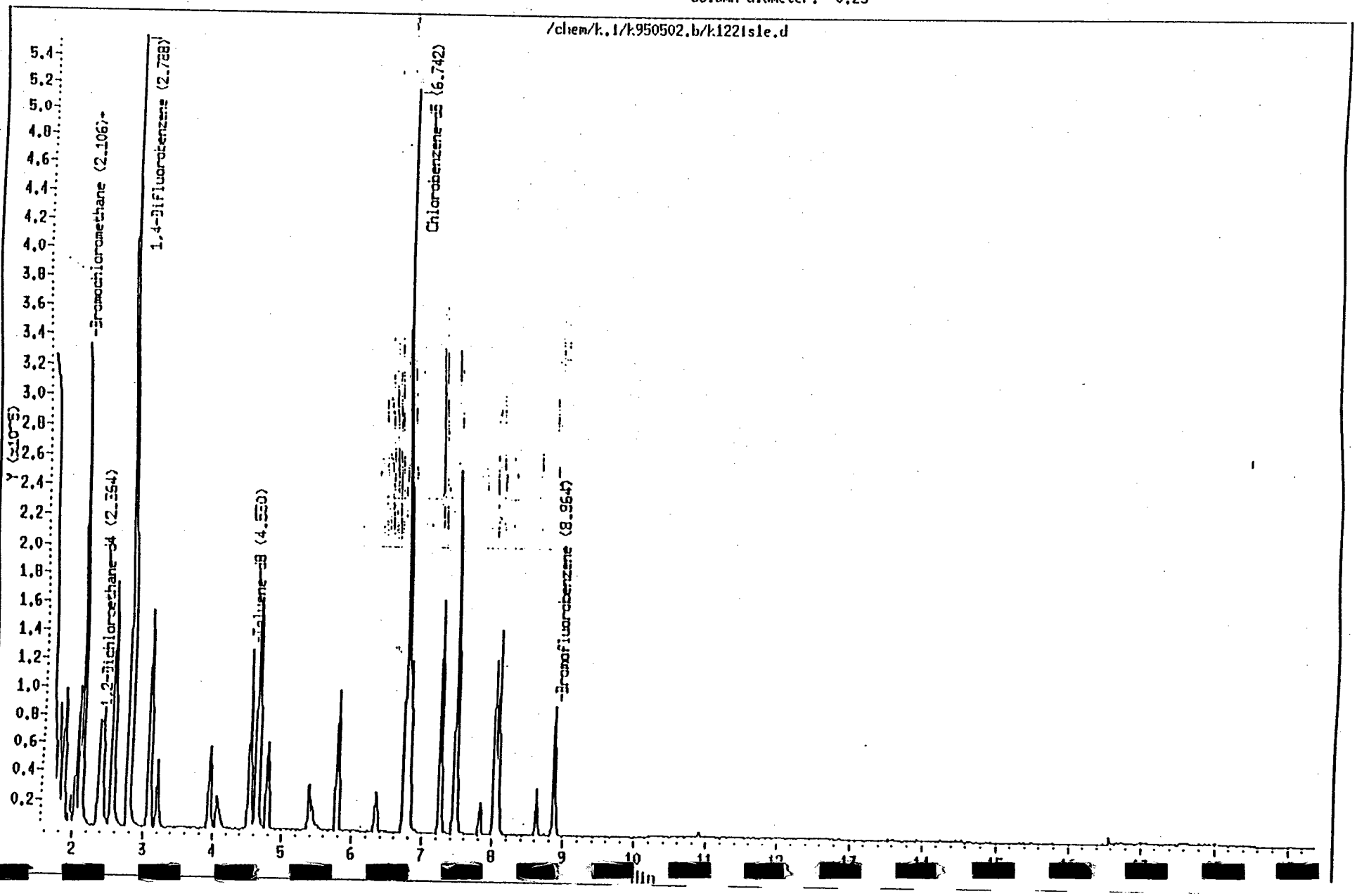
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s1e.d
Date : 02-MAY-1995 20:30
Client ID:
Sample Info: 10 PPB SIB 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLH
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Inj Date : 02-MAY-1995 19:54
Operator : HLW Inst ID: k.i
Smp Info : 20 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 8
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON COLUMN (ng)	FINAL (ug/Kg)	
	4 Chloromethane	50.00	1.362	1.392	(0.643)	81838	130	26	
	5 Vinyl Chloride	62.00	1.392	1.422	(0.657)	85676	130	26	(CM)
	7 Bromomethane	94.00	1.438	1.437	(0.678)	58591	120	25	
	6 Chloroethane	64.00	1.453	1.437	(0.685)	71886	120	25	(Q)
	9 Trichlorofluoromethane	100.00	1.529	1.528	(0.721)	60642	100	21	
	8 Acetone	58.00	1.514	1.513	(0.714)	7593	90	18	(aCM)
	10 1,1-Dichloroethene	96.00	1.620	1.619	(0.764)	63299	110	22	
	11 Methylene Chloride	84.00	1.665	1.665	(0.786)	78177	110	22	
M	1 1,2-Dichloroethene (total)	96.00				151612	200	41	
	12 Carbon Disulfide	76.00	1.710	1.710	(0.807)	253649	110	22	
	13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	79882	110	22	
	14 1,1-Dichloroethane	63.00	1.847	1.846	(0.871)	149094	110	22	
	16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	135900	100	20	
	17 2-Butanone	43.00	1.968	1.952	(0.928)	56706	87	17	(a)
	19 cis-1,2-Dichloroethene	96.00	2.044	2.043	(0.964)	71730	97	19	
	21 Chloroform	83.00	2.120	2.119	(1.000)	122812	100	21	
	24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	103955	110	22	
	25 1,2-Dichloroethane	62.00	2.408	2.407	(0.864)	95170	94	19	
	27 Benzene	78.00	2.544	2.543	(0.913)	306916	97	19	
	28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	78408	95	19	
	33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	81167	92	18	
	34 Trichloroethene	130.00	3.089	3.089	(1.109)	67641	90	18	
	35 Bromodichloromethane	83.00	3.211	3.210	(1.152)	86766	89	18	
	15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	149094	92	18	
	38 4-Methyl-2-Pentanone	43.00	4.029	3.998	(1.446)	88519	96	19	
	42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.663)	78792	98	19	
	37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.586)	99671	100	21	
	43 Toluene	92.00	4.635	4.634	(0.688)	176014	110	22	
	44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.710)	44241	100	21	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.392	5.347	(0.800)	80536	120	23
	46 Dibromochloromethane	129.00	5.392	5.377	(0.800)	50968	100	20
	48 Tetrachloroethene	164.00	5.786	5.786	(0.858)	57926	110	22
	52 Chlorobenzene	112.00	6.802	6.801	(1.009)	144990	95	19
M	2 Xylene (Total)	106.00				326150	350	70
	53 Ethylbenzene	106.00	7.241	7.241	(1.074)	87047	110	22
	54 m,p-Xylene(s)	106.00	7.453	7.468	(1.106)	221933	230	46
	55 Bromoform	173.00	7.817	7.816	(1.160)	29086	100	20
	57 Styrene	104.00	8.014	8.013	(1.189)	163949	120	24
	58 o-Xylene	106.00	8.059	8.074	(1.196)	104327	120	25
	59 1,1,2,2-Tetrachloroethane	83.00	8.605	8.604	(1.276)	58841	130	26
	20 Bromochloromethane	128.00	2.120	2.119	(1.000)	72685	250	[illegible]
*	31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	537784	250	[illegible]
*	51 Chlorobenzene-d5	117.00	6.741	6.756	(1.000)	332743	250	[illegible]
	23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	15788	130	25 (R)
S	40 Toluene-d8	98.00	4.529	4.528	(0.672)	251991	120	24 (R)
S	61 Bromofluorobenzene	95.00	8.862	8.847	(1.315)	88899	120	24 (R)

QC Flag Legend

- B - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Q - Qualifier signal failed the ratio test.
- R - Spike/Surrogate failed recovery limits.
- M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	201774[illegible]08	[illegible]38704	154816	72685	-6.10
31 1,4-Difluorobenzene	3488350	244175	976700	537784	10.12
51 Chlorobenzene-d5	2357839	178920	715678	332743	-7.01

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.03
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.02
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.22

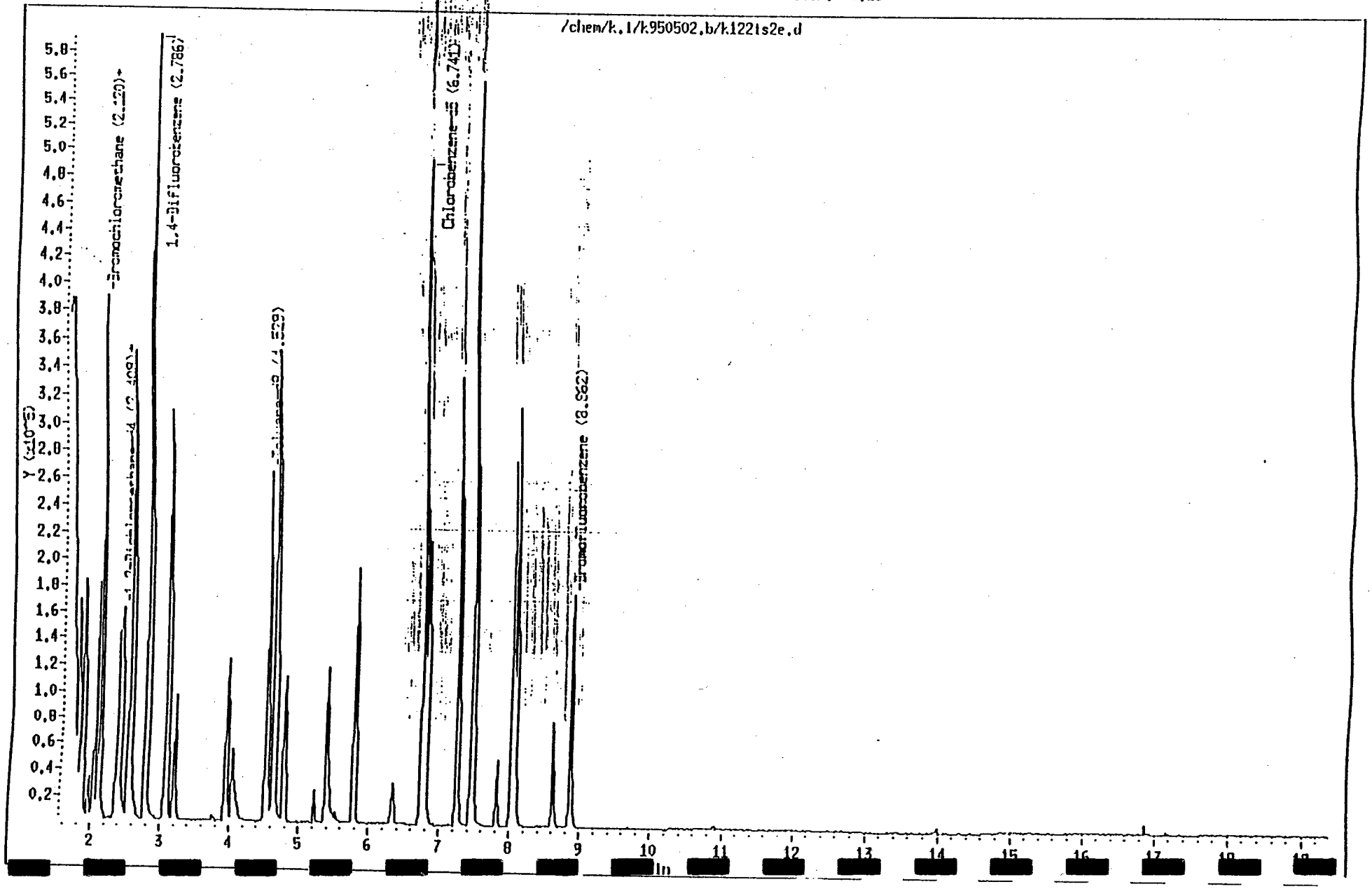
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k122ts2e.d
Date : 02-MAY-1995 19:54
Client ID:
Sample Info: 20 PPB SID 8240S

Column phase: 30m,Hp5ms,0.25u df

Instrument: k.1

Operator: HLH
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122cs7.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 02-MAY-1995 18:00
Operator : HLW Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
AIs bottle: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
4	Chloromethane	50.00	1.361	1.392	(0.642)	164285	250	50	
5	Vinyl Chloride	62.00	1.407	1.422	(0.664)	175774	250	50	
7	Bromomethane	94.00	1.437	1.437	(0.678)	125209	250	50	
6	Chloroethane	64.00	1.437	1.437	(0.678)	152163	250	50	
9	Trichlorofluoromethane	100.00	1.528	1.528	(0.721)	154882	250	50	
8	Acetone	58.00	1.513	1.513	(0.714)	22320	250	50	(a)
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	156295	250	50	
11	Methylene Chloride	84.00	1.665	1.665	(0.785)	186397	250	50	
M 1	1,2-Dichloroethene (total)	96.00				393739	500	100	
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	613845	250	50	
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	196704	250	50	
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	356125	250	50	
16	Vinyl Acetate	43.00	1.861	1.862	(0.878)	358222	250	50	
17	2-Butanone	43.00	1.968	1.952	(0.928)	174217	250	50	
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	197035	250	50	
21	Chloroform	83.00	2.119	2.119	(1.000)	308907	250	50	
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	245830	250	50	
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	229647	250	50	
27	Benzene	78.00	2.543	2.543	(0.913)	719698	250	50	
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	187782	250	50	
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	199516	250	50	
34	Trichloroethene	130.00	3.089	3.089	(1.109)	170287	250	50	
35	Bromodichloromethane	83.00	3.210	3.210	(1.152)	222234	250	50	
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	366096	250	50	
38	4-Methyl-2-Pentanone	43.00	4.013	3.998	(1.441)	210082	250	50	
42	cis-1,3-Dichloropropene	75.00	4.649	4.634	(1.669)	203470	250	50	
37	trans-1,3-Dichloropropene	75.00	3.952	3.953	(0.585)	253995	250	50	
43	Toluene	92.00	4.634	4.634	(0.686)	423416	250	50	
44	1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	124187	250	50	

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
45 2-Hexanone	43.00	5.377	5.347	(0.796)	184794	250	50
46 Dibromochloromethane	129.00	5.392	5.377	(0.798)	135271	250	50
48 Tetrachloroethene	164.00	5.801	5.786	(0.859)	144739	250	50
52 Chlorobenzene	112.00	6.801	6.801	(1.007)	410492	250	50
2 Xylene (Total)	106.00				749788	750	150
53 Ethylbenzene	106.00	7.240	7.241	(1.072)	217352	250	50
54 m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	523866	500	100
55 Bromoform	173.00	7.815	7.815	(1.157)	77770	250	50
57 Styrene	104.00	8.013	8.013	(1.186)	372618	250	50
58 o-Xylene	106.00	8.074	8.074	(1.195)	225922	250	50
59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	119944	250	50
20 Bromochloromethane	128.00	2.319	2.319	(1.000)	77408	250	
* 31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	488350	250	
51 Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	357839	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	33202	250	50
$ 40 Toluene-d8	98.00	4.528	4.528	(0.670)	553531	250	50
$ 61 Bromofluorobenzene	95.00	8.862	8.847	(1.312)	199743	250	50

QC Flag Legend

B - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122cs7.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	77408	0.00
31 1,4-Difluorobenzene	488350	244175	976700	488350	0.00
51 Chlorobenzene-d5	357839	178920	715678	357839	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

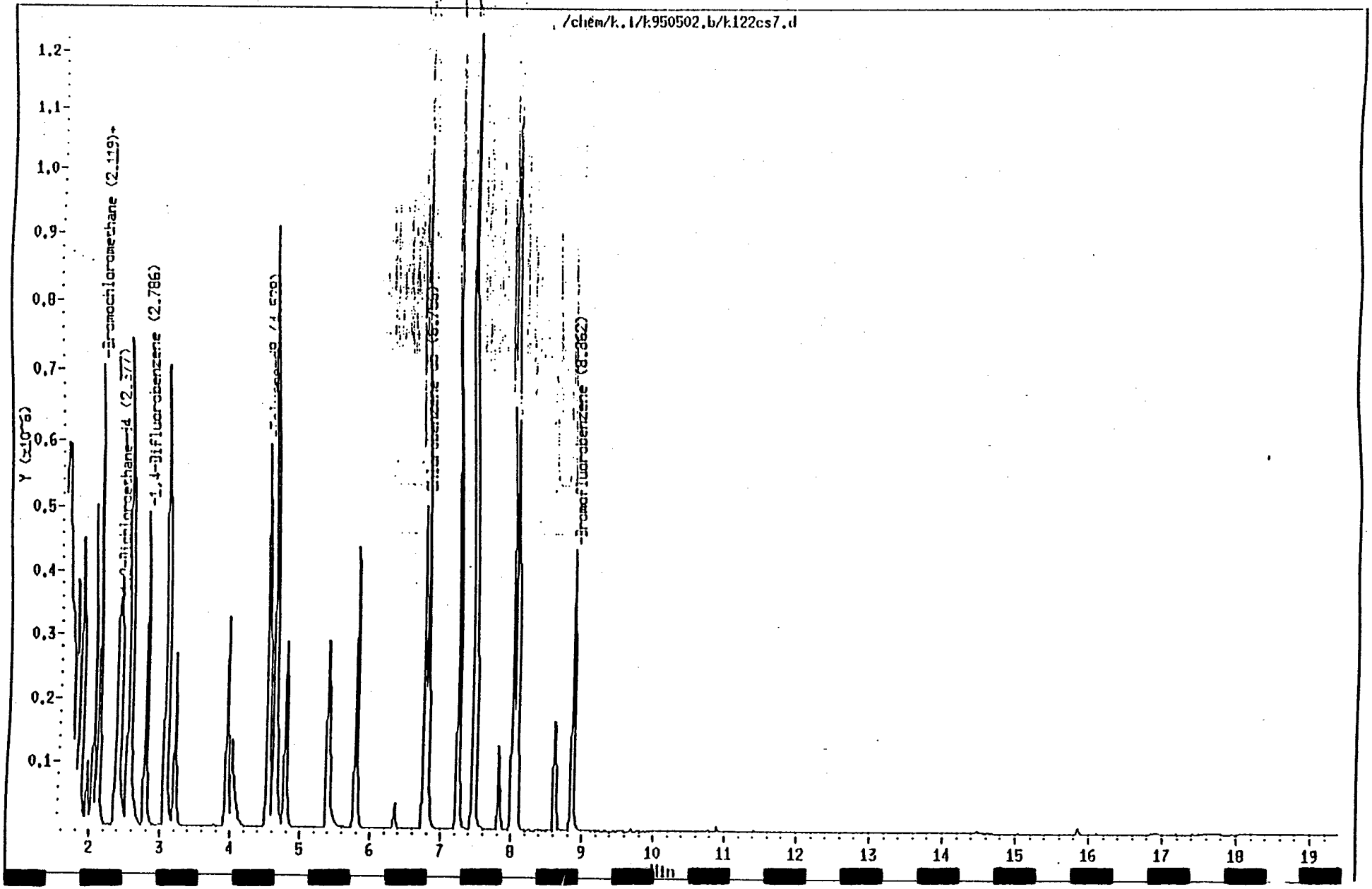
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k122cs7.d
Date : 02-MAY-1995 18:00
Client ID:
Sample Info: 50 PPB SID 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLW
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Inj Date : 02-MAY-1995 21:00
Operator : HLW Inst ID: k.i
Smp Info : 100 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	4 Chloromethane	50.00	1.377	1.392	(0.650)	363004	530	100
	5 Vinyl Chloride	62.00	1.422	1.422	(0.671)	371205	500	100
	7 Bromomethane	94.00	1.437	1.437	(0.678)	268832	510	100
	6 Chloroethane	64.00	1.437	1.437	(0.678)	320402	500	100
	9 Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	311832	480	96
	8 Acetone	58.00	1.513	1.513	(0.714)	30286	320	65(a)
	10 1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	323877	500	99
	11 Methylene Chloride	84.00	1.665	1.665	(0.785)	361796	460	93
M	1 1,2-Dichloroethene (total)	96.00				832625	1000	200
	12 Carbon Disulfide	76.00	1.725	1.710	(0.814)	1269622	490	99
	13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	407280	500	99
	14 1,1-Dichloroethane	63.00	1.847	1.846	(0.871)	773432	500	100
	16 Vinyl Acetate	43.00	1.962	1.962	(0.878)	679260	450	91
	17 2-Butanone	43.00	1.953	1.952	(0.921)	231101	320	63
	19 cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	425345	500	100
	21 Chloroform	83.00	2.119	2.119	(1.000)	624589	480	97
	24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	502902	490	98
	25 1,2-Dichloroethane	62.00	2.407	2.407	(0.964)	452921	480	96
	27 Benzene	78.00	2.544	2.543	(0.913)	1477643	500	100
	28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	394399	510	100
	33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	373720	460	91
	34 Trichloroethene	130.00	3.089	3.089	(1.109)	322170	460	92
	35 Bromodichloromethane	83.00	3.210	3.210	(1.152)	411699	450	90
	15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	773432	510	100
	38 4-Methyl-2-Pentanone	43.00	4.013	3.998	(1.441)	233024	270	54
	42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.664)	382393	460	92
	37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.585)	481365	440	88
	43 Toluene	92.00	4.635	4.634	(0.686)	803091	440	88
	44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	209676	430	86

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
45	2-Hexanone	43.00	5.377	5.347	(0.796)	110835	140	28
46	Dibromochloromethane	129.00	5.392	5.377	(0.798)	255368	440	88
48	Tetrachloroethene	164.00	5.786	5.786	(0.856)	277544	440	89
52	Chlorobenzene	112.00	6.801	6.801	(1.007)	864442	490	98
2	Xylene (Total)	106.00				1607895	1500	300
53	Ethylbenzene	106.00	7.241	7.241	(1.072)	458911	490	98
54	m,p-Xylene(s)	106.00	7.453	7.468	(1.103)	1088090	960	190
55	Bromoform	173.00	7.816	7.816	(1.157)	159567	480	95
57	Styrene	104.00	8.013	8.013	(1.186)	837162	520	100
58	o-Xylene	106.00	8.059	8.074	(1.193)	519805	530	110
59	1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	253257	490	98
20	Bromochloromethane	128.00	2.119	2.119	(1.000)	808820	250	50
* 31	1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	501386	250	50
* 51	Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	385585	250	50
23	1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	73003	530	100(R)
40	Toluene-d8	98.00	4.528	4.528	(0.670)	1135233	480	95(R)
S 61	Bromofluorobenzene	95.00	8.847	8.847	(1.310)	358413	420	83(R)

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	AREA LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	.38704	154816	80882	4.49
31 1,4-Difluorobenzene	488350	244175	976700	501386	2.67
51 Chlorobenzene-d5	357839	178920	715678	385585	7.75

COMPOUND	RT LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.01
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

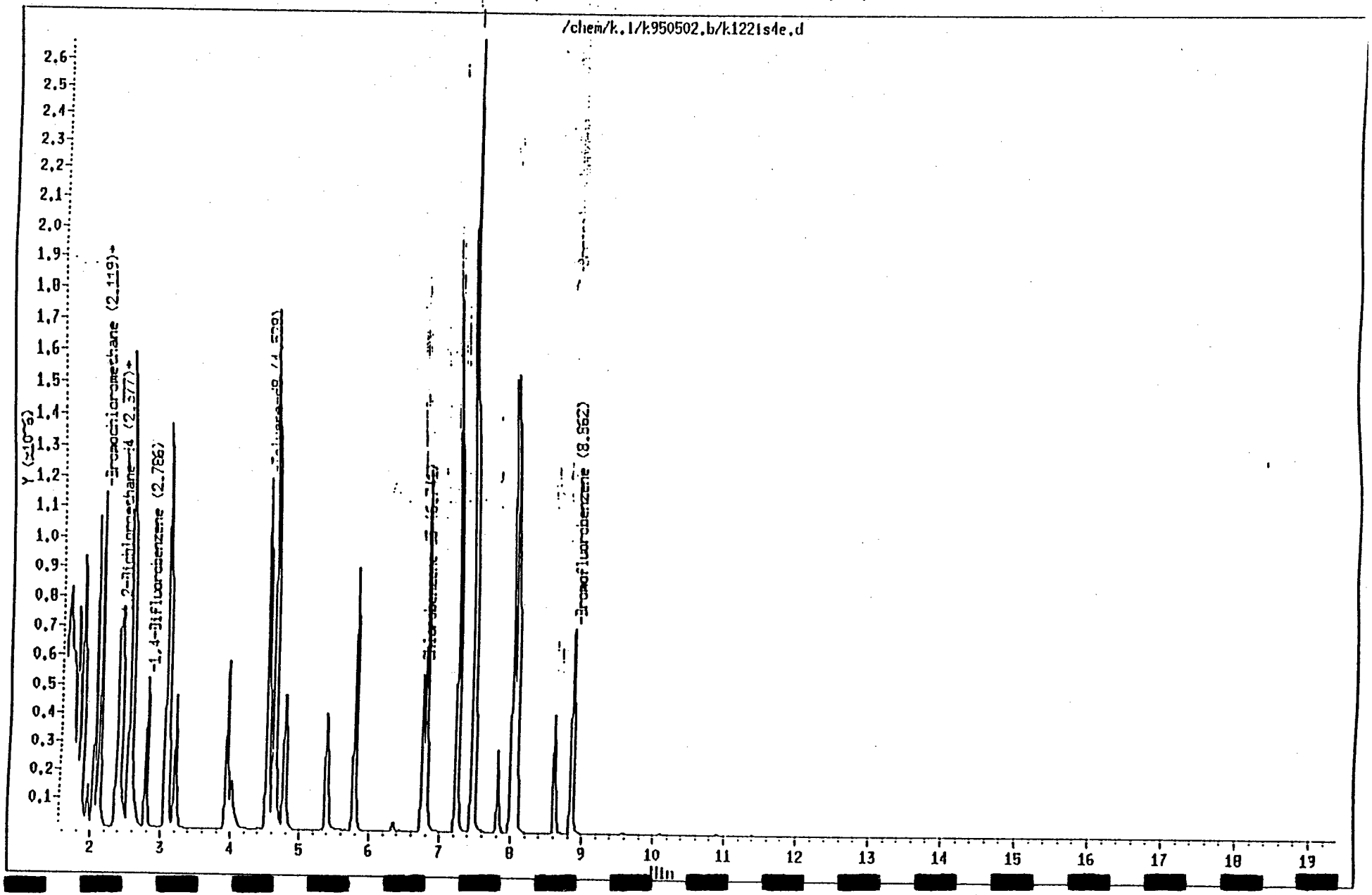
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s4e.d
Date : 02-MAY-1995 21:00
Client ID:
Sample Info: 100 PPB SID 8240S

Instrument: k.1

Operator: MLH
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122isSe.d
Lab Smp Id: 200 PPB STD 8240S
Inj Date : 02-MAY-1995 21:27
Operator : HLW Inst ID: k.i
Smp Info : 200 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 10
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS (ug/L)	FINAL (ug/Kg)
4	Chloromethane	50.00	1.392	1.392	(0.657)	685728	1200	230
5	Vinyl Chloride	62.00	1.422	1.422	(0.671)	704004	1100	220
7	Bromomethane	94.00	1.437	1.437	(0.678)	498045	1100	220
6	Chloroethane	64.00	1.437	1.437	(0.678)	597616	1100	220
9	Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	633109	1100	220
8	Acetone	58.00	1.513	1.513	(0.714)	58205	720	140
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	593966	1000	210
11	Methylene Chloride	84 00	1.665	1.665	(0.785)	656340	980	200
M 1	1,2-Dichloroethene (total)	96.00				1418932	2000	400(A)
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	2371271	1100	210
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	740595	1000	210
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	1330224	1000	200
16	Vinyl Acetate	43.00	1.862	1.862	(0.878)	1063693	820	160
17	2-Butanone	43.00	1.952	1.952	(0.921)	408178	650	130
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	678337	960	190
21	Chloroform	83.00	2.119	2.119	(1.000)	1172526	1000	210
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	991614	1100	220
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	873142	960	190
27	Benzene	78.00	2.543	2.543	(0.913)	2765913	970	190
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	789468	1100	210
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	731473	920	180
34	Trichloroethene	130.00	3.089	3.089	(1.109)	628771	930	190
35	Bromodichloromethane	83.00	3.210	3.210	(1.152)	958246	970	190
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	1330224	920	180
38	4-Methyl-2-Pentanone	43.00	3.998	3.998	(1.435)	519380	620	120
42	cis-1,3-Dichloropropene	75.00	4.634	4.634	(1.664)	770745	960	190
37	trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.595)	993745	1000	210
43	Toluene	92.00	4.634	4.634	(0.686)	1575951	990	200
44	1,1,2-Trichloroethane	83.00	4.771	4.771	(0.706)	418215	990	200

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
45	2-Hexanone	43.00	5.347	5.347	(0.791)	424312	610	120
46	Dibromochloromethane	129.00	5.377	5.377	(0.796)	545513	1100	220
48	Tetrachloroethene	164.00	5.786	5.786	(0.856)	541413	1000	200
52	Chlorobenzene	112.00	6.801	6.801	(1.007)	1429806	930	180
M 2	Xylene (Total)	106.00				2721696	2900	580
53	Ethylbenzene	106.00	7.241	7.241	(1.072)	803456	990	200
54	m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	1743881	1800	360
55	Bromoform	173.00	7.816	7.816	(1.157)	325417	1100	220
57	Styrene	104.00	8.013	8.013	(1.186)	1679049	1200	240 (A)
58	o-Xylene	106.00	8.074	8.074	(1.195)	977815	1200	230
59	1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	423790	940	190
20	Bromochloromethane	128.00	[illegible]	[illegible]	(1.000)	69736	250	[illegible]
* 31	1,4-Difluorobenzene	114.00	[illegible]	3.786	(1.000)	484077	250	[illegible]
51	Chlorobenzene-d5	117.00	[illegible]	6.756	(1.000)	335343	250	[illegible]
23	1,2-Dichloroethane-d4	102.00	[illegible]	2.362	(1.114)	145292	1200	240 (AR)
$ 40	Toluene-d8	98.00	[illegible]	4.528	(0.670)	2248228	1100	220 (AR)
$ 61	Bromofluorobenzene	95.00		8.847	(1.310)	722436	960	190 (R)

QC Flag Legend

J - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.

SPL Labs.

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is5e.d
Lab Smp Id: 200 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	AREA LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	[illegible]	38704	154816	69736	-9.91
31 1,4-Difluorobenzene	488350	244175	976700	484077	-0.87
51 Chlorobenzene-d5	357839	178920	715678	335343	-6.29

COMPOUND	RT LIMIT STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

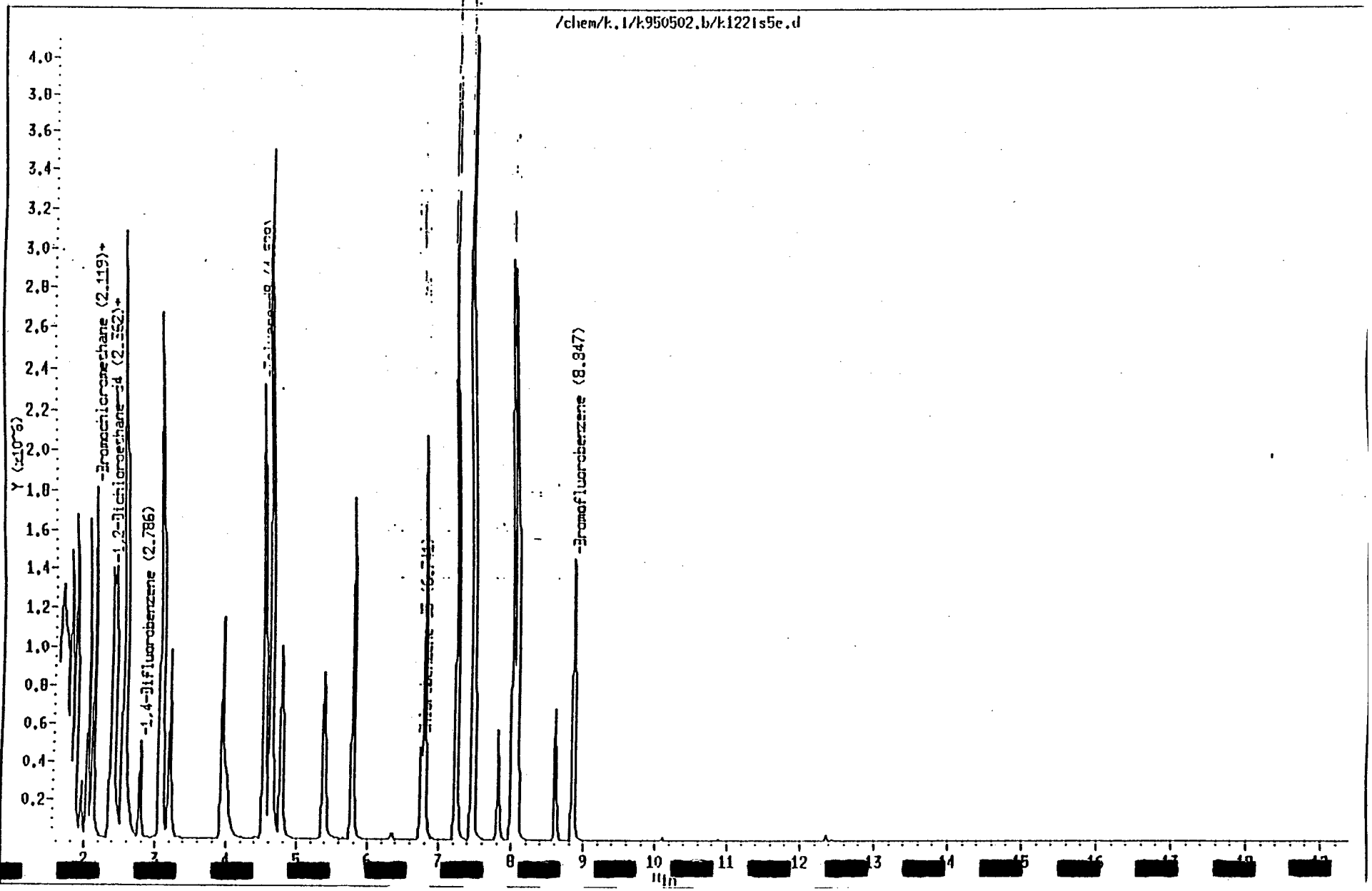
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s5e.d
Date : 02-MAY-1995 21:27
Client ID:
Sample Info: 200 PPB SID 8240S

Instrument: k.1

Operator: MLH
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: l.i
Lab File ID: l136cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 16-MAY-1995 12:00
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:01 16:50
Method File: /chem/l.i/l950516.b/lvoclpw.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	1 Chloromethane	2.358	2.540	0.010	7.7	40.0
	2 Vinyl Chloride	1.875	2.174	0.100	16.0	25.0
	3 Bromomethane	1.425	1.485	0.100	4.2	25.0
	4 Chloroethane	1.225	1.298	0.010	5.9	40.0
	7 Trichlorofluoromethane	1.891	1.967	0.010	4.0	40.0
	8 Acetone	0.381	0.197	0.010	48.3	100.0
	11 1,1-Dichloroethene	1.351	1.351	0.100	0.0	25.0
	13 Methylene Chloride	1.565	1.613	0.010	3.1	40.0
M	18 1,2-Dichloroethene (total)	1.869	1.861	0.010	0.4	40.0
	14 Carbon Disulfide	5.036	5.077	0.010	0.8	40.0
	15 trans-1,2-Dichloroethene	1.757	1.735	0.010	1.2	40.0
	17 1,1-Dichloroethane	3.790	3.801	0.200	0.3	25.0
	19 Vinyl Acetate	6.426	6.939	0.010	8.0	100.0
	20 2-Butanone	2.528	1.732	0.010	31.5	100.0
	21 cis-1,2-Dichloroethene	1.981	1.987	0.010	0.3	25.0
	24 Chloroform	3.156	3.192	0.200	1.1	25.0
	27 1,1,1-Trichloroethane	0.422	0.420	0.100	0.5	25.0
	28 1,2-Dichloroethane	2.814	2.825	0.100	0.4	25.0
	30 Benzene	1.337	1.339	0.500	0.1	25.0
	31 Carbon Tetrachloride	0.348	0.349	0.100	0.2	25.0
	34 1,2-Dichloropropane	0.400	0.393	0.010	1.6	25.0
	35 Trichloroethene	0.302	0.295	0.300	2.3	25.0
	37 Bromodichloromethane	0.389	0.398	0.200	2.2	25.0
	39 2-Chloroethylvinylether	0.166	0.166	0.010	0.0	100.0
	40 4-Methyl-2-Pentanone	0.611	0.506	0.010	17.2	100.0
	41 cis-1,3-Dichloropropene	0.481	0.490	0.100	1.9	25.0
	42 trans-1,3-Dichloropropene	0.424	0.435	0.100	2.4	25.0
	44 Toluene	0.940	0.937	0.400	0.2	25.0
	45 1,1,2-Trichloroethane	0.259	0.266	0.100	2.7	25.0
	46 2-Hexanone	0.681	0.413	0.010	39.4	100.0
	47 Dibromochloromethane	0.273	0.272	0.100	0.5	25.0
	49 Tetrachloroethene	0.336	0.324	0.200	3.6	25.0
	52 Chlorobenzene	1.011	0.999	0.500	1.2	25.0
M	53 Xylene (Total)	0.636	0.638	0.300	0.3	25.0
	54 Ethylbenzene	0.519	0.518	0.100	0.3	25.0
	55 m,p-Xylene(s)	0.641	0.641	0.300	0.0	25.0
	56 Bromoform	0.238	0.234	0.100	1.8	25.0
	57 Styrene	1.007	1.011	0.300	0.4	25.0
	59 o-Xylene	0.625	0.631	0.300	0.9	25.0
	60 1,1,2,2-Tetrachloroethane	0.508	0.518	0.300	2.1	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: l.i
Lab File ID: l136cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 16-MAY-1995 12:00
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:01 16:50
Method File: /chem/l.i/1950516.b/lvoclpw.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 26 1,2-Dichloroethane-d4	0.425	0.420	0.010	1.1	40.0
$ 43 Toluene-d8	1.333	1.321	0.010	0.9	40.0
$ 61 Bromofluorobenzene	0.514	0.505	0.010	1.9	25.0

ata File: /chem/l.i/l950516.b/l136cw1.d
eport Date: 16-May-1995 12:26

SPL Labs

Volatiles by 624/8240

ata file : /chem/l.i/l950516.b/l136cw1.d
ab Smp Id:
nj Date : 16-MAY-1995 12:00
perator : JC Inst ID: l.i
mp Info : 50 UG-L STD-8240W/1X
isc Info : L136W1//L136CW1
omment :
ethod : /chem/l.i/l950516.b/lvoclpw.m
eth Date : 16-May-1995 12:26 jimmy Quant Type: ISTD
al Date : 16-MAY-1995 12:00 Cal File: l136cw1.d
ls bottle: 2 Continuing Calibration Sample
il Factor: 1.000
ntegrator: HP RTE Compound Sublist: normal.sub
arget Version: 3.10

						AMOUNTS	
mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CAL-AMT (ng)	ON-COL (ng)
1 Chloromethane	50.00	1.796	1.796	(0.342)	166265	250	270
2 Vinyl Chloride	62.00	1.903	1.903	(0.363)	142286	250	290
3 Bromomethane	94.00	2.144	2.144	(0.409)	97202	250	260
4 Chloroethane	64.00	2.215	2.215	(0.422)	84960	250	260
7 Trichlorofluoromethane	101.00	2.571	2.571	(0.490)	128735	250	260
8 Acetone	58.00	2.625	2.625	(0.500)	12896	250	130(a)
11 1,1-Dichloroethene	96.00	3.017	3.017	(0.575)	88415	250	250
13 Methylene Chloride	84.00	3.258	3.258	(0.621)	105601	250	260
18 1,2-Dichloroethene (total)	96.00				243668	500	530
14 Carbon Disulfide	76.00	3.383	3.383	(0.645)	332322	250	250
15 trans-1,2-Dichloroethene	96.00	3.846	3.846	(0.733)	113602	250	250
17 1,1-Dichloroethane	63.00	4.176	4.176	(0.796)	248782	250	250
19 Vinyl Acetate	43.00	4.274	4.274	(0.815)	454187	250	270
20 2-Butanone	43.00	4.639	4.639	(0.884)	113361	250	270
21 cis-1,2-Dichloroethene	96.00	4.978	4.978	(0.949)	130066	250	250
24 Chloroform	83.00	5.255	5.255	(1.002)	208941	250	250
27 1,1,1-Trichloroethane	97.00	6.039	6.039	(0.869)	154774	250	250
28 1,2-Dichloroethane	62.00	6.119	6.119	(1.167)	184888	250	250
30 Benzene	78.00	6.485	6.485	(0.933)	493189	250	250
31 Carbon Tetrachloride	117.00	6.511	6.511	(0.937)	128394	250	250
34 1,2-Dichloropropane	63.00	7.474	7.474	(1.076)	144874	250	240
35 Trichloroethene	130.00	7.501	7.501	(1.080)	108550	250	240
37 Bromodichloromethane	83.00	7.697	7.697	(1.108)	146486	250	260
39 2-Chloroethylvinylether	63.00	8.294	8.294	(1.194)	61005	250	250
40 4-Methyl-2-Pentanone	43.00	8.517	8.517	(1.226)	186317	250	220
41 cis-1,3-Dichloropropene	75.00	8.553	8.553	(1.231)	180605	250	250
42 trans-1,3-Dichloropropene	75.00	9.177	9.177	(1.321)	160044	250	260
44 Toluene	92.00	9.266	9.266	(0.834)	269820	250	250
45 1,1,2-Trichloroethane	83.00	9.346	9.346	(1.345)	97983	250	260

	mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	2-Hexanone	43.00	9.720	9.720	(0.875)	118889	250	150
	Dibromochloromethane	129.00	9.979	9.979	(1.436)	100039	250	250
49	Tetrachloroethene	164.00	10.318	10.318	(0.929)	93318	250	240
	Chlorobenzene	112.00	11.164	11.164	(1.005)	287456	250	250
	Xylene (Total)	106.00				550718	750	750
54	Ethylbenzene	106.00	11.459	11.459	(1.031)	149104	250	250
55	m,p-Xylene(s)	106.00	11.628	11.628	(1.047)	369125	500	500
	Bromoform	173.00	12.047	12.047	(1.084)	67375	250	240
	Styrene	104.00	12.091	12.091	(1.088)	290952	250	250
59	o-Xylene	106.00	12.154	12.154	(1.094)	181593	250	250
60	1,1,2,2-Tetrachloroethane	83.00	12.502	12.502	(1.125)	149099	250	260
	Bromochloromethane	128.00	5.246	5.246	(1.000)	65458	250	
	1,4-Difluorobenzene	114.00	6.948	6.948	(1.000)	368339	250	
50	Chlorobenzene-d5	117.00	11.111	11.111	(1.000)	287836	250	
	1,2-Dichloroethane-d4	102.00	6.012	6.012	(1.146)	27515	250	250
	Toluene-d8	98.00	9.168	9.168	(0.825)	380099	250	250
	Bromofluorobenzene	95.00	12.787	12.787	(1.151)	145300	250	240

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: 1.i
Lab File ID: l136cw1.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: JC
Method File: /chem/1.i/1950516.b/lvoclpw.m
Misc Info: L136W1//L136CW1

Calibration Date: 05/16/95
Calibration Time: 1200

Level: LOW
Sample Type: WATER

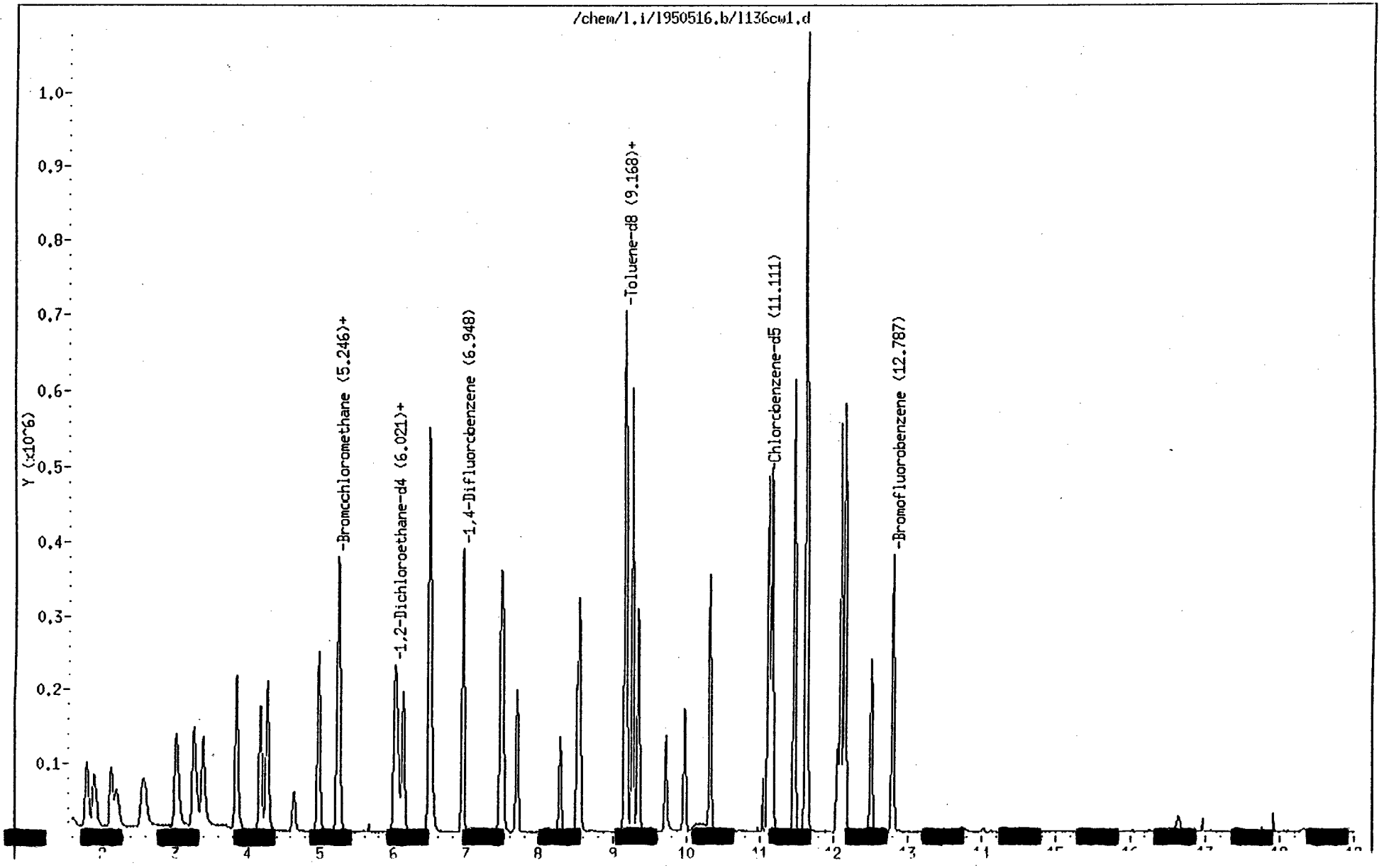
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65458	32729	130916	65458	0.00
32 1,4-Difluorobenzene	368339	184170	736678	368339	0.00
50 Chlorobenzene-d5	287836	143918	575672	287836	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.25	4.75	5.75	5.25	0.00
32 1,4-Difluorobenzene	6.95	6.45	7.45	6.95	0.00
50 Chlorobenzene-d5	11.11	10.61	11.61	11.11	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/l.i/1950516.b/1136cw1.d
Date : 16-MAY-1995 12:00
Client ID:
Sample Info: 50 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: l.i
Operator: JC
Column diameter: 0.25



Data File: /chem/l.i/l950519.b/l139cw1.d
Report Date: 30-May-1995 16:57

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: l.i
Lab File ID: l139cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 19-MAY-1995 09:41
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:01 16:50
Method File: /chem/l.i/l950519.b/lvoclpw.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	1 Chloromethane	2.358	2.527	0.010	7.2	40.0
	2 Vinyl Chloride	1.875	2.147	0.100	14.5	25.0
	3 Bromomethane	1.425	1.451	0.100	1.9	25.0
	4 Chloroethane	1.225	1.238	0.010	1.0	40.0
	7 Trichlorofluoromethane	1.891	2.117	0.010	11.9	40.0
	8 Acetone	0.381	0.158	0.010	58.4	100.0
	11 1,1-Dichloroethene	1.351	1.301	0.100	3.7	25.0
	13 Methylene Chloride	1.565	1.573	0.010	0.5	40.0
M	18 1,2-Dichloroethene (total)	1.869	1.812	0.010	3.1	40.0
	14 Carbon Disulfide	5.036	4.973	0.010	1.3	40.0
	15 trans-1,2-Dichloroethene	1.757	1.662	0.010	5.4	40.0
	17 1,1-Dichloroethane	3.790	3.722	0.200	1.8	25.0
	19 Vinyl Acetate	6.426	7.032	0.010	9.4	100.0
	20 2-Butanone	2.528	1.613	0.010	36.2	100.0
	21 cis-1,2-Dichloroethene	1.981	1.961	0.010	1.0	25.0
	24 Chloroform	3.156	3.196	0.200	1.3	25.0
	27 1,1,1-Trichloroethane	0.422	0.418	0.100	1.0	25.0
	28 1,2-Dichloroethane	2.814	2.899	0.100	3.0	25.0
	30 Benzene	1.337	1.351	0.500	1.0	25.0
	31 Carbon Tetrachloride	0.348	0.347	0.100	0.2	25.0
	34 1,2-Dichloropropane	0.400	0.407	0.010	1.7	25.0
	35 Trichloroethene	0.302	0.293	0.300	2.7	25.0
	37 Bromodichloromethane	0.389	0.410	0.200	5.5	25.0
	39 2-Chloroethylvinylether	0.166	0.169	0.010	2.0	100.0
	40 4-Methyl-2-Pentanone	0.611	0.545	0.010	10.9	100.0
	41 cis-1,3-Dichloropropene	0.481	0.512	0.100	6.5	25.0
	42 trans-1,3-Dichloropropene	0.424	0.453	0.100	6.7	25.0
	44 Toluene	0.940	0.937	0.400	0.3	25.0
	45 1,1,2-Trichloroethane	0.259	0.274	0.100	5.6	25.0
	46 2-Hexanone	0.681	0.421	0.010	38.2	100.0
	47 Dibromochloromethane	0.273	0.284	0.100	4.0	25.0
	49 Tetrachloroethene	0.336	0.313	0.200	7.0	25.0
	52 Chlorobenzene	1.011	0.974	0.500	3.6	25.0
M	53 Xylene (Total)	0.636	0.636	0.300	0.0	25.0
	54 Ethylbenzene	0.519	0.508	0.100	2.2	25.0
	55 m,p-Xylene(s)	0.641	0.634	0.300	1.1	25.0
	56 Bromoform	0.238	0.250	0.100	4.7	25.0
	57 Styrene	1.007	0.999	0.300	0.8	25.0
	59 o-Xylene	0.625	0.638	0.300	2.1	25.0
	60 1,1,2,2-Tetrachloroethane	0.508	0.528	0.300	4.0	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: l.i
Lab File ID: l139cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 19-MAY-1995 09:41
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:01 16:50
Method File: /chem/l.i/l950519.b/lvoclpw.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 26 1,2-Dichloroethane-d4	0.425	0.428	0.010	0.8	40.0
$ 43 Toluene-d8	1.333	1.371	0.010	2.8	40.0
$ 61 Bromofluorobenzene	0.514	0.521	0.010	1.2	25.0

SPL Labs

Volatiles by 624/8240

Data file : /chem/1.i/1950519.b/l139cw1.d
Lab Smp Id:
Inj Date : 19-MAY-1995 09:41
Operator : JC Inst ID: 1.i
Smp Info : 50 UG-L STD-8240W/1X
Misc Info : L139W1//L139CW1
Comment :
Method : /chem/1.i/1950519.b/lvoclpw.m
Meth Date : 19-May-1995 10:10 jimmy Quant Type: ISTD
Cal Date : 19-MAY-1995 09:41 Cal File: l139cw1.d
Als bottle: 2 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1 Chloromethane	50.00	1.794	1.794	(0.343)	166311	250	270
2 Vinyl Chloride	62.00	1.901	1.901	(0.364)	141300	250	290
3 Bromomethane	94.00	2.133	2.133	(0.408)	95485	250	250
4 Chloroethane	64.00	2.204	2.204	(0.422)	81454	250	250
7 Trichlorofluoromethane	101.00	2.561	2.561	(0.490)	139290	250	280
8 Acetone	58.00	2.605	2.605	(0.499)	10415	250	100(a)
11 1,1-Dichloroethene	96.00	3.007	3.007	(0.575)	85636	250	240
13 Methylene Chloride	84.00	3.247	3.247	(0.621)	103506	250	250
18 1,2-Dichloroethene (total)	96.00				238447	500	480
14 Carbon Disulfide	76.00	3.381	3.381	(0.647)	327258	250	250
15 trans-1,2-Dichloroethene	96.00	3.836	3.836	(0.734)	109385	250	240
17 1,1-Dichloroethane	63.00	4.174	4.174	(0.799)	244970	250	240
19 Vinyl Acetate	43.00	4.263	4.263	(0.816)	462758	250	270
20 2-Butanone	43.00	4.629	4.629	(0.886)	106166	250	160
21 cis-1,2-Dichloroethene	96.00	4.968	4.968	(0.951)	129062	250	250
24 Chloroform	83.00	5.244	5.244	(1.003)	210353	250	250
27 1,1,1-Trichloroethane	97.00	6.028	6.028	(0.869)	153338	250	250
28 1,2-Dichloroethane	62.00	6.118	6.118	(1.171)	190768	250	260
30 Benzene	78.00	6.474	6.474	(0.933)	495866	250	250
31 Carbon Tetrachloride	117.00	6.501	6.501	(0.937)	127471	250	250
34 1,2-Dichloropropane	63.00	7.464	7.464	(1.076)	149273	250	250
35 Trichloroethene	130.00	7.490	7.490	(1.080)	107711	250	240
37 Bromodichloromethane	83.00	7.686	7.686	(1.108)	150629	250	260
39 2-Chloroethylvinylether	63.00	8.284	8.284	(1.194)	61996	250	260
40 4-Methyl-2-Pentanone	43.00	8.506	8.506	(1.226)	199888	250	220
41 cis-1,3-Dichloropropene	75.00	8.542	8.542	(1.231)	188005	250	270
42 trans-1,3-Dichloropropene	75.00	9.166	9.166	(1.321)	166194	250	270
44 Toluene	92.00	9.255	9.255	(0.834)	269617	250	250
45 1,1,2-Trichloroethane	83.00	9.335	9.335	(1.346)	100395	250	260

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
46 2-Hexanone	43.00	9.710	9.710	(0.875)	121120	250	150
47 Dibromochloromethane	129.00	9.968	9.968	(1.437)	104099	250	260
49 Tetrachloroethene	164.00	10.307	10.307	(0.929)	90002	250	230
52 Chlorobenzene	112.00	11.154	11.154	(1.005)	280343	250	240
53 Xylene (Total)	106.00				548775	750	750
54 Ethylbenzene	106.00	11.448	11.448	(1.031)	146229	250	240
55 m,p-Xylene(s)	106.00	11.617	11.617	(1.047)	365007	500	490
58 Bromoform	173.00	12.036	12.036	(1.084)	71847	250	260
58 Styrene	104.00	12.081	12.081	(1.088)	287515	250	250
59 o-Xylene	106.00	12.143	12.143	(1.094)	183768	250	260
60 1,1,2,2-Tetrachloroethane	83.00	12.491	12.491	(1.125)	151890	250	260
2 Bromochloromethane	128.00	5.226	5.226	(1.000)	65811	250	
3 1,4-Difluorobenzene	114.00	6.938	6.938	(1.000)	366990	250	
50 Chlorobenzene-d5	117.00	11.100	11.100	(1.000)	287816	250	
2 1,2-Dichloroethane-d4	102.00	6.002	6.002	(1.148)	28196	250	250
4 Toluene-d8	98.00	9.157	9.157	(0.825)	394617	250	260
61 Bromofluorobenzene	95.00	12.776	12.776	(1.151)	149920	250	250

Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: l.i
ab File ID: l139cw1.d
ab Smp Id:
nalysis Type: VOA
uant Type: ISTD
perator: JC
ethod File: /chem/l.i/l950519.b/lvoclpw.m
isc Info: L139W1//L139CW1

Calibration Date: 05/19/95
Calibration Time: 0941

Level: LOW
Sample Type: WATER

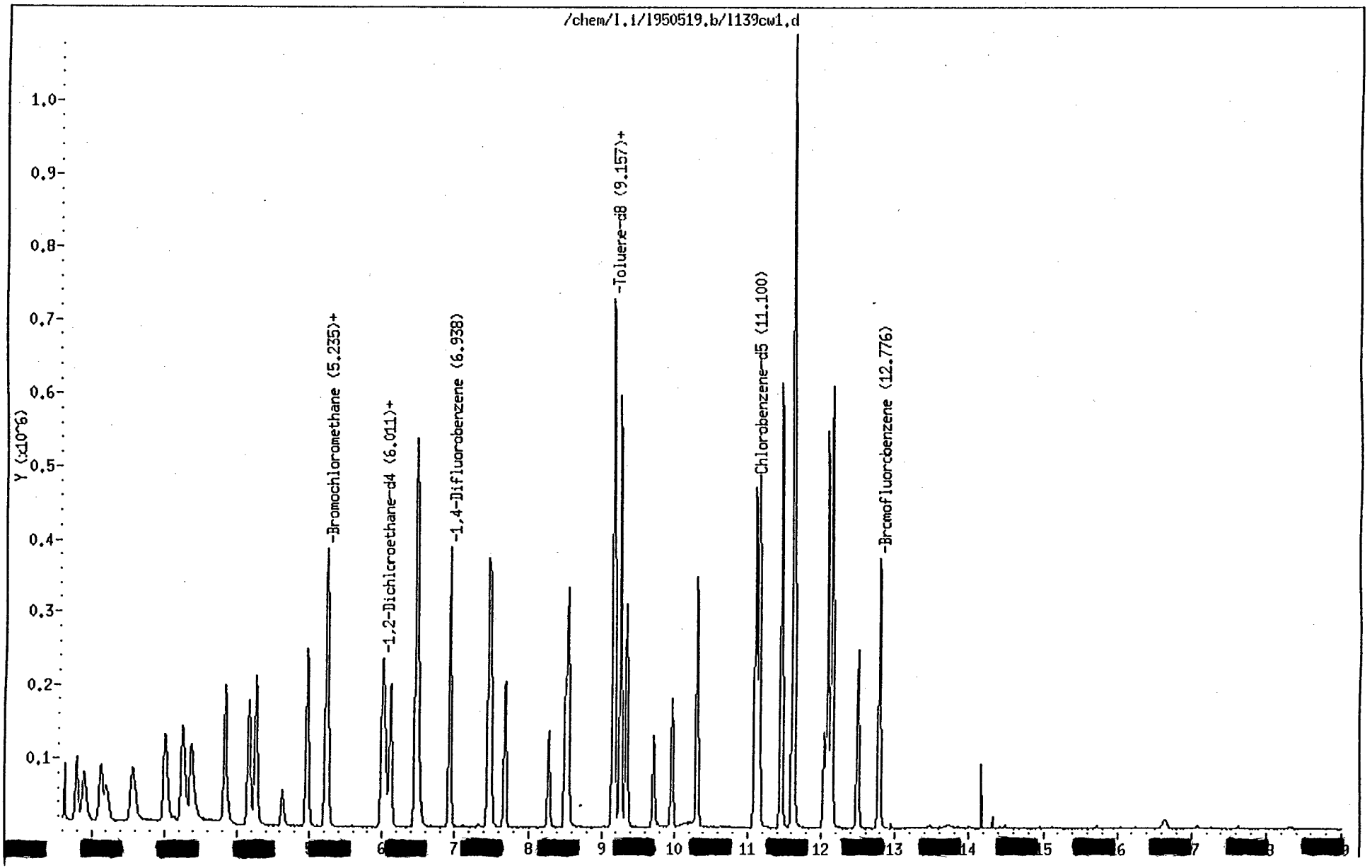
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	65811	32906	131622	65811	0.00
32 1,4-Difluorobenzene	366990	183495	733980	366990	0.00
50 Chlorobenzene-d5	287816	143908	575632	287816	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
23 Bromochloromethane	5.23	4.73	5.73	5.23	0.00
32 1,4-Difluorobenzene	6.94	6.44	7.44	6.94	0.00
50 Chlorobenzene-d5	11.10	10.60	11.60	11.10	0.00

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/1.i/1950519.b/1139cw1.d
Date : 19-MAY-1995 09:41
Client ID:
Sample Info: 50 UG-L STD-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: 1.i
Operator: JC
Column diameter: 0.25



Data File: /chem/k.i/k950517.b/k137cs1.d
Report Date: 17-May-1995 13:34

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k137cs1.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 17-MAY-1995 11:22
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950517.b/kvoclps.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	4 Chloromethane	2.451	3.079	0.010	25.6	40.0
	5 Vinyl Chloride	2.538	2.998	0.100	18.1	25.0
	7 Bromomethane	1.839	1.949	0.100	6.0	25.0
	6 Chloroethane	2.054	2.500	0.010	21.7	40.0
	9 Trichlorofluoromethane	1.955	2.261	0.010	15.6	40.0
	8 Acetone	0.244	0.292	0.010	20.1	100.0
	10 1,1-Dichloroethene	2.037	1.968	0.100	3.4	25.0
	11 Methylene Chloride	2.413	2.208	0.010	8.5	40.0
M	1 1,2-Dichloroethene (total)	2.551	2.490	0.010	2.4	40.0
	12 Carbon Disulfide	8.123	7.635	0.010	6.0	40.0
	13 trans-1,2-Dichloroethene	2.583	2.467	0.010	4.5	40.0
	14 1,1-Dichloroethane	4.811	4.786	0.200	0.5	25.0
	16 Vinyl Acetate	4.341	3.333	0.010	23.2	100.0
	17 2-Butanone	1.834	1.799	0.010	1.9	100.0
	19 cis-1,2-Dichloroethene	2.519	2.513	0.010	0.2	100.0
	21 Chloroform	4.063	4.127	0.200	1.6	25.0
	24 1,1,1-Trichloroethane	3.305	3.472	0.100	5.1	25.0
	25 1,2-Dichloroethane	0.456	0.531	0.100	16.4	25.0
	27 Benzene	1.452	1.467	0.500	1.0	25.0
	28 Carbon Tetrachloride	0.385	0.433	0.100	12.4	25.0
	33 1,2-Dichloropropane	0.387	0.395	0.010	2.1	25.0
	34 Trichloroethene	0.328	0.330	0.300	0.7	25.0
	35 Bromodichloromethane	0.426	0.471	0.010	10.6	100.0
	15 2-Chloroethylvinylether	0.732	0.758	0.010	3.5	100.0
	38 4-Methyl-2-Pentanone	0.342	0.363	0.010	6.0	100.0
	42 cis-1,3-Dichloropropene	0.390	0.442	0.200	13.1	25.0
	37 trans-1,3-Dichloropropene	0.698	0.703	0.100	0.7	25.0
	43 Toluene	1.189	1.132	0.400	4.8	25.0
	44 1,1,2-Trichloroethane	0.316	0.310	0.100	1.9	25.0
	45 2-Hexanone	0.388	0.149	0.010	61.7	100.0
	46 Dibromochloromethane	0.372	0.387	0.100	4.0	25.0
	48 Tetrachloroethene	0.403	0.370	0.200	8.2	25.0
	52 Chlorobenzene	1.112	1.116	0.500	0.4	25.0
M	2 Xylene (Total)	0.716	0.717	0.300	0.1	25.0
	53 Ethylbenzene	0.609	0.590	0.300	3.1	25.0
	54 m,p-Xylene(s)	0.727	0.726	0.300	0.1	25.0
	55 Bromoform	0.213	0.247	0.100	16.0	25.0
	57 Styrene	1.129	1.140	0.300	1.0	25.0
	58 o-Xylene	0.695	0.699	0.300	0.5	25.0
	59 1,1,2,2-Tetrachloroethane	0.357	0.400	0.300	11.9	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k137cs1.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 17-MAY-1995 11:22
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950517.b/kvoclps.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 23 1,2-Dichloroethane-d4	0.482	0.450	0.010	6.6	40.0
$ 40 Toluene-d8	1.661	1.507	0.010	9.2	40.0
$ 61 Bromofluorobenzene	0.578	0.574	0.200	0.6	25.0

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950517.b/k137cs1.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 17-MAY-1995 11:22
Operator : HLW Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 17-May-1995 13:34 hillery Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22 Cal File: k137cs1.d
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4	Chloromethane	50.00	1.362	1.362	(0.642)	193545	250	50
5	Vinyl Chloride	62.00	1.407	1.407	(0.664)	188440	250	50
7	Bromomethane	94.00	1.437	1.437	(0.678)	122512	250	50
6	Chloroethane	64.00	1.452	1.452	(0.685)	157128	250	50
9	Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	142126	250	50
8	Acetone	58.00	1.528	1.528	(0.721)	18380	250	50(a)
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	123713	250	50
11	Methylene Chloride	84.00	1.665	1.665	(0.785)	138771	250	50
M 1	1,2-Dichloroethene (total)	96.00				313046	500	100
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	479903	250	50
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	155076	250	50
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	300835	250	50
16	Vinyl Acetate	43.00	1.862	1.862	(0.878)	209479	250	50
17	2-Butanone	43.00	1.968	1.968	(0.928)	113070	250	50
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	157970	250	50
21	Chloroform	83.00	2.119	2.119	(1.000)	259400	250	50
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	218250	250	50
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.859)	210647	250	50
27	Benzene	78.00	2.559	2.559	(0.913)	582240	250	50
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.919)	171999	250	50
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.097)	156726	250	50
34	Trichloroethene	130.00	3.089	3.089	(1.103)	131113	250	50
35	Bromodichloromethane	83.00	3.210	3.210	(1.146)	186823	250	50
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.659)	300835	250	50
38	4-Methyl-2-Pentanone	43.00	4.028	4.028	(1.438)	143928	250	50
42	cis-1,3-Dichloropropene	75.00	4.650	4.650	(1.660)	175225	250	50
37	trans-1,3-Dichloropropene	75.00	3.968	3.968	(0.586)	207841	250	50
43	Toluene	92.00	4.650	4.650	(0.687)	334726	250	50
44	1,1,2-Trichloroethane	83.00	4.801	4.801	(0.709)	91769	250	50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CN-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.422	5.422	(0.801)	43911	250	50
	46 Dibromochloromethane	129.00	5.407	5.407	(0.799)	114293	250	50
	48 Tetrachloroethene	164.00	5.801	5.801	(0.857)	109364	250	50
	52 Chlorobenzene	112.00	6.816	6.816	(1.007)	330012	250	50
M	2 Xylene (Total)	106.00				635999	750	150
	53 Ethylbenzene	106.00	7.256	7.256	(1.072)	174518	250	50
	54 m,p-Xylene(s)	106.00	7.468	7.468	(1.103)	429292	500	100
	55 Bromoform	173.00	7.831	7.831	(1.157)	73022	250	50
	57 Styrene	104.00	8.028	8.028	(1.186)	337103	250	50
	58 o-Xylene	106.00	8.074	8.074	(1.192)	206707	250	50
	59 1,1,2,2-Tetrachloroethane	83.00	8.619	8.619	(1.273)	118223	250	50
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	62852	250	
*	31 1,4-Difluorobenzene	114.00	2.801	2.801	(1.000)	396843	250	
*	51 Chlorobenzene-d5	117.00	6.771	6.771	(1.000)	295653	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.122)	28311	250	50
$	40 Toluene-d8	98.00	4.543	4.543	(0.671)	445653	250	50
$	61 Bromofluorobenzene	95.00	8.877	8.877	(1.311)	169752	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k137cs1.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950517.b/kvoclps.m
Misc Info:

Calibration Date: 05/17/95
Calibration Time: 1122

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	62852	31426	125704	62852	0.00
31 1,4-Difluorobenzene	396843	198422	793686	396843	0.00
51 Chlorobenzene-d5	295653	147826	591306	295653	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.00
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.00

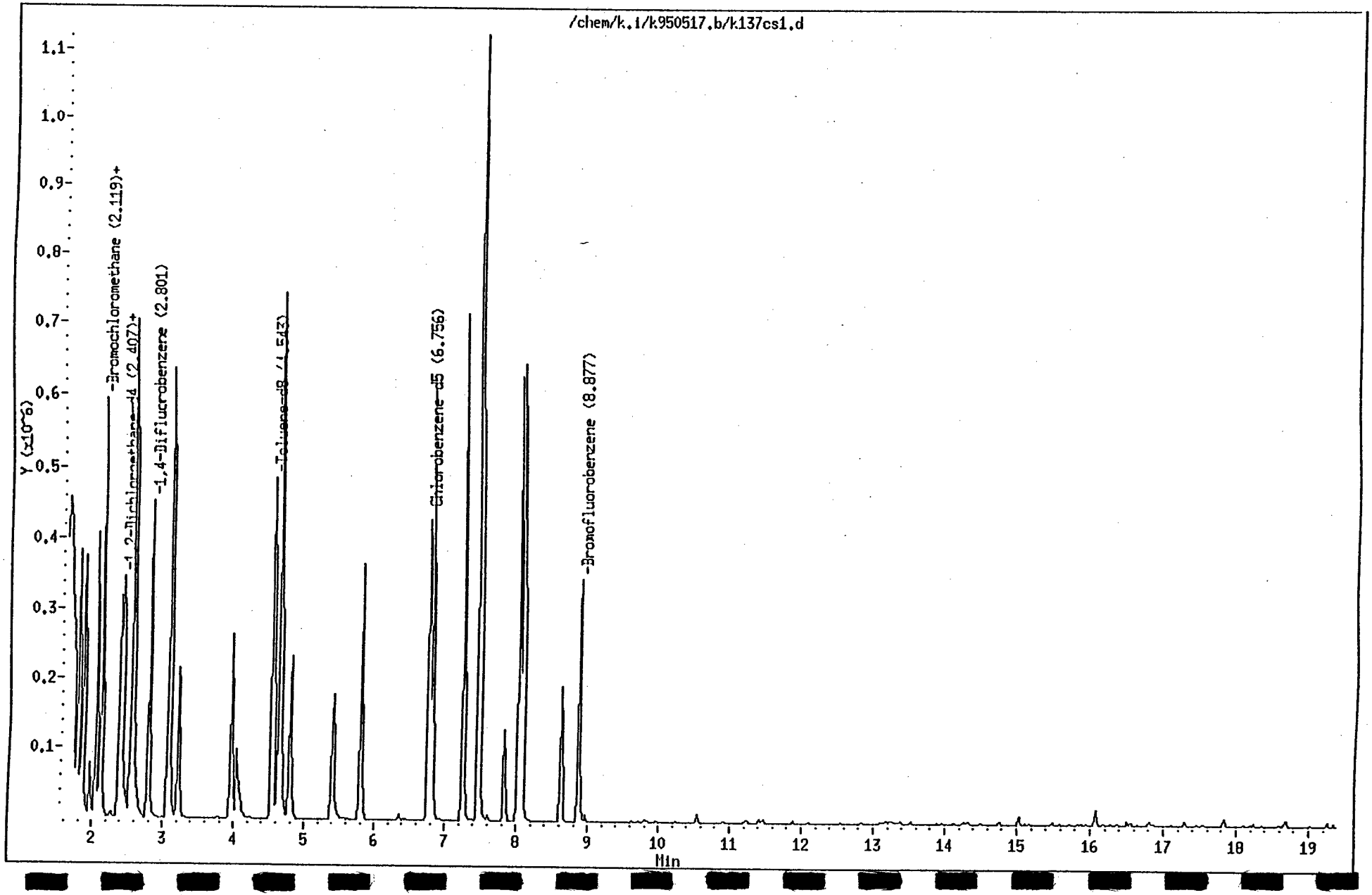
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950517.b/k137cs1.d
Date : 17-MAY-1995 11:22
Client ID:
Sample Info: 50 PPB STD 8240S

Instrument: k.i

Operator: MLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/h.i/h950518.b/h137kb2.d
Report Date: 19-May-1995 15:29

SPL Houston Labs

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 9504362 LCS
Level: LOW
Data Type: MS DATA
SpikeList File: 8270s.spk
Method File: /chem/h.i/h950518.b/hclps.m
Misc Info: E137S1/H137B02/H138CC1

Client SDG: h950518
Fraction: SV

Operator: LH
SampleType: BLANK
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
5 Phenol	2500	1300	53.81	26-90
9 2-Chlorophenol	2500	1500	59.66	25-102
12 1,4-Dichlorobenzen	1600	1100	69.76	28-104
21 N-Nitroso-di-n-pro	1600	1400	89.70	41-126
31 1,2,4-Trichloroben	1600	1100	70.70	38-107
36 4-Chloro-3-methylp	2500	1900	76.05	26-103
49 Acenaphthene	1600	1100	70.82	31-137
51 4-Nitrophenol	2500	1500	60.07	11-114
53 2,4-Dinitrotoluene	1600	1200	78.31	28-89
64 Pentachlorophenol	2500	850	33.98	17-109
71 Pyrene	1600	1100	66.87	35-142

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
$ 23 Nitrobenzene-d5	1600	1200	74.46	23-120
$ 41 2-Fluorobiphenyl	1600	1200	75.54	30-115
$ 72 Terphenyl-d14	1600	1200	71.97	18-137
$ 3 2-Fluorophenol	2500	1500	61.31	25-121
$ 4 Phenol-d5	2500	1700	66.79	24-113
$ 61 2,4,6-Tribromophen	2500	1800	73.02	19-122

Idelis Williams, QC Officer

3B

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 504362 SAS No.: ___ SDG NO.: 505556

Matrix Spike - EPA Sample No.: SFA-Q2-4(0-3')VER

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
Phenol	2500	0	2200	88	26- 90
2-Chlorophenol	2500	0	2200	88	25-102
1,4-Dichlorobenzene	1600	0	1300	81	28-104
N-Nitroso-di-n-prop.(1)	1600	0	1700	106	41-126
1,2,4-Trichlorobenzene	1600	0	1500	94	38-107
4-Chloro-3-methylphenol	2500	0	2500	100	26-103
Acenaphthene	1600	0	1700	106	31-137
4-Nitrophenol	2500	0	1000	40	11-114
2,4-Dinitrotoluene	1600	0	1600	105*	28- 89
Pentachlorophenol	2500	0	950	38	17-109
Pyrene	1600	0	1800	113	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
Phenol	2500	2200	88	0	35	26- 90
2-Chlorophenol	2500	2300	92	4	50	25-102
1,4-Dichlorobenzene	1600	1400	88	8	27	28-104
N-Nitroso-di-n-prop.(1)	1600	1800	113	6	38	41-126
1,2,4-Trichlorobenzene	1600	1600	100	6	23	38-107
4-Chloro-3-methylphenol	2500	2600	104*	4	33	26-103
Acenaphthene	1600	1500	94	12	19	31-137
4-Nitrophenol	2500	1200	48	18	50	11-114
2,4-Dinitrotoluene	1600	1500	94*	6	47	28- 89
Pentachlorophenol	2500	910	36	5	47	17-109
Pyrene	1600	1800	113	0	36	35-142

(1) N-Nitroso-di-n-propylamine

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 11 outside limits

Spike Recovery: 3 out of 22 outside limits

FORM III SV - 2

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 05/31/95 13:56
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Pyridine	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
bis(2-Chloroethyl)ether	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
bis(2-chloroisopropyl)ethe	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
N-Nitroso-di-n-propylamine	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Nitrobenzene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Benzoic acid	ND	1600	ug/Kg
bis(2-Chloroethoxy)methane	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
4-Chloro-3-methylphenol	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
Dimethylphthalate	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 05/31/95 13:56
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	330	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
Acenaphthene	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
Dibenzofuran	ND	330	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
4-Chlorophenyl-phenylether	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
4,6-Dinitro-2-methylphenol	ND	800	ug/Kg
n-Nitrosodiphenylamine	ND	330	ug/Kg
1,2-Diphenylhydrazine	ND	330	ug/Kg
4-Bromophenyl-phenylether	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
Di-n-butylphthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
Benzo[a]anthracene	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
bis(2-Ethylhexyl)phthalate	ND	330	ug/Kg
Di-n-octylphthalate	ND	330	ug/Kg
Benzo[b]fluoranthene	ND	330	ug/Kg
Benzo[k]fluoranthene	ND	330	ug/Kg
Benzo[a]pyrene	ND	330	ug/Kg
Indeno[1,2,3-cd]pyrene	ND	330	ug/Kg
Dibenz[a,h]anthracene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950522044703

Reported on: 05/31/95 13:56
Analyzed on: 05/25/95 18:11
Analyst: LH

METHOD 8270 BLANK H142B02

Compound	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	330	ug/Kg

Surrogate	Result	QC Criteria	Units
2-Fluorophenol	61	25-121	% Recovery
Phenol-d5	80	24-113	% Recovery
Nitrobenzene-d5	80	23-120	% Recovery
2-Fluorobiphenyl	78	30-115	% Recovery
2,4,6-Tribromophenol	67	19-122	% Recovery
Terphenyl-d14	96	18-137	% Recovery

Samples in Batch 9505556-02 9505556-03 9505556-04 9505556-05

Notes
ND - Not detected.

Idelis Williams, QC Officer

Data File: /chem/j.i/j950523.b/j143df2.d

Date : 23-MAY-95 08:55

Client ID:

Instrument: j.i

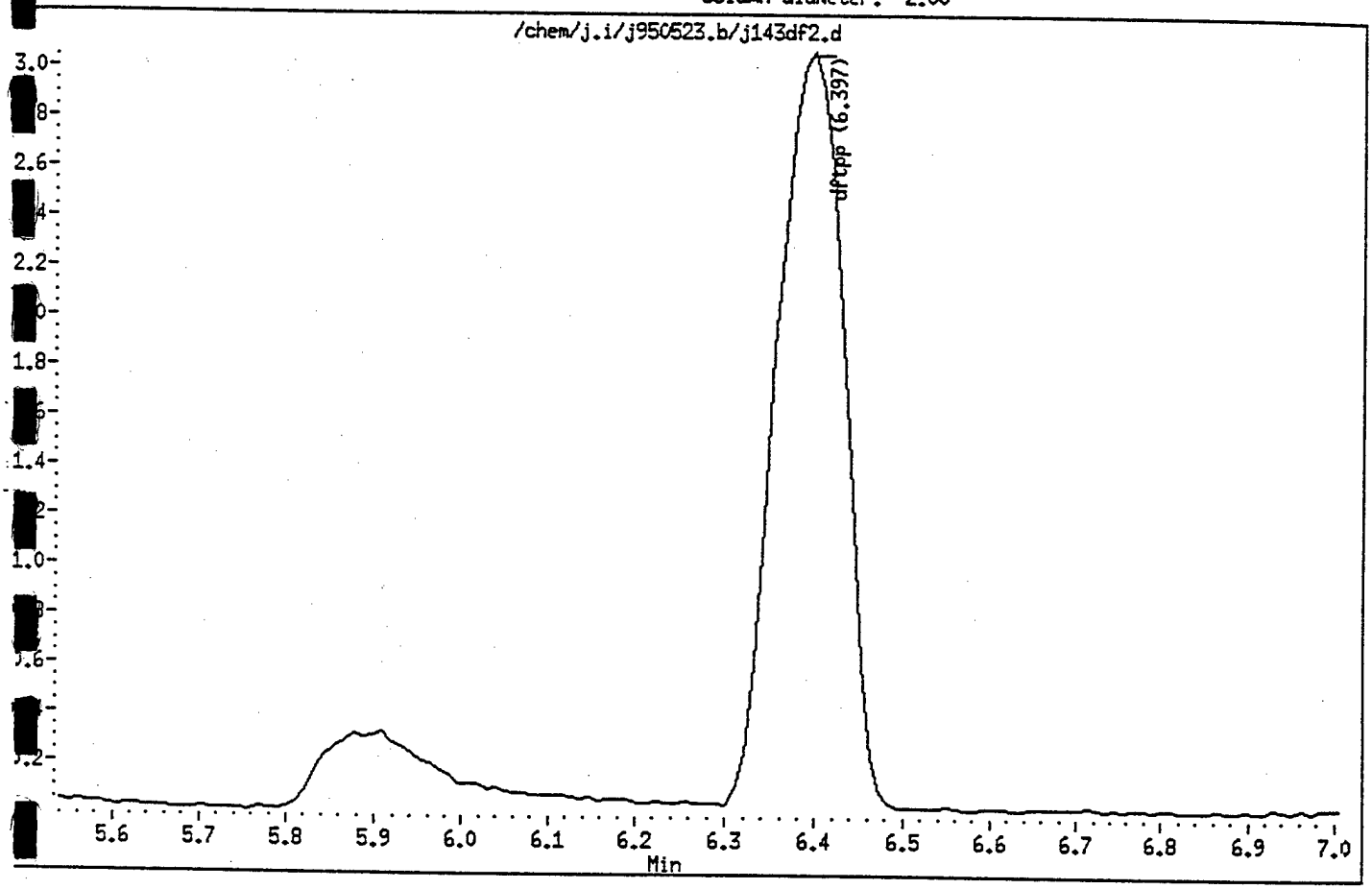
Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0

Operator: PC

Column phase:

Column diameter: 2.00



Data File: /chem/j.i/j950523.b/j143df2.d

Date : 23-MAY-95 08:55

Client ID:

Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0

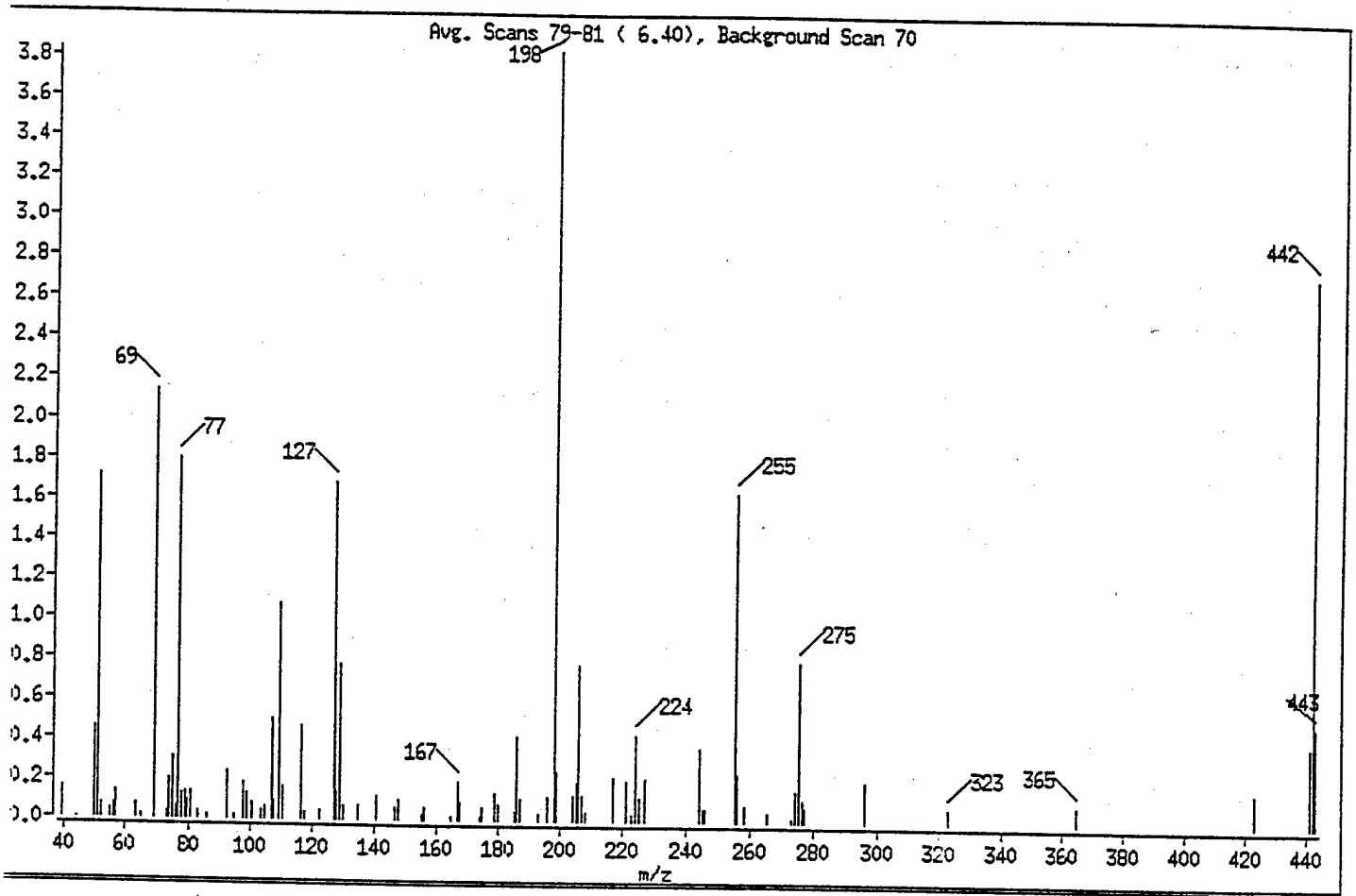
Column phase:

1 dftpp

Instrument: j.i

Operator: PC

Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	44.76
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	55.77
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	43.82
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.45
275	10.00 - 30.00% of mass 198	20.68
365	Greater than 0.75% of mass 198	2.42
441	Present, but less than mass 443	10.29
442	40.00 - 110.00% of mass 198	71.43
443	17.00 - 23.00% of mass 442	13.07 (18.30)

Data File: /chem/j.i/j950523.b/j143df2.d
Date : 23-MAY-95 08:55
Client ID:
Instrument: j.i
Sample Info: 50 NG DFTPP
Volume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 2.00

Data File: j143df2.d
Spectrum : Avg. Scans 79-81 (6.40), Background Scan 70
Largest m/z: 197.95
Number of peaks: 90

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.05	1572	95.00	190	164.85	149	224.95	1142
44.05	8	97.90	1801	166.95	1922	226.95	2078
50.00	4513	98.90	1295	167.95	933	244.00	3657
51.00	17168	101.00	792	174.05	179	245.00	615
52.00	699	103.90	412	174.95	636	245.80	659
55.00	410	104.90	607	178.95	1356	254.90	16299
56.00	684	107.00	4982	179.95	801	255.90	2318
56.90	1340	108.00	919	185.05	475	257.90	846
63.00	742	109.90	10716	185.95	4169	264.90	458
64.90	167	111.00	1633	186.95	1083	272.90	209
68.90	21400	116.90	4634	192.95	342	274.00	1560
73.00	342	117.90	365	195.95	1187	275.00	7935
73.90	1967	122.80	457	197.95	38368	276.00	1047
75.00	3097	127.00	16808	198.95	2474	276.90	748
75.90	622	128.00	1382	204.05	1276	295.90	1971
77.00	17936	129.00	7738	204.95	1906	322.95	745
78.00	1278	129.90	689	206.05	7696	364.85	928
78.90	1350	134.90	768	206.95	1257	423.00	1592
79.90	885	140.95	1143	207.95	442	441.10	3949
80.90	1388	146.85	615	216.95	2141	442.00	27408
83.00	398	147.95	959	221.05	1994	443.00	5015
85.90	202	154.85	242	223.05	374		
92.90	2372	155.95	632	224.05	4235		

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/j.i/j950515.b/j135ic1.d
Level 2: /chem/j.i/j950515.b/j135ic2.d
Level 3: /chem/j.i/j950515.b/j135ic3.d
Level 4: /chem/j.i/j950515.b/j135ic4.d
Level 5: /chem/j.i/j950515.b/j135ic5.d

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
2 Pyridine	0.95105	1.26705	1.23502	1.33160	1.48833	1.25461	15.601
5 Phenol	1.51832	1.65443	1.58304	1.72973	2.00205	1.69751	11.054
6 Aniline	1.36393	1.76985	1.74905	1.92722	2.16595	1.79520	16.327
7 bis(2-Chloroethyl)ether	1.25411	1.48762	1.45620	1.46936	1.54893	1.44325	7.728
9 2-Chlorophenol	1.02696	1.23674	1.15397	1.23144	1.29693	1.18921	8.740
10 1,3-Dichlorobenzene	1.34917	1.49659	1.38271	1.45601	1.48908	1.43471	4.578
12 1,4-Dichlorobenzene	1.60006	1.67907	1.54190	1.52079	1.54718	1.57780	4.037
13 Benzyl alcohol	0.53329	0.79005	0.82283	0.89240	0.98200	0.80411	20.933
15 1,2-Dichlorobenzene	1.50220	1.52238	1.37536	1.38949	1.44032	1.44595	4.536
16 2-Methylphenol	1.19543	1.35725	1.32818	1.36100	1.48673	1.34572	7.718
17 ortho-Cresol	1.19543	1.35725	1.32818	1.43178	1.48673	1.35987	8.165
18 bis(2-chloroisopropyl)ether	1.76798	1.76851	1.70940	1.71433	1.82264	1.75657	2.647
19 4-Methylphenol	1.05392	1.30252	1.42666	1.38146	1.41489	1.31589	11.722
20 meta,para-Cresol	1.05886	1.30252	1.42666	1.48284	1.41489	1.33715	12.621
21 N-Nitroso-di-n-propylamine	0.87335	1.06493	1.06762	1.07818	1.15447	1.04771	9.945
22 Hexachloroethane	0.69094	0.69528	0.62342	0.62498	0.65254	0.65743	5.263
24 Nitrobenzene	0.28587	0.32718	0.32549	0.36702	0.37957	0.33703	11.059
25 Isophorone	0.76857	0.85821	0.78532	0.81508	0.82607	0.81065	4.331
26 2-Nitrophenol	0.13155	0.14223	0.16652	0.19168	0.20758	0.16791	19.118
27 2,4-Dimethylphenol	0.33771	0.36339	0.33649	0.35681	0.36466	0.35181	3.912
28 Benzoic acid	0.06016	0.04836	0.11869	0.18084	0.15672	0.11295	51.464
29 bis(2-Chloroethoxy)methane	0.42222	0.46401	0.43459	0.44374	0.45735	0.44438	3.800
30 2,4-Dichlorophenol	0.25343	0.29339	0.28143	0.29478	0.30151	0.28491	6.678
31 1,2,4-Trichlorobenzene	0.30741	0.32200	0.29045	0.30527	0.31109	0.30724	3.706
33 Naphthalene	1.01228	1.05065	0.96870	1.00463	1.01642	1.01053	2.898
34 4-Chloroaniline	0.40672	0.43940	0.40261	0.41762	0.42253	0.41778	3.473

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
35 Hexachlorobutadiene	0.16723	0.16702	0.15373	0.15764	0.16195	0.16151	3.647
36 4-Chloro-3-methylphenol	0.27010	0.31639	0.30299	0.31421	0.31424	0.30359	6.403
37 2-Methylnaphthalene	0.71152	0.72896	0.68681	0.70283	0.70093	0.70621	2.196
38 Hexachlorocyclopentadiene	0.08166	0.15446	0.18379	0.23183	0.26697	0.18374	38.979
39 2,4,6-Trichlorophenol	0.28606	0.33348	0.32647	0.38371	0.41647	0.34924	14.647
40 2,4,5-Trichlorophenol	0.27887	0.37871	0.36262	0.37822	0.37673	0.35503	12.137
42 2-Chloronaphthalene	1.07462	1.14790	1.04047	1.09629	1.14040	1.09994	4.098
43 2-Nitroaniline	0.26045	0.30646	0.32759	0.35965	0.36334	0.32350	13.093
44 Dimethylphthalate	1.33503	1.45003	1.17295	1.13198	1.13770	1.24554	11.327
45 2,6-Dinitrotoluene	0.19775	0.23250	0.26006	0.27051	0.27623	0.24741	13.117
46 Acenaphthylene	1.89377	1.98018	1.81003	1.86750	1.89947	1.89019	3.255
47 3-Nitroaniline	0.24880	0.29390	0.30926	0.31630	0.33588	0.30083	10.891
49 Acenaphthene	1.10308	1.15985	1.06041	1.08599	1.10991	1.10385	3.322
50 2,4-Dinitrophenol	0.01312	0.03990	0.06599	0.10986	0.13994	0.07376	69.684
51 4-Nitrophenol	0.10125	0.09981	0.12493	0.12426	0.12827	0.11571	12.054
52 Dibenzofuran	1.60012	1.70641	1.57273	1.65040	1.66645	1.63922	3.247
53 2,4-Dinitrotoluene	0.22118	0.31857	0.35206	0.39893	0.38067	0.33428	20.987
54 Diethylphthalate	1.29307	1.16339	1.07643	1.08836	1.08674	1.14160	8.017
55 4-Chlorophenyl-phenylether	0.60706	0.64523	0.59312	0.61902	0.50838	0.59456	8.720
56 Fluorene	1.27759	1.36248	1.23577	1.28125	1.26119	1.28366	3.706
57 4-Nitroaniline	0.21402	0.28985	0.25758	0.28689	0.31079	0.27183	13.782
58 4,6-Dinitro-2-methylphenol	0.03059	0.05007	0.09116	0.15279	0.16501	0.09792	61.232
59 n-Nitrosodiphenylamine	0.51655	0.55847	0.50740	0.51665	0.49939	0.51969	4.394
60 1,2-Diphenylhydrazine	2.08860	2.25724	2.09159	2.52856	2.40385	2.27397	8.504
62 4-Bromophenyl-phenylether	0.21346	0.23072	0.21828	0.22724	0.21989	0.22192	3.143
63 Hexachlorobenzene	0.23804	0.25488	0.23514	0.29216	0.28083	0.26021	9.787
64 Pentachlorophenol	0.07041	0.09786	0.10596	0.13378	0.14153	0.10991	26.098
66 Phenanthrene	1.21947	1.39737	1.29086	1.62620	1.56750	1.42028	12.280
67 Anthracene	1.23143	1.19931	1.09424	1.29253	1.25997	1.21550	6.256
68 Carbazole	1.02126	1.13742	0.97197	1.20739	1.17657	1.10292	9.218
69 Di-n-butylphthalate	1.29031	1.43356	1.34818	1.64157	1.62900	1.46852	10.936
70 Fluoranthene	1.07541	1.10480	1.00195	1.25405	1.25060	1.13736	9.798
71 Pyrene	1.33167	1.47384	1.36535	1.43146	1.45975	1.41241	4.352
73 Butylbenzylphthalate	0.77066	0.86319	0.76986	0.81568	0.82800	0.80948	4.919

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INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

	Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
74	3,3'-Dichlorobenzidine	0.39914	0.42903	0.40834	0.44206	0.45633	0.42698	5.513
75	Benzo[a]anthracene	1.22568	1.28194	1.19877	1.22823	1.26654	1.24023	2.707
77	Chrysene	1.14333	1.20407	1.10284	1.18931	1.15540	1.15899	3.441
78	bis(2-Ethylhexyl)phthalate	1.06264	1.15854	1.05292	1.09392	1.11358	1.09632	3.868
79	Di-n-octylphthalate	2.56522	3.05460	2.92959	3.23091	3.34981	3.02603	10.041
80	Benzo[b]fluoranthene	1.68789	1.88018	1.96569	2.05254	2.22508	1.96227	10.168
81	Benzo[k]fluoranthene	1.66504	1.81921	1.51041	1.60892	1.48518	1.61775	8.293
82	Benzo[a]pyrene	1.41684	1.53858	1.45954	1.51435	1.54723	1.49531	3.719
84	Indeno[1,2,3-cd]pyrene	1.34560	1.43852	1.29149	1.33980	1.41585	1.36625	4.391
85	Dibenz[a,h]anthracene	1.13755	1.23807	1.10419	1.14280	1.21980	1.16848	4.921
86	Benzo[g,h,i]perylene	1.07314	1.11446	1.00801	1.04609	1.12547	1.07343	4.520
96	Benzidine	0.23696	0.40586	0.33322	0.43468	0.44840	0.37182	23.543
$ 3	2-Fluorophenol	0.53676	0.60858	0.58345	0.78905	0.89782	0.68313	22.467
$ 4	Phenol-d5	1.27175	1.56530	1.53071	1.64719	1.81856	1.56670	12.694
$ 8	2-Chlorophenol-d4	0.98505	1.16531	1.06248	1.15564	1.20282	1.11426	7.969
$ 14	1,2-Dichlorobenzene-d4	0.38858	0.43736	0.37932	0.40981	0.41932	0.40688	5.747
$ 23	Nitrobenzene-d5	0.28758	0.32000	0.32625	0.37035	0.38320	0.33747	11.565
$ 41	2-Fluorobiphenyl	1.22535	1.30328	1.21468	1.26964	1.32263	1.26712	3.720
$ 61	2,4,6-Tribromophenol	0.09140	0.10858	0.10962	0.11966	0.11882	0.10962	10.387
$ 72	Terphenyl-d14	0.90836	1.01420	0.94580	1.00700	1.01611	0.97829	4.979

Data File: /chem/j.i/j950515.b/j135ic1.d
Report Date: 16-May-1995 13:16

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Data file : /chem/j.i/j950515.b/j135ic1.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:27
Operator : PC Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950515 STD020
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Proc Date : 16-May-1995 13:16 patti Quant Type: ISTD
Inj Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
Vials bottle: 2 Calibration Sample, Level: 1
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: Std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2	Pyridine	79.00	4.136	4.136	(0.514)	149998	20	15
5	Phenol	94.00	7.462	7.462	(0.927)	239466	20	18
	Aniline	93.00	7.484	7.484	(0.930)	215115	20	15
	bis(2-Chloroethyl)ether	93.00	7.571	7.571	(0.940)	197795	20	17
9	2-Chlorophenol	128.00	7.702	7.702	(0.957)	161969	20	17
	1,3-Dichlorobenzene	146.00	7.974	7.974	(0.991)	212788	20	19
	1,4-Dichlorobenzene	146.00	8.084	8.084	(1.004)	252358	20	20
3	Benzyl alcohol	108.00	8.411	8.411	(1.045)	84109	20	13(M)
	1,2-Dichlorobenzene	146.00	8.465	8.465	(1.051)	236923	20	21
	2-Methylphenol	108.00	8.662	8.662	(1.076)	188540	20	18
8	bis(2-chloroisopropyl)ether	45.00	8.694	8.694	(1.080)	278842	20	20
19	4-Methylphenol	108.00	8.989	8.989	(1.116)	166221	20	16(M)
	N-Nitroso-di-n-propylamine	70.00	8.989	8.989	(1.116)	137742	20	17
	Hexachloroethane	117.00	9.109	9.109	(1.131)	108974	20	21
24	Nitrobenzene	77.00	9.294	9.294	(0.857)	184415	20	17
25	Isophorone	82.00	9.817	9.817	(0.905)	495813	20	19
	2-Nitrophenol	139.00	10.024	10.024	(0.925)	84866	20	16(aM)
7	2,4-Dimethylphenol	107.00	10.154	10.154	(0.937)	217862	20	19
28	Benzoic acid	122.00	10.623	10.623	(0.980)	38807	20	11(aQM)
9	bis(2-Chloroethoxy)methane	93.00	10.351	10.351	(0.955)	272381	20	19
0	2,4-Dichlorophenol	162.00	10.590	10.590	(0.977)	163487	20	18
31	1,2,4-Trichlorobenzene	180.00	10.754	10.754	(0.992)	198316	20	20
3	Naphthalene	128.00	10.885	10.885	(1.004)	653030	20	20
4	4-Chloroaniline	127.00	11.093	11.093	(1.023)	262378	20	19
5	Hexachlorobutadiene	225.00	11.333	11.333	(1.045)	107879	20	21
36	4-Chloro-3-methylphenol	107.00	12.301	12.301	(1.135)	174247	20	18
7	2-Methylnaphthalene	142.00	12.530	12.530	(1.156)	459009	20	20
8	Hexachlorocyclopentadiene	237.00	13.096	13.096	(0.867)	29991	20	9(a)
39	2,4,6-Trichlorophenol	196.00	13.314	13.314	(0.882)	105065	20	16

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.889)	102426	20	16 (a)
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.908)	394689	20	20
43 2-Nitroaniline	65.00	14.056	14.056	(0.931)	95660	20	16 (a)
44 Dimethylphthalate	163.00	14.579	14.579	(0.965)	490332	20	21
45 2,6-Dinitrotoluene	165.00	14.732	14.732	(0.975)	72630	20	16 (M)
46 Acenaphthylene	152.00	14.721	14.721	(0.975)	695549	20	20
47 3-Nitroaniline	138.00	15.091	15.091	(0.999)	91381	20	16 (a)
49 Acenaphthene	153.00	15.179	15.179	(1.005)	405143	20	20
50 2,4-Dinitrophenol	184.00	15.441	15.441	(1.022)	4818	20	4 (aQM)
51 4-Nitrophenol	109.00	15.659	15.659	(1.037)	37186	20	18 (aQM)
52 Dibenzofuran	168.00	15.582	15.582	(1.032)	587696	20	20
53 2,4-Dinitrotoluene	165.00	15.713	15.713	(1.040)	81234	20	13
54 Diethylphthalate	149.00	16.324	16.324	(1.081)	474922	20	23
55 4-Chlorophenyl-phenylether	204.00	16.444	16.444	(1.089)	222961	20	20
56 Fluorene	166.00	16.422	16.422	(1.087)	469236	20	20
57 4-Nitroaniline	138.00	16.619	16.619	(1.100)	78607	20	16 (aQ)
58 4,6-Dinitro-2-methylphenol	198.00	16.728	16.728	(0.893)	16469	20	6 (aM)
59 n-Nitrosodiphenylamine	169.00	16.750	16.750	(0.895)	278110	20	20
60 1,2-Diphenylhydrazine	77.00	16.826	16.826	(0.899)	1124508	20	18
62 4-Bromophenyl-phenylether	248.00	17.633	17.633	(0.942)	114929	20	19
63 Hexachlorobenzene	283.70	17.993	17.993	(0.961)	128163	20	18
64 Pentachlorophenol	266.00	18.472	18.472	(0.987)	37907	20	13 (aM)
66 Phenanthrene	178.00	18.778	18.778	(1.003)	656565	20	17
67 Anthracene	178.00	18.887	18.887	(1.009)	663009	20	20
68 Carbazole	167.00	19.323	19.323	(1.032)	549851	20	18
69 Di-n-butylphthalate	149.00	20.324	20.324	(1.086)	694710	20	18
70 Fluoranthene	202.00	21.726	21.726	(1.160)	579004	20	19
71 Pyrene	202.00	22.271	22.271	(0.877)	567285	20	19
73 Butylbenzylphthalate	149.00	23.980	23.980	(0.944)	328298	20	19
74 3,3'-Dichlorobenzidine	252.00	25.341	25.341	(0.997)	170030	20	19 (M)
75 Benzo[a]anthracene	228.00	25.352	25.352	(0.998)	522134	20	20
77 Chrysene	228.00	25.474	25.474	(1.003)	487055	20	20
78 bis(2-Ethylhexyl)phthalate	149.00	25.605	25.605	(1.008)	452678	20	19
79 Di-n-octylphthalate	149.00	27.413	27.413	(0.917)	752106	20	17
80 Benzo[b]fluoranthene	252.00	28.633	28.633	(0.958)	494877	20	17
81 Benzo[k]fluoranthene	252.00	28.666	28.666	(0.959)	488178	20	20 (M)
82 Benzo[a]pyrene	252.00	29.703	29.703	(0.993)	415409	20	19
84 Indeno[1,2,3-cd]pyrene	276.00	34.468	34.468	(1.153)	394521	20	20
85 Dibenz[a,h]anthracene	278.00	34.534	34.534	(1.155)	333522	20	19
86 Benzo[g,h,i]perylene	276.00	35.788	35.788	(1.197)	314637	20	20
1 1,4-Dichlorobenzene-d4	152.00	8.051	8.051	(1.000)	315435	40	
2 Naphthalene-d8	136.00	10.842	10.842	(1.000)	1290219	40	
3 Acenaphthene-d10	164.00	15.102	15.102	(1.000)	734566	40	
5 Phenanthrene-d10	188.00	18.723	18.723	(1.000)	1076808	40	
6 Chrysene-d12	240.00	25.407	25.407	(1.000)	851991	40	
8 Perylene-d12	264.00	29.900	29.900	(1.000)	586387	40	
Nitrobenzene-d5	82.00	9.261	9.261	(0.854)	185519	20	17
2-Fluorobiphenyl	172.00	13.478	13.478	(0.892)	450050	20	19
Terphenyl-d14	244.00	22.696	22.696	(0.893)	386959	20	18

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.440	7.440	(0.924)	200578	20	16
3 2-Fluorophenol	112.00	5.843	5.843	(0.726)	84656	20	16 (QM)
2,4,6-Tribromophenol	329.70	17.078	17.078	(0.912)	49211	20	17
ortho-Cresol	108.00	8.662	8.662	(1.076)	188540	20	18
20 meta,para-Cresol	108.00	8.989	8.989	(1.116)	167000	20	16 (aM)
96 Benzidine	184.00	22.118	22.118	(0.871)	100944	20	13 (aM)

Flag Legend

Target compound detected but, quantitated amount
Below Limit Of Quantitation (BLOQ).
Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
.ab File ID: j135ic1.d
.ab Smp Id:
nalysis Type: SV
)uant Type: ISTD
)perator: PC
:ethod File: /chem/j.i/j950515.b/jclpw.m
isc Info: 950515 STD020

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	315435	1.66
32 Naphthalene-d8	1245807	622904	2491614	1290219	3.56
48 Acenaphthene-d10	707154	353577	1414308	734566	3.88
65 Phenanthrene-d10	1039593	519796	2079186	1076808	3.58
76 Chrysene-d12	791981	395990	1583962	851991	7.58
83 Perylene-d12	481272	240636	962544	586387	21.84

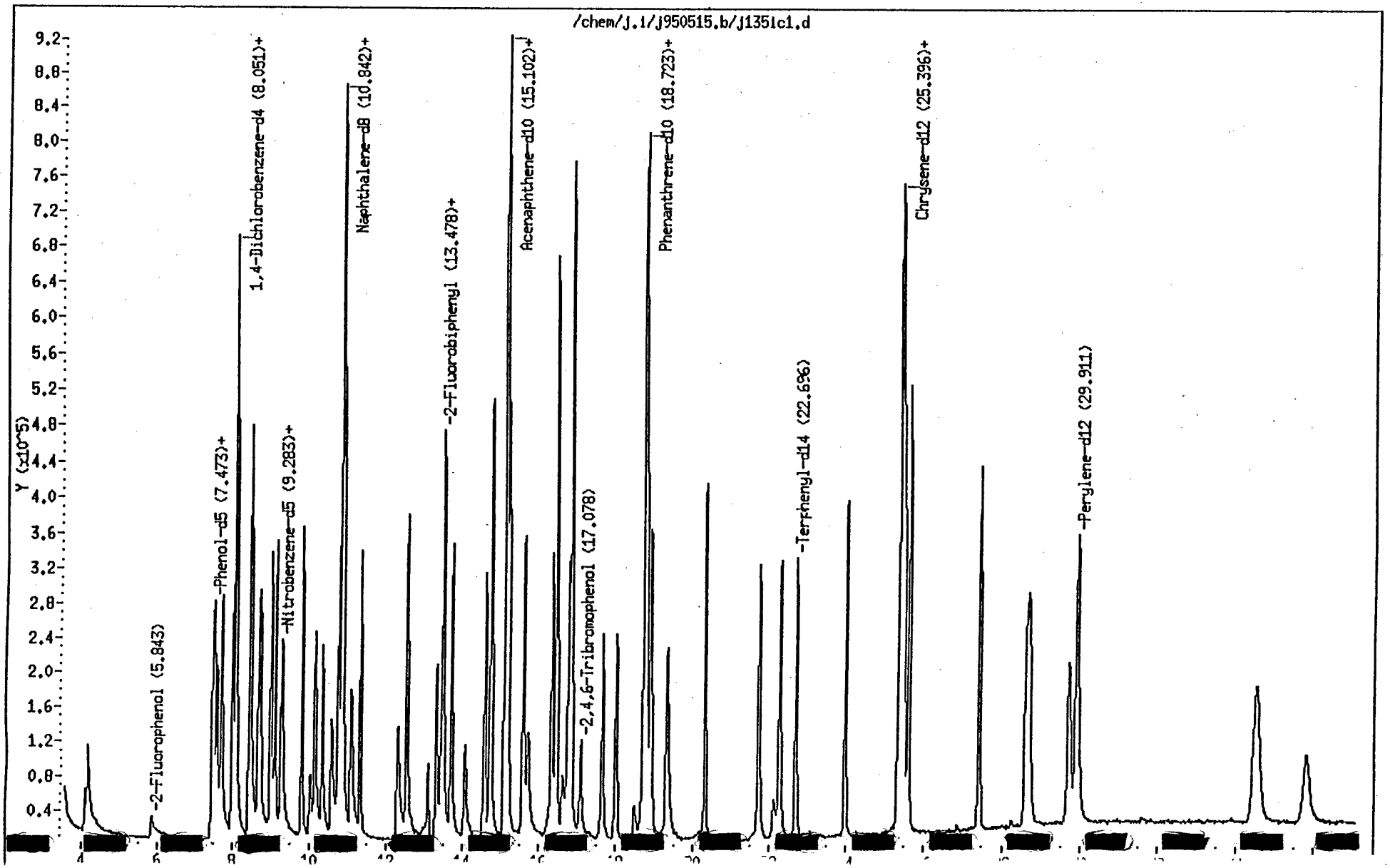
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.12
32 Naphthalene-d8	10.84	10.34	11.34	10.84	-0.03
48 Acenaphthene-d10	15.11	14.61	15.61	15.10	-0.07
65 Phenanthrene-d10	18.73	18.23	19.23	18.72	-0.05
76 Chrysene-d12	25.41	24.91	25.91	25.41	-0.02
83 Perylene-d12	29.92	29.42	30.42	29.90	-0.06

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j135ic1.d
Date : 15-MAY-1995 15:27
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



ata File: /chem/j.i/j950515.b/j135ic2.d
eport Date: 16-May-1995 13:16

SPL Houston Labs

ata file : /chem/j.i/j950515.b/j135ic2.d
ab Smp Id:
nj Date : 15-MAY-1995 14:43
perator : PC
mp Info : STD-8270W/1X
isc Info : 950515 STD050
omment :
ethod : /chem/j.i/j950515.b/jclpw.m
eth Date : 16-May-1995 13:16 patti
al Date : 15-MAY-1995 14:43
ls bottle: 1
il Factor: 1.000
ntegrator: HP RTE
arget Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 2

Compound Sublist: Std.sub

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
2 Pyridine	79.00	4.104	4.104	(0.510)	491439	50	50
5 Phenol	94.00	7.452	7.452	(0.927)	641687	50	49
6 Aniline	93.00	7.474	7.474	(0.929)	686454	50	49
7 bis(2-Chloroethyl)ether	93.00	7.572	7.572	(0.942)	576988	50	52
9 2-Chlorophenol	128.00	7.703	7.703	(0.958)	479681	50	52
10 1,3-Dichlorobenzene	146.00	7.975	7.975	(0.992)	580469	50	52
12 1,4-Dichlorobenzene	146.00	8.074	8.074	(1.004)	651245	50	53
13 Benzyl alcohol	108.00	8.390	8.390	(1.043)	306430	50	49
15 1,2-Dichlorobenzene	146.00	8.456	8.456	(1.052)	590469	50	53
16 2-Methylphenol	108.00	8.663	8.663	(1.077)	526423	50	50
18 bis(2-chloroisopropyl)ether	45.00	8.696	8.696	(1.081)	685933	50	50
19 4-Methylphenol	108.00	8.979	8.979	(1.117)	505196	50	49
21 N-Nitroso-di-n-propylamine	70.00	9.001	9.001	(1.119)	413044	50	51
22 Hexachloroethane	117.00	9.110	9.110	(1.133)	269672	50	53
24 Nitrobenzene	77.00	9.296	9.296	(0.857)	509508	50	48
25 Isophorone	82.00	9.830	9.830	(0.906)	1336448	50	53
26 2-Nitrophenol	139.00	10.015	10.015	(0.923)	221484	50	42(a)
27 2,4-Dimethylphenol	107.00	10.146	10.146	(0.936)	565891	50	52
28 Benzoic acid	122.00	10.560	10.560	(0.974)	75311	50	21(aM)
29 bis(2-Chloroethoxy)methane	93.00	10.342	10.342	(0.954)	722590	50	52
30 2,4-Dichlorophenol	162.00	10.582	10.582	(0.976)	456888	50	51
31 1,2,4-Trichlorobenzene	180.00	10.757	10.757	(0.992)	501441	50	52
33 Naphthalene	128.00	10.889	10.889	(1.004)	1636127	50	52
34 4-Chloroaniline	127.00	11.074	11.074	(1.021)	684255	50	52
35 Hexachlorobutadiene	225.00	11.337	11.337	(1.045)	260096	50	52
36 4-Chloro-3-methylphenol	107.00	12.284	12.284	(1.133)	492700	50	52
37 2-Methylnaphthalene	142.00	12.524	12.524	(1.155)	1135186	50	52
38 Hexachlorocyclopentadiene	237.00	13.102	13.102	(0.867)	136536	50	42
39 2,4,6-Trichlorophenol	196.00	13.309	13.309	(0.881)	294778	50	48

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2,4,5-Trichlorophenol	196.00	13.419	13.419	(0.888)	334756	50	53
42 2-Chloronaphthalene	162.00	13.704	13.704	(0.907)	1014677	50	52
43 2-Nitroaniline	65.00	14.053	14.053	(0.930)	270894	50	47 (a)
Dimethylphthalate	163.00	14.588	14.588	(0.965)	1281740	50	58
2,6-Dinitrotoluene	165.00	14.741	14.741	(0.975)	205515	50	47
46 Acenaphthylene	152.00	14.730	14.730	(0.975)	1750366	50	52
3-Nitroaniline	138.00	15.079	15.079	(0.998)	259787	50	49 (a)
Acenaphthene	153.00	15.189	15.189	(1.005)	1025240	50	52
50 2,4-Dinitrophenol	184.00	15.364	15.364	(1.017)	35266	50	27 (aM)
4-Nitrophenol	109.00	15.604	15.604	(1.033)	88228	50	43 (a)
Dibenzofuran	168.00	15.582	15.582	(1.031)	1508365	50	52
53 2,4-Dinitrotoluene	165.00	15.714	15.714	(1.040)	281598	50	48
54 Diethylphthalate	149.00	16.336	16.336	(1.081)	1028369	50	51
4-Chlorophenyl-phenylether	204.00	16.446	16.446	(1.088)	570349	50	54
Fluorene	166.00	16.435	16.435	(1.087)	1204358	50	53
57 4-Nitroaniline	138.00	16.599	16.599	(1.098)	256207	50	53
4,6-Dinitro-2-methylphenol	198.00	16.730	16.730	(0.893)	65061	50	26 (a)
n-Nitrosodiphenylamine	169.00	16.763	16.763	(0.895)	725731	50	54
60 1,2-Diphenylhydrazine	77.00	16.840	16.840	(0.899)	2933270	50	50
4-Bromophenyl-phenylether	248.00	17.638	17.638	(0.942)	299818	50	52
Hexachlorobenzene	283.70	17.999	17.999	(0.961)	331208	50	49
Pentachlorophenol	266.00	18.457	18.457	(0.985)	127165	50	44 (a)
66 Phenanthrene	178.00	18.787	18.787	(1.003)	1815870	50	49
Anthracene	178.00	18.896	18.896	(1.009)	1558490	50	49
Carbazole	167.00	19.312	19.312	(1.031)	1478063	50	52
69 Di-n-butylphthalate	149.00	20.326	20.326	(1.085)	1862897	50	49
Fluoranthene	202.00	21.721	21.721	(1.160)	1435681	50	48
Pyrene	202.00	22.278	22.278	(0.877)	1459067	50	52
73 Butylbenzylphthalate	149.00	23.982	23.982	(0.944)	854533	50	53
74 3,3'-Dichlorobenzidine	252.00	25.336	25.336	(0.997)	424725	50	50
Benzo[a]anthracene	228.00	25.358	25.358	(0.998)	1269093	50	52
Chrysene	228.00	25.479	25.479	(1.003)	1192000	50	52
78 bis(2-Ethylhexyl)phthalate	149.00	25.600	25.600	(1.007)	1146928	50	53
Di-n-octylphthalate	149.00	27.423	27.423	(0.917)	1837617	50	50
Benzo[b]fluoranthene	252.00	28.669	28.669	(0.958)	1131095	50	48 (M)
d1 Benzo[k]fluoranthene	252.00	28.691	28.691	(0.959)	1094421	50	56 (M)
Benzo[a]pyrene	252.00	29.708	29.708	(0.993)	925596	50	51
Indeno[1,2,3-cd]pyrene	276.00	34.493	34.493	(1.153)	865400	50	53
85 Dibenz[a,h]anthracene	278.00	34.559	34.559	(1.155)	744810	50	53
86 Benzo[g,h,i]perylene	276.00	35.805	35.805	(1.197)	670447	50	52
1,4-Dichlorobenzene-d4	152.00	8.041	8.041	(1.000)	310288	40	
Naphthalene-d8	136.00	10.845	10.845	(1.000)	1245807	40	
48 Acenaphthene-d10	164.00	15.112	15.112	(1.000)	707154	40	
Phenanthrene-d10	188.00	18.732	18.732	(1.000)	1039593	40	
Chrysene-d12	240.00	25.413	25.413	(1.000)	791981	40	
3 Perylene-d12	264.00	29.918	29.918	(1.000)	481272	40	
Nitrobenzene-d5	82.00	9.252	9.252	(0.853)	498320	50	47
2-Fluorobiphenyl	172.00	13.485	13.485	(0.892)	1152025	50	51
2 Terphenyl-d14	244.00	22.694	22.694	(0.893)	1004031	50	52

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
4 Phenol-d5	99.00	7.430	7.430	(0.924)	607117	50	50
3 2-Fluorophenol	112.00	5.821	5.821	(0.724)	236045	50	44
61 2,4,6-Tribromophenol	329.70	17.081	17.081	(0.912)	141097	50	50
17 ortho-Cresol	108.00	8.663	8.663	(1.077)	526423	50	50
20 meta,para-Cresol	108.00	8.979	8.979	(1.117)	505196	50	49
96 Benzidine	184.00	22.081	22.081	(0.869)	401793	50	54

: Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

strument ID: j.i
b File ID: j135ic2.d
ah Smp Id:
alysis Type: SV
ant Type: ISTD
perator: PC
thod File: /chem/j.i/j950515.b/jclpw.m
s Info: 950515 STD050

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

	COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1	1,4-Dichlorobenzene-	310288	155144	620576	310288	0.00
32	Naphthalene-d8	1245807	622904	2491614	1245807	0.00
48	Acenaphthene-d10	707154	353577	1414308	707154	0.00
6	Phenanthrene-d10	1039593	519796	2079186	1039593	0.00
7	Chrysene-d12	791981	395990	1583962	791981	0.00
33	Perylene-d12	481272	240636	962544	481272	0.00

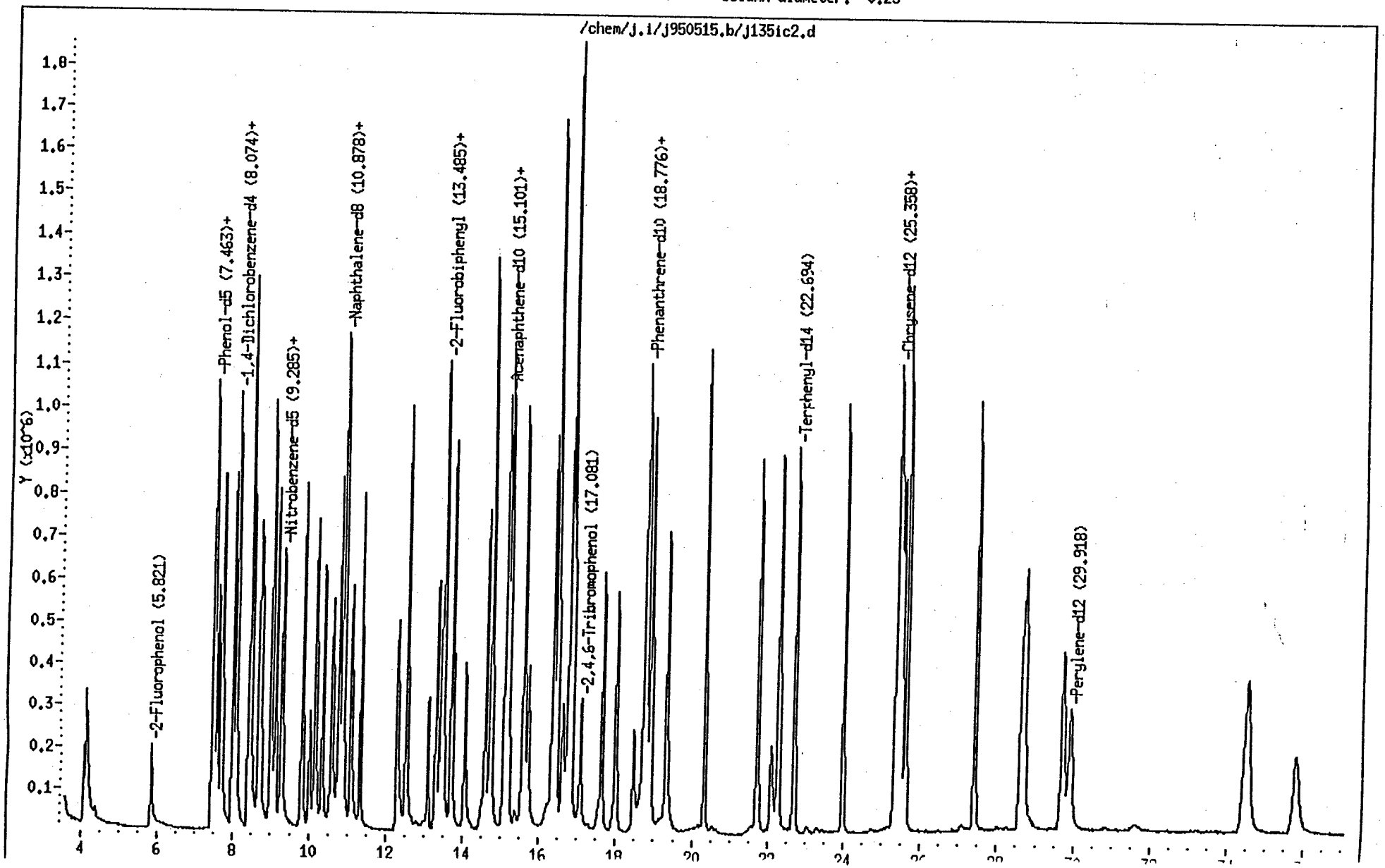
	COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1	1,4-Dichlorobenzene-	8.04	7.54	8.54	8.04	0.00
3	Naphthalene-d8	10.84	10.34	11.34	10.84	0.00
18	Acenaphthene-d10	15.11	14.61	15.61	15.11	0.00
6	Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
7	Chrysene-d12	25.41	24.91	25.91	25.41	0.00
3	Perylene-d12	29.92	29.42	30.42	29.92	0.00

EA UPPER LIMIT = +100% of internal standard area.
E LOWER LIMIT = - 50% of internal standard area.
PPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/J.i/J950515.b/J1351c2.d
Date : 15-MAY-1995 14:43
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: J.i

Operator: PC
Column diameter: 0.25



a File: /chem/j.i/j950515.b/j135ic3.d
port Date: 16-May-1995 13:16

SPL Houston Labs

ta file : /chem/j.i/j950515.b/j135ic3.d
ab Smp Id:
Date : 15-MAY-1995 16:12
erator : PC Inst ID: j.i
mp Info : STD-8270W/1X
Info : 950515 STD080
ment :
thod : /chem/j.i/j950515.b/jclpw.m
in Date : 16-May-1995 13:16 patti Quant Type: ISTD
Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
bottle: 3 Calibration Sample, Level: 3
l Factor: 1.000
egrator: HP RTE Compound Sublist: Std.sub
get Version: 3.10

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2 Pyridine	79.00	4.115	4.115	(0.511)	778898	80	79
5 Phenol	94.00	7.474	7.474	(0.928)	998384	80	75
Aniline	93.00	7.485	7.485	(0.930)	1103083	80	78
bis(2-Chloroethyl)ether	93.00	7.594	7.594	(0.943)	918391	80	81
9 2-Chlorophenol	128.00	7.714	7.714	(0.958)	727783	80	78
1,3-Dichlorobenzene	146.00	7.976	7.976	(0.990)	872044	80	77
1,4-Dichlorobenzene	146.00	8.086	8.086	(1.004)	972442	80	78
3 Benzyl alcohol	108.00	8.391	8.391	(1.042)	518941	80	82
1,2-Dichlorobenzene	146.00	8.467	8.467	(1.051)	867404	80	76
2-Methylphenol	108.00	8.664	8.664	(1.076)	837649	80	79
bis(2-chloroisopropyl)ether	45.00	8.708	8.708	(1.081)	1078078	80	78
19 4-Methylphenol	108.00	8.991	8.991	(1.117)	899758	80	87
N-Nitroso-di-n-propylamine	70.00	9.013	9.013	(1.119)	673322	80	82
Hexachloroethane	117.00	9.122	9.122	(1.133)	393179	80	76
4 Nitrobenzene	77.00	9.308	9.308	(0.858)	863562	80	77
25 Isophorone	82.00	9.853	9.853	(0.908)	2083552	80	78
2-Nitrophenol	139.00	10.028	10.028	(0.924)	441803	80	79
7 2,4-Dimethylphenol	107.00	10.169	10.169	(0.938)	892755	80	76
28 Benzoic acid	122.00	10.617	10.617	(0.979)	314888	80	84(Q)
bis(2-Chloroethoxy)methane	93.00	10.355	10.355	(0.955)	1153023	80	78
2,4-Dichlorophenol	162.00	10.584	10.584	(0.976)	746680	80	79
31 1,2,4-Trichlorobenzene	180.00	10.770	10.770	(0.993)	770586	80	76
Naphthalene	128.00	10.891	10.891	(1.004)	2570079	80	77
4-Chloroaniline	127.00	11.087	11.087	(1.022)	1068177	80	77
3 Hexachlorobutadiene	225.00	11.339	11.339	(1.045)	407861	80	76
4-Chloro-3-methylphenol	107.00	12.298	12.298	(1.134)	803875	80	80
2-Methylnaphthalene	142.00	12.538	12.538	(1.156)	1822187	80	78
Hexachlorocyclopentadiene	237.00	13.106	13.106	(0.867)	274475	80	80
39 2,4,6-Trichlorophenol	196.00	13.313	13.313	(0.881)	487561	80	75

ompounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.888)	541543	80	82
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.907)	1553843	80	76
43 2-Nitroaniline	65.00	14.058	14.058	(0.930)	489221	80	81
44 Dimethylphthalate	163.00	14.604	14.604	(0.966)	1751697	80	75
45 2,6-Dinitrotoluene	165.00	14.757	14.757	(0.976)	388379	80	84
46 Acenaphthylene	152.00	14.735	14.735	(0.975)	2703115	80	77
47 3-Nitroaniline	138.00	15.096	15.096	(0.999)	461845	80	82
49 Acenaphthene	153.00	15.195	15.195	(1.005)	1583625	80	77
50 2,4-Dinitrophenol	184.00	15.370	15.370	(1.017)	98550	80	72 (Q)
51 4-Nitrophenol	109.00	15.610	15.610	(1.033)	186577	80	86
52 Dibenzofuran	168.00	15.588	15.588	(1.031)	2348724	80	77
53 2,4-Dinitrotoluene	165.00	15.720	15.720	(1.040)	525768	80	84
54 Diethylphthalate	149.00	16.354	16.354	(1.082)	1607549	80	75
55 4-Chlorophenyl-phenylether	204.00	16.453	16.453	(1.088)	885765	80	80
56 Fluorene	166.00	16.442	16.442	(1.088)	1845516	80	77
57 4-Nitroaniline	138.00	16.628	16.628	(1.100)	384677	80	76
58 4,6-Dinitro-2-methylphenol	198.00	16.749	16.749	(0.894)	194912	80	74
59 n-Nitrosodiphenylamine	169.00	16.781	16.781	(0.896)	1084913	80	78
60 1,2-Diphenylhydrazine	77.00	16.847	16.847	(0.899)	4472162	80	74
62 4-Bromophenyl-phenylether	248.00	17.646	17.646	(0.942)	466721	80	79
63 Hexachlorobenzene	283.70	18.008	18.008	(0.961)	502771	80	72
64 Pentachlorophenol	266.00	18.467	18.467	(0.986)	226570	80	77
66 Phenanthrene	178.00	18.797	18.797	(1.004)	2760069	80	73
67 Anthracene	178.00	18.896	18.896	(1.009)	2339664	80	72
68 Carbazole	167.00	19.323	19.323	(1.032)	2078236	80	70
69 Di-n-butylphthalate	149.00	20.338	20.338	(1.086)	2882638	80	73
70 Fluoranthene	202.00	21.734	21.734	(1.160)	2142334	80	70
71 Pyrene	202.00	22.281	22.281	(0.876)	2218728	80	77
73 Butylbenzylphthalate	149.00	23.985	23.985	(0.943)	1251034	80	76
74 3,3'-Dichlorobenzidine	252.00	25.339	25.339	(0.997)	663554	80	76
75 Benzo[a]anthracene	228.00	25.372	25.372	(0.998)	1948018	80	77
77 Chrysene	228.00	25.493	25.493	(1.003)	1792140	80	76
78 bis(2-Ethylhexyl)phthalate	149.00	25.614	25.614	(1.007)	1711011	80	77
79 Di-n-octylphthalate	149.00	27.425	27.425	(0.916)	2783071	80	77
80 Benzo[b]fluoranthene	252.00	28.691	28.691	(0.959)	1867379	80	80 (M)
81 Benzo[k]fluoranthene	252.00	28.713	28.713	(0.959)	1434871	80	75 (M)
82 Benzo[a]pyrene	252.00	29.718	29.718	(0.993)	1386544	80	78
84 Indeno[1,2,3-cd]pyrene	276.00	34.509	34.509	(1.153)	1226900	80	76
85 Dibenz[a,h]anthracene	278.00	34.575	34.575	(1.155)	1048970	80	76
86 Benzo[g,h,i]perylene	276.00	35.820	35.820	(1.197)	957599	80	75
11 1,4-Dichlorobenzene-d4	152.00	8.053	8.053	(1.000)	315338	40	
32 Naphthalene-d8	136.00	10.847	10.847	(1.000)	1326560	40	
48 Acenaphthene-d10	164.00	15.118	15.118	(1.000)	746705	40	
65 Phenanthrene-d10	188.00	18.731	18.731	(1.000)	1069083	40	
76 Chrysene-d12	240.00	25.427	25.427	(1.000)	812510	40	
83 Perylene-d12	264.00	29.927	29.927	(1.000)	474994	40	
13 Nitrobenzene-d5	82.00	9.264	9.264	(0.854)	865579	80	77
1 2-Fluorobiphenyl	172.00	13.489	13.489	(0.892)	1814018	80	77
2 Terphenyl-d14	244.00	22.697	22.697	(0.893)	1536945	80	77

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.442	7.442	(0.924)	965380	80	78
3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	367968	80	68
61 2,4,6-Tribromophenol	329.70	17.088	17.088	(0.912)	234377	80	80
ortho-Cresol	108.00	8.664	8.664	(1.076)	837649	80	78
meta,para-Cresol	108.00	8.991	8.991	(1.117)	899758	80	85
96 Benzidine	184.00	22.083	22.083	(0.868)	541482	80	72

Flag Legend

Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
ab File ID: j135ic3.d
ab Smp Id:
nalysis Type: SV
uant Type: ISTD
perator: PC
ethod File: /chem/j.i/j950515.b/jclpw.m
isc Info: 950515 STD080

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	315338	1.63
32 Naphthalene-d8	1245807	622904	2491614	1326560	6.48
48 Acenaphthene-d10	707154	353577	1414308	746705	5.59
65 Phenanthrene-d10	1039593	519796	2079186	1069083	2.84
76 Chrysene-d12	791981	395990	1583962	812510	2.59
83 Perylene-d12	481272	240636	962544	474994	-1.30

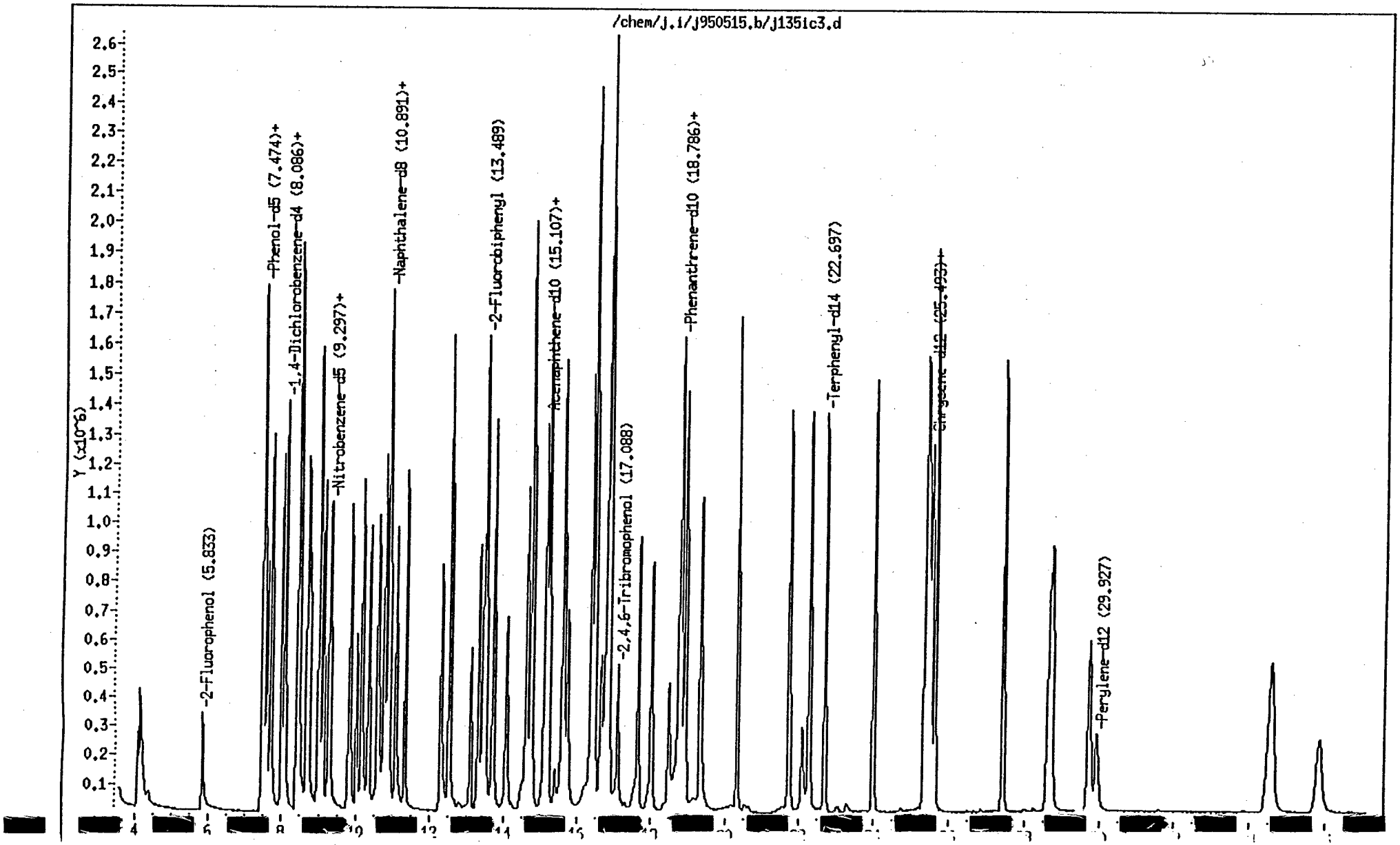
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.15
32 Naphthalene-d8	10.84	10.34	11.34	10.85	0.02
48 Acenaphthene-d10	15.11	14.61	15.61	15.12	0.04
65 Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
76 Chrysene-d12	25.41	24.91	25.91	25.43	0.05
83 Perylene-d12	29.92	29.42	30.42	29.93	0.03

EA UPPER LIMIT = +100% of internal standard area.
EA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j1351c3.d
Date : 15-MAY-1995 16:12
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic4.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:57
Operator : PC Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950515 STD120
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti Quant Type: ISTD
Cal Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
Vials bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: Std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2 Pyridine	79.00	4.115	4.115	(0.511)	1332117	120	130
5 Phenol	94.00	7.486	7.486	(0.930)	1730405	120	120
6 Aniline	93.00	7.497	7.497	(0.931)	1927971	120	130
7 bis(2-Chloroethyl)ether	93.00	7.606	7.606	(0.944)	1469936	120	120
9 2-Chlorophenol	128.00	7.726	7.726	(0.959)	1231916	120	120
10 1,3-Dichlorobenzene	146.00	7.988	7.988	(0.992)	1456576	120	120
12 1,4-Dichlorobenzene	146.00	8.087	8.087	(1.004)	1521385	120	120
13 Benzyl alcohol	108.00	8.414	8.414	(1.045)	892744	120	130
15 1,2-Dichlorobenzene	146.00	8.480	8.480	(1.053)	1390028	120	120
16 2-Methylphenol	108.00	8.676	8.676	(1.077)	1361526	120	120
18 bis(2-chloroisopropyl)ether	45.00	8.709	8.709	(1.081)	1714995	120	120
19 4-Methylphenol	108.00	9.015	9.015	(1.119)	1381999	120	120
21 N-Nitroso-di-n-propylamine	70.00	9.037	9.037	(1.122)	1078601	120	120
22 Hexachloroethane	117.00	9.124	9.124	(1.133)	625220	120	110
24 Nitrobenzene	77.00	9.321	9.321	(0.858)	1470233	120	130
25 Isophorone	82.00	9.877	9.877	(0.909)	3265075	120	120
26 2-Nitrophenol	139.00	10.030	10.030	(0.924)	767848	120	140
27 2,4-Dimethylphenol	107.00	10.183	10.183	(0.938)	1429335	120	120
28 Benzoic acid	122.00	10.696	10.696	(0.985)	724403	120	190(Q)
29 bis(2-Chloroethoxy)methane	93.00	10.368	10.368	(0.955)	1777529	120	120
30 2,4-Dichlorophenol	162.00	10.598	10.598	(0.976)	1180837	120	120
31 1,2,4-Trichlorobenzene	180.00	10.773	10.773	(0.992)	1222845	120	120
33 Naphthalene	128.00	10.904	10.904	(1.004)	4024385	120	120
34 4-Chloroaniline	127.00	11.090	11.090	(1.021)	1672934	120	120
35 Hexachlorobutadiene	225.00	11.353	11.353	(1.045)	631463	120	120
36 4-Chloro-3-methylphenol	107.00	12.302	12.302	(1.133)	1258654	120	120
37 2-Methylnaphthalene	142.00	12.542	12.542	(1.155)	2815406	120	120
38 Hexachlorocyclopentadiene	237.00	13.111	13.111	(0.867)	510469	120	150
39 2,4,6-Trichlorophenol	196.00	13.319	13.319	(0.881)	844908	120	130

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
42 2-Chloronaphthalene	196.00	13.429	13.429	(0.888)	832819	120	130
43 2-Nitroaniline	162.00	13.725	13.725	(0.907)	2413980	120	120
Dimethylphthalate	65.00	14.075	14.075	(0.931)	791923	120	130
2,6-Dinitrotoluene	163.00	14.622	14.622	(0.967)	2492560	120	110
46 Acenaphthylene	165.00	14.764	14.764	(0.976)	595644	120	130
3-Nitroaniline	152.00	14.742	14.742	(0.975)	4112145	120	130
Acenaphthene	138.00	15.103	15.103	(0.999)	696467	120	120
50 2,4-Dinitrophenol	153.00	15.202	15.202	(1.005)	2391293	120	130
4-Nitrophenol	184.00	15.377	15.377	(1.017)	241900	120	120
Dibenzofuran	109.00	15.618	15.618	(1.033)	273622	120	180 (Q)
53 2,4-Dinitrotoluene	168.00	15.596	15.596	(1.031)	3634094	120	130 (Q)
54 Diethylphthalate	165.00	15.739	15.739	(1.041)	878421	120	120
4-Chlorophenyl-phenylether	149.00	16.374	16.374	(1.083)	2396514	120	140
Fluorene	204.00	16.462	16.462	(1.088)	1363055	120	110
57 4-Nitroaniline	166.00	16.451	16.451	(1.088)	2821239	120	120
4,6-Dinitro-2-methylphenol	138.00	16.648	16.648	(1.101)	631717	120	120
N-Nitrosodiphenylamine	198.00	16.769	16.769	(0.895)	402975	120	130
60 1,2-Diphenylhydrazine	169.00	16.802	16.802	(0.896)	1362669	120	190
62 4-Bromophenyl-phenylether	77.00	16.868	16.868	(0.900)	6669125	120	120
63 Hexachlorobenzene	248.00	17.646	17.646	(0.941)	599348	120	130
Pentachlorophenol	283.70	18.019	18.019	(0.961)	770567	120	120
66 Phenanthrene	266.00	18.480	18.480	(0.986)	352855	120	130
Anthracene	178.00	18.799	18.799	(1.003)	4289132	120	150
Carbazole	178.00	18.920	18.920	(1.009)	3409067	120	140
69 Di-n-butylphthalate	167.00	19.337	19.337	(1.032)	3184518	120	130
Fluoranthene	149.00	20.343	20.343	(1.085)	4329667	120	130
Pyrene	202.00	21.741	21.741	(1.160)	3307570	120	130
73 Butylbenzylphthalate	202.00	22.289	22.289	(0.876)	3398182	120	120
74 3,3'-Dichlorobenzidine	149.00	23.996	23.996	(0.944)	1936372	120	120
Benzo[a]anthracene	252.00	25.353	25.353	(0.997)	1049418	120	120
Chrysene	228.00	25.386	25.386	(0.998)	2915731	120	120
78 bis(2-Ethylhexyl)phthalate	228.00	25.508	25.508	(1.003)	2823339	120	120
Di-n-octylphthalate	149.00	25.618	25.618	(1.007)	2596903	120	120
Benzo[b]fluoranthene	149.00	27.442	27.442	(0.917)	4244969	120	130
81 Benzo[k]fluoranthene	252.00	28.710	28.710	(0.959)	2696755	120	120 (M)
82 Benzo[a]pyrene	252.00	28.721	28.721	(0.960)	2113899	120	120 (M)
Indeno[1,2,3-cd]pyrene	252.00	29.738	29.738	(0.994)	1989646	120	120
84 Dibenz[a,h]anthracene	276.00	34.554	34.554	(1.155)	1760313	120	120
86 Benzo[g,h,i]perylene	278.00	34.620	34.620	(1.157)	1501479	120	120
1,4-Dichlorobenzene-d4	276.00	35.855	35.855	(1.198)	1374414	120	120
Naphthalene-d8	152.00	8.054	8.054	(1.000)	333463	40	
Acenaphthene-d10	136.00	10.860	10.860	(1.000)	1335278	40	
85 Phenanthrene-d10	164.00	15.125	15.125	(1.000)	733982	40	
Chrysene-d12	188.00	18.744	18.744	(1.000)	879172	40	
Perylene-d12	240.00	25.430	25.430	(1.000)	791311	40	
3 Nitrobenzene-d5	264.00	29.925	29.925	(1.000)	437954	40	
1 Fluorobiphenyl	82.00	9.277	9.277	(0.854)	1483541	120	130
Terphenyl-d14	172.00	13.506	13.506	(0.893)	2795685	120	120
	244.00	22.706	22.706	(0.893)	2390544	120	120

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.464	7.464	(0.927)	1647832	120	130
3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	789355	120	140
61 2,4,6-Tribromophenol	329.70	17.098	17.098	(0.912)	315605	120	130
17 ortho-Cresol	108.00	8.676	8.676	(1.077)	1432337	120	130 (QM)
20 meta,para-Cresol	108.00	9.015	9.015	(1.119)	1483413	120	130 (QM)
96 Benzidine	184.00	22.091	22.091	(0.869)	1031906	120	140 (M)

: Flag Legend

- Qualifier signal failed the ratio test.
- Compound response manually integrated.

Data File: /chem/j.i/j950515.b/j135ic4.d
Report Date: 16-May-1995 13:16

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic4.d
Lab Smp Id:
Analysis Type: SV
Client Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD120

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	310288	155144	620576	333463	7.47
2 Naphthalene-d8	1245807	622904	2491614	1335278	7.18
48 Acenaphthene-d10	707154	353577	1414308	733982	3.79
65 Phenanthrene-d10	1039593	519796	2079186	879172	-15.43
6 Chrysene-d12	791981	395990	1583962	791311	-0.08
83 Perylene-d12	481272	240636	962544	437954	-9.00

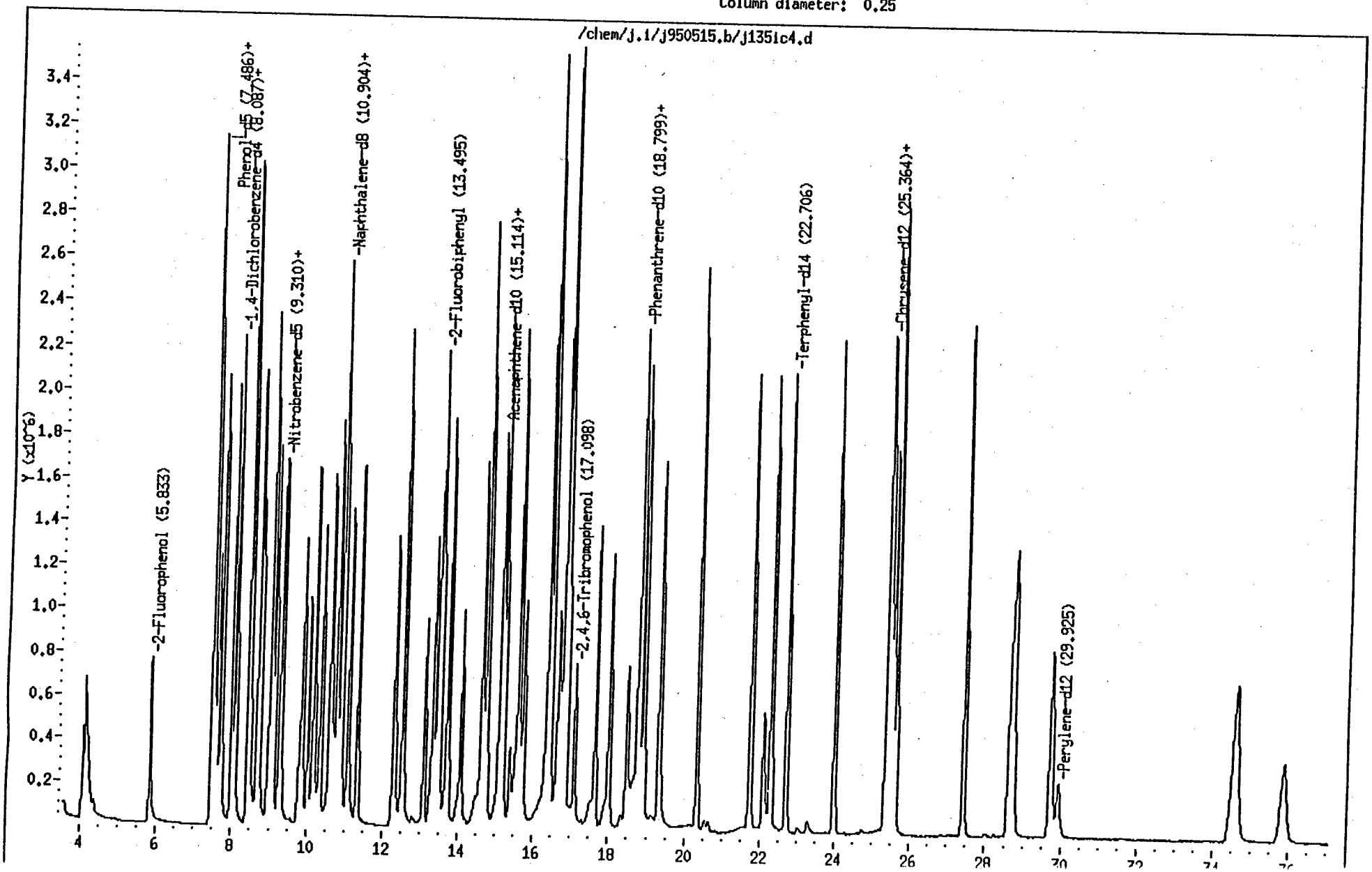
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.16
2 Naphthalene-d8	10.84	10.34	11.34	10.86	0.14
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.09
65 Phenanthrene-d10	18.73	18.23	19.23	18.74	0.07
6 Chrysene-d12	25.41	24.91	25.91	25.43	0.07
3 Perylene-d12	29.92	29.42	30.42	29.93	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950515.b/j1351c4.d
Date : 15-MAY-1995 16:57
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.1

Operator: PC
Column diameter: 0.25



File: /chem/j.i/j950515.b/j135ic5.d
Report Date: 16-May-1995 13:16

SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic5.d
Lab Smp Id:
Inj Date : 15-MAY-1995 17:42
Operator : PC
Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950515 STD160
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Quant Type: ISTD
Inj Date : 15-MAY-1995 14:43
Cal File: j135ic2.d
Sample bottle: 5
Calibration Sample, Level: 5
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: Std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2 Pyridine	79.00	4.115	4.115	(0.510)	1861341	160	190
5 Phenol	94.00	7.498	7.498	(0.930)	2503807	160	190
6 Aniline	93.00	7.509	7.509	(0.931)	2708787	160	190
7 Bis(2-Chloroethyl)ether	93.00	7.618	7.618	(0.944)	1937134	160	170
9 2-Chlorophenol	128.00	7.727	7.727	(0.958)	1621967	160	170
10 1,3-Dichlorobenzene	146.00	7.989	7.989	(0.991)	1862276	160	170
12 1,4-Dichlorobenzene	146.00	8.099	8.099	(1.004)	1934944	160	160
13 Benzyl alcohol	108.00	8.426	8.426	(1.045)	1228109	160	200
15 1,2-Dichlorobenzene	146.00	8.481	8.481	(1.051)	1801304	160	160
16 2-Methylphenol	108.00	8.689	8.689	(1.077)	1859340	160	180(Q)
18 Bis(2-chloroisopropyl)ether	45.00	8.721	8.721	(1.081)	2279436	160	170
20 4-Methylphenol	108.00	9.027	9.027	(1.119)	1769491	160	170
21 N-Nitroso-di-n-propylamine	70.00	9.082	9.082	(1.126)	1443812	160	180
23 Hexachloroethane	117.00	9.126	9.126	(1.131)	816079	160	160
24 Nitrobenzene	77.00	9.333	9.333	(0.859)	2003056	160	180
25 Isophorone	82.00	9.901	9.901	(0.911)	4359357	160	160
26 2-Nitrophenol	139.00	10.043	10.043	(0.924)	1095438	160	200
27 2,4-Dimethylphenol	107.00	10.196	10.196	(0.939)	1924364	160	160
28 Benzoic acid	122.00	10.742	10.742	(0.989)	827023	160	220(Q)
29 Bis(2-Chloroethoxy)methane	93.00	10.381	10.381	(0.956)	2413515	160	160
2,4-Dichlorophenol	162.00	10.611	10.611	(0.977)	1591107	160	170
1,2,4-Trichlorobenzene	180.00	10.786	10.786	(0.993)	1641684	160	160
33 Naphthalene	128.00	10.918	10.918	(1.005)	5363841	160	160
4-Chloroaniline	127.00	11.104	11.104	(1.022)	2229774	160	160
Hexachlorobutadiene	225.00	11.355	11.355	(1.045)	854668	160	160
36 4-Chloro-3-methylphenol	107.00	12.305	12.305	(1.133)	1658292	160	160
37 2-Methylnaphthalene	142.00	12.557	12.557	(1.156)	3698963	160	160
Hexachlorocyclopentadiene	237.00	13.114	13.114	(0.867)	745519	160	230
39 2,4,6-Trichlorophenol	196.00	13.334	13.334	(0.881)	1162984	160	190

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.444	13.444	(0.888)	1052016	160	170
42 2-Chloronaphthalene	162.00	13.729	13.729	(0.907)	3184566	160	160
43 2-Nitroaniline	65.00	14.080	14.080	(0.931)	1014639	160	180
44 Dimethylphthalate	163.00	14.627	14.627	(0.967)	3177036	160	150
45 2,6-Dinitrotoluene	165.00	14.780	14.780	(0.977)	771380	160	180
46 Acenaphthylene	152.00	14.747	14.747	(0.975)	5304264	160	160
47 3-Nitroaniline	138.00	15.120	15.120	(0.999)	937937	160	180
49 Acenaphthene	153.00	15.219	15.219	(1.006)	3099434	160	160
50 2,4-Dinitrophenol	184.00	15.394	15.394	(1.017)	390783	160	300 (Q)
51 4-Nitrophenol	109.00	15.624	15.624	(1.033)	358205	160	180
52 Dibenzofuran	168.00	15.613	15.613	(1.032)	4653568	160	160
53 2,4-Dinitrotoluene	165.00	15.745	15.745	(1.041)	1063034	160	180
54 Diethylphthalate	149.00	16.381	16.381	(1.083)	3034728	160	150
55 4-Chlorophenyl-phenylether	204.00	16.468	16.468	(1.088)	1419658	160	140
56 Fluorene	166.00	16.457	16.457	(1.088)	3521880	160	160
57 4-Nitroaniline	138.00	16.666	16.666	(1.101)	867894	160	180
58 4,6-Dinitro-2-methylphenol	198.00	16.798	16.798	(0.896)	565273	160	270
59 n-Nitrosodiphenylamine	169.00	16.820	16.820	(0.897)	1710758	160	150
60 1,2-Diphenylhydrazine	77.00	16.875	16.875	(0.900)	8234780	160	170
62 4-Bromophenyl-phenylether	248.00	17.654	17.654	(0.941)	753280	160	160
63 Hexachlorobenzene	283.70	18.016	18.016	(0.961)	962032	160	170
64 Pentachlorophenol	266.00	18.478	18.478	(0.985)	484830	160	210
66 Phenanthrene	178.00	18.809	18.809	(1.003)	5369737	160	180
67 Anthracene	178.00	18.919	18.919	(1.009)	4316230	160	160
68 Carbazole	167.00	19.335	19.335	(1.031)	4030549	160	170
69 Di-n-butylphthalate	149.00	20.353	20.353	(1.085)	5580400	160	180
70 Fluoranthene	202.00	21.754	21.754	(1.160)	4284140	160	180
71 Pyrene	202.00	22.303	22.303	(0.876)	4453511	160	160
73 Butylbenzylphthalate	149.00	24.002	24.002	(0.943)	2526104	160	160
74 3,3'-Dichlorobenzidine	252.00	25.360	25.360	(0.997)	1392213	160	170
75 Benzo[a]anthracene	228.00	25.394	25.394	(0.998)	3864041	160	160
77 Chrysene	228.00	25.526	25.526	(1.003)	3524959	160	160
78 bis(2-Ethylhexyl)phthalate	149.00	25.625	25.625	(1.007)	3397374	160	160
79 Di-n-octylphthalate	149.00	27.452	27.452	(0.917)	5502119	160	180
30 Benzo[b]fluoranthene	252.00	28.732	28.732	(0.959)	3654722	160	180 (M)
31 Benzo[k]fluoranthene	252.00	28.743	28.743	(0.960)	2439435	160	150 (M)
32 Benzo[a]pyrene	252.00	29.761	29.761	(0.994)	2541355	160	160
34 Indeno[1,2,3-cd]pyrene	276.00	34.602	34.602	(1.155)	2325552	160	160 (M)
35 Dibenz[a,h]anthracene	278.00	34.657	34.657	(1.157)	2003540	160	170
36 Benzo[g,h,i]perylene	276.00	35.904	35.904	(1.199)	1848595	160	170
1 1,4-Dichlorobenzene-d4	152.00	8.066	8.066	(1.000)	312656	40	
2 Naphthalene-d8	136.00	10.863	10.863	(1.000)	1319300	40	
8 Acenaphthene-d10	164.00	15.131	15.131	(1.000)	698125	40	
5 Phenanthrene-d10	188.00	18.753	18.753	(1.000)	856416	40	
6 Chrysene-d12	240.00	25.449	25.449	(1.000)	762716	40	
3 Perylene-d12	264.00	29.948	29.948	(1.000)	410629	40	
3 Nitrobenzene-d5	82.00	9.290	9.290	(0.855)	2022236	160	180
1 2-Fluorobiphenyl	172.00	13.510	13.510	(0.893)	3693437	160	170
2 Terphenyl-d14	244.00	22.720	22.720	(0.893)	3100007	160	170

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
Phenol-d5	99.00	7.476	7.476	(0.927)	2274340	160	180
3 2-Fluorophenol	112.00	5.834	5.834	(0.723)	1122829	160	210
61 2,4,6-Tribromophenol	329.70	17.116	17.116	(0.913)	407049	160	170
ortho-Cresol	108.00	8.689	8.689	(1.077)	1859340	160	170 (Q)
meta,para-Cresol	108.00	9.027	9.027	(1.119)	1769491	160	170
96 Benzidine	184.00	22.093	22.093	(0.868)	1368013	160	190

Flag Legend

Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic5.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD160

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	312656	0.76
32 Naphthalene-d8	1245807	622904	2491614	1319300	5.90
48 Acenaphthene-d10	707154	353577	1414308	698125	-1.28
65 Phenanthrene-d10	1039593	519796	2079186	856416	-17.62
76 Chrysene-d12	791981	395990	1583962	762716	-3.70
83 Perylene-d12	481272	240636	962544	410629	-14.68

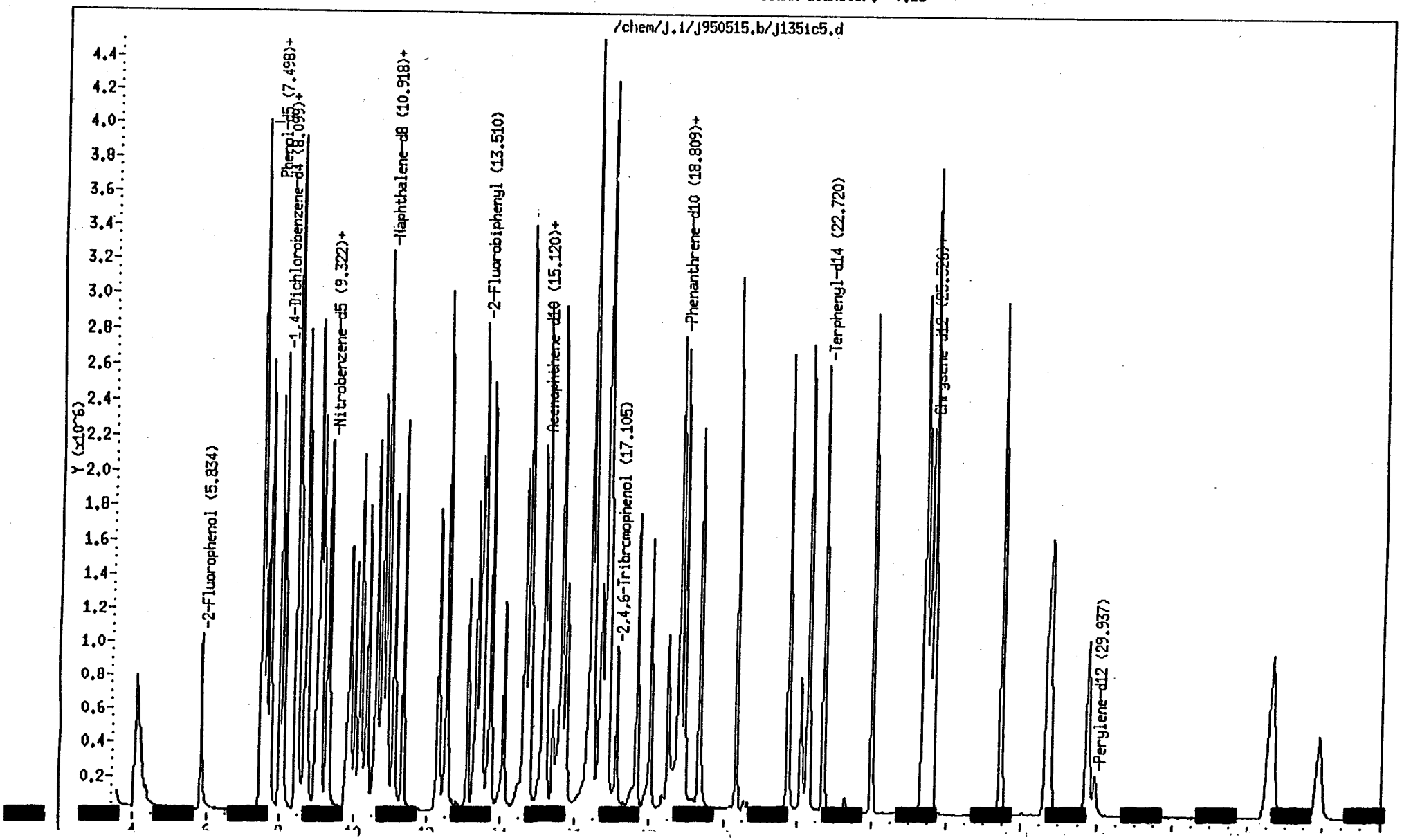
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.07	0.31
32 Naphthalene-d8	10.84	10.34	11.34	10.86	0.17
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.12
65 Phenanthrene-d10	18.73	18.23	19.23	18.75	0.12
76 Chrysene-d12	25.41	24.91	25.91	25.45	0.14
83 Perylene-d12	29.92	29.42	30.42	29.95	0.10

EA UPPER LIMIT = +100% of internal standard area.
EA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950515.b/j1351c5.d
Date : 15-MAY-1995 17:42
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: J.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j143cc1.d
Analysis Type: SOIL
Lab Sample ID:
Quant Type: ISTD

Injection Date: 23-MAY-1995 09:08
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950523.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	1.255	1.124	0.010	10.4	40.0
5	Phenol	1.698	1.567	0.800	7.7	25.0
6	Aniline	1.795	1.518	0.010	15.5	40.0
7	bis(2-Chloroethyl)ether	1.443	1.381	0.700	4.3	25.0
9	2-Chlorophenol	1.189	1.159	0.800	2.6	25.0
10	1,3-Dichlorobenzene	1.435	1.441	0.600	0.5	25.0
12	1,4-Dichlorobenzene	1.578	1.662	0.500	5.3	25.0
13	Benzyl alcohol	0.804	0.662	0.010	17.7	40.0
15	1,2-Dichlorobenzene	1.446	1.437	0.400	0.6	25.0
16	2-Methylphenol	1.346	1.161	0.700	13.7	25.0
18	bis(2-chloroisopropyl)ether	1.757	1.673	0.010	4.8	40.0
19	4-Methylphenol	1.316	1.081	0.600	17.9	25.0
21	N-Nitroso-di-n-propylamine	1.048	0.954	0.500	9.0	25.0
22	Hexachloroethane	0.657	0.664	0.300	1.0	25.0
24	Nitrobenzene	0.337	0.380	0.200	12.8	25.0
25	Isophorone	0.811	0.815	0.400	0.5	25.0
26	2-Nitrophenol	0.168	0.195	0.100	16.0	25.0
27	2,4-Dimethylphenol	0.352	0.359	0.200	2.0	25.0
28	Benzoic acid	0.113	0.043	0.010	62.3	100.0
29	bis(2-Chloroethoxy)methane	0.444	0.420	0.300	5.5	25.0
30	2,4-Dichlorophenol	0.285	0.272	0.200	4.5	25.0
31	1,2,4-Trichlorobenzene	0.307	0.336	0.200	9.4	25.0
33	Naphthalene	1.011	1.029	0.700	1.9	25.0
34	4-Chloroaniline	0.418	0.389	0.010	6.8	40.0
35	Hexachlorobutadiene	0.162	0.184	0.010	13.8	40.0
36	4-Chloro-3-methylphenol	0.304	0.301	0.200	0.8	25.0
37	2-Methylnaphthalene	0.706	0.723	0.400	2.4	25.0
38	Hexachlorocyclopentadiene	0.184	0.144	0.010	21.5	40.0
39	2,4,6-Trichlorophenol	0.349	0.340	0.200	2.7	25.0
40	2,4,5-Trichlorophenol	0.355	0.404	0.200	13.8	25.0
42	2-Chloronaphthalene	1.100	1.169	0.800	6.3	25.0
43	2-Nitroaniline	0.323	0.389	0.010	20.2	40.0
44	Dimethylphthalate	1.246	1.491	0.010	19.7	40.0
45	2,6-Dinitrotoluene	0.247	0.345	0.200	39.5	25.0
46	Acenaphthylene	1.890	1.959	1.300	3.6	25.0
47	3-Nitroaniline	0.301	0.330	0.010	9.6	40.0
49	Acenaphthene	1.104	1.164	0.800	5.5	25.0
50	2,4-Dinitrophenol	0.074	0.095	0.010	29.3	40.0
51	4-Nitrophenol	0.116	0.141	0.010	22.3	40.0
52	Dibenzofuran	1.639	1.719	0.800	4.9	25.0

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j143cc1.d
Analysis Type: SOIL
Lab Sample ID:
Quant Type: ISTD

Injection Date: 23-MAY-1995 09:08
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950523.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.334	0.462	0.200	38.3	25.0
	54 Diethylphthalate	1.142	1.253	0.010	9.8	40.0
	55 4-Chlorophenyl-phenylether	0.595	0.673	0.400	13.1	25.0
	56 Fluorene	1.284	1.384	0.900	7.9	25.0
	57 4-Nitroaniline	0.272	0.285	0.010	4.7	40.0
	58 4,6-Dinitro-2-methylphenol	0.098	0.120	0.010	22.8	40.0
	59 n-Nitrosodiphenylamine	0.520	0.541	0.010	4.1	40.0
	60 1,2-Diphenylhydrazine	2.274	2.199	0.010	3.3	40.0
	62 4-Bromophenyl-phenylether	0.222	0.228	0.100	2.7	25.0
	63 Hexachlorobenzene	0.260	0.259	0.100	0.6	25.0
	64 Pentachlorophenol	0.110	0.111	0.050	1.1	25.0
	66 Phenanthrene	1.420	1.348	0.700	5.1	25.0
	67 Anthracene	1.215	1.166	0.700	4.0	25.0
	68 Carbazole	1.103	0.966	0.010	12.4	40.0
	69 Di-n-butylphthalate	1.469	1.360	0.010	7.4	40.0
	70 Fluoranthene	1.137	1.113	0.600	2.1	25.0
	71 Pyrene	1.412	1.425	0.600	0.9	25.0
	73 Butylbenzylphthalate	0.809	0.774	0.010	4.3	40.0
	74 3,3'-Dichlorobenzidine	0.427	0.379	0.010	11.2	40.0
	75 Benzo[a]anthracene	1.240	1.221	0.800	1.6	25.0
	77 Chrysene	1.159	1.208	0.700	4.2	25.0
	78 bis(2-Ethylhexyl)phthalate	1.096	1.026	0.010	6.4	40.0
	79 Di-n-octylphthalate	3.026	3.095	0.010	2.3	40.0
	80 Benzo[b]fluoranthene	1.962	2.169	0.700	10.5	25.0
	81 Benzo[k]fluoranthene	1.618	1.695	0.700	4.8	25.0
	82 Benzo[a]pyrene	1.495	1.619	0.700	8.3	25.0
	84 Indeno[1,2,3-cd]pyrene	1.366	1.290	0.500	5.6	25.0
	85 Dibenz[a,h]anthracene	1.168	1.081	0.400	7.4	25.0
	86 Benzo[g,h,i]perylene	1.073	0.915	0.500	14.7	25.0
$	23 Nitrobenzene-d5	0.337	0.372	0.200	10.1	25.0
$	41 2-Fluorobiphenyl	1.267	1.323	0.700	4.4	25.0
$	72 Terphenyl-d14	0.978	1.000	0.500	2.3	25.0
$	4 Phenol-d5	1.567	1.386	0.800	11.5	25.0
$	3 2-Fluorophenol	0.683	0.907	0.600	32.8	25.0
$	61 2,4,6-Tribromophenol	0.110	0.120	0.010	9.3	40.0
	17 ortho-Cresol	1.360	1.161	0.700	14.6	25.0
	20 meta,para-Cresol	1.337	1.081	0.600	19.2	25.0
	96 Benzidine	0.372	0.315	0.010	15.3	40.0

SPL Houston Labs

Data file : /chem/j.i/j950523.b/j143cc1.d
Lab Smp Id:
Inj Date : 23-MAY-1995 09:08
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950523 STD050
Comment :
Method : /chem/j.i/j950523.b/jclpw.m
Meth Date : 23-May-1995 13:28 patti
Cal Date : 23-MAY-1995 09:08
Vials bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j143cc1.d
Continuing Calibration Sample

Compound Sublist: Std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2 Pyridine	79.00	4.028	4.028	(0.508)	434569	50	45
5 Phenol	94.00	7.358	7.358	(0.927)	605722	50	46
6 Aniline	93.00	7.380	7.380	(0.930)	586561	50	42
7 bis(2-Chloroethyl)ether	93.00	7.468	7.468	(0.941)	533714	50	48
9 2-Chlorophenol	128.00	7.599	7.599	(0.957)	447866	50	49
10 1,3-Dichlorobenzene	146.00	7.871	7.871	(0.992)	557169	50	50
12 1,4-Dichlorobenzene	146.00	7.970	7.970	(1.004)	642422	50	53
13 Benzyl alcohol	108.00	8.297	8.297	(1.045)	255892	50	41
15 1,2-Dichlorobenzene	146.00	8.352	8.352	(1.052)	555379	50	50
16 2-Methylphenol	108.00	8.559	8.559	(1.078)	448806	50	43
18 bis(2-chloroisopropyl)ether	45.00	8.581	8.581	(1.081)	646624	50	48
19 4-Methylphenol	108.00	8.876	8.876	(1.118)	417829	50	41
21 N-Nitroso-di-n-propylamine	70.00	8.886	8.886	(1.120)	368581	50	46
22 Hexachloroethane	117.00	8.996	8.996	(1.133)	256579	50	50
24 Nitrobenzene	77.00	9.181	9.181	(0.857)	551475	50	56
25 Isophorone	82.00	9.704	9.704	(0.905)	1181927	50	50
26 2-Nitrophenol	139.00	9.911	9.911	(0.925)	282440	50	58
27 2,4-Dimethylphenol	107.00	10.042	10.042	(0.937)	520479	50	51
28 Benzoic acid	122.00	11.506	11.506	(1.073)	61784	50	19(aM)
29 bis(2-Chloroethoxy)methane	93.00	10.239	10.239	(0.955)	609191	50	47
30 2,4-Dichlorophenol	162.00	10.478	10.478	(0.978)	394465	50	48
31 1,2,4-Trichlorobenzene	180.00	10.642	10.642	(0.993)	487310	50	55
33 Naphthalene	128.00	10.763	10.763	(1.004)	1493093	50	51
34 4-Chloroaniline	127.00	10.981	10.981	(1.024)	564748	50	47
35 Hexachlorobutadiene	225.00	11.211	11.211	(1.046)	266487	50	57
36 4-Chloro-3-methylphenol	107.00	12.180	12.180	(1.136)	436919	50	50
37 2-Methylnaphthalene	142.00	12.410	12.410	(1.158)	1049245	50	51
38 Hexachlorocyclopentadiene	237.00	12.977	12.977	(0.867)	116793	50	39
39 2,4,6-Trichlorophenol	196.00	13.195	13.195	(0.881)	275335	50	49

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.316	13.316	(0.889)	327344	50	57
42 2-Chloronaphthalene	162.00	13.578	13.578	(0.907)	947110	50	53
43 2-Nitroaniline	65.00	13.939	13.939	(0.931)	314936	50	60
44 Dimethylphthalate	163.00	14.462	14.462	(0.966)	1207521	50	60
45 2,6-Dinitrotoluene	165.00	14.615	14.615	(0.976)	279635	50	70
46 Acenaphthylene	152.00	14.604	14.604	(0.975)	1586883	50	52
47 3-Nitroaniline	138.00	14.975	14.975	(1.000)	267135	50	55
49 Acenaphthene	153.00	15.052	15.052	(1.005)	943337	50	53
50 2,4-Dinitrophenol	184.00	15.379	15.379	(1.027)	77259	50	65 (M)
51 4-Nitrophenol	109.00	15.554	15.554	(1.039)	114628	50	61 (M)
52 Dibenzofuran	168.00	15.456	15.456	(1.032)	1392660	50	52
53 2,4-Dinitrotoluene	165.00	15.598	15.598	(1.042)	374397	50	69
54 Diethylphthalate	149.00	16.209	16.209	(1.082)	1015304	50	55
55 4-Chlorophenyl-phenylether	204.00	16.319	16.319	(1.090)	544974	50	56
56 Fluorene	166.00	16.297	16.297	(1.088)	1121579	50	54
57 4-Nitroaniline	138.00	16.516	16.516	(1.103)	230490	50	52
58 4,6-Dinitro-2-methylphenol	198.00	16.636	16.636	(0.895)	151042	50	61 (M)
59 n-Nitrosodiphenylamine	169.00	16.636	16.636	(0.895)	679643	50	52
60 1,2-Diphenylhydrazine	77.00	16.702	16.702	(0.898)	2763365	50	48
62 4-Bromophenyl-phenylether	248.00	17.500	17.500	(0.941)	286352	50	51
63 Hexachlorobenzene	283.70	17.860	17.860	(0.961)	324930	50	50
64 Pentachlorophenol	266.00	18.373	18.373	(0.988)	139617	50	50 (M)
66 Phenanthrene	178.00	18.648	18.648	(1.003)	1694197	50	47
67 Anthracene	178.00	18.768	18.768	(1.009)	1465774	50	48
68 Carbazole	167.00	19.206	19.206	(1.033)	1213789	50	44
69 Di-n-butylphthalate	149.00	20.187	20.187	(1.086)	1708343	50	46
70 Fluoranthene	202.00	21.591	21.591	(1.161)	1398593	50	49
71 Pyrene	202.00	22.137	22.137	(0.877)	1412168	50	50
73 Butylbenzylphthalate	149.00	23.838	23.838	(0.944)	767195	50	48
74 3,3'-Dichlorobenzidine	252.00	25.200	25.200	(0.998)	375571	50	44 (M)
75 Benzo[a]anthracene	228.00	25.211	25.211	(0.998)	1209784	50	49
76 Chrysene	228.00	25.321	25.321	(1.003)	1196782	50	52
78 bis(2-Ethylhexyl)phthalate	149.00	25.453	25.453	(1.008)	1016777	50	47
79 Di-n-octylphthalate	149.00	27.239	27.239	(0.917)	1682519	50	51
80 Benzo[b]fluoranthene	252.00	28.492	28.492	(0.959)	1179412	50	55 (M)
81 Benzo[k]fluoranthene	252.00	28.503	28.503	(0.959)	921797	50	52 (M)
82 Benzo[a]pyrene	252.00	29.517	29.517	(0.993)	880350	50	54
84 Indeno[1,2,3-cd]pyrene	276.00	34.203	34.203	(1.151)	701225	50	47
85 Dibenz[a,h]anthracene	278.00	34.247	34.247	(1.153)	588010	50	46
86 Benzo[g,h,i]perylene	276.00	35.490	35.490	(1.194)	497576	50	43
1,4-Dichlorobenzene-d4	152.00	7.937	7.937	(1.000)	309222	40	
Naphthalene-d8	136.00	10.719	10.719	(1.000)	1160307	40	
48 Acenaphthene-d10	164.00	14.975	14.975	(1.000)	648094	40	
Phenanthrene-d10	188.00	18.593	18.593	(1.000)	1005266	40	
Chrysene-d12	240.00	25.255	25.255	(1.000)	792658	40	
83 Perylene-d12	264.00	29.715	29.715	(1.000)	434959	40	
22 Nitrobenzene-d5	82.00	9.149	9.149	(0.853)	538840	50	55
2-Fluorobiphenyl	172.00	13.359	13.359	(0.892)	1071864	50	52
72 Terphenyl-d14	244.00	22.563	22.563	(0.893)	991310	50	51

ompounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.336	7.336	(0.924)	535877	50	44
3 2-Fluorophenol	112.00	5.737	5.737	(0.723)	350620	50	66 (M)
61 2,4,6-Tribromophenol	329.70	16.954	16.954	(0.912)	150561	50	55
17 ortho-Cresol	108.00	8.559	8.559	(1.078)	448806	50	43
20 meta,para-Cresol	108.00	8.876	8.876	(1.118)	417829	50	40
96 Benzidine	184.00	22.016	22.016	(0.872)	312187	50	42

C Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

strument ID: j.i
File ID: j143cc1.d
b Smp Id:
alysis Type: SV
nt Type: ISTD
erator: PC
ethod File: /chem/j.i/j950523.b/jclpw.m
t Info: 950523 STD050

Calibration Date: 05/23/95
Calibration Time: 0908

Level: LOW
Sample Type: WATER

OMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	309222	154611	618444	309222	0.00
Naphthalene-d8	1160307	580154	2320614	1160307	0.00
Acenaphthene-d10	648094	324047	1296188	648094	0.00
65 Phenanthrene-d10	1005266	502633	2010532	1005266	0.00
Chrysene-d12	792658	396329	1585316	792658	0.00
Perylene-d12	434959	217480	869918	434959	0.00

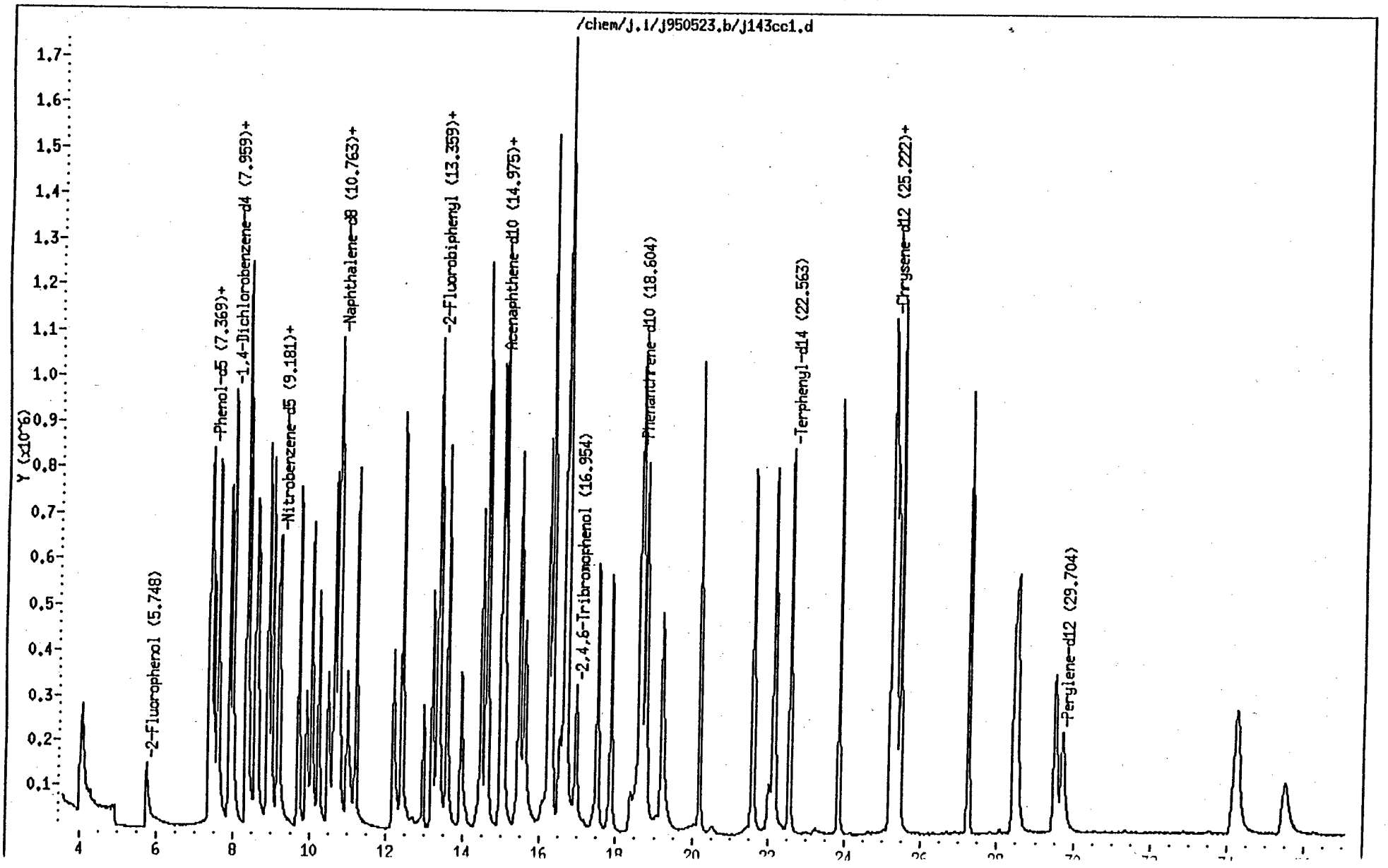
MPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.94	0.00
Naphthalene-d8	10.72	10.22	11.22	10.72	0.00
Acenaphthene-d10	14.98	14.48	15.48	14.98	0.00
5 Phenanthrene-d10	18.59	18.09	19.09	18.59	0.00
76 Chrysene-d12	25.25	24.75	25.75	25.25	0.00
Perylene-d12	29.71	29.21	30.21	29.71	0.00

UPPER LIMIT = +100% of internal standard area.
A LOWER LIMIT = - 50% of internal standard area.
PPER LIMIT = + 0.50 minutes of internal standard RT.
OWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950523.b/j143cc1.d
Date : 23-MAY-1995 09:08
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.1

Operator: PC
Column diameter: 0.25



ICP Spectroscopy Method 6010 Quality Control Report

Matrix: Soil Units: mg/Kg Analyst: DQ

Date:052295 Time:1032 File Name:52295DQ2 Checked J. Marrero 5/23/95

Laboratory Control Sample Lot #224

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver	ND	65.4	50	77	29.4	95.5
Aluminum						
Arsenic						
Barium	0.28	238	194	81	138	311
Beryllium	ND	152	136	89	97.2	213
Calcium						
Cadmium	ND	90	79	87	51.3	130
Cobalt	ND	101	83	82	60.6	143
Chromium	ND	167	139	83	90.3	236
Copper						
Iron						
Potassium						
Magnesium						
Manganese						
Sodium						
Nickel	ND	135	104	77	74.3	197
Lead	ND	162	136	84	85.8	230
Antimony						
Selenium						
Thallium						
Vanadium	ND	94	73	77	57.3	123
Zinc	ND	199	159	80	103	296

Work Orders in Batch

Work Order	Fractions
95-05-645	01A
95-05-683	03A
95-04-364	07D, 11D
95-04-698	07D, 11C
	13D
95-05-556	02C-5C

Matrix Spike - Spike Duplicate Results

Work Order Spiked: 95-05-497 03A

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	Q.C. Limits % Recovery		Spike RPD %	QC Limits %
Silver	ND	100	84.98	85	81.77	82	80	120	3.9	20.0
Aluminum										
Arsenic										
Barium	77.09	200	278.2	101	287.1	105	80	120	4.3	20.0
Beryllium	0.23	100	94.41	94	89.56	89	80	120	5.3	20.0
Calcium										
Cadmium	ND	100	91.42	91	88.78	89	80	120	2.9	20.0
Cobalt	2.32	100	94.42	92	90.61	88	80	120	4.2	20.0
Chromium	1.86	100	95.67	94	94.67	93	80	120	1.1	20.0
Copper										
Iron										
Potassium										
Magnesium										
Manganese										
Sodium										
Nickel	6.46	100	98.15	92	96.2	90	80	120	2.1	20.0
Lead	5.65	100	99.24	94	96.81	91	80	120	2.6	20.0
Antimony										
Selenium										
Thallium										
Vanadium	4.33	100	97.59	93	95.48	91	80	120	2.3	20.0
Zinc	5.91	100	102.7	97	101.1	95	80	120	1.7	20.0

Increased Ba D.L. to 0.4 mg/Kg

I. Williams 5/23/95

Idelis Williams, QC Officer

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: Cr

Test Code: CRSG

Method: P3050G

Instrument: B

Date: 5/22/95

Time: 10:45

File #: 0522A

Analyst: WFC

Units: mg/kg

Matrix: Soil ☑ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05556-2c,	3c,	4c,	5c	

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
*04974-MB1	MB1	167.0	76.0%	15.7	20.0	35.7	36.5	100.0%	104.0%	4

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☑ Soil LCS % Rec. Range 54.1% – 141.3%

☑ Sample used for QA/QC only

Analyst: Walley F Swol Date: 5/22/95

Approved By: [signature] Date: 5-22-95

[signature] QC Officer Date: 5/22/95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: PB

Test Code: PBSG

Method: P3050G

Instrument: B

Date: 5/20/95

Time: 10:28

File #: 0520A

Analyst WFC

Matrix: Soil ☑ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units mg/kg

Sample #'s in Batch

04974-1A WFC = 4A WFC	05556-2c - 5c		
04975-1A WFC = 4A WFC			
04364-7D, 11D			
04698-7D, 11c, 13D			
0571-1A			

Blank and Check Standard				Sample Conc.	Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery		Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
* 04974-4B	ND	162.0	76.5%	15.8	50.0	43.7	43.7	55.8%	55.8%	0

• FLAGS •

☑ • = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☑ Soil LCS % Rec. Range 32.0% - 142.0%

Analyst William F Carroll Date 5/20/95

Approved By [signature] Date 5-22-95

[signature] Date 5/22/95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: Hg
Test Code: Hg5C
Method: 7471
Instrument: 3030B

Date: 5/24/95
Time: 14:01
File #: 0524A

Analyst T. B.

Matrix: Soil ☑ Water ☐
Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units ug/L

Sample #'s in Batch

9504702-16D, 18D	9505759-1B	9505512-2C-13C	9505556-2C-5C	9505696-1C, 4C, 7C
9505612-3C-6C	9505774-4B			

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05512-11C	#1 ND	1.92	#1 96.0	ND	2.00	2.26	2.12	113.0	106.0	6
05696-4C	#2 ND	↓	#2 99.8	↓	↓	1.99	2.21	99.5	110.5	10

* FLAGS *

* = Values Outside QC Range

- ☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)
- ☐ RPD out of QA/QC Limits (20 %)
- ☐ Soil LCS % Rec. Range _____
- ☐ Sample used for QA/QC only
- ☐ See Case Narrative

Analyst T. B. Williams Date 5/24/95

Approved By [signature] Date 5/24/95

[signature] Date 5/24/95

Idelis Williams, QC Officer

WETDUPCA.RC Rev. 4/94

Wet Chemistry QA/QC Validation Report

Test Name: Moisture

AM Test Code: MOISED Date: 5/17/95 Analyst: CA

Method CLP Time: 9:30AM Matrix ☐ Liquid ☒ Soil ☐ Other

of Samples in Batch: 38 Reporting Units: %weight

Sample #'s in Batch:

9505572 - 3C	9504364 - 7D, 11D	9504972 - 1A → 5A
9505568 - 1B → 5B	9504698 - 7D, 11C, 13D	9504973 - 1A → 3A, 7A, 9A, 11A
9505571 - 1B → 4B	9505556 - 2C, 3C, 4C, 5C	
9504362 - 19D, 20D, 21D, 25D, 27D	9505575 - 1B, 2B, 3B	

Standards	Actual Concentration	Theoretical Concentration	Percent Recovery	QC Limits (**) (Mandatory) Upper Limit	Lower Limit
Blank					
Check Standard 1					
Check Standard 2					
Check Standard 3					
(Outside Source)					

DUPLICATES

QC Duplicate SPL Sample ID	Sample Result <1>	Sample Result <2>	Relative Percent Difference	QC LIMITS (**) (Advisory) Relative Percent Difference Max.
9504972 - 1A	19	19	0	23.0
9504973 - 7A	22	22	0	
9504362 - 25D	20	21	4.88	
9504698 - 13D	21	19	10.00	
9505568 - 5B	20	18	10.53	
9505575 - 1B	13	17	5.71	V

Relative Percent Difference (RPD) Calculation:

$$RPD = \frac{|<1> - <2>|}{(<1> + <2>) \times 0.5} \times 100$$

(**) = Source: SPL Houston Historical Data

* = Indicates Value Outside QA/QC Range

Reviewed By: [signature] Date: 5-18-95

Approved By: [signature] Date: 5/18/95

[signature] Date: 5/18/95

Idelis Williams, QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/11/95 16:25:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/18/95	ND	0.004	mg/L
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/18/95	ND	0.01	mg/L
Mercury, Total METHOD 7470 *** Analyzed by: PB Date: 05/17/95	ND	0.0004	mg/L
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/18/95	ND	0.02	mg/L
Acid Digestion-Aqueous, ICP METHOD 3010 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/11/95 16:25:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion-Aqueous, GF METHOD 3020 *** Analyzed by: AM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	0.006	0.004	mg/L

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/11/95 16:25:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/L
Benzene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
Bromoform	ND	5	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ND	20	ug/L
Carbon Disulfide	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Chloroethane	ND	10	ug/L
2-Chloroethylvinylether	ND	10	ug/L
Chloroform	ND	5	ug/L
Chloromethane	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,1-Dichloroethene	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
total-1,2-Dichloroethene	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Methylene Chloride	ND	5	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Trichlorofluoromethane	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Xylenes (total)	ND	5	ug/L

METHOD: 8240, Volatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech

SAMPLE ID: 025-001-RB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/L	106	76	114
Toluene-d8	50 ug/L	104	88	110
4-Bromofluorobenzene	50 ug/L	98	86	115

ANALYZED BY: GT DATE/TIME: 05/15/95 13:42:00
METHOD: 8240, Volatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-001-RB

PROJECT NO: 1315-197
MATRIX: WATER
DATE SAMPLED: 05/11/95 16:25:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	5	ug/L
Acenaphthylene	ND	5	ug/L
Aniline	ND	5	ug/L
Anthracene	ND	5	ug/L
Benzo(a)Anthracene	ND	5	ug/L
Benzo(b)Fluoranthene	ND	5	ug/L
Benzo(k)Fluoranthene	ND	5	ug/L
Benzo(a)Pyrene	ND	5	ug/L
Benzoic Acid	ND	25	ug/L
Benzo(g,h,i)Perylene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
4-Bromophenylphenyl ether	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
di-n-Butyl phthalate	ND	5	ug/L
Carbazole	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
bis(2-Chloroethoxy)Methane	ND	5	ug/L
bis(2-Chloroethyl)Ether	ND	5	ug/L
bis(2-Chloroisopropyl)Ether	ND	5	ug/L
4-Chloro-3-Methylphenol	ND	5	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
4-Chlorophenylphenyl ether	ND	5	ug/L
Chrysene	ND	5	ug/L
Dibenz(a,h)Anthracene	ND	5	ug/L
Dibenzofuran	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	5	ug/L
2,4-Dichlorophenol	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Dimethyl Phthalate	ND	5	ug/L
4,6-Dinitro-2-Methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

METHOD: 8270, Semivolatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech

SAMPLE ID: 025-001-RB

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	5	ug/L
bis(2-Ethylhexyl)Phthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Fluorene	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
Indeno(1,2,3-cd)Pyrene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
Naphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	5	ug/L
2-Nitrophenol	ND	25	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodiphenylamine (1)	ND	5	ug/L
N-Nitroso-Di-n-Propylamine	ND	5	ug/L
Di-n-Octyl Phthalate	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Phenol	51	5	ug/L
Pyrene	ND	5	ug/L
Pyridine	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L

METHOD: 8270, Semivolatile Organics - Water

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-01

Operational Tech

SAMPLE ID: 025-001-RB

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	50 ug/L	82	35	114
2-Fluorobiphenyl	50 ug/L	86	43	116
Terphenyl-d14	50 ug/L	83	33	141
Phenol-d5	75 ug/L	75	10	110
2-Fluorophenol	75 ug/L	83	21	110
2,4,6-Tribromophenol	75 ug/L	79	10	123

ANALYZED BY: PC DATE/TIME: 05/22/95 11:35:00
EXTRACTED BY: VM DATE/TIME: 05/18/95
METHOD: 8270, Semivolatile Organics - Water
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950515.b/m135s02.d
Lab Smp Id:
Inj Date : 15-MAY-95 13:42
Operator : GT Inst ID: m.i
Smp Info : 9505512-01A-8240W/1X
Misc Info : M135W1/M135B01/M135CW1
Comment :
Method : /chem/m.i/m950515.b/mvoclpw.m
Meth Date : 15-May-1995 11:48 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 10:50 Cal File: m135cw1.d
Als bottle: 6
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 16 Bromochloromethane	128.00	3.994	3.981	(1.000)	52945	250	
* 23 1,4-Difluorobenzene	114.00	5.809	5.797	(1.000)	333452	250	
* 37 Chlorobenzene-d5	117.00	10.959	10.948	(1.000)	306271	250	
$ 18 1,2-Dichloroethane-d4	102.00	4.777	4.763	(1.196)	20682	260	53
$ 31 Toluene-d8	98.00	8.466	8.453	(0.772)	433667	260	52
$ 46 Bromofluorobenzene	95.00	13.173	13.162	(1.202)	185469	240	49

Data File: /chem/m.i/m950515.b/m135s02.d
Report Date: 16-May-1995 09:52

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m135s02.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950515.b/mvoclpw.m
Misc Info: M135W1/M135B01/M135CW1

Calibration Date: 05/15/95
Calibration Time: 1050

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	57929	28964	115858	52945	-8.60
23 1,4-Difluorobenzene	354872	177436	709744	333452	-6.04
37 Chlorobenzene-d5	333021	166510	666042	306271	-8.03

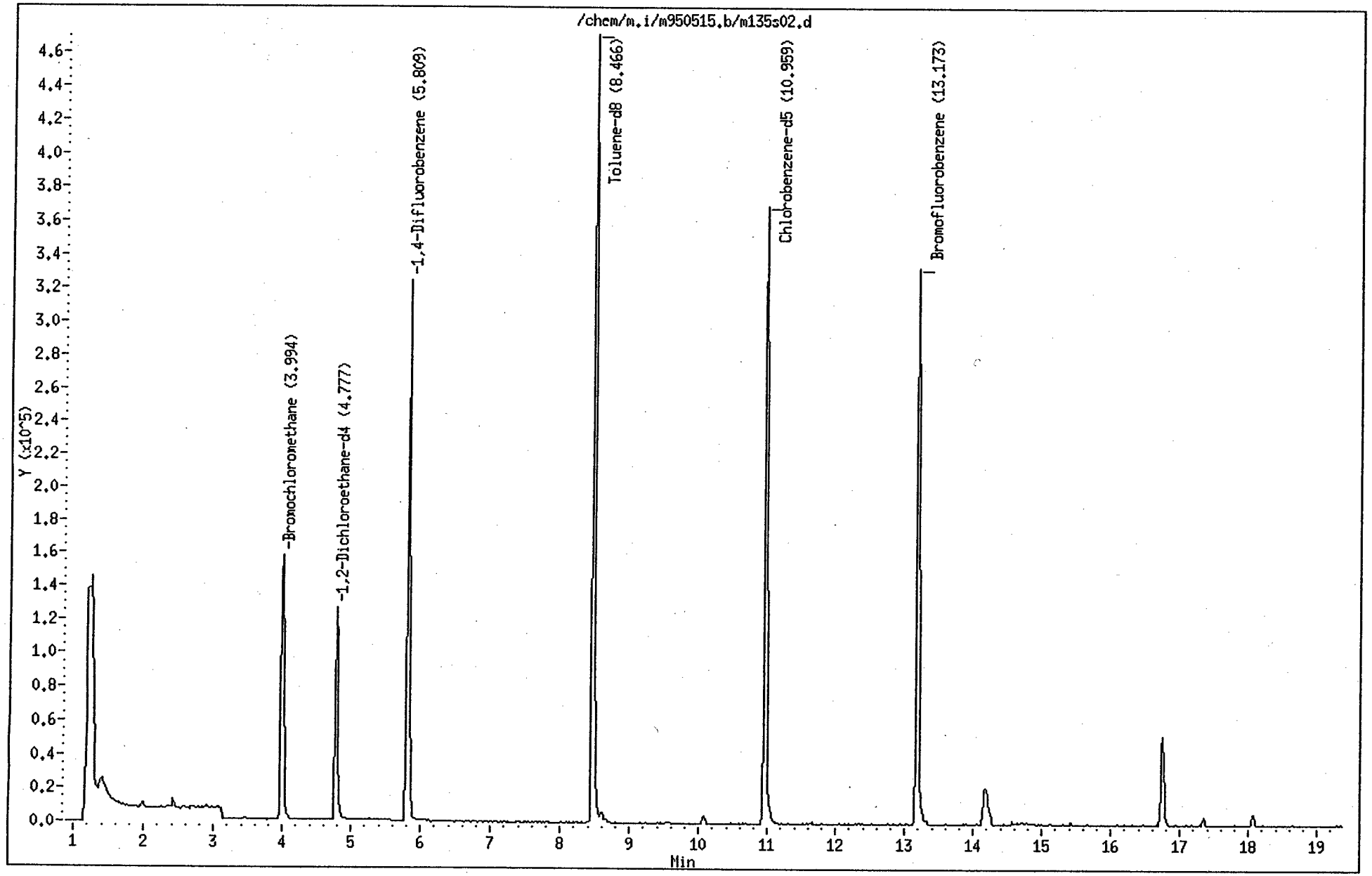
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	3.98	3.48	4.48	3.99	0.33
23 1,4-Difluorobenzene	5.80	5.30	6.30	5.81	0.22
37 Chlorobenzene-d5	10.95	10.45	11.45	10.96	0.11

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950515.b/m135s02.d
Date : 15-MAY-95 13:42
Client ID:
Sample Info: 9505512-01A-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950522.b/j142s01.d
Lab Smp Id: 9505512-01B
Inj Date : 22-MAY-1995 11:35
Operator : PC pc
Inst ID: j.i
Smp Info : 9505512-01B-8270W/1X
Misc Info : E138C1/H138B01/J142CC1
Comment :
Method : /chem/j.i/j950522.b/jclpw.m
Meth Date : 22-May-1995 11:30 patti
Quant Type: ISTD
Cal Date : 22-MAY-1995 10:47
Cal File: j142cc1.d
Inj bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)	
Phenol	94.00	7.349	7.357	(0.926)	1061023	100	51(Q)	pc
11 1,4-Dichlorobenzene-d4	152.00	7.938	7.936	(1.000)	296475	40		
Naphthalene-d8	136.00	10.725	10.719	(1.000)	916397	40		
Acenaphthene-d10	164.00	14.978	14.976	(1.000)	594735	40		
65 Phenanthrene-d10	188.00	18.590	18.594	(1.000)	863558	40		
76 Chrysene-d12	240.00	25.249	25.247	(1.000)	744442	40		
Perylene-d12	264.00	29.692	29.698	(1.000)	470374	40		
Nitrobenzene-d5	82.00	9.159	9.148	(0.854)	711551	82	41	
41 2-Fluorobiphenyl	172.00	13.357	13.360	(0.892)	1689318	86	43	
Terphenyl-d14	244.00	22.560	22.555	(0.893)	1488023	83	41	
Phenol-d5	99.00	7.327	7.335	(0.923)	1210826	110	56	
3 2-Fluorophenol	112.00	5.725	5.736	(0.721)	738769	120	62(Q)	
61 2,4,6-Tribromophenol	329.70	16.957	16.955	(0.912)	313039	120	59	

QC Flag Legend

Q Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j142s01.d
Lab Smp Id: 9505512-01B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950522.b/jclpw.m
Misc Info: E138C1/H138B01/J142CC1

Calibration Date: 05/22/95
Calibration Time: 1047

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	336862	168431	673724	296475	-11.99
32 Naphthalene-d8	1268035	634018	2536070	916397	-27.73
48 Acenaphthene-d10	679432	339716	1358864	594735	-12.47
65 Phenanthrene-d10	946155	473078	1892310	863558	-8.73
76 Chrysene-d12	813677	406838	1627354	744442	-8.51
83 Perylene-d12	478967	239484	957934	470374	-1.79

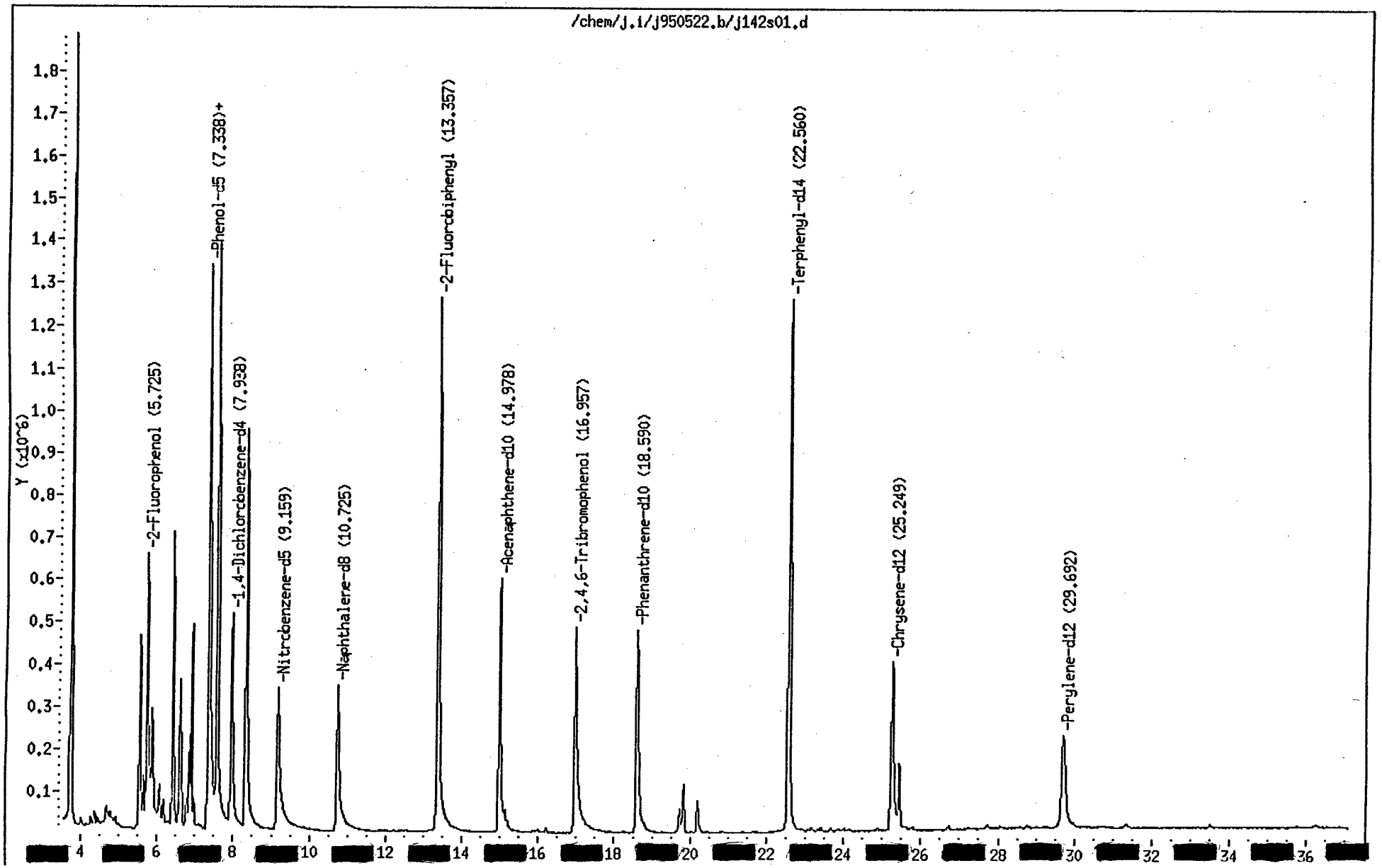
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.94	0.03
32 Naphthalene-d8	10.72	10.22	11.22	10.73	0.06
48 Acenaphthene-d10	14.98	14.48	15.48	14.98	0.02
65 Phenanthrene-d10	18.59	18.09	19.09	18.59	-0.02
76 Chrysene-d12	25.25	24.75	25.75	25.25	0.01
83 Perylene-d12	29.70	29.20	30.20	29.69	-0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950522.b/j142s01.d
Date : 22-MAY-1995 11:35
Client ID:
Sample Info: 9505512-01B-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

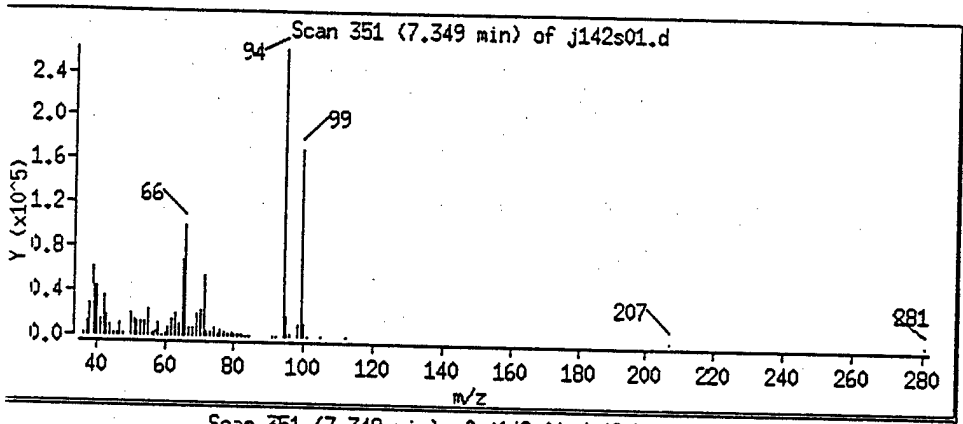
Operator: PC
Column diameter: 0.25

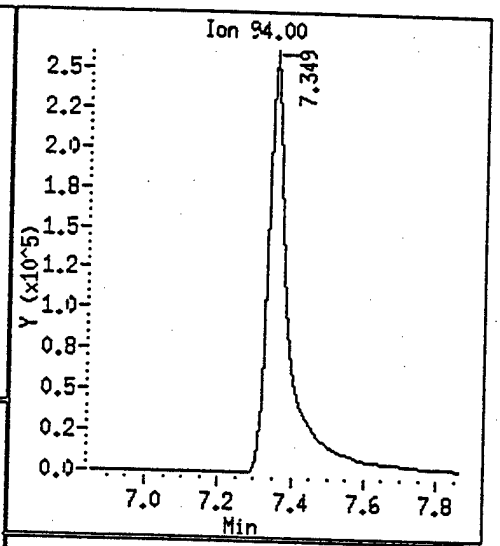


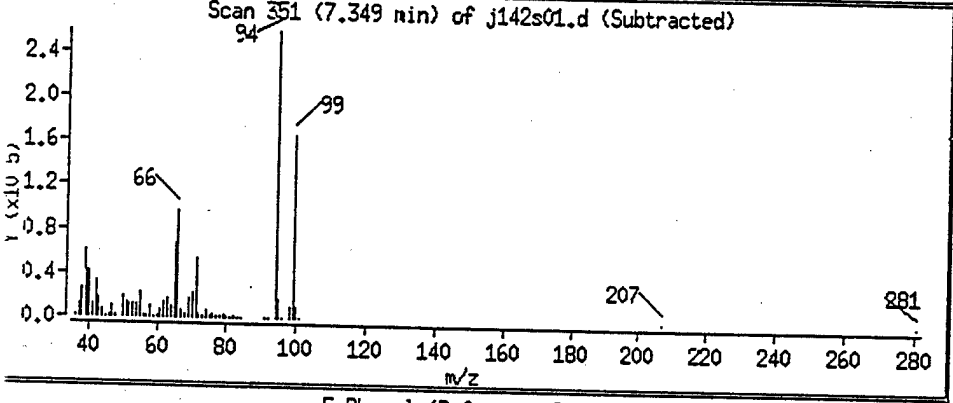
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Date : 22-MAY-1995 11:35
Client ID:
Sample Info: 9505512-01B-8270W/1X
Volume Injected (uL): 2.0
Column phase:

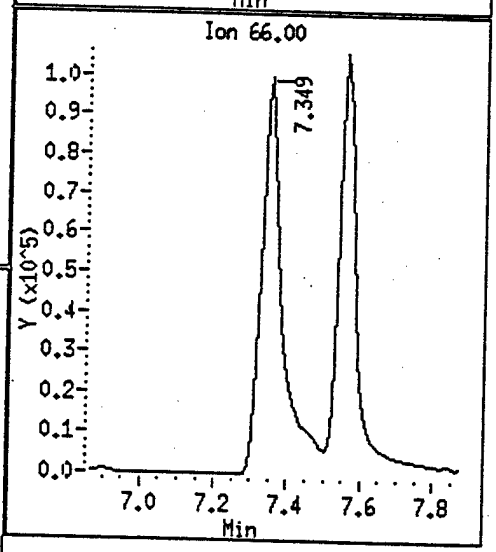
Instrument: j.i
Operator: PC
Column diameter: 0.25

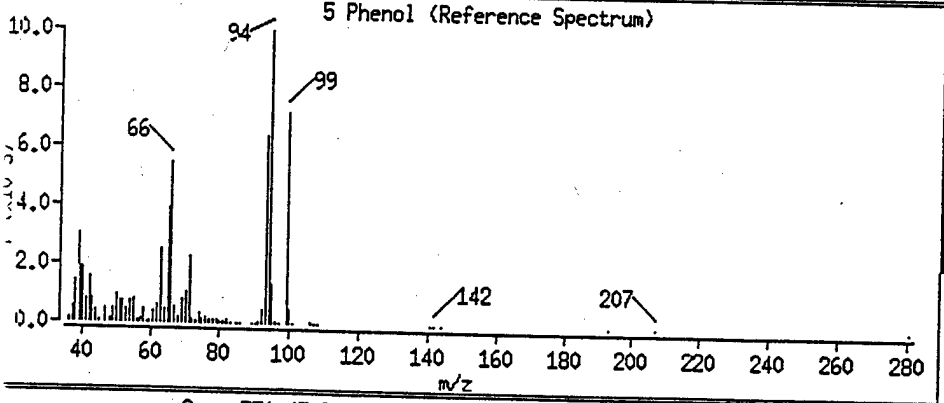
5 Phenol

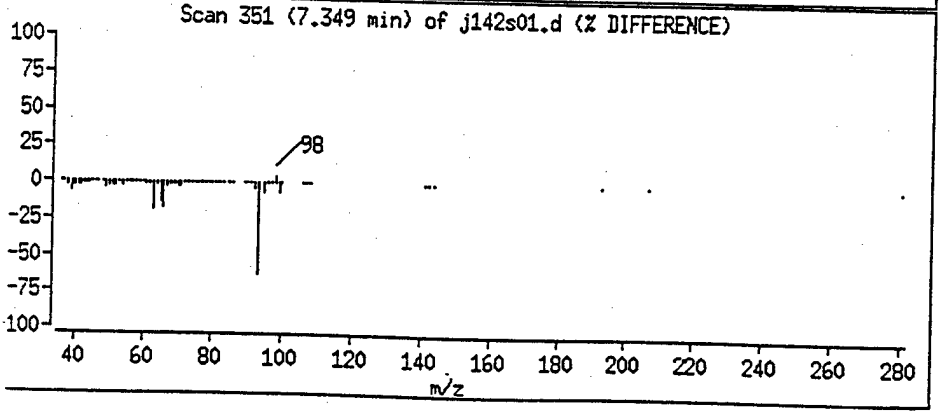












HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	10	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/27/95	18	2	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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DATE: 05/31/95

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SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	26	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	4.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
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Certificate of Analysis No. H9-9505512-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-02

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	90	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 20:09:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-02

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-02

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	94	23	120
2-Fluorobiphenyl	1600 ug/Kg	95	30	115
Terphenyl-d14	1600 ug/Kg	97	18	137
Phenol-d5	2500 ug/Kg	102	24	113
2-Fluorophenol	2500 ug/Kg	122 «	25	121
2,4,6-Tribromophenol	2500 ug/Kg	83	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 14:39:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« - Recovery outside of control limits.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s05.d
Lab Smp Id: 9505512-02A-8240S/1X
Inj Date : 15-MAY-1995 20:09
Operator : HLW Inst ID: k.i
Smp Info : 9505512-02A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 20
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	11 Methylene Chloride	84.00	1.665	1.668	(0.786)	8961	17	3(a)
*	20 Bromochloromethane	128.00	2.120	2.108	(1.000)	66967	250	
*	31 1,4-Difluorobenzene	114.00	2.786	2.790	(1.000)	406087	250	
*	51 Chlorobenzene-d5	117.00	6.756	6.744	(1.000)	299697	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.365	(1.122)	28004	230	45
$	40 Toluene-d8	98.00	4.529	4.532	(0.670)	443475	250	51
$	61 Bromofluorobenzene	95.00	8.862	8.851	(1.312)	164103	240	48

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s05.d
Lab Smp Id: 9505512-02A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	66967	2.68
31 1,4-Difluorobenzene	411543	205772	823086	406087	-1.33
51 Chlorobenzene-d5	312868	156434	625736	299697	-4.21

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.56
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.12
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.17

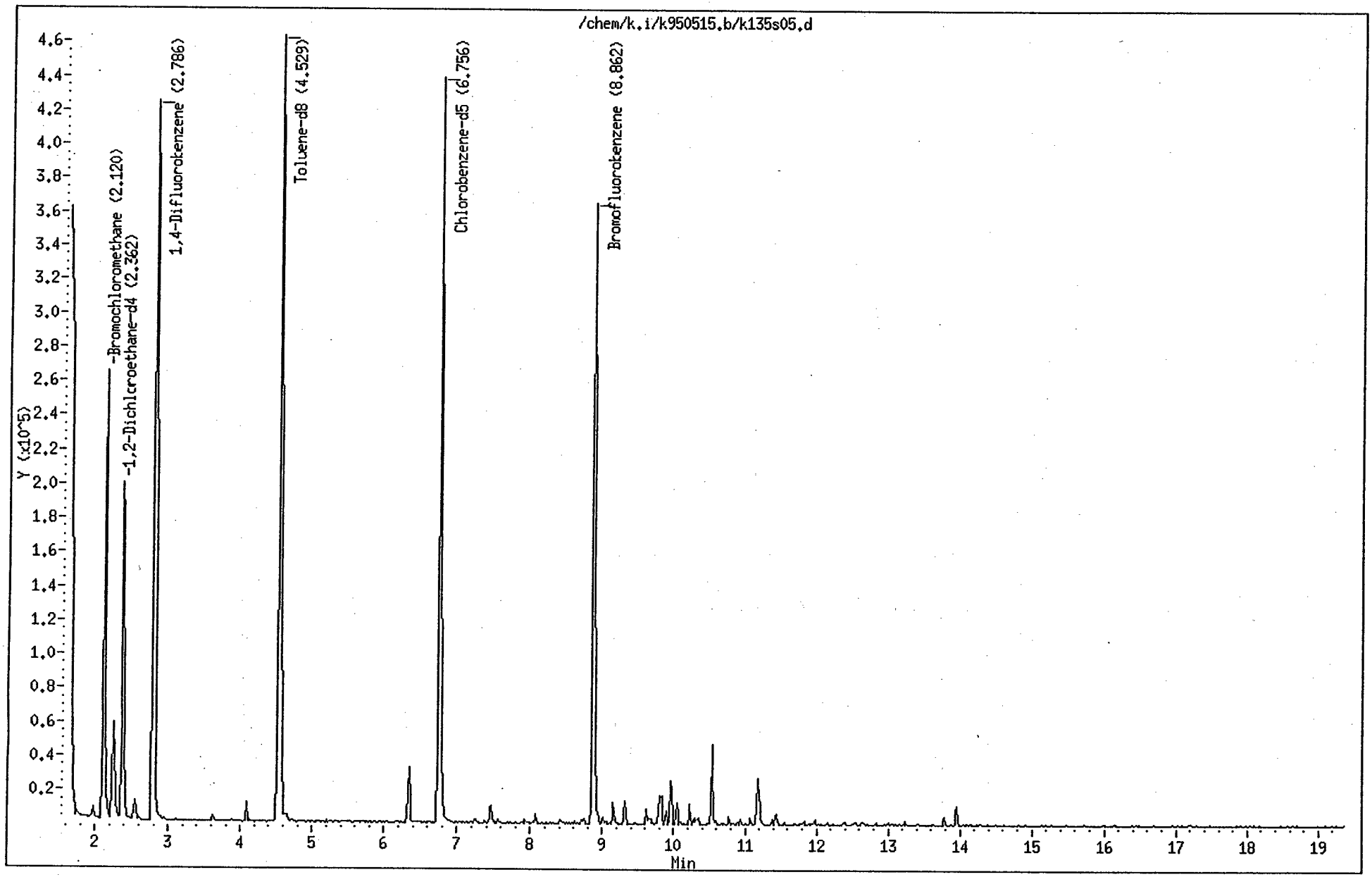
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s05.d
Date : 15-MAY-95 20:09
Client ID:
Sample Info: 9505512-02A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

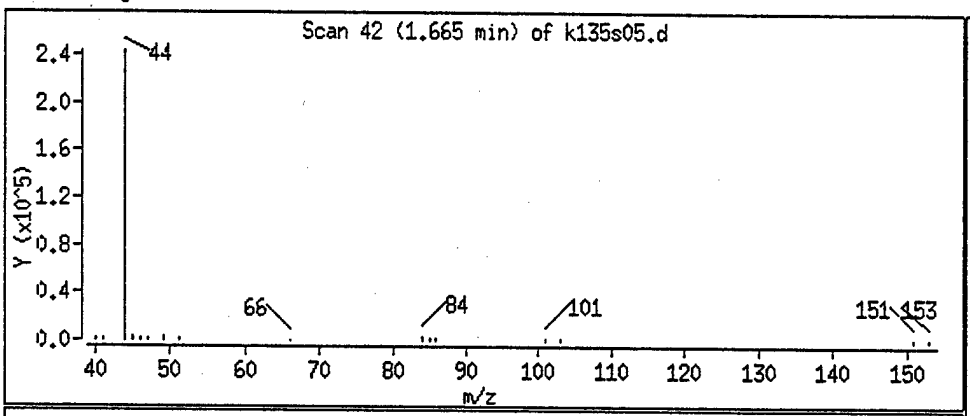
Column phase: 30m,hp5ms,0.25u df

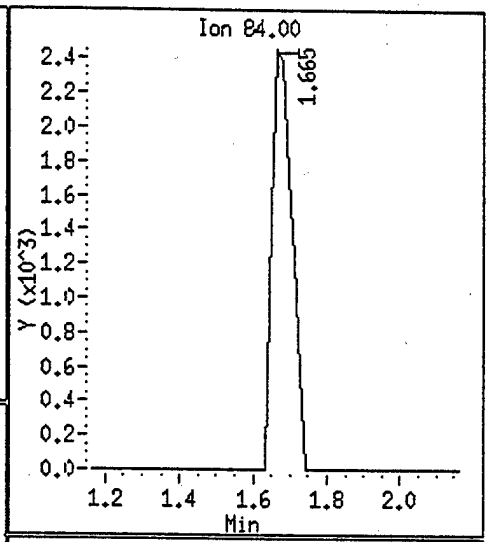


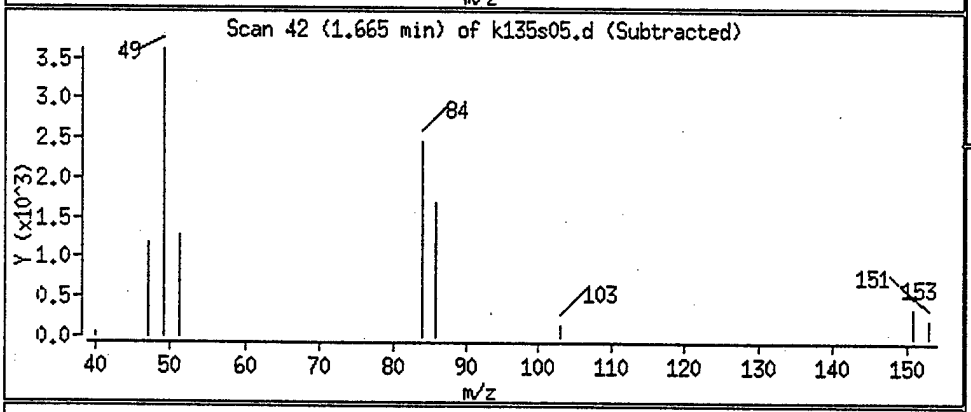
Data File: /chem/k.i/k950515.b/k135s05.d
Date : 15-MAY-95 20:09
Client ID:
Sample Info: 9505512-02A-8240S/1X

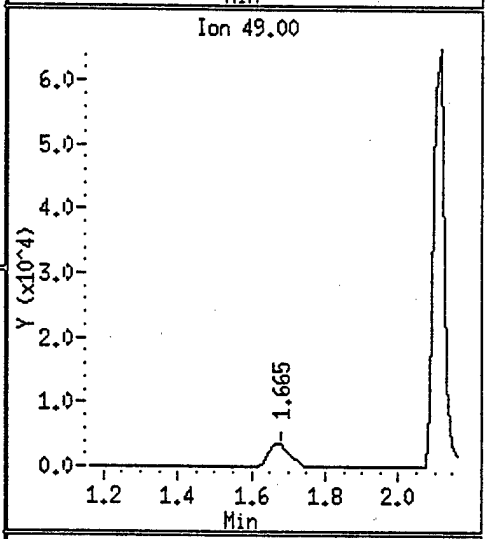
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

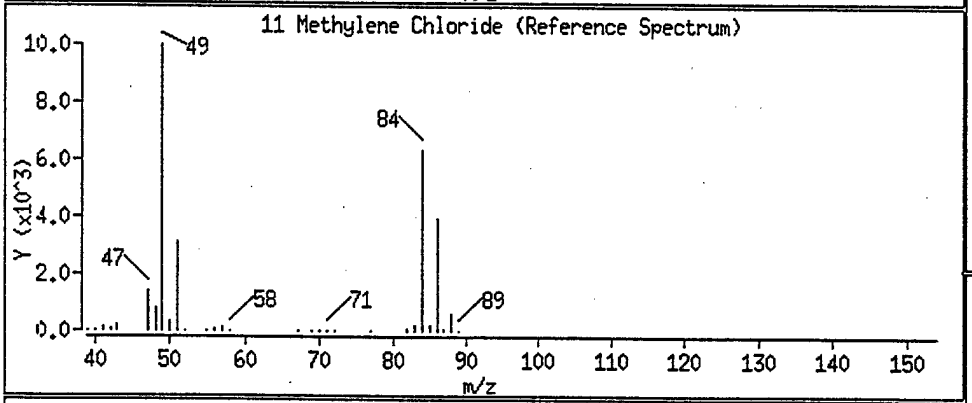
11 Methylene Chloride

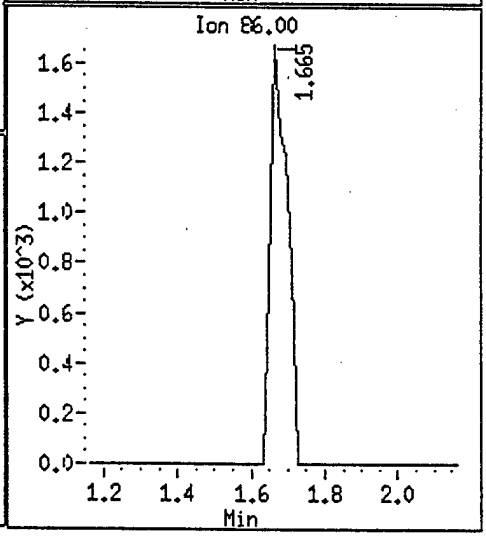


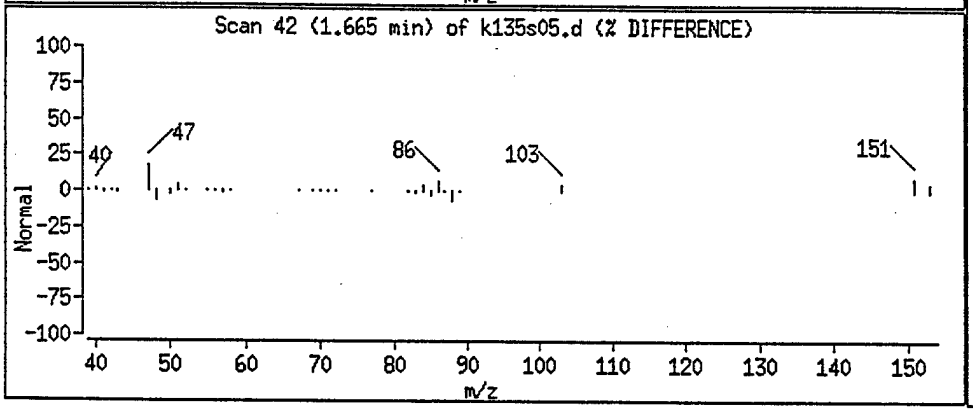












SPL Houston Labs

Data file : /chem/j.i/j950519.b/j139s02.d
Lab Smp Id: 9505512-02B
Inj Date : 19-MAY-1995 14:39
Operator : PC PC
Smp Info : 9505512-02B-8270S/1X
Misc Info : E135S1/J135B02/J139CC1
Comment :
Method : /chem/j.i/j950519.b/jclps.m
Meth Date : 19-May-1995 14:55 patti
Cal Date : 19-MAY-1995 10:06
Vials bottle: 6
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j139cc1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
11 1,4-Dichlorobenzene-d4	152.00	7.942	7.945	(1.000)	385128	40	
32 Naphthalene-d8	136.00	10.731	10.738	(1.000)	1378237	40	
48 Acenaphthene-d10	164.00	15.002	14.994	(1.000)	744462	40	
65 Phenanthrene-d10	188.00	18.617	18.611	(1.000)	984972	40	
76 Chrysene-d12	240.00	25.283	25.284	(1.000)	744422	40	
83 Perylene-d12	264.00	29.751	29.745	(1.000)	529823	40	
23 Nitrobenzene-d5	82.00	9.153	9.157	(0.853)	1196453	90	1500
41 2-Fluorobiphenyl	172.00	13.377	13.378	(0.892)	2262815	92	1500
72 Terphenyl-d14	244.00	22.598	22.580	(0.894)	1746289	93	1600
4 Phenol-d5	99.00	7.331	7.345	(0.923)	2167298	150	2500
3 2-Fluorophenol	112.00	5.739	5.735	(0.723)	1591036	180	3000(R)
61 2,4,6-Tribromophenol	329.70	16.979	16.972	(0.912)	355253	120	2100

C Flag Legend

- Spike/Surrogate failed recovery limits.

Data File: /chem/j.i/j950519.b/j139s02.d
Report Date: 19-May-1995 15:36

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j139s02.d
Lab Smp Id: 9505512-02B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	326931	163466	653862	385128	17.80
2 Naphthalene-d8	1205967	602984	2411934	1378237	14.28
48 Acenaphthene-d10	666246	333123	1332492	744462	11.74
65 Phenanthrene-d10	984904	492452	1969808	984972	0.01
76 Chrysene-d12	787352	393676	1574704	744422	-5.45
83 Perylene-d12	490059	245030	980118	529823	8.11

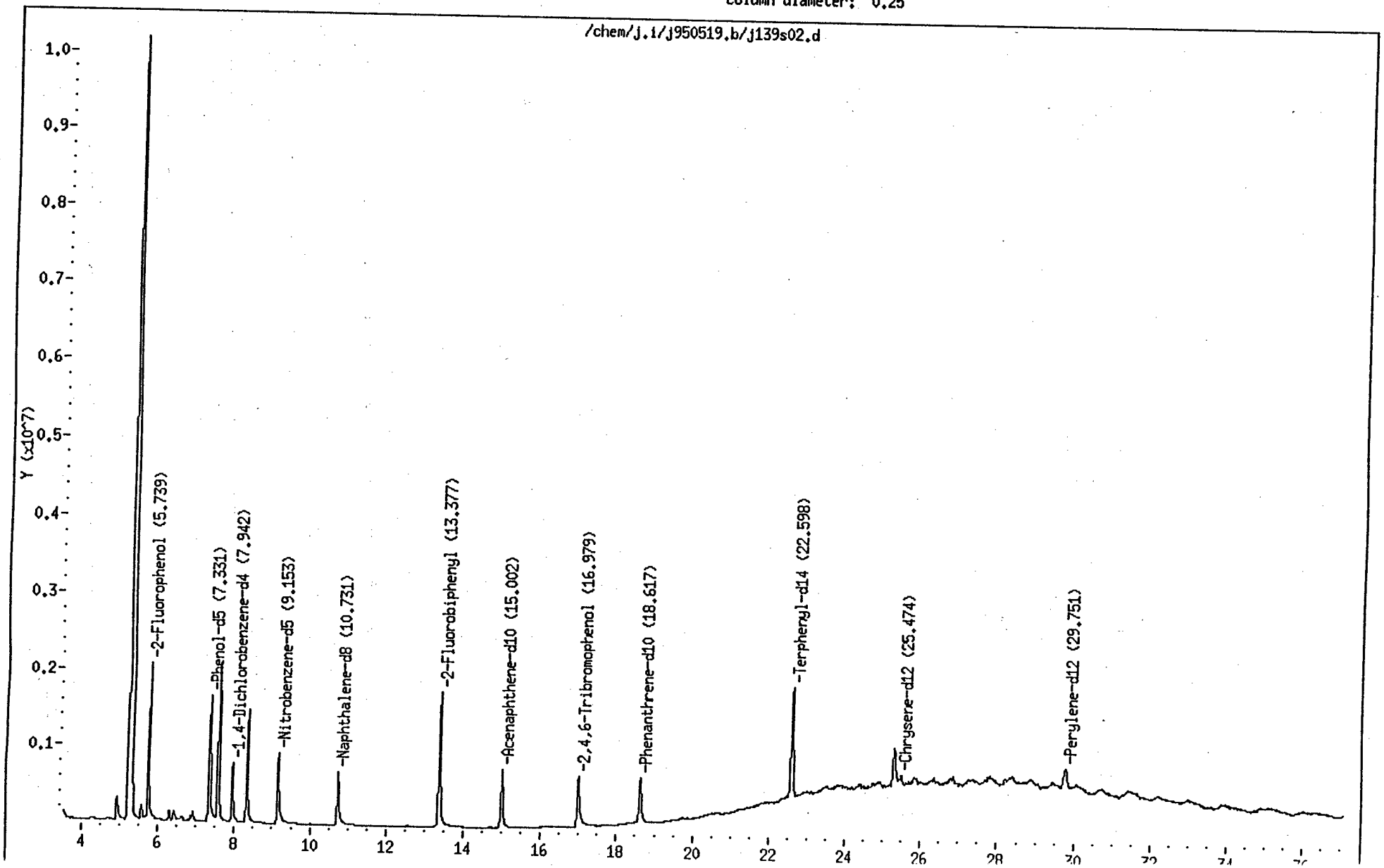
		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.94	-0.04
2 Naphthalene-d8	10.74	10.24	11.24	10.73	-0.07
48 Acenaphthene-d10	14.99	14.49	15.49	15.00	0.05
65 Phenanthrene-d10	18.61	18.11	19.11	18.62	0.03
76 Chrysene-d12	25.28	24.78	25.78	25.28	0.00
83 Perylene-d12	29.75	29.25	30.25	29.75	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139s02.d
Date : 19-MAY-1995 14:39
Client ID:
Sample Info: 9505512-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 14.5-15.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 11:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	13	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	12	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 14.5-15.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 11:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	27	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	6.8	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 14.5-15.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 11:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	30	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	29	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	230	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech

SAMPLE ID: 025-008BH 14.5-15.0

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	96	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	98	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 20:35:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 14.5-15.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 11:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech

SAMPLE ID: 025-008BH 14.5-15.0

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-03

Operational Tech

SAMPLE ID: 025-008BH 14.5-15.0

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	91	23	120
2-Fluorobiphenyl	1600 ug/Kg	96	30	115
Terphenyl-d14	1600 ug/Kg	97	18	137
Phenol-d5	2500 ug/Kg	96	24	113
2-Fluorophenol	2500 ug/Kg	128 «	25	121
2,4,6-Tribromophenol	2500 ug/Kg	59	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 16:47:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« - Recovery outside of control limits.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s06.d
Lab Smp Id: 9505512-03A-8240S/1X
Inj Date : 15-MAY-1995 20:35
Operator : HLW Inst ID: k.i
Smp Info : 9505512-03A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 21
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	17 2-Butanone	43.00	1.972	1.956	(0.929)	13355	29	6(a)
	43 Toluene	92.00	4.638	4.623	(0.686)	202379	150	29
M	2 Xylene (Total)	106.00				1052331	1200	230
	53 Ethylbenzene	106.00	7.245	7.244	(1.072)	109902	150	30
	54 m,p-Xylene(s)	106.00	7.457	7.457	(1.103)	785674	860	170
	58 o-Xylene	106.00	8.063	8.063	(1.193)	266657	290	58
*	20 Bromochloromethane	128.00	2.123	2.108	(1.000)	65479	250	
*	31 1,4-Difluorobenzene	114.00	2.790	2.790	(1.000)	398469	250	
*	51 Chlorobenzene-d5	117.00	6.760	6.744	(1.000)	303470	250	
$	23 1,2-Dichloroethane-d4	102.00	2.366	2.365	(1.114)	28777	240	48
$	40 Toluene-d8	98.00	4.532	4.532	(0.670)	440863	250	50
$	61 Bromofluorobenzene	95.00	8.866	8.851	(1.312)	169808	240	49

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s06.d
Lab Smp Id: 9505512-03A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	65479	0.40
31 1,4-Difluorobenzene	411543	205772	823086	398469	-3.18
51 Chlorobenzene-d5	312868	156434	625736	303470	-3.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.73
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.01
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.23

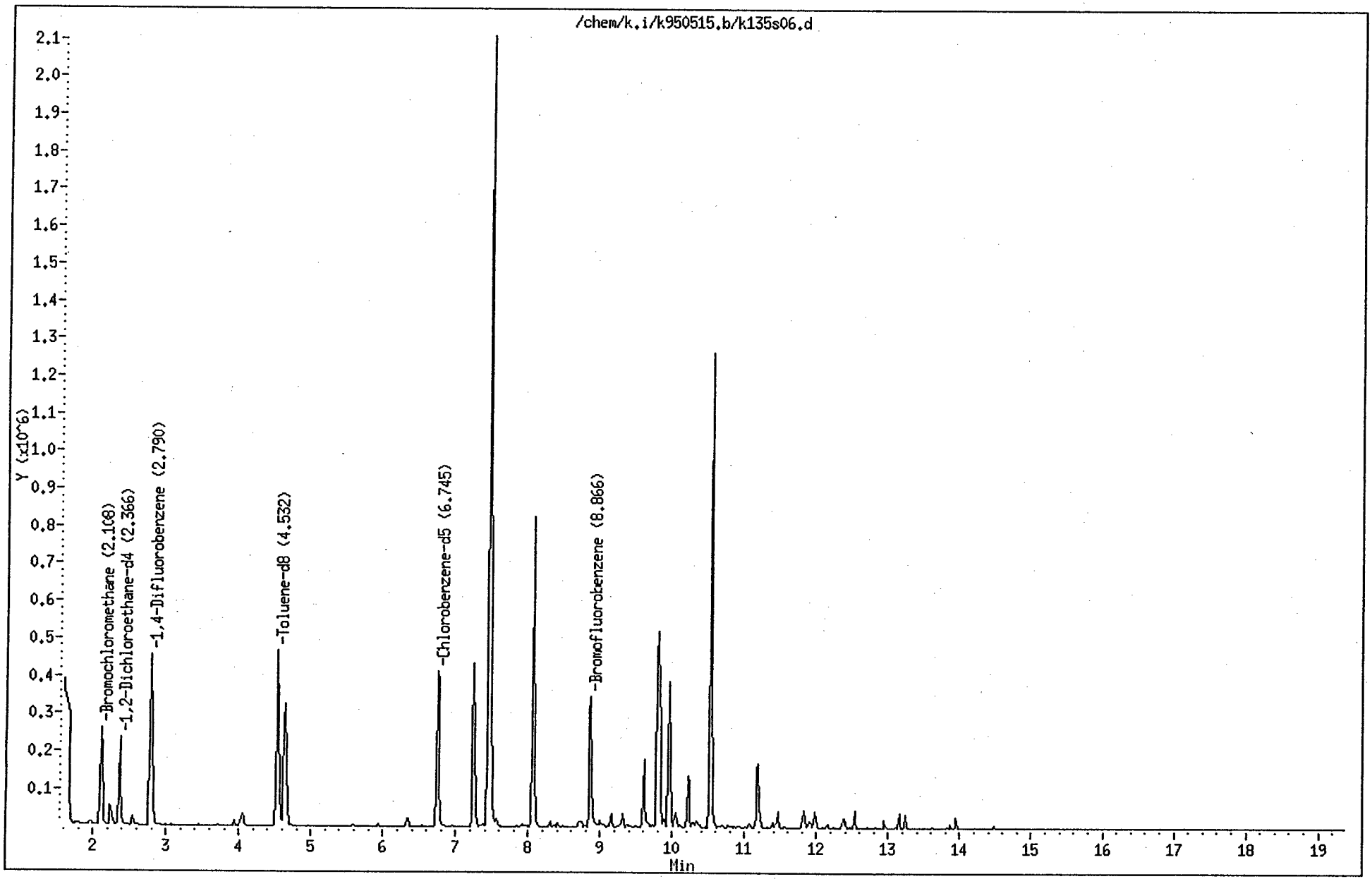
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s06.d
Date : 15-MAY-95 20:35
Client ID:
Sample Info: 9505512-03A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

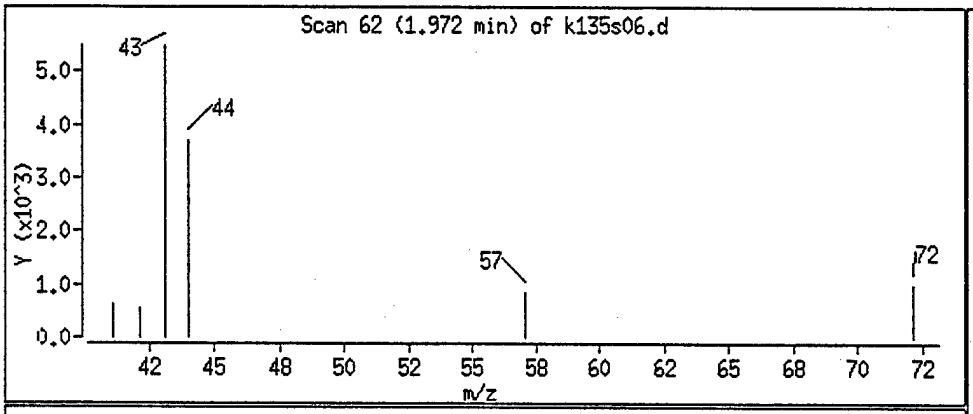
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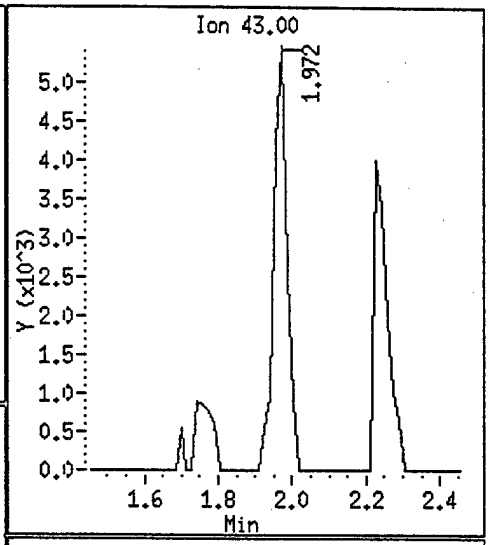


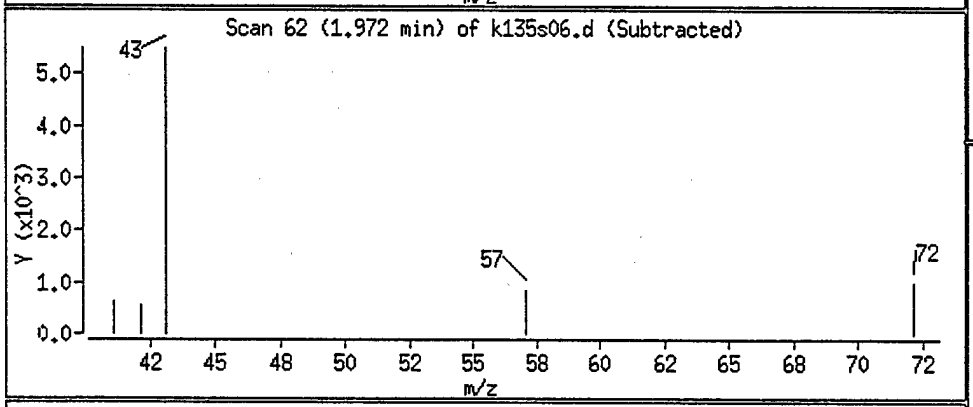
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Client ID:
Sample Info: 9505512-03A-8240S/1X

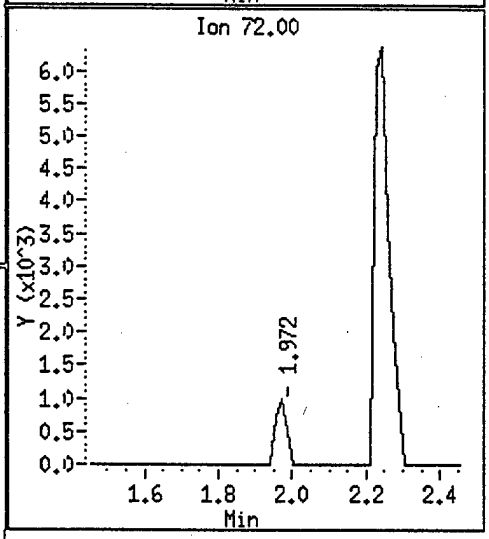
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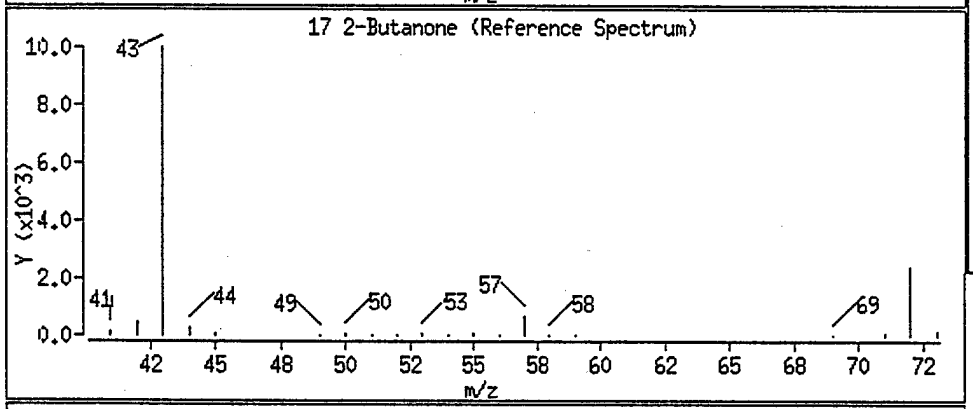
17 2-Butanone

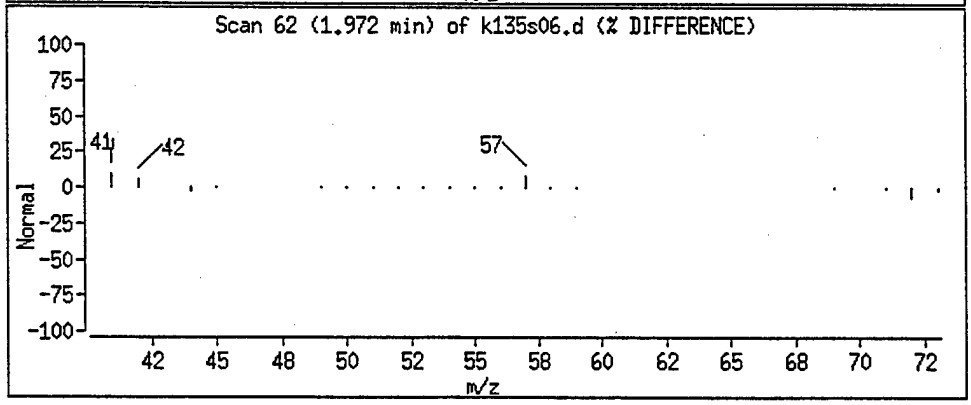










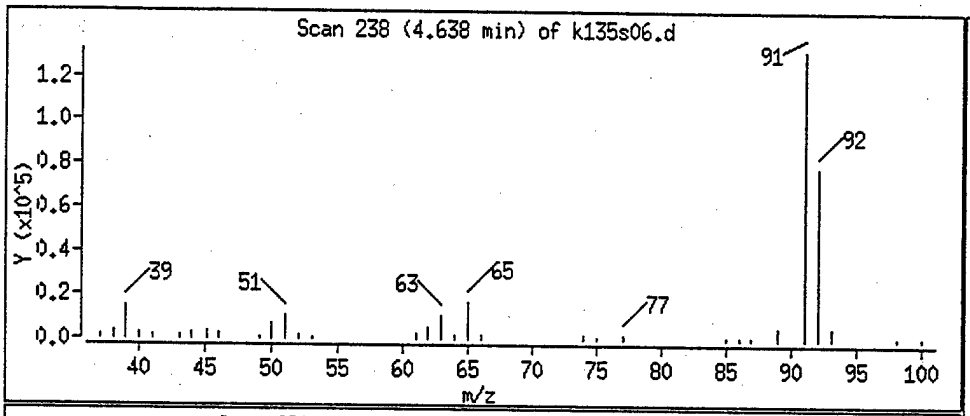


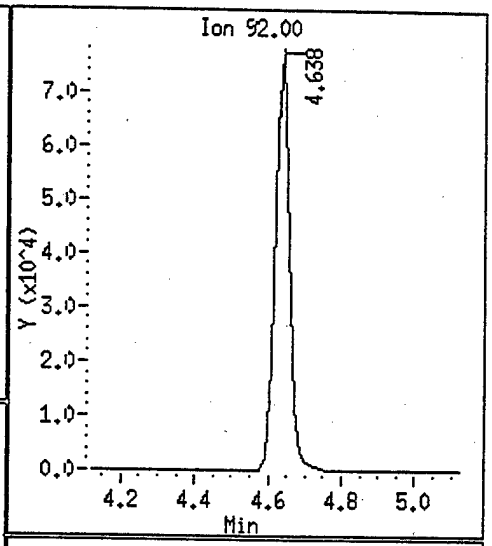
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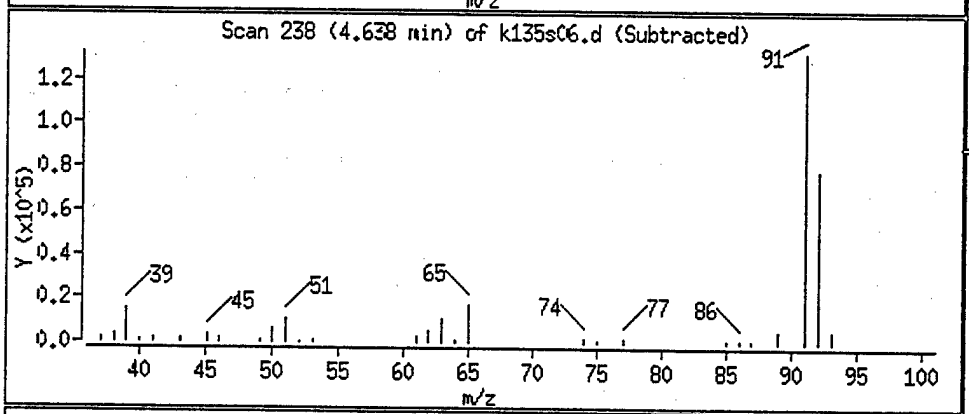
Instrument: k.i

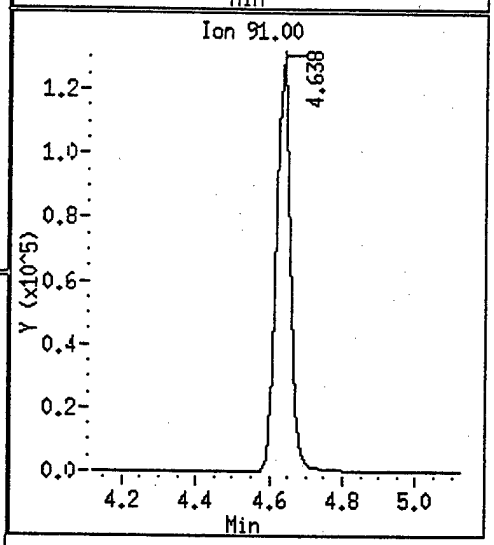
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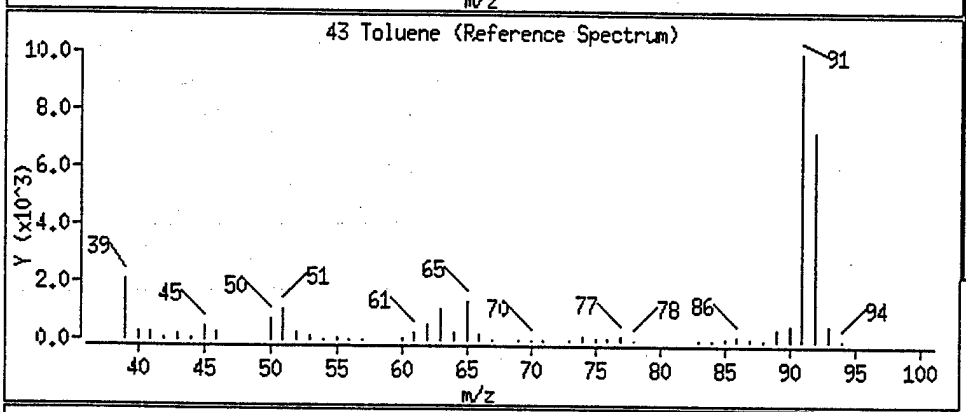
43 Toluene

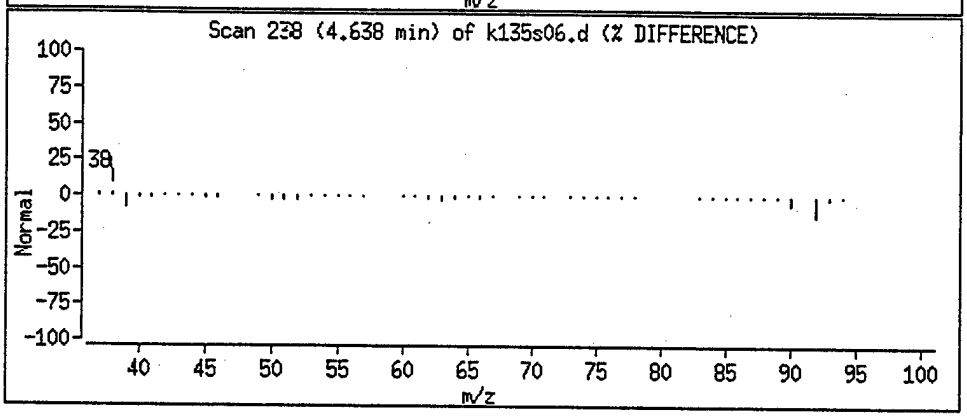








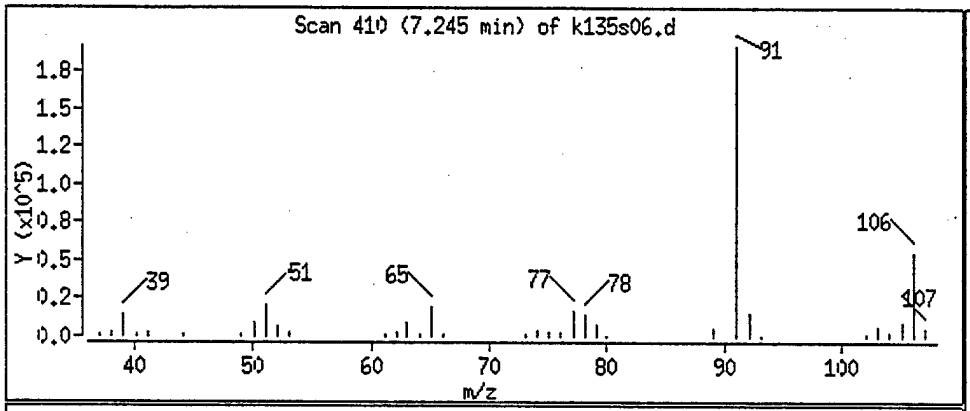


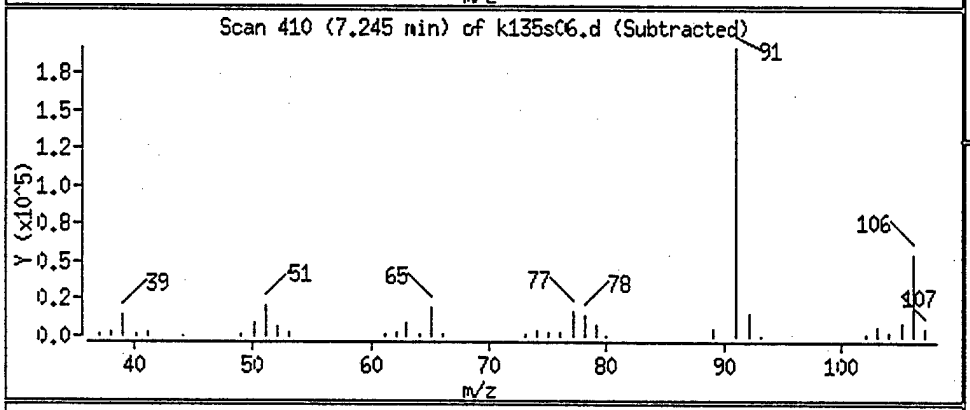


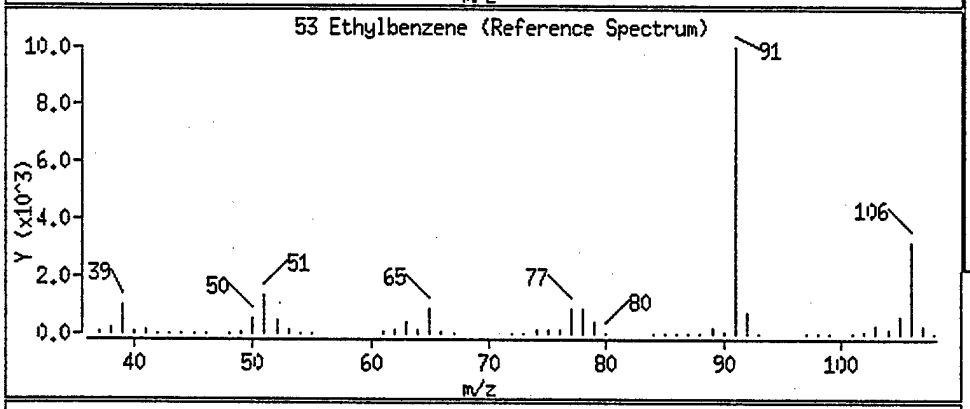
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Date : 15-MAY-95 20:35
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Sample Info: 9505512-03A-8240S/1X

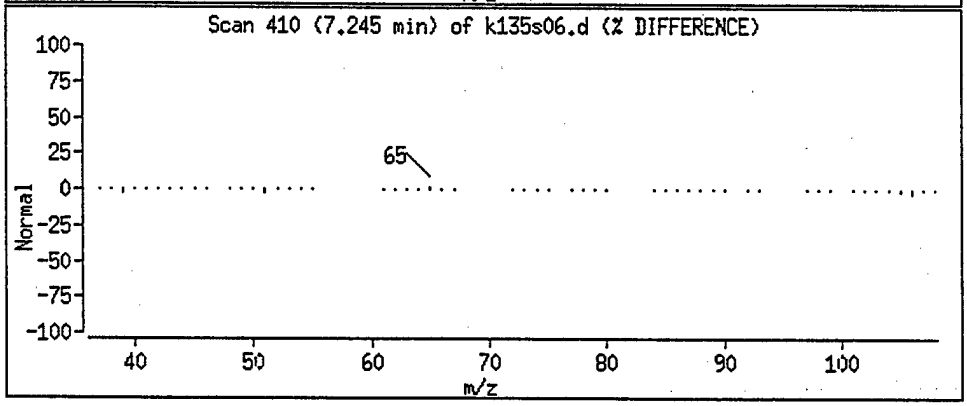
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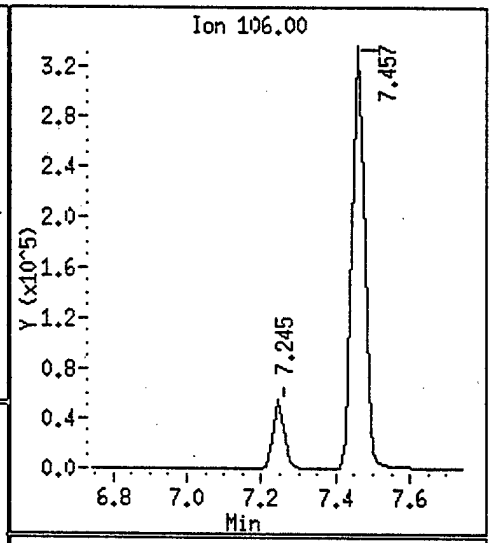
53 Ethylbenzene

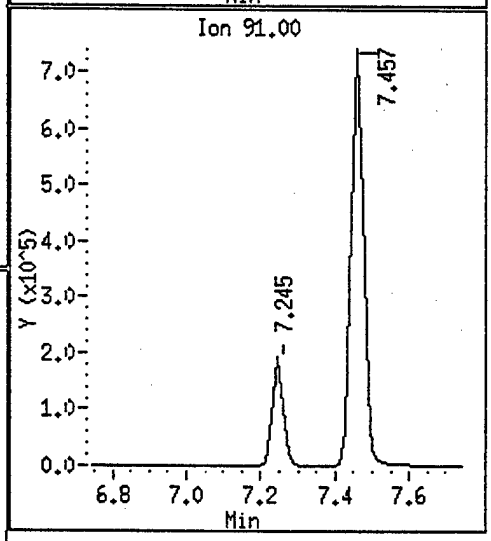










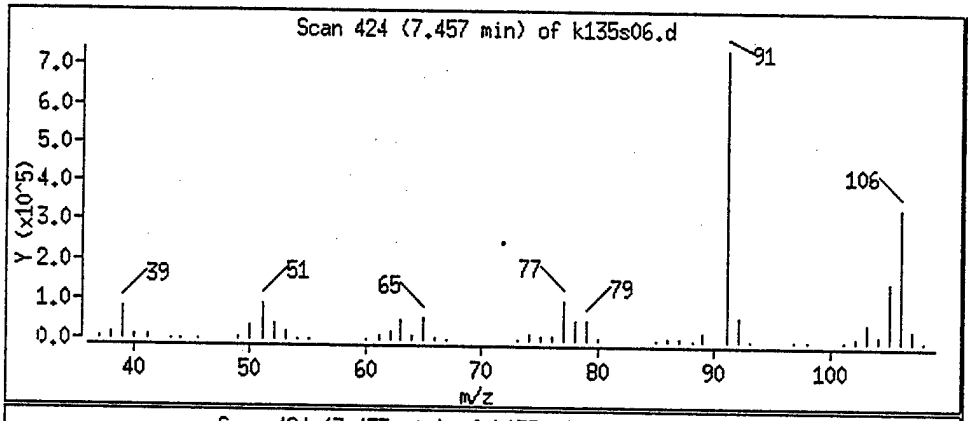


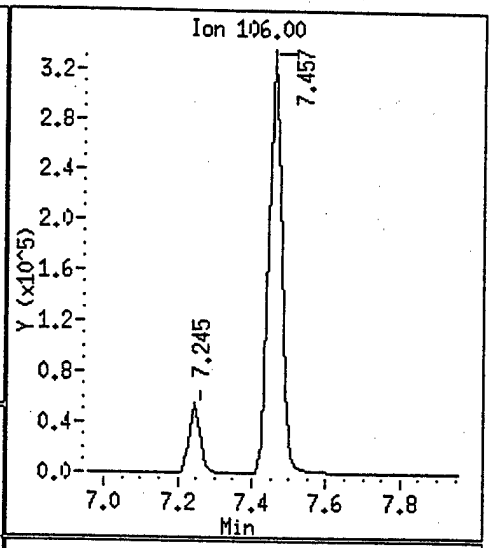
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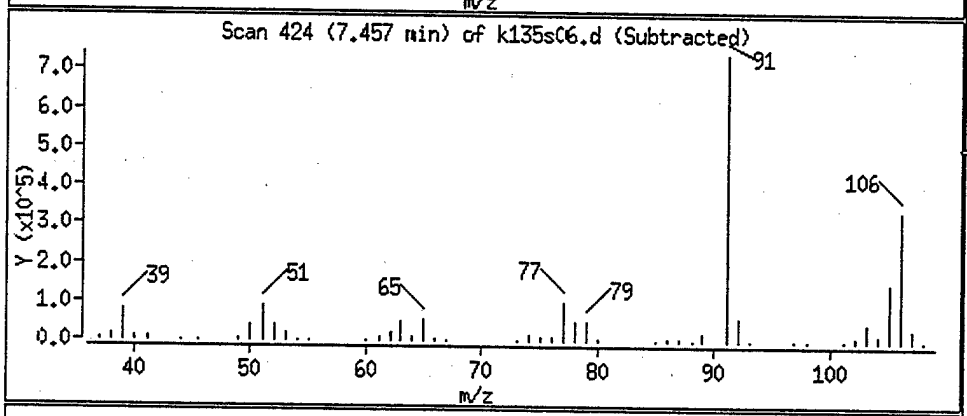
Instrument: k.i

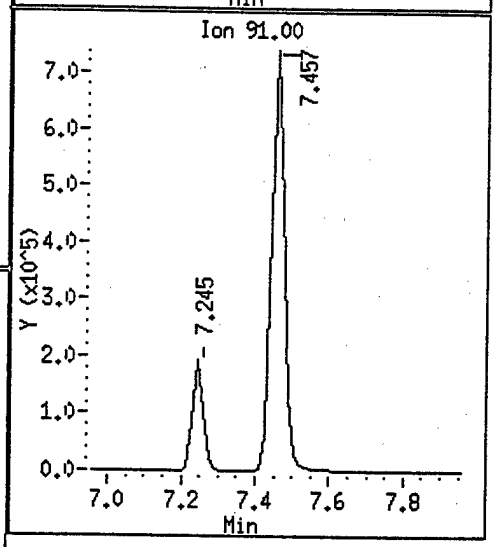
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

54 m,p-Xylene(s)









Data File: /chem/k.i/k950515.b/k135s06.d

Date : 15-MAY-95 20:35

Client ID:

Instrument: k.i

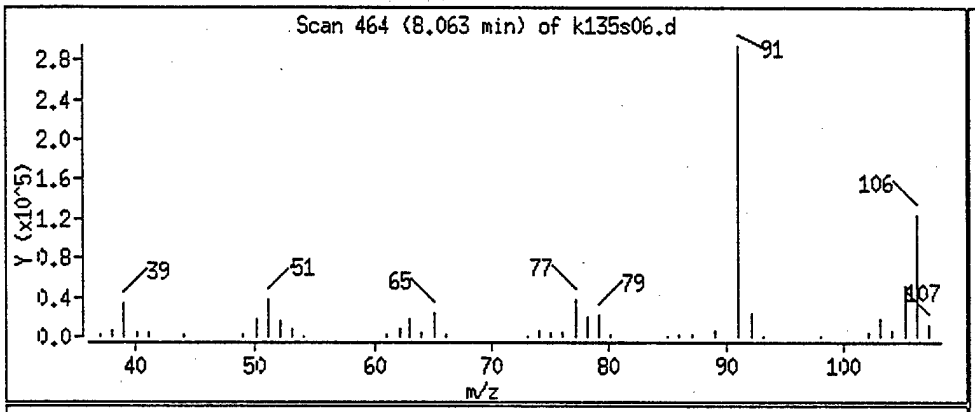
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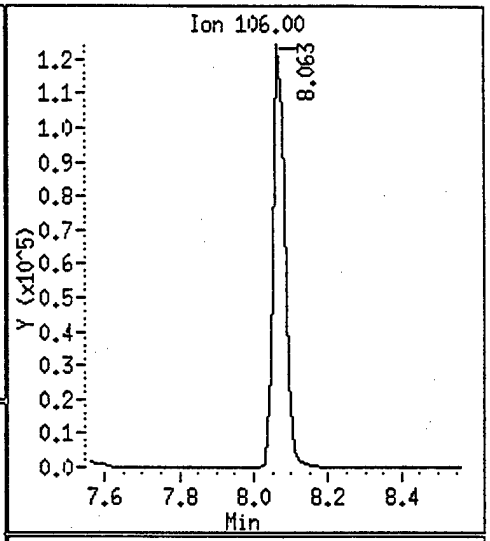
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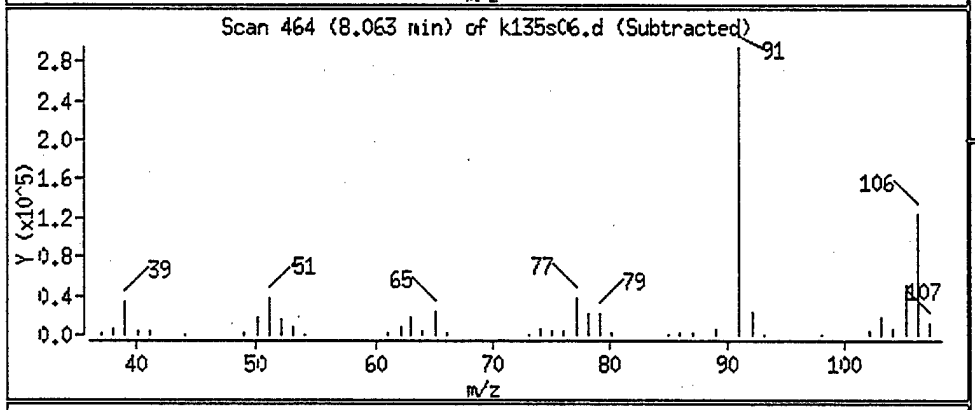
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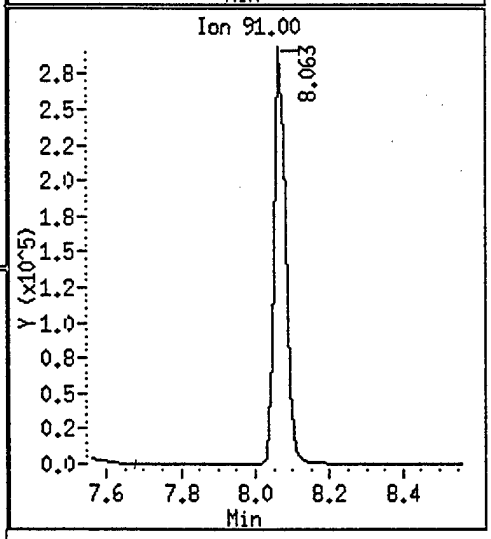
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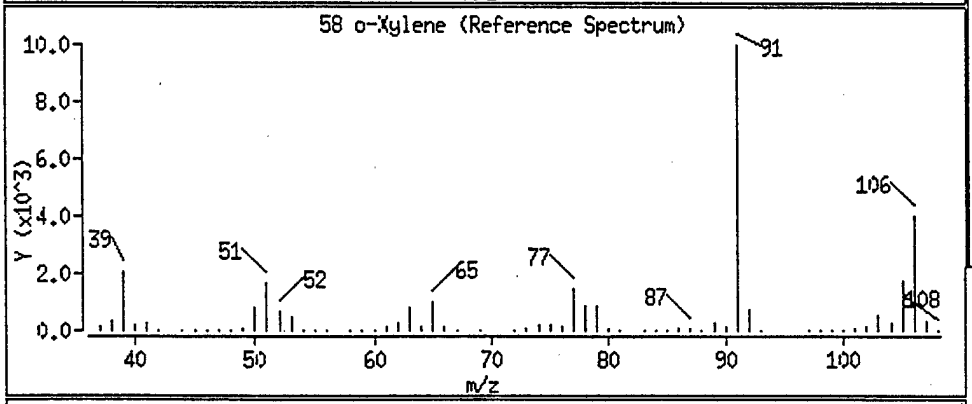
58 o-Xylene

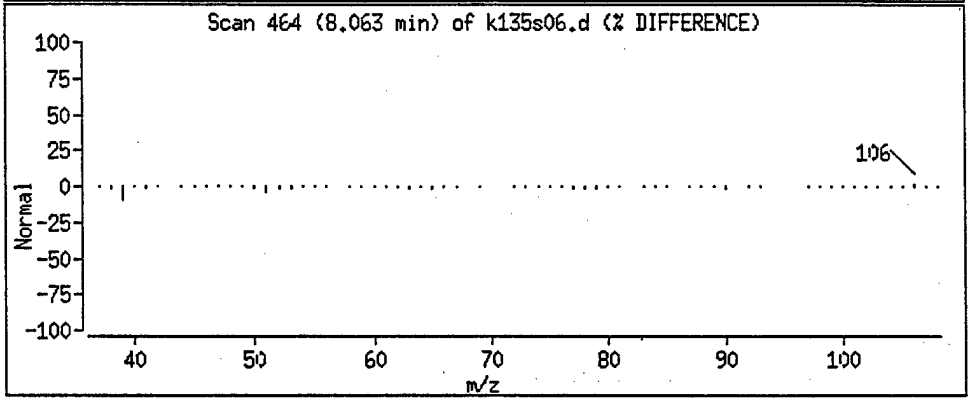












SPL Houston Labs

ata file : /chem/j.i/j950518.b/j138s05.d
ab Smp Id: 9505512-03B
nj Date : 18-MAY-1995 16:47
perator : PC PC
mp Info : 9505512-03B-8270S/1X
isc Info : E135S1/J135B02/J138CC1
omment :
ethod : /chem/j.i/j950518.b/jclps.m
eth Date : 18-May-1995 10:36 patti
l Date : 18-MAY-1995 09:08
s bottle: 10
l Factor: 1.000
tegrator: HP RTE
rget Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j138cc1.d

Compound Sublist: 8270.sub

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
11 1,4-Dichlorobenzene-d4	152.00	8.059	8.063	(1.000)	351605	40	
32 Naphthalene-d8	136.00	10.861	10.857	(1.000)	1227807	40	
48 Acenaphthene-d10	164.00	15.133	15.126	(1.000)	663031	40	
65 Phenanthrene-d10	188.00	18.765	18.743	(1.000)	927933	40	
76 Chrysene-d12	240.00	25.469	25.440	(1.000)	743108	40	
83 Perylene-d12	264.00	30.019	29.980	(1.000)	408347	40	
23 Nitrobenzene-d5	82.00	9.281	9.275	(0.855)	1002017	87	1400
41 2-Fluorobiphenyl	172.00	13.507	13.498	(0.893)	1991948	92	1500
72 Terphenyl-d14	244.00	22.740	22.714	(0.893)	1637957	93	1500
4 Phenol-d5	99.00	7.459	7.463	(0.925)	1802843	140	2400
3 2-Fluorophenol	112.00	5.846	5.854	(0.725)	1377414	190	3200 (QR)
51 2,4,6-Tribromophenol	329.70	17.154	17.115	(0.914)	251872	89	1500

Flag Legend

- Qualifier signal failed the ratio test.
- Spike/Surrogate failed recovery limits.

)ata File: /chem/j.i/j950518.b/j138s05.d
:e[ort Date: 19-May-1995 10:22

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

n[trument ID: j.i
a[File ID: j138s05.d
:ab Smp Id: 9505512-03B
n[lysis Type: SV
i[nt Type: ISTD
)erator: PC
fe[hod File: /chem/j.i/j950518.b/jclps.m
'i[Info: E135S1/J135B02/J138CC1

Calibration Date: 05/18/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
[illegible] 1,4-Dichlorobenzene-	289441	144720	578882	351605	21.48
[illegible] Naphthalene-d8	1091185	545592	2182370	1227807	12.52
48 Acenaphthene-d10	650439	325220	1300878	663031	1.94
65 Phenanthrene-d10	940843	470422	1881686	927933	-1.37
[illegible] Chrysene-d12	819112	409556	1638224	743108	-9.28
[illegible] Perylene-d12	486922	243461	973844	408347	-16.14

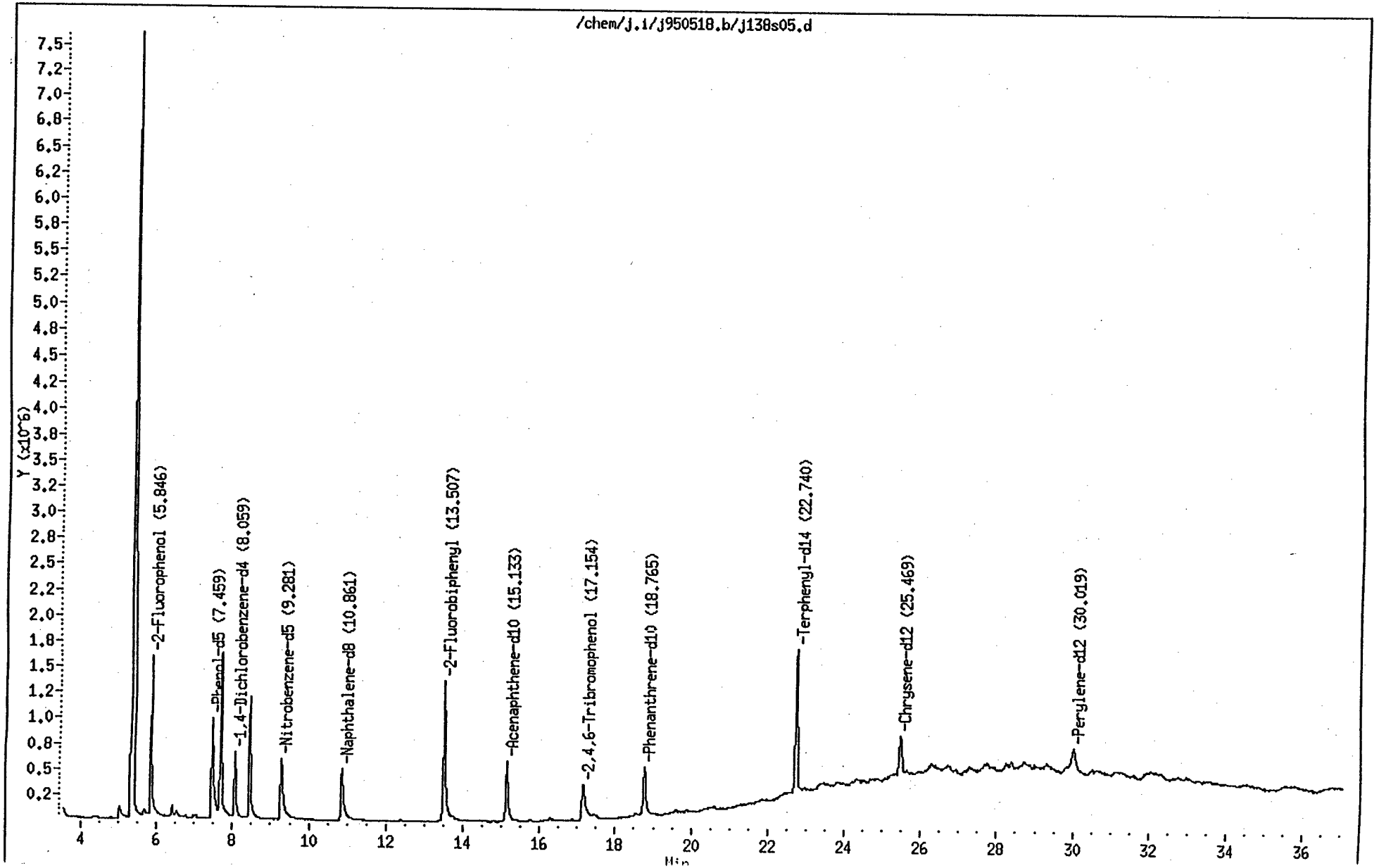
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.06	7.56	8.56	8.06	-0.05
[illegible] Naphthalene-d8	10.86	10.36	11.36	10.86	0.03
[illegible] Acenaphthene-d10	15.13	14.63	15.63	15.13	0.05
65 Phenanthrene-d10	18.74	18.24	19.24	18.77	0.12
[illegible] Chrysene-d12	25.44	24.94	25.94	25.47	0.11
[illegible] Perylene-d12	29.98	29.48	30.48	30.02	0.13

'EA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
' LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138s05.d
Date : 18-MAY-1995 16:47
Client ID:
Sample Info: 9505512-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	11	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	15	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	20	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	4.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
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Certificate of Analysis No. H9-9505512-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

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Certificate of Analysis No. H9-9505512-04

Operational Tech

SAMPLE ID: 025-010BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	90	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW
DATE/TIME: 05/15/95 21:02:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit
ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-04

Operational Tech

SAMPLE ID: 025-010BH 2-2.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	420	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	360	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-04

Operational Tech

SAMPLE ID: 025-010BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	83	23	120
2-Fluorobiphenyl	1600 ug/Kg	91	30	115
Terphenyl-d14	1600 ug/Kg	97	18	137
Phenol-d5	2500 ug/Kg	93	24	113
2-Fluorophenol	2500 ug/Kg	121	25	121
2,4,6-Tribromophenol	2500 ug/Kg	48	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 17:32:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s07.d
Lab Smp Id: 9505512-04A-8240S/1X
Inj Date : 15-MAY-1995 21:02
Operator : HLW Inst ID: k.i
Smp Info : 9505512-04A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 22
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.121	2.108	(1.000)	65336	250	
* 31 1,4-Difluorobenzene	114.00	2.788	2.790	(1.000)	390670	250	
* 51 Chlorobenzene-d5	117.00	6.758	6.744	(1.000)	295103	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.364	2.365	(1.114)	27270	230	45
$ 40 Toluene-d8	98.00	4.531	4.532	(0.670)	430323	250	50
$ 61 Bromofluorobenzene	95.00	8.864	8.851	(1.312)	162741	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s07..d
Lab Smp Id: 9505512-04A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

		AREA LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	65336	0.18
31 1,4-Difluorobenzene	411543	205772	823086	390670	-5.07
51 Chlorobenzene-d5	312868	156434	625736	295103	-5.68

		RT LIMIT			
COMPOUND	STANDARD	LOWER	UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.64
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.06
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.20

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138s06.d

Date : 18-MAY-1995 17:32

Client ID:

Instrument: j.i

Sample Info: 9505512-04B-8270S/1X

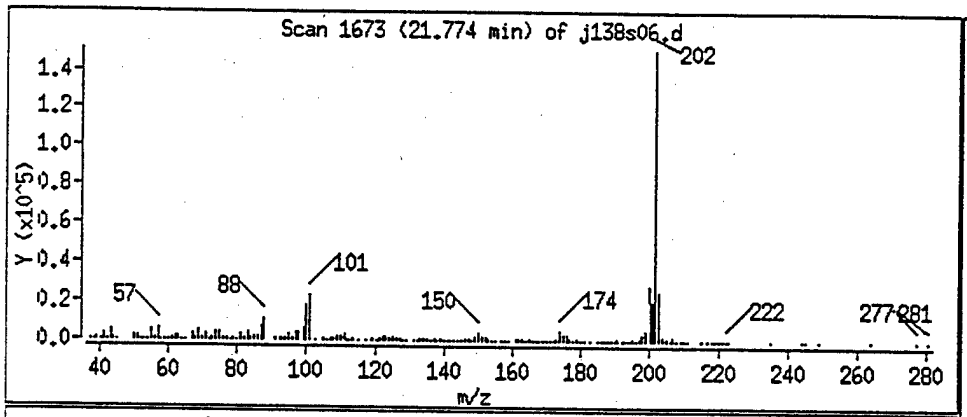
Volume Injected (uL): 2.0

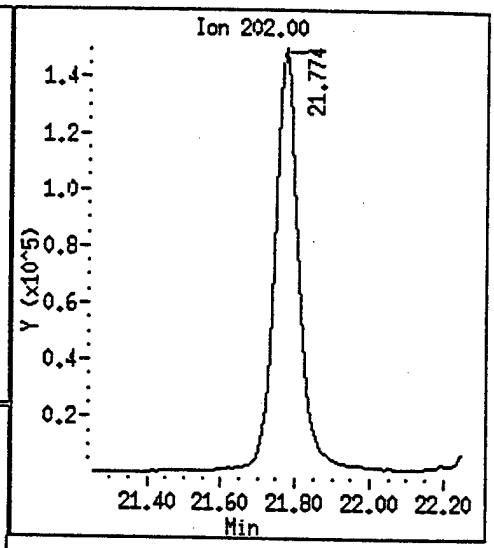
Operator: PC

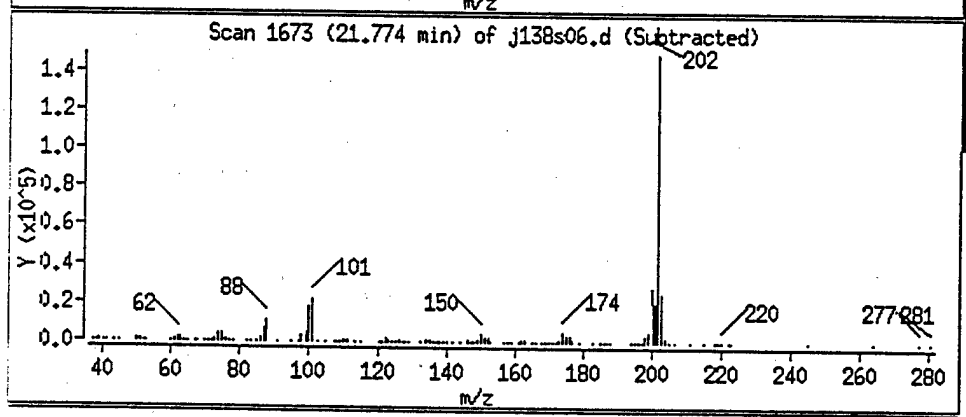
Column phase:

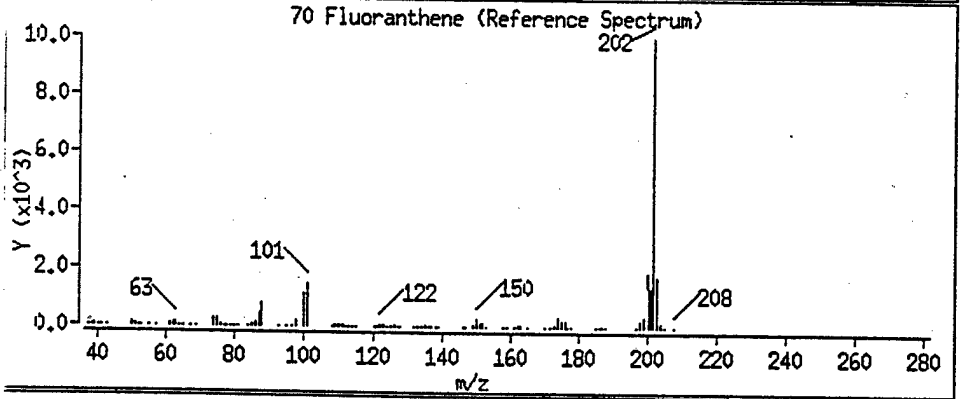
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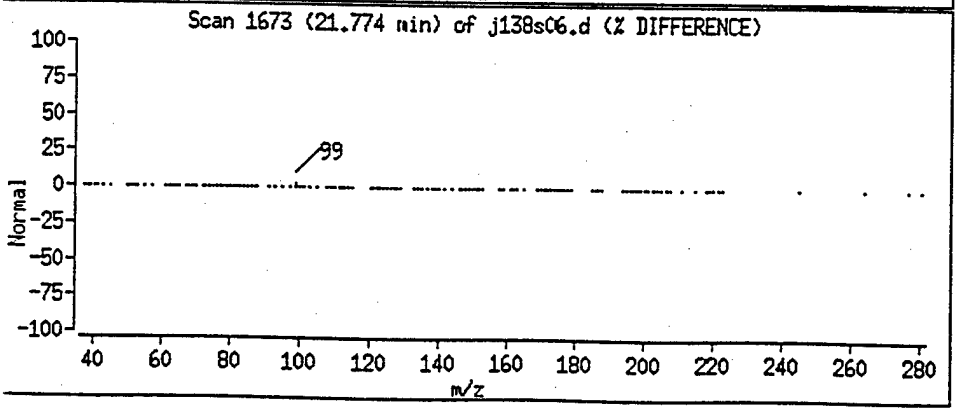
70 Fluoranthene





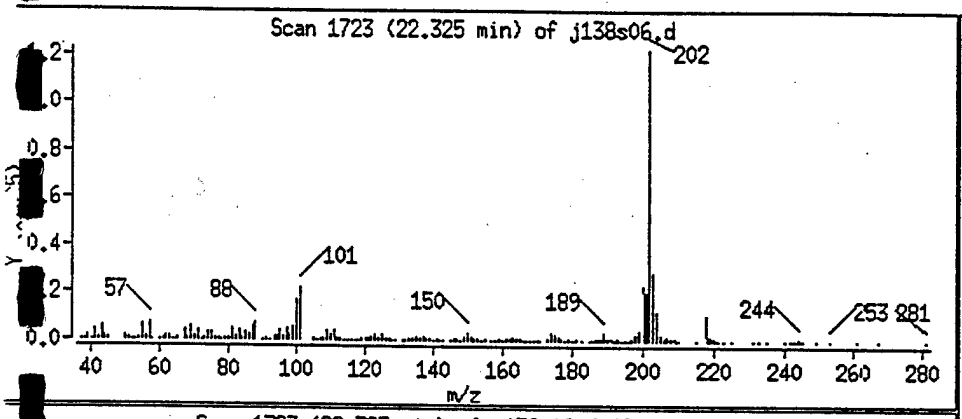


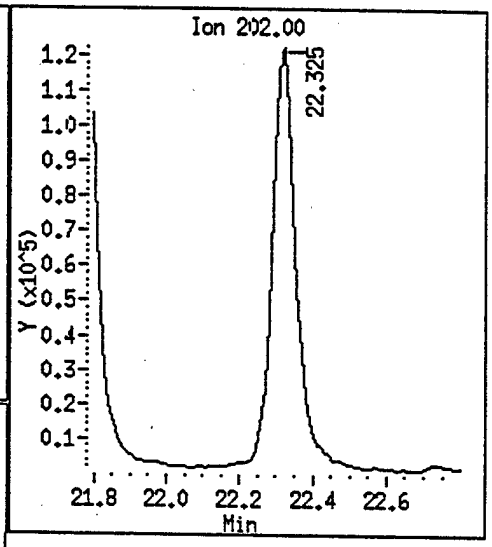


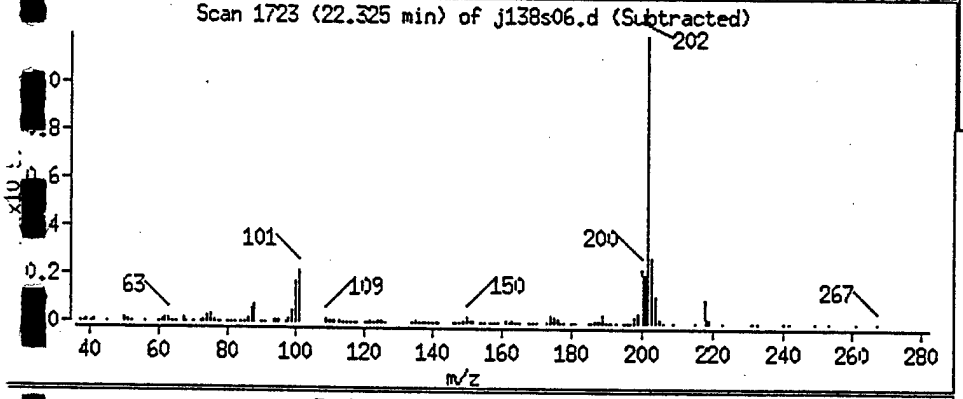


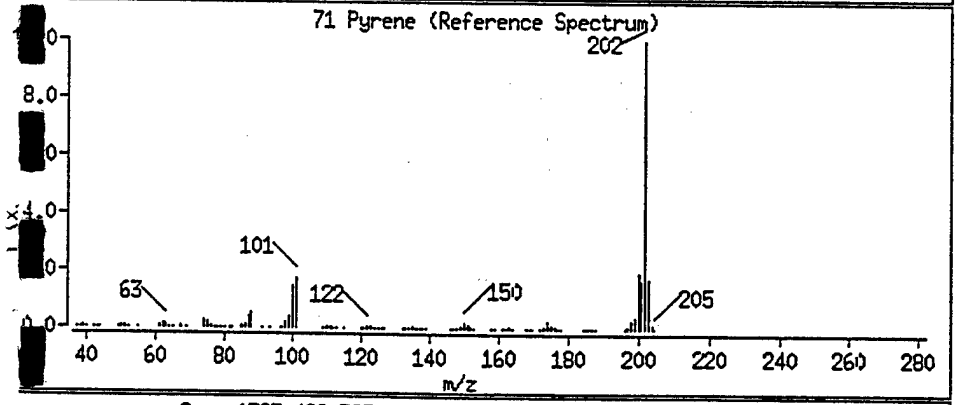
Data File: /chem/j.i/j950518.b/j138s06.d
Date : 18-MAY-1995 17:32
Client ID:
Instrument: j.i
Sample Info: 9505512-04B-8270S/1X
Volume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 0.25

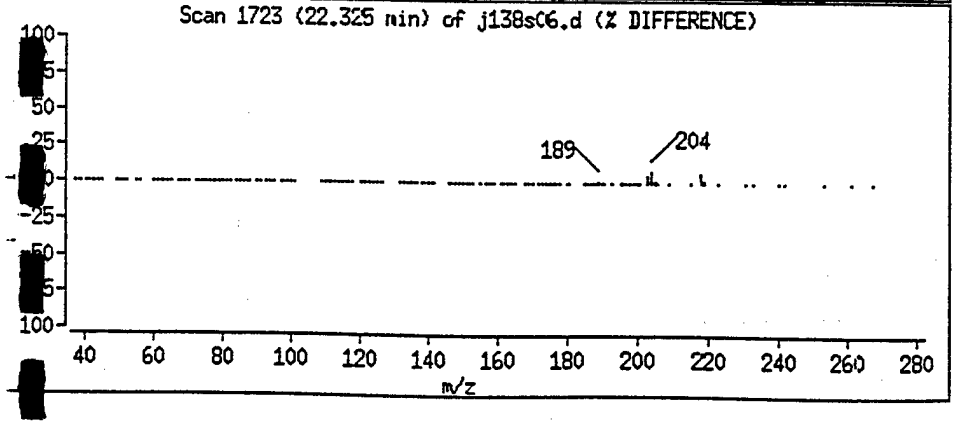
1 Pyrene











HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 6-6.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	11	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	19	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 6-6.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	25	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	3.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/9

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 6-6.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:30:0
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	7	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	17	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	5	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech

SAMPLE ID: 025-010BH 6-6.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	94	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 21:28:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/9

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-010BH 6-6.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:30:0
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech

SAMPLE ID: 025-010BH 6-6.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-05

Operational Tech

SAMPLE ID: 025-010BH 6-6.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	88	23	120
2-Fluorobiphenyl	1600 ug/Kg	91	30	115
Terphenyl-d14	1600 ug/Kg	94	18	137
Phenol-d5	2500 ug/Kg	90	24	113
2-Fluorophenol	2500 ug/Kg	122 «	25	121
2,4,6-Tribromophenol	2500 ug/Kg	62	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 18:17:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« - Recovery outside of control limits.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s08.d
Lab Smp Id: 9505512-05A-8240S/1X
Inj Date : 15-MAY-1995 21:28
Operator : HLW Inst ID: k.i
Smp Info : 9505512-05A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 23
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	43 Toluene	92.00	4.638	4.623	(0.686)	113802	84	17
M	2 Xylene (Total)	106.00				22446	25	5
	53 Ethylbenzene	106.00	7.244	7.244	(1.072)	26401	37	7
	54 m,p-Xylene(s)	106.00	7.456	7.457	(1.103)	22446	25	5
*	20 Bromochloromethane	128.00	2.123	2.108	(1.000)	65453	250	
*	31 1,4-Difluorobenzene	114.00	2.789	2.790	(1.000)	400947	250	
*	51 Chlorobenzene-d5	117.00	6.759	6.744	(1.000)	296906	250	
$	23 1,2-Dichloroethane-d4	102.00	2.365	2.365	(1.114)	28169	230	47
$	40 Toluene-d8	98.00	4.532	4.532	(0.670)	441568	260	51
$	61 Bromofluorobenzene	95.00	8.865	8.851	(1.312)	164562	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s08.d
Lab Smp Id: 9505512-05A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	65453	0.36
31 1,4-Difluorobenzene	411543	205772	823086	400947	-2.57
51 Chlorobenzene-d5	312868	156434	625736	296906	-5.10

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.71
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.01
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.22

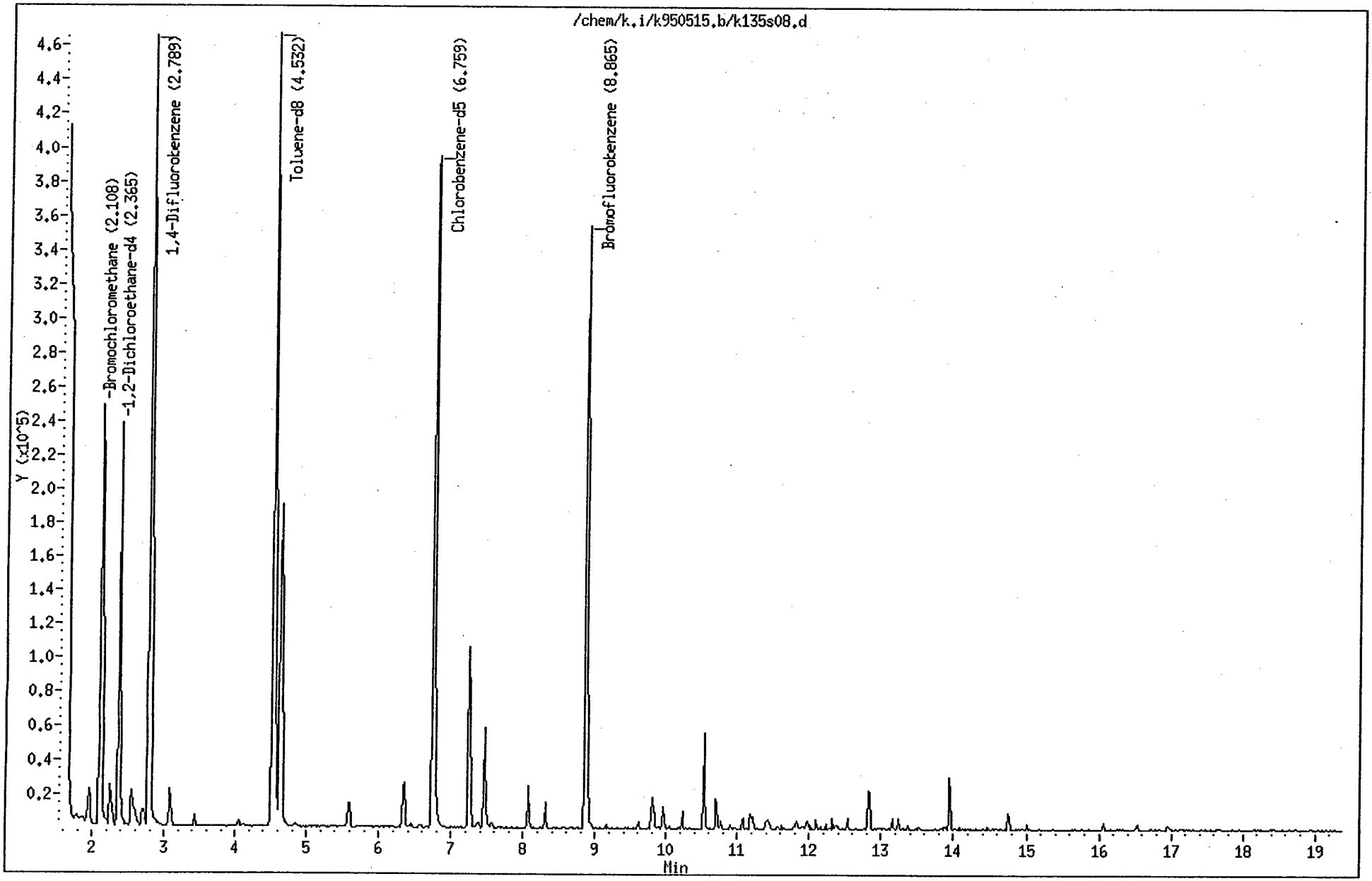
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AREA LOWER LIMIT = - 50% of internal standard area.
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RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s08.d
Date : 15-MAY-95 21:28
Client ID:
Sample Info: 9505512-05A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



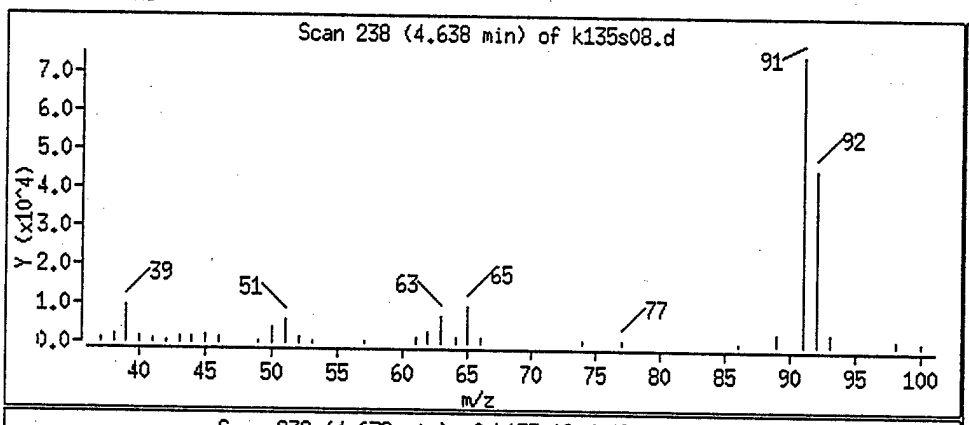
Data File: /chem/k.i/k950515.b/k135s08.d
Date : 15-MAY-95 21:28
Client ID:
Sample Info: 9505512-05A-8240S/1X

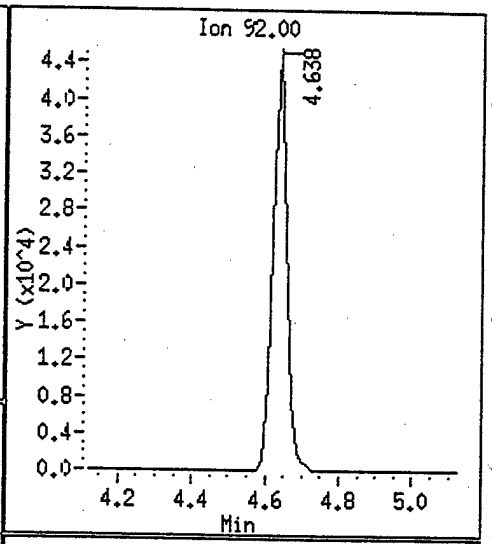
Instrument: k.i

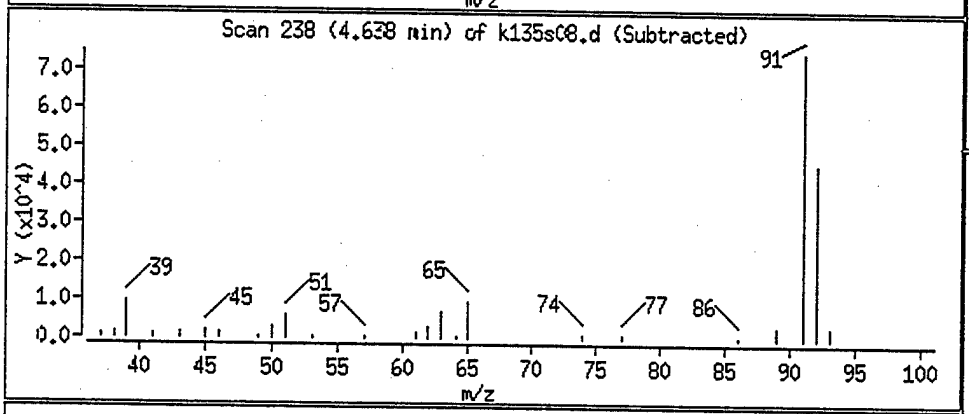
Operator: HLW
Column diameter: 0.25

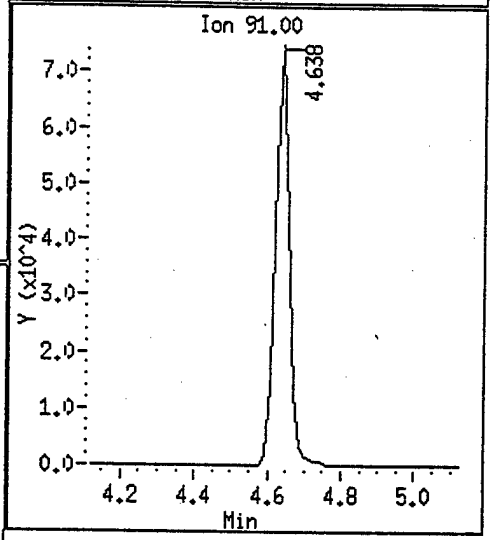
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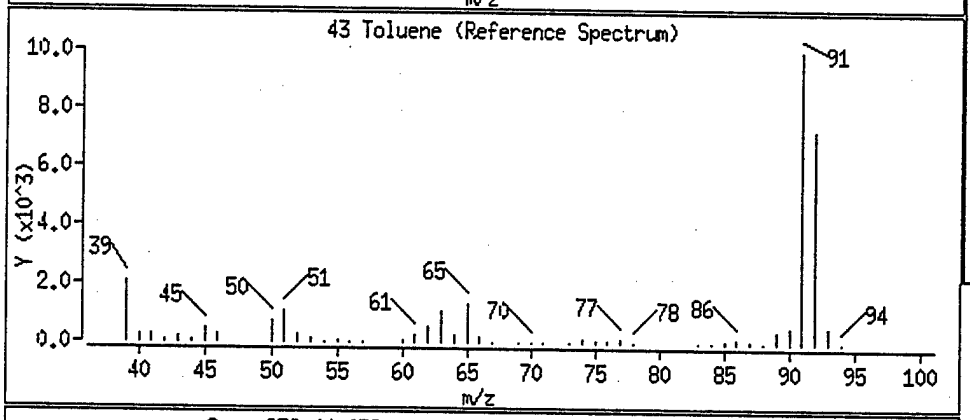
43 Toluene

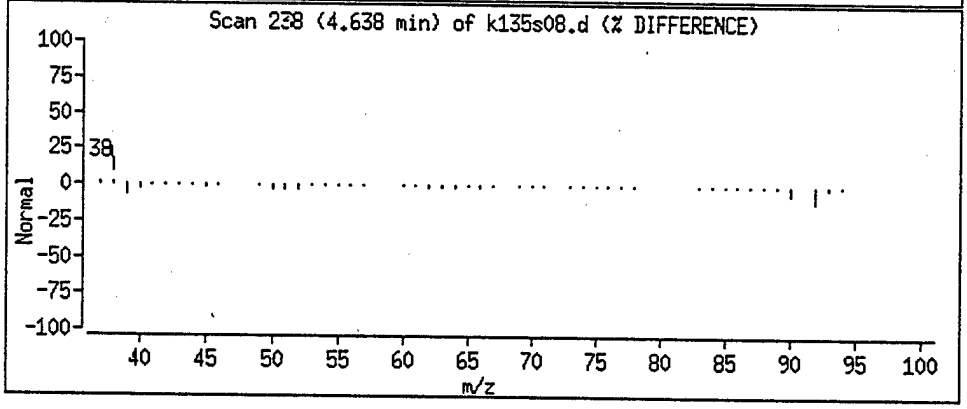








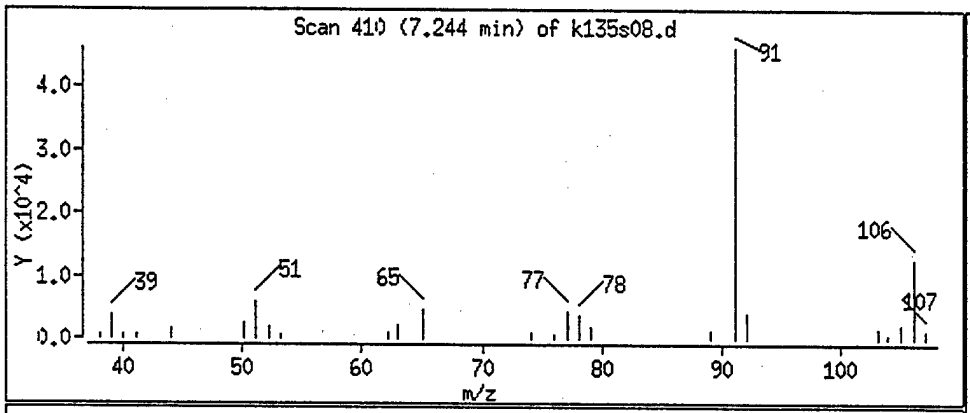


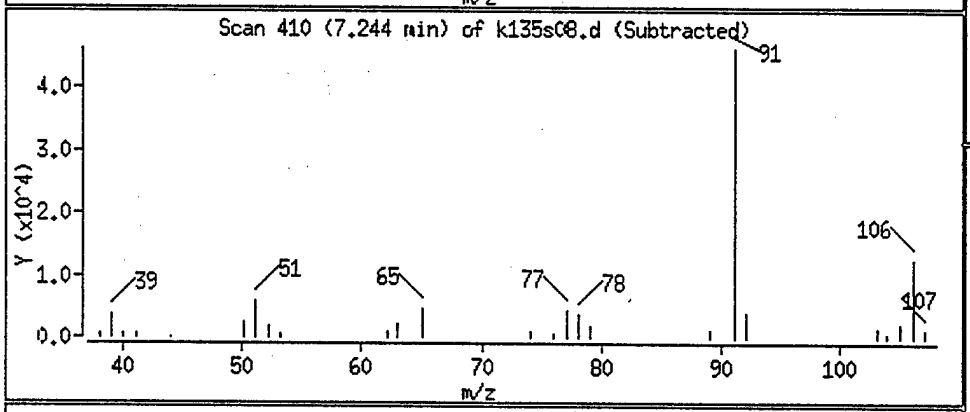


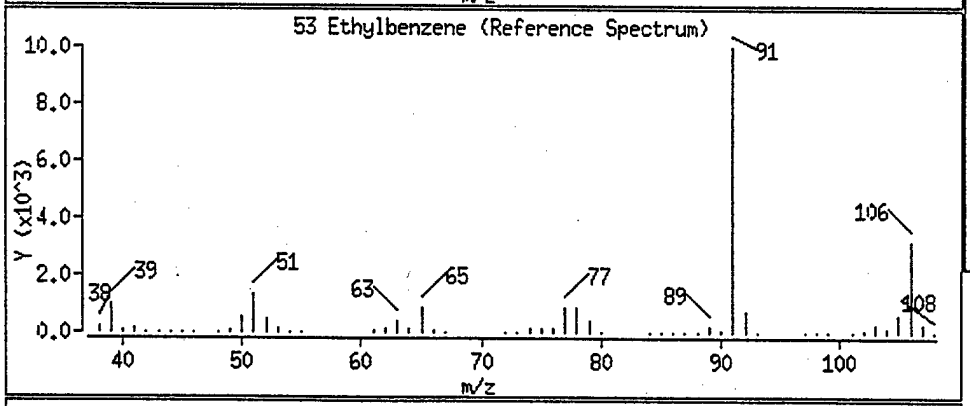
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Date : 15-MAY-95 21:28
Client ID:
Sample Info: 9505512-05A-8240S/1X

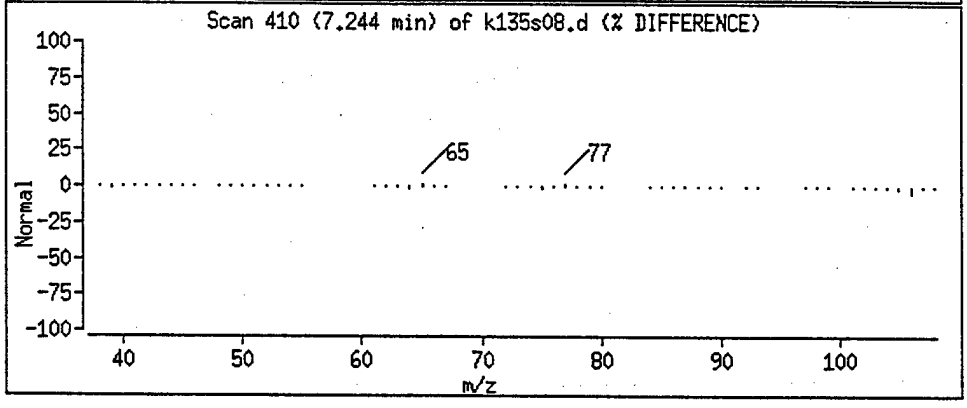
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

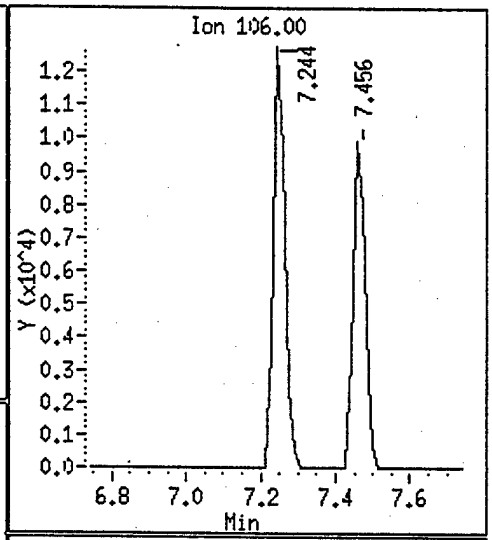
53 Ethylbenzene

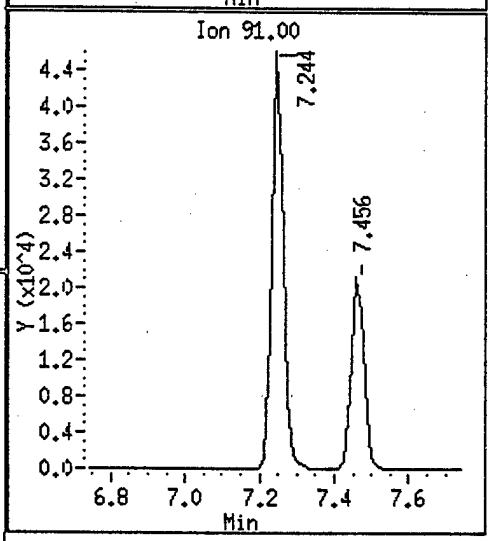










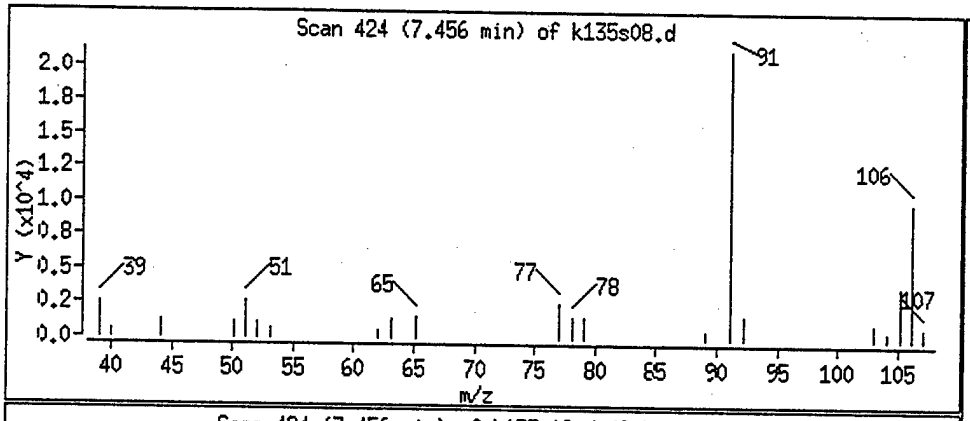


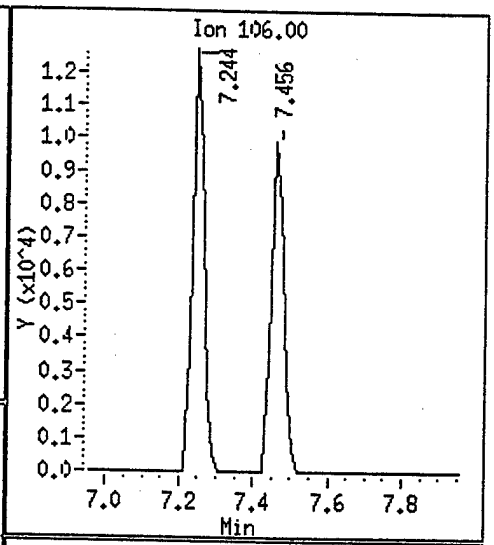
Data File: /chem/k.i/k950515.b/k135s08.d
Date : 15-MAY-95 21:28
Client ID:
Sample Info: 9505512-05A-8240S/1X

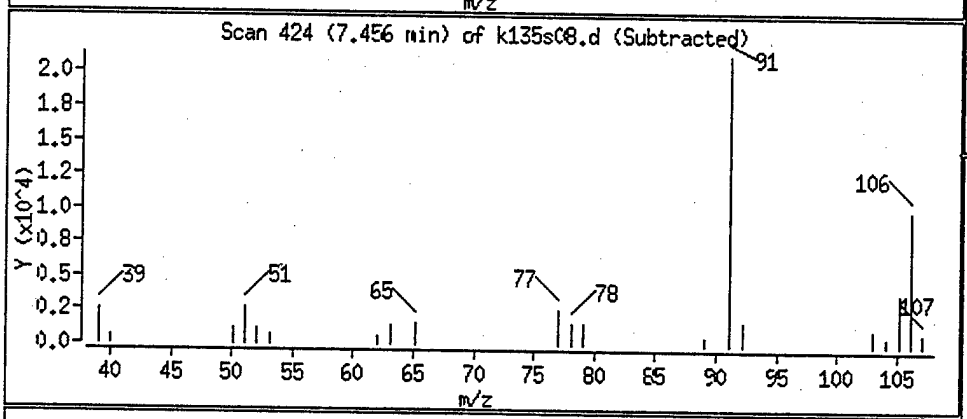
Instrument: k.i

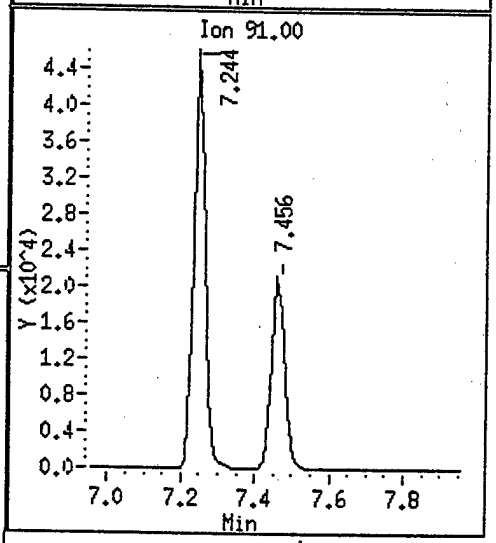
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

54 m,p-Xylene(s)









SPL Houston Labs

ta file : /chem/j.i/j950518.b/j138s07.d
ab Smp Id: 9505512-05B
n Date : 18-MAY-1995 18:17
rator : PC pc Inst ID: j.i
p Info : 9505512-05B-8270S/1X
c Info : E135S1/J135B02/J138CC1
ment :
thod : /chem/j.i/j950518.b/jclps.m
eth Date : 18-May-1995 10:36 patti Quant Type: ISTD
a Date : 18-MAY-1995 09:08 Cal File: j138cc1.d
S bottle: 12
l Factor: 1.000
n egrator: HP RTE Compound Sublist: 8270.sub
get Version: 3.10

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
1 1,4-Dichlorobenzene-d4	152.00	8.058	8.063	(1.000)	349696	40	
32 Naphthalene-d8	136.00	10.858	10.857	(1.000)	1243408	40	
4 Acenaphthene-d10	164.00	15.127	15.126	(1.000)	686188	40	
6 Phenanthrene-d10	188.00	18.767	18.743	(1.000)	1006475	40	
76 Chrysene-d12	240.00	25.451	25.440	(1.000)	783624	40	
8 Perylene-d12	264.00	29.994	29.980	(1.000)	446907	40	
2 Nitrobenzene-d5	82.00	9.279	9.275	(0.855)	987896	85	1400
41 2-Fluorobiphenyl	172.00	13.503	13.498	(0.893)	1942868	87	1400
72 Terphenyl-d14	244.00	22.735	22.714	(0.893)	1681758	90	1500
Phenol-d5	99.00	7.457	7.463	(0.925)	1675035	130	2200
2-Fluorophenol	112.00	5.845	5.854	(0.725)	1305497	180	3000 (QR)
61 2,4,6-Tribromophenol	329.70	17.141	17.115	(0.913)	287025	93	1600

Flag Legend

Qualifier signal failed the ratio test.
Spike/Surrogate failed recovery limits.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j138s07.d
Lab Smp Id: 9505512-05B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950518.b/jclps.m
Misc Info: E135S1/J135B02/J138CC1

Calibration Date: 05/18/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	289441	144720	578882	349696	20.82
32 Naphthalene-d8	1091185	545592	2182370	1243408	13.95
48 Acenaphthene-d10	650439	325220	1300878	686188	5.50
65 Phenanthrene-d10	940843	470422	1881686	1006475	6.98
76 Chrysene-d12	819112	409556	1638224	783624	-4.33
83 Perylene-d12	486922	243461	973844	446907	-8.22

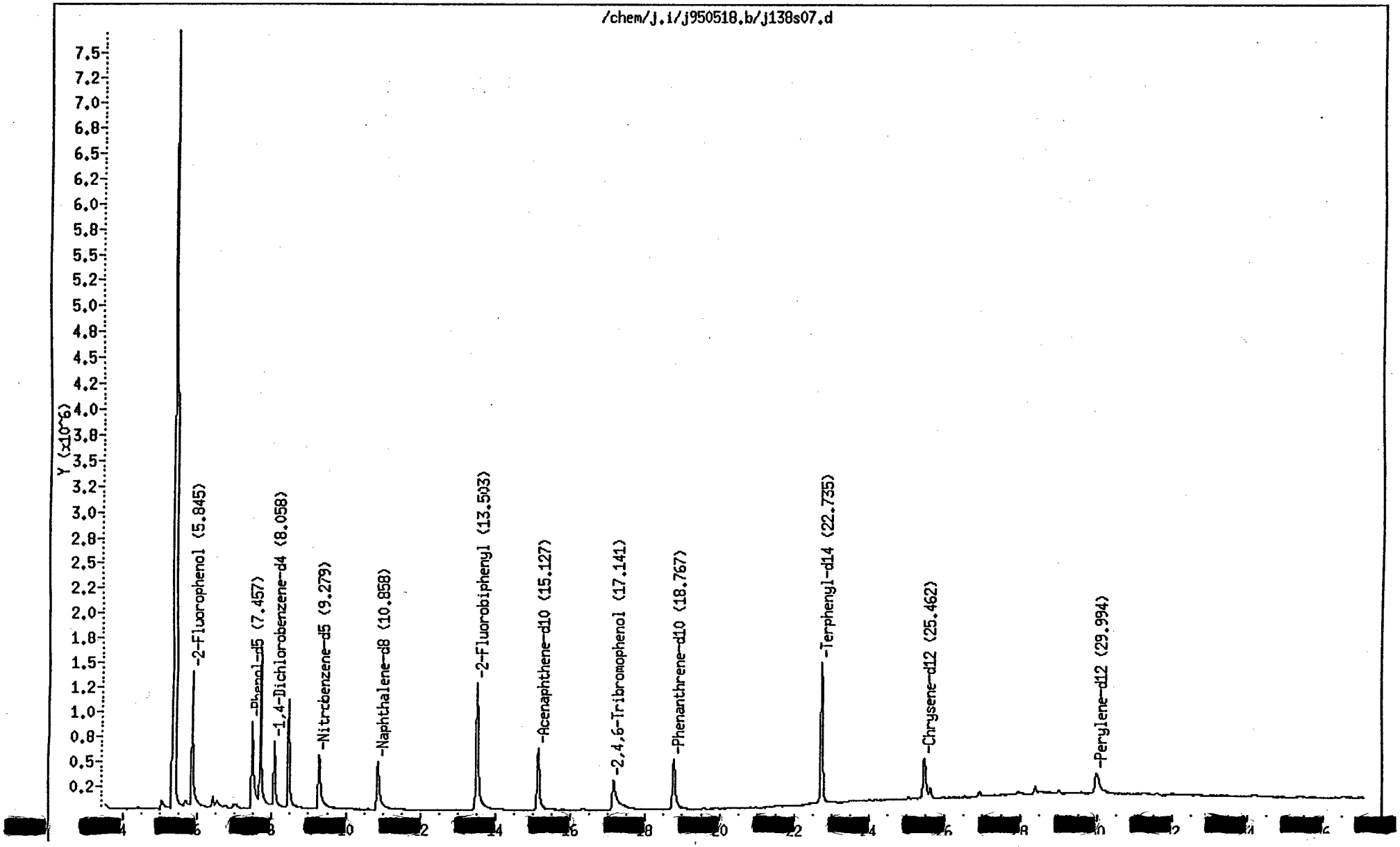
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.06	7.56	8.56	8.06	-0.07
32 Naphthalene-d8	10.86	10.36	11.36	10.86	0.01
48 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
65 Phenanthrene-d10	18.74	18.24	19.24	18.77	0.12
76 Chrysene-d12	25.44	24.94	25.94	25.45	0.04
83 Perylene-d12	29.98	29.48	30.48	29.99	0.05

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138s07.d
Date : 18-MAY-1995 18:17
Client ID:
Sample Info: 9505512-05B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:50:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	11	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	19	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:50:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	21	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	5.2	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:50:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil
(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech

SAMPLE ID: 025-011BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	94	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	104	59	113

ANALYZED BY: HLW DATE/TIME: 05/17/95 19:35:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:50:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech

SAMPLE ID: 025-011BH 2-2.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-06

Operational Tech

SAMPLE ID: 025-011BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	90	23	120
2-Fluorobiphenyl	1600 ug/Kg	92	30	115
Terphenyl-d14	1600 ug/Kg	100	18	137
Phenol-d5	2500 ug/Kg	96	24	113
2-Fluorophenol	2500 ug/Kg	130 «	25	121
2,4,6-Tribromophenol	2500 ug/Kg	44	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 19:02:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
« - Recovery outside of control limits.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

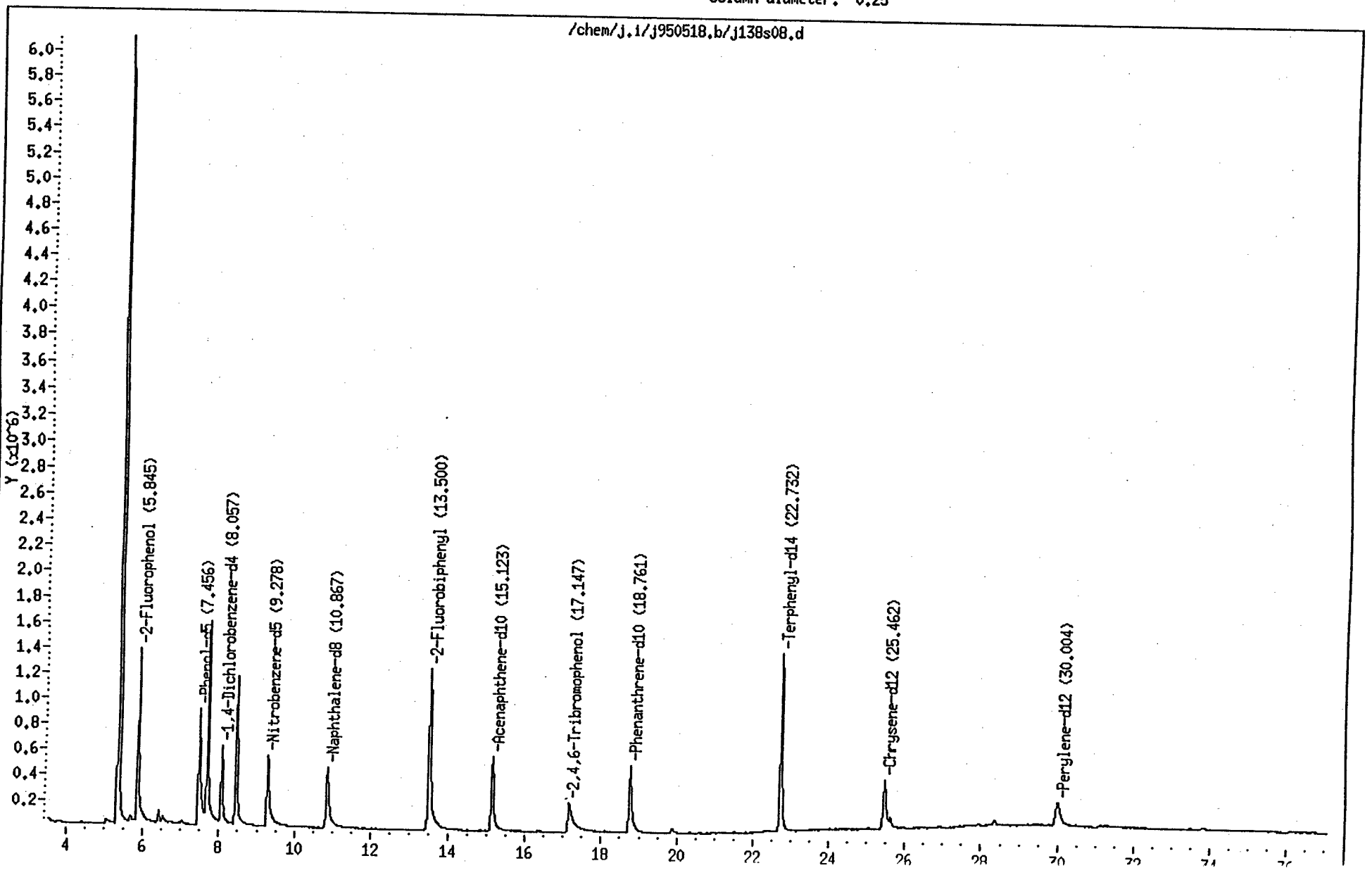
Data file : /chem/k.i/k950517.b/k137s11.d
Lab Smp Id: 9505512-06A-8240S/1X
Inj Date : 17-MAY-95 19:35
Operator : HLW
Inst ID: k.i
Smp Info : 9505512-06A-8240S/1X
Misc Info : K137S1/K137B02/K137CS2
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 17-May-1995 14:26 hillery
Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22
Cal File: k137cs1.d
Als bottle: 25
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10
Compound Sublist: normal.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.136	2.119	(1.000)	66006	250	
* 31 1,4-Difluorobenzene	114.00	2.803	2.801	(1.000)	383748	250	
* 51 Chlorobenzene-d5	117.00	6.773	6.771	(1.000)	289980	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.379	2.377	(1.113)	27921	230	47
$ 40 Toluene-d8	98.00	4.561	4.543	(0.673)	438698	250	50
$ 61 Bromofluorobenzene	95.00	8.879	8.877	(1.311)	174028	260	52

Data File: /chem/j.i/j950518.b/j138s08.d
Date : 18-MAY-1995 19:02
Client ID:
Sample Info: 9505512-06B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	9	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	17	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	18	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	6.3	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	6	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech

SAMPLE ID: 025-011BH 6.5-7

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	98	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 22:22:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-011BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 13:00:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	3300	ug/Kg
Acenaphthylene	ND	3300	ug/Kg
Aniline	ND	3300	ug/Kg
Anthracene	ND	3300	ug/Kg
Benzo(a)Anthracene	ND	3300	ug/Kg
Benzo(b)Fluoranthene	ND	3300	ug/Kg
Benzo(k)Fluoranthene	ND	3300	ug/Kg
Benzo(a)Pyrene	ND	3300	ug/Kg
Benzoic Acid	ND	16000	ug/Kg
Benzo(g,h,i)Perylene	ND	3300	ug/Kg
Benzyl alcohol	ND	3300	ug/Kg
4-Bromophenylphenyl ether	ND	3300	ug/Kg
Butylbenzylphthalate	ND	3300	ug/Kg
di-n-Butyl phthalate	ND	3300	ug/Kg
Carbazole	ND	3300	ug/Kg
4-Chloroaniline	ND	3300	ug/Kg
bis(2-Chloroethoxy)Methane	ND	3300	ug/Kg
bis(2-Chloroethyl)Ether	ND	3300	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	3300	ug/Kg
4-Chloro-3-Methylphenol	ND	3300	ug/Kg
2-Chloronaphthalene	ND	3300	ug/Kg
2-Chlorophenol	ND	3300	ug/Kg
4-Chlorophenylphenyl ether	ND	3300	ug/Kg
Chrysene	ND	3300	ug/Kg
Dibenz(a,h)Anthracene	ND	3300	ug/Kg
Dibenzofuran	ND	3300	ug/Kg
1,2-Dichlorobenzene	ND	3300	ug/Kg
1,3-Dichlorobenzene	ND	3300	ug/Kg
1,4-Dichlorobenzene	ND	3300	ug/Kg
3,3'-Dichlorobenzidine	ND	3300	ug/Kg
2,4-Dichlorophenol	ND	3300	ug/Kg
Diethylphthalate	ND	3300	ug/Kg
2,4-Dimethylphenol	ND	3300	ug/Kg
Dimethyl Phthalate	ND	3300	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	8000	ug/Kg
2,4-Dinitrophenol	ND	8000	ug/Kg
2,4-Dinitrotoluene	ND	3300	ug/Kg
2,6-Dinitrotoluene	ND	3300	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech

SAMPLE ID: 025-011BH 6.5-7

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	3300	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	3300	ug/Kg
Fluoranthene	ND	3300	ug/Kg
Fluorene	ND	3300	ug/Kg
Hexachlorobenzene	ND	3300	ug/Kg
Hexachlorobutadiene	ND	3300	ug/Kg
Hexachloroethane	ND	3300	ug/Kg
Hexachlorocyclopentadiene	ND	3300	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	3300	ug/Kg
Isophorone	ND	3300	ug/Kg
2-Methylnaphthalene	ND	3300	ug/Kg
2-Methylphenol	ND	3300	ug/Kg
4-Methylphenol	ND	3300	ug/Kg
Naphthalene	ND	3300	ug/Kg
2-Nitroaniline	ND	3300	ug/Kg
3-Nitroaniline	ND	8000	ug/Kg
4-Nitroaniline	ND	8000	ug/Kg
Nitrobenzene	ND	8000	ug/Kg
2-Nitrophenol	ND	3300	ug/Kg
4-Nitrophenol	ND	3300	ug/Kg
N-Nitrosodiphenylamine (1)	ND	8000	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	3300	ug/Kg
Di-n-Octyl Phthalate	ND	3300	ug/Kg
Pentachlorophenol	ND	3300	ug/Kg
Phenanthrene	ND	8000	ug/Kg
Phenol	ND	3300	ug/Kg
Pyrene	ND	3300	ug/Kg
Pyridine	ND	3300	ug/Kg
1,2,4-Trichlorobenzene	ND	3300	ug/Kg
2,4,5-Trichlorophenol	ND	3300	ug/Kg
2,4,6-Trichlorophenol	ND	8000	ug/Kg
	ND	3300	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-07

Operational Tech

SAMPLE ID: 025-011BH 6.5-7

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	D	23	120
2-Fluorobiphenyl	1600 ug/Kg	D	30	115
Terphenyl-d14	1600 ug/Kg	D	18	137
Phenol-d5	2500 ug/Kg	D	24	113
2-Fluorophenol	2500 ug/Kg	D	25	121
2,4,6-Tribromophenol	2500 ug/Kg	D	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 19:48:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed
D - Diluted, control limits not applicable.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s10.d
Lab Smp Id: 9505512-07A-8240S/1X
Inj Date : 15-MAY-1995 22:22
Operator : HLW Inst ID: k.i
Smp Info : 9505512-07A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 25
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	8 Acetone	58.00	1.517	1.517	(0.714)	16554	270	53 (a)
	11 Methylene Chloride	84.00	1.668	1.668	(0.786)	7014	14	3 (a)
	17 2-Butanone	43.00	1.956	1.956	(0.921)	33378	76	15 (a)
M	2 Xylene (Total)	106.00				26801	32	6
	53 Ethylbenzene	106.00	7.244	7.244	(1.072)	8785	13	2 (a)
	54 m,p-Xylene(s)	106.00	7.456	7.457	(1.103)	26801	32	6
*	20 Bromochloromethane	128.00	2.123	2.108	(1.000)	62670	250	
*	31 1,4-Difluorobenzene	114.00	2.789	2.790	(1.000)	382462	250	
*	51 Chlorobenzene-d5	117.00	6.759	6.744	(1.000)	280682	250	
$	23 1,2-Dichloroethane-d4	102.00	2.365	2.365	(1.114)	26561	230	46
$	40 Toluene-d8	98.00	4.532	4.532	(0.670)	415894	260	51
$	61 Bromofluorobenzene	95.00	8.866	8.851	(1.312)	156950	240	49

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s10.d
Lab Smp Id: 9505512-07A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	62670	-3.91
31 1,4-Difluorobenzene	411543	205772	823086	382462	-7.07
51 Chlorobenzene-d5	312868	156434	625736	280682	-10.29

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.71
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.01
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.22

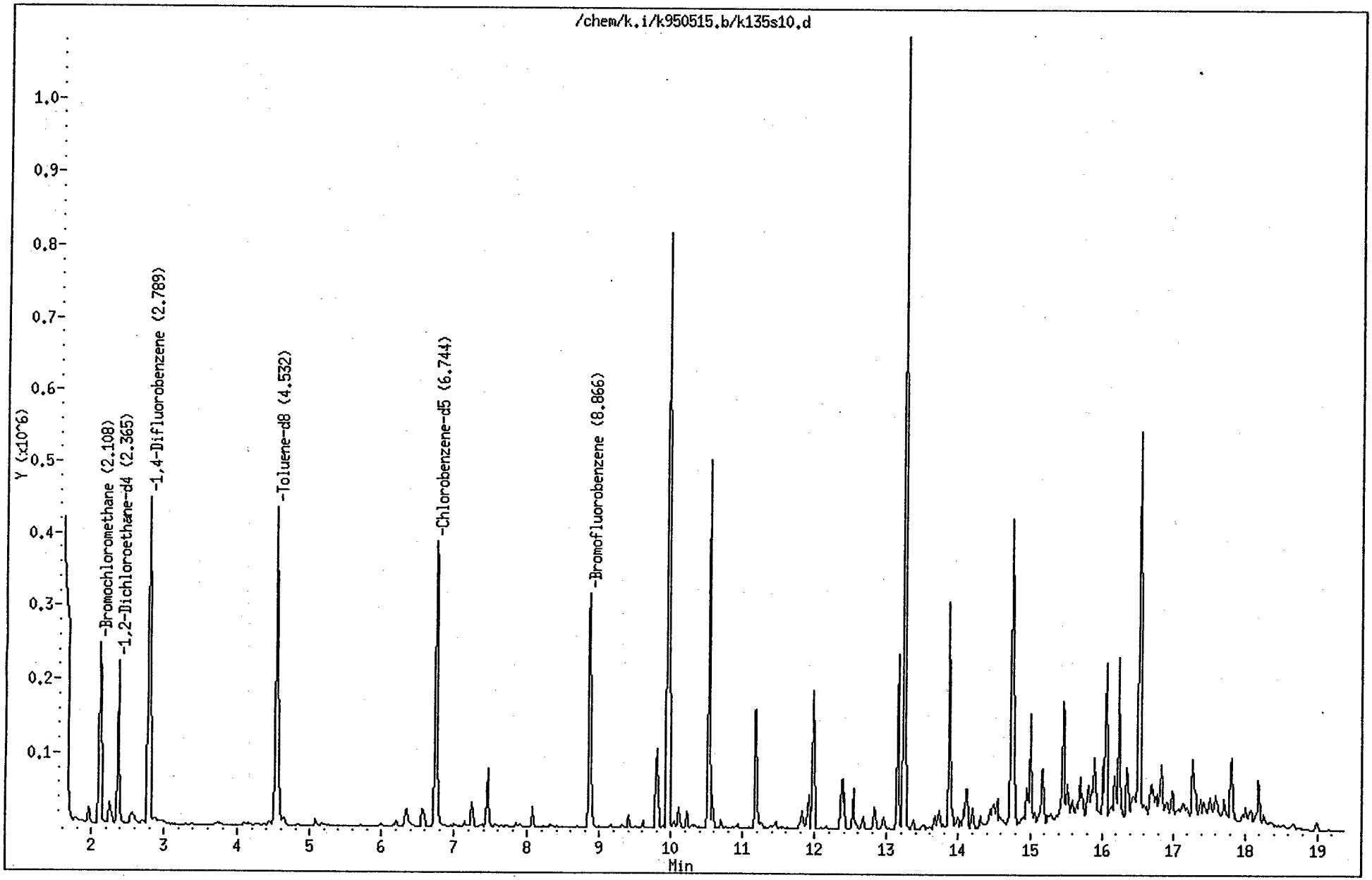
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AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s10.d
Date : 15-MAY-95 22:22
Client ID:
Sample Info: 9505512-07A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/k.i/k950515.b/k135s10.d

Date : 15-MAY-95 22:22

Client ID:

Instrument: k.i

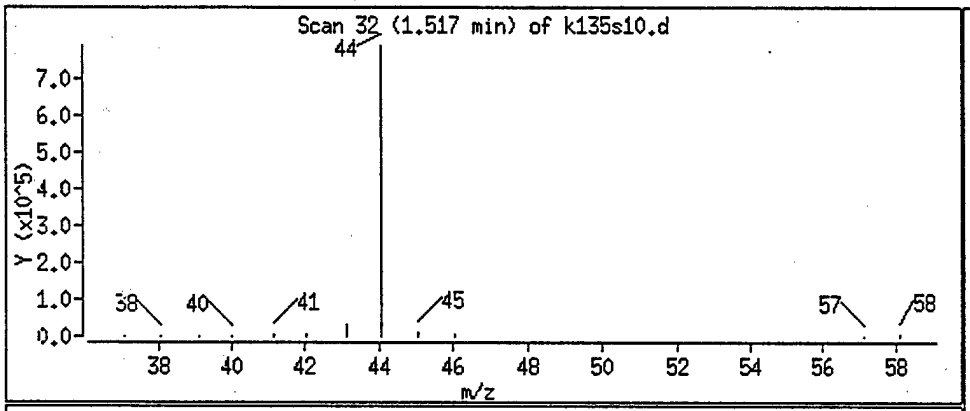
Sample Info: 9505512-07A-8240S/1X

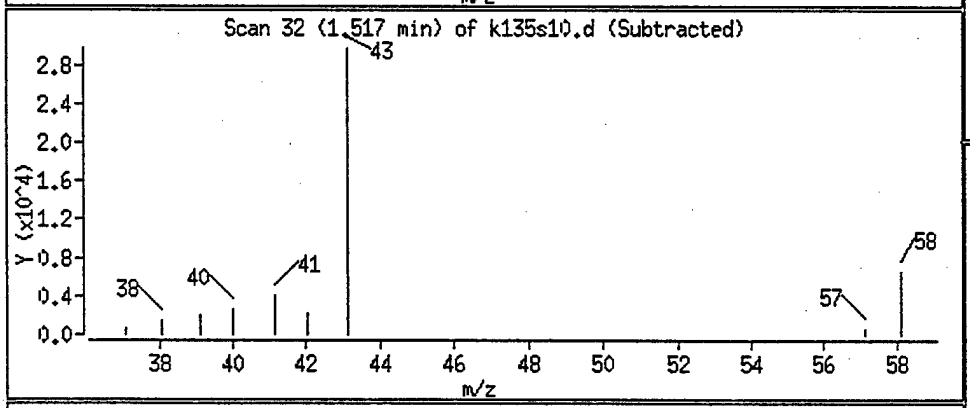
Operator: HLW

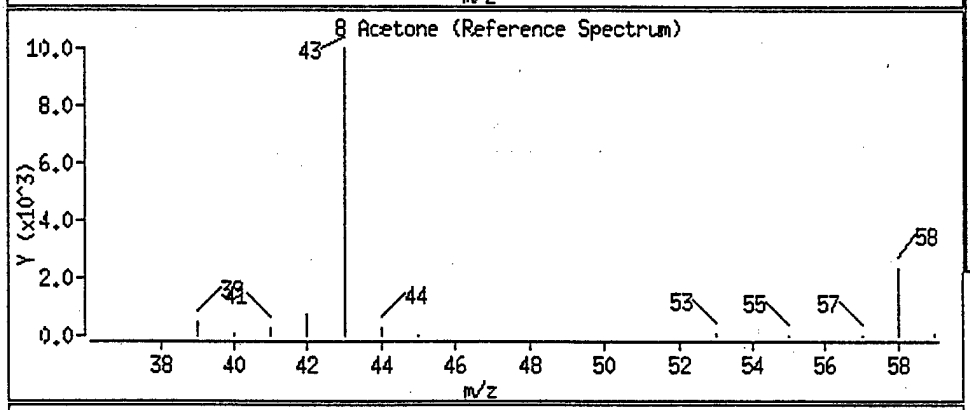
Column phase: 30m,hp5ms,0.25u df

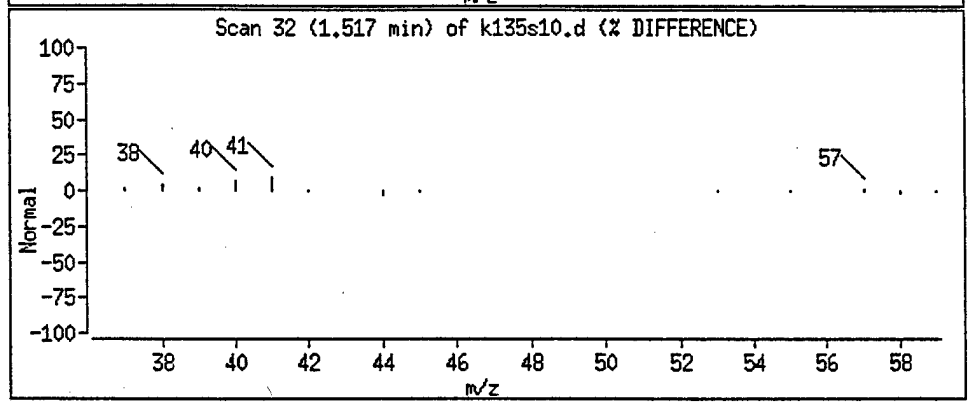
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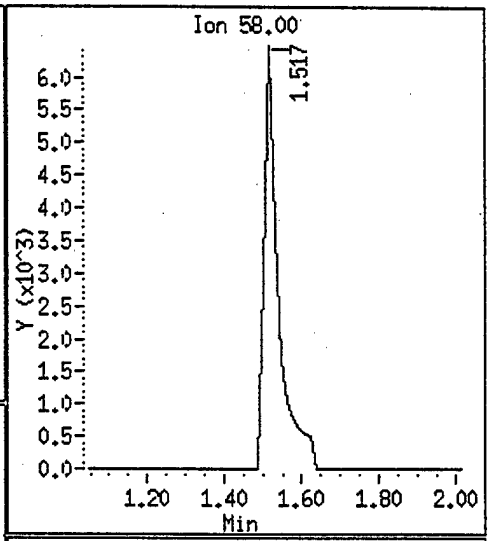
8 Acetone

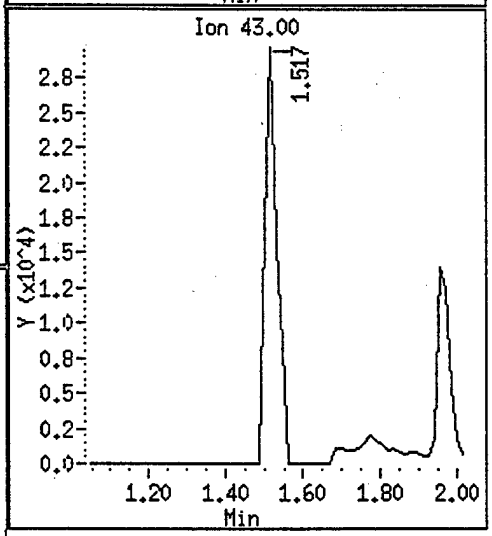












Data File: /chem/k.i/k950515.b/k135s10.d

Date : 15-MAY-95 22:22

Client ID:

Instrument: k.i

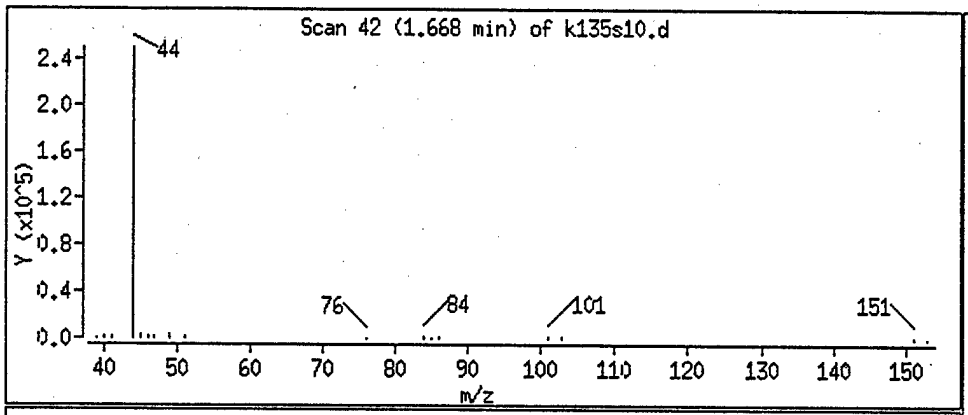
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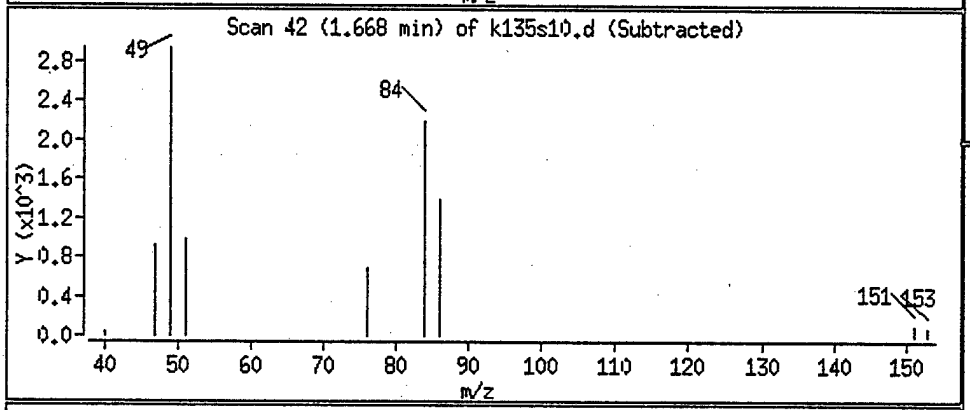
Operator: HLW

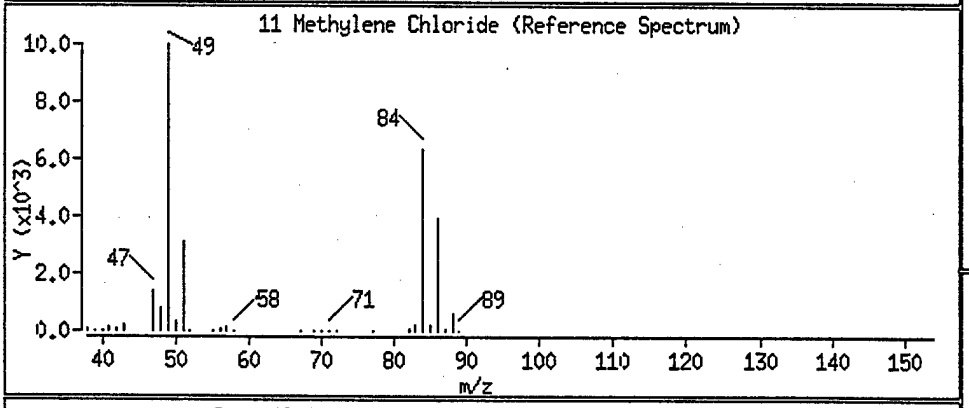
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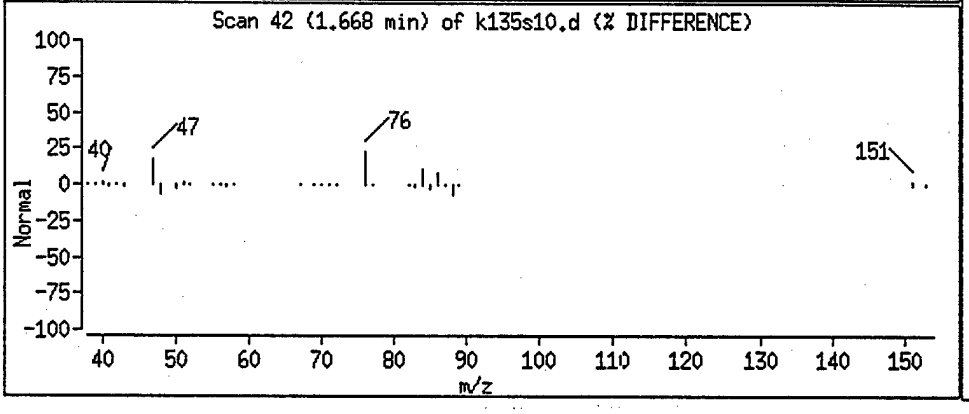
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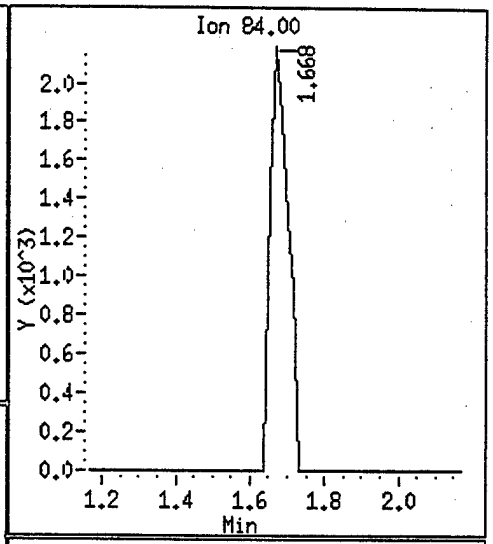
11 Methylene Chloride

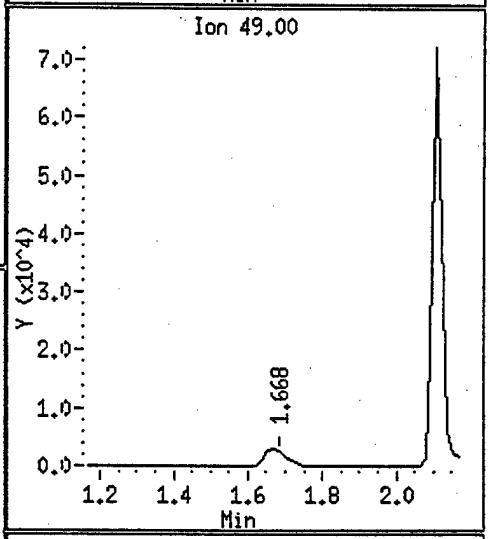


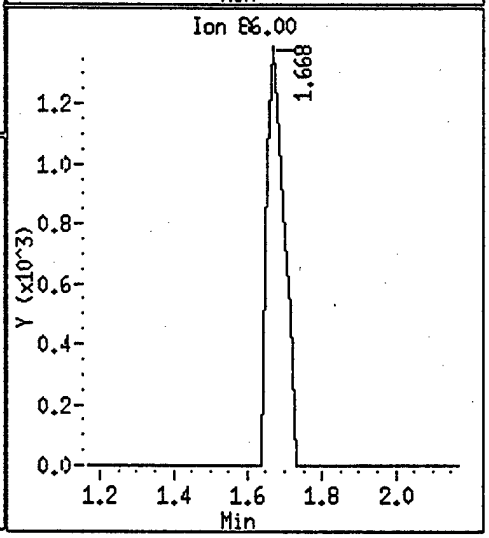








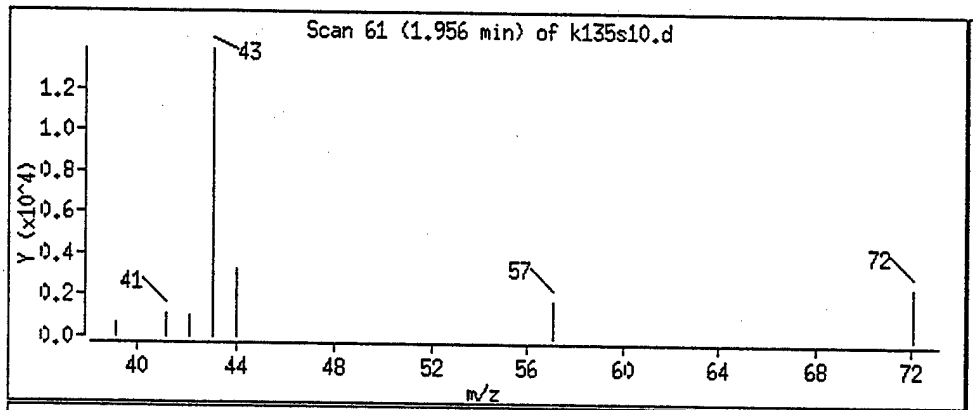


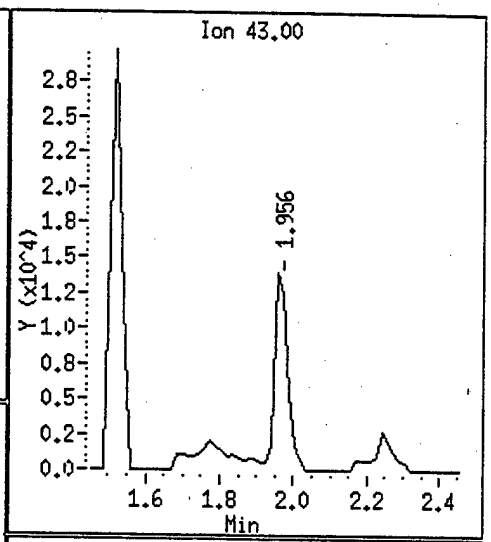


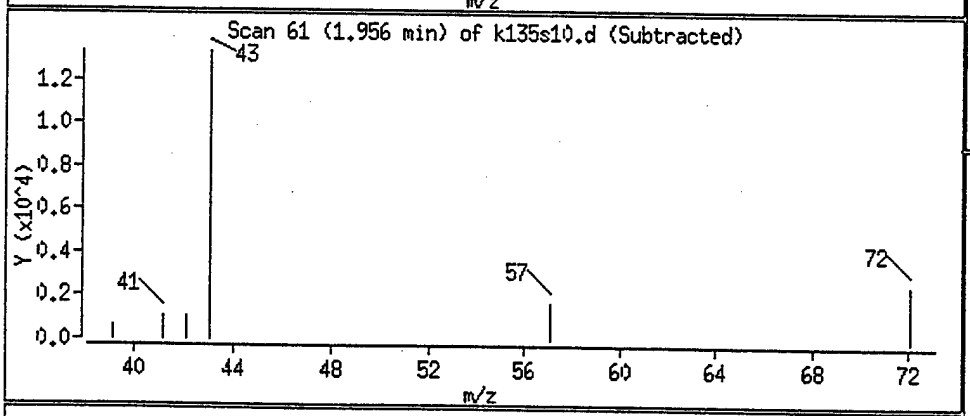
Data File: /chem/k.i/k950515.b/k135s10.d
Date : 15-MAY-95 22:22
Client ID:
Sample Info: 9505512-07A-8240S/1X

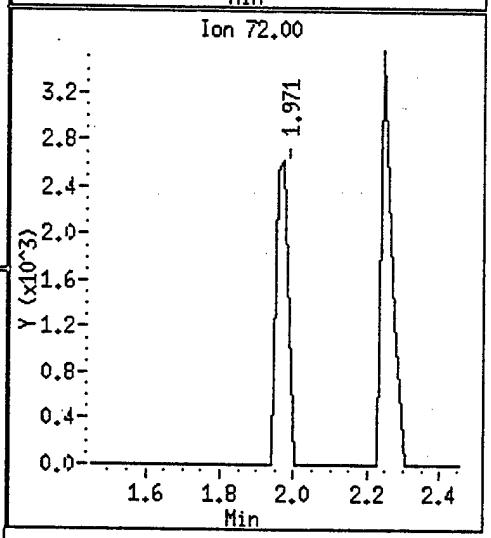
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

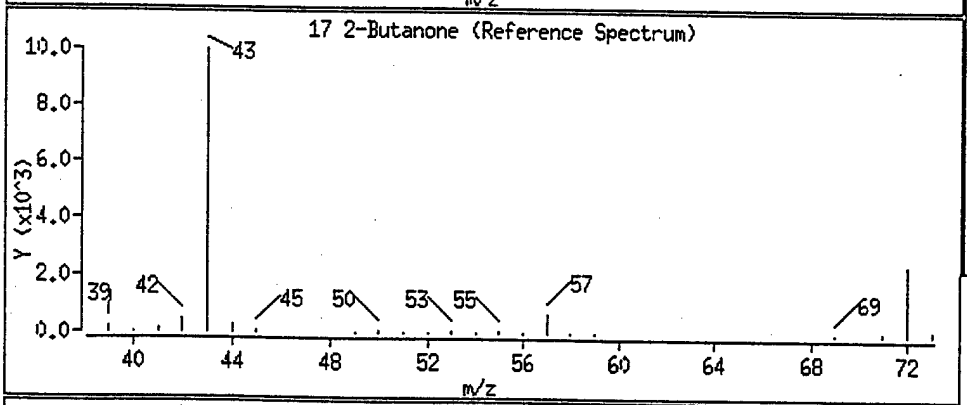
17 2-Butanone

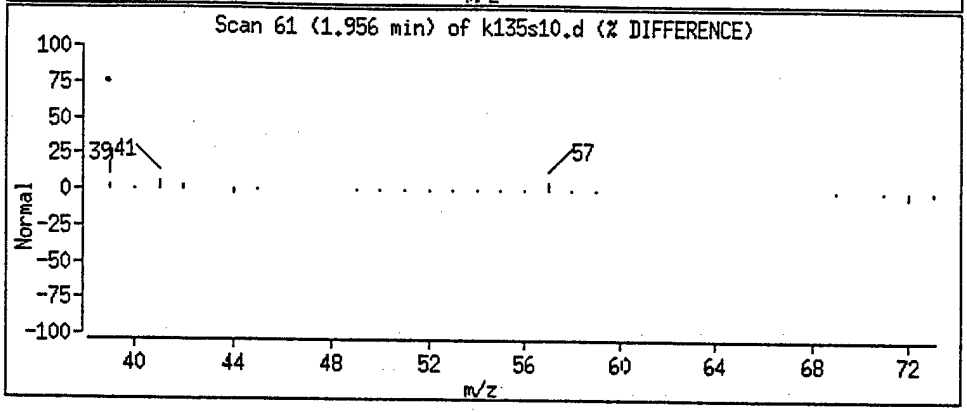










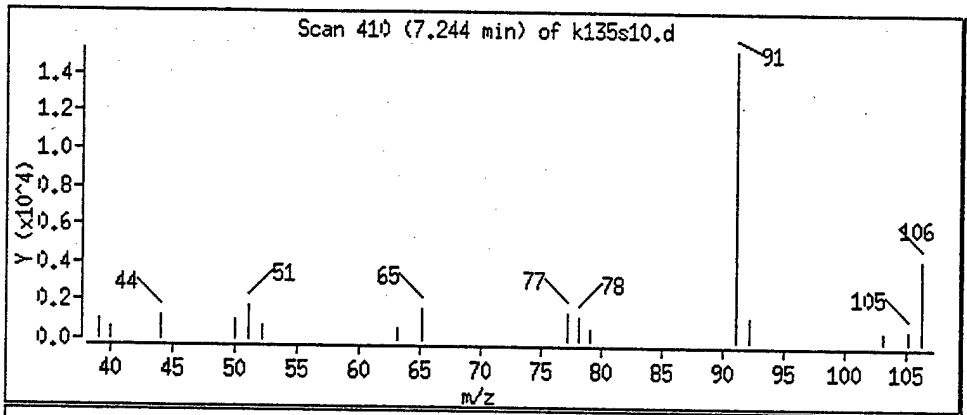


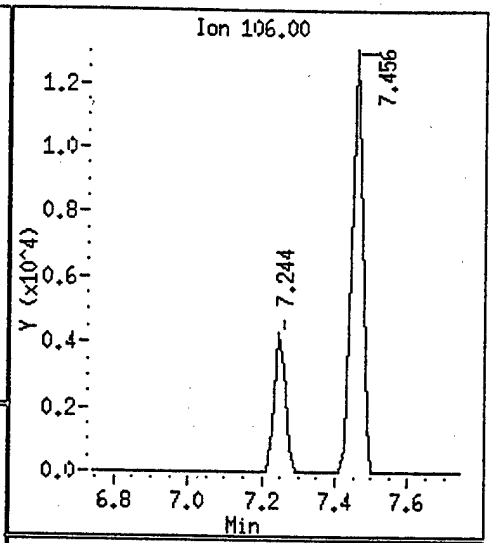
Data File: /chem/k.i/k950515.b/k135s10.d
Date : 15-MAY-95 22:22
Client ID:
Sample Info: 9505512-07A-8240S/1X

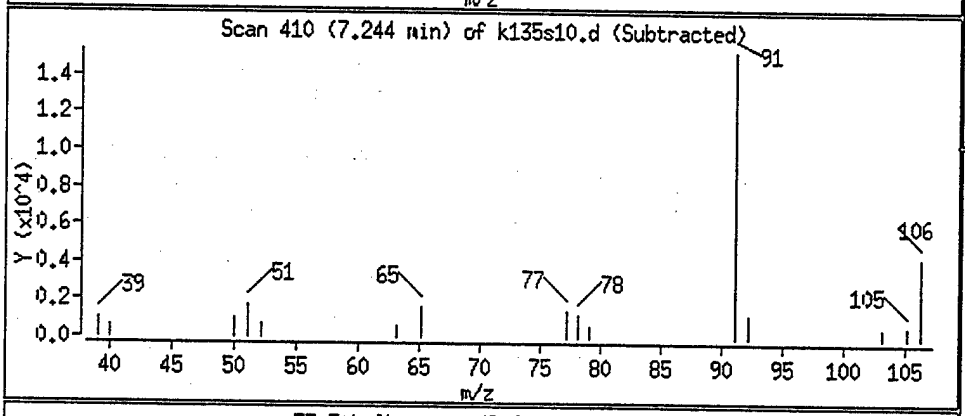
Instrument: k.i

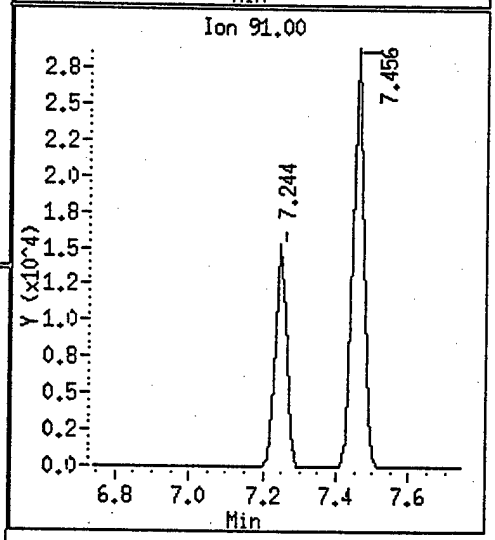
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Column diameter: 0.25

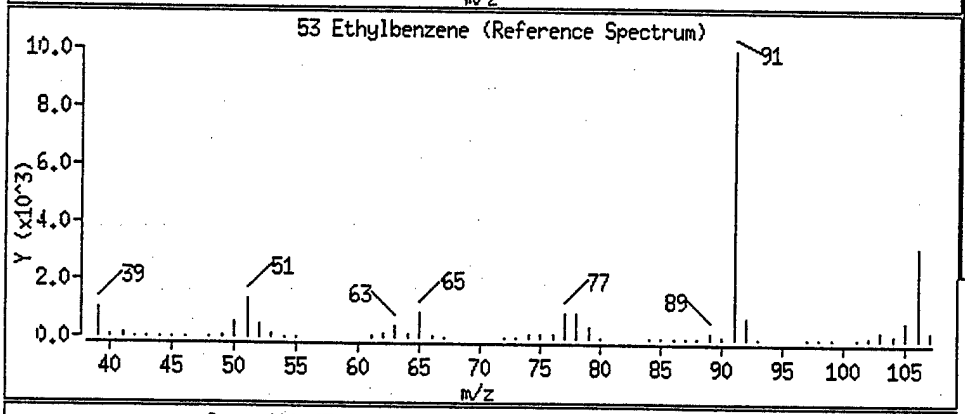
53 Ethylbenzene

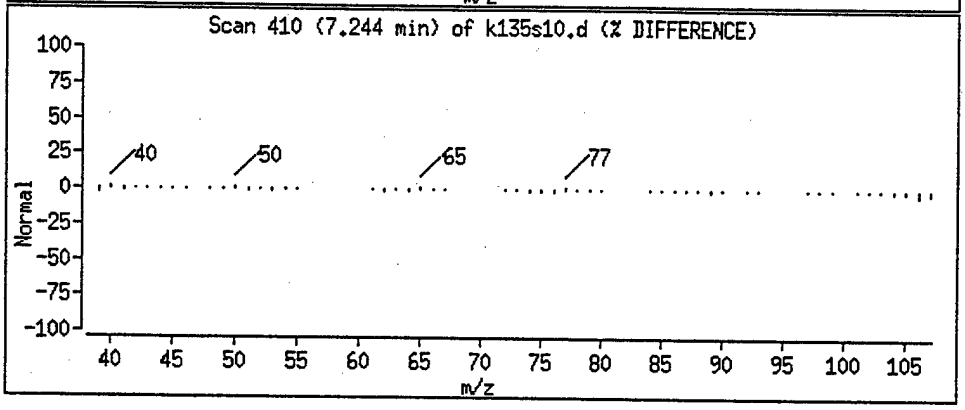












Data File: /chem/k.i/k950515.b/k135s10.d

Date : 15-MAY-95 22:22

Client ID:

Instrument: k.i

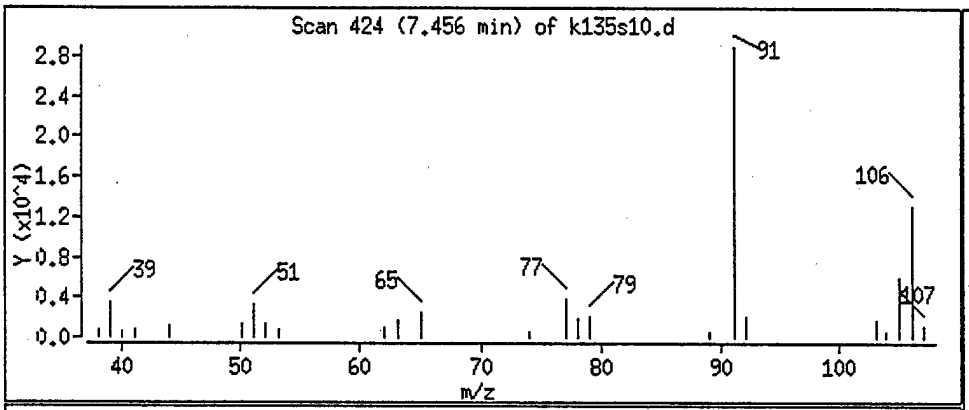
Sample Info: 9505512-07A-8240S/1X

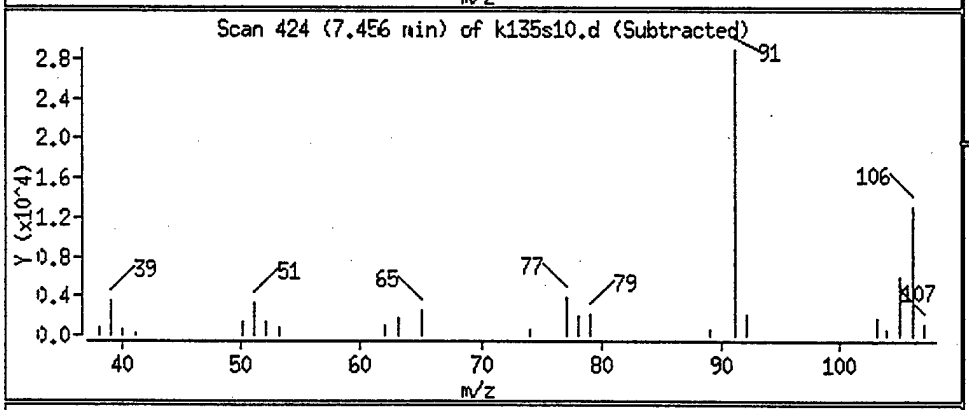
Operator: HLW

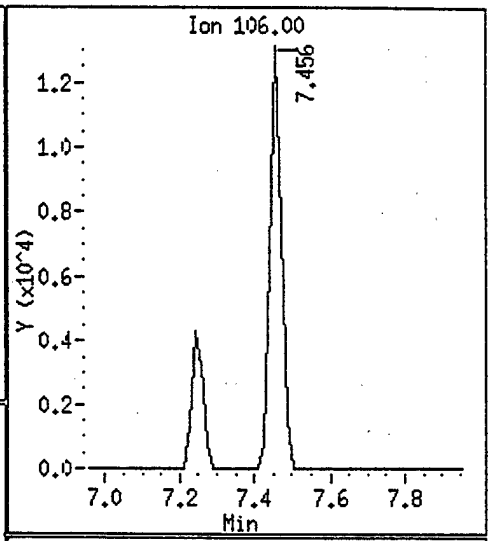
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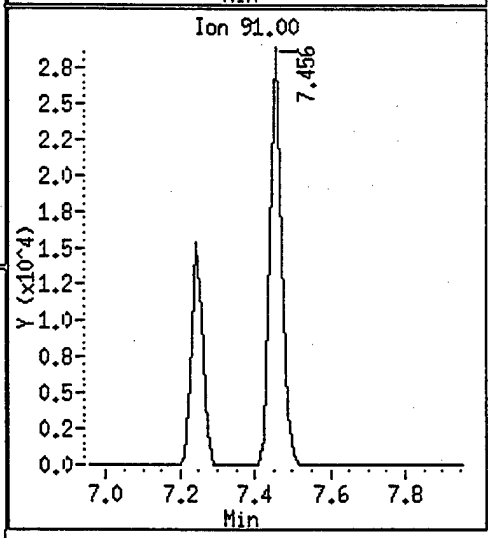
Column diameter: 0.25

54 m,p-Xylene(s)









SPL Houston Labs

Data file : /chem/j.i/j950518.b/j138s09.d
Lab Smp Id: 9505512-07B
Inj Date : 18-MAY-1995 19:48
Operator : PC PC
Smp Info : 9505512-07B-8270S/1X
Misc Info : E135S1/J135B02/J138CC1
Comment :
Method : /chem/j.i/j950518.b/jclps.m
Meth Date : 18-May-1995 10:36 patti
Cal Date : 18-MAY-1995 09:08
Cals bottle: 14
Dil Factor: 10.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j138cc1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
11 1,4-Dichlorobenzene-d4	152.00	8.072	8.063	(1.000)	229777	40	
32 Naphthalene-d8	136.00	10.858	10.857	(1.000)	1101142	40	
48 Acenaphthene-d10	164.00	15.132	15.126	(1.000)	619522	40	
65 Phenanthrene-d10	188.00	18.767	18.743	(1.000)	882044	40	
76 Chrysene-d12	240.00	25.456	25.440	(1.000)	781059	40	
83 Perylene-d12	264.00	29.982	29.980	(1.000)	419243	40	

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j138s09.d
Lab Smp Id: 9505512-07B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950518.b/jclps.m
Misc Info: E135S1/J135B02/J138CC1

Calibration Date: 05/18/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	289441	144720	578882	229777	-20.61
2 Naphthalene-d8	1091185	545592	2182370	1101142	0.91
48 Acenaphthene-d10	650439	325220	1300878	619522	-4.75
65 Phenanthrene-d10	940843	470422	1881686	882044	-6.25
76 Chrysene-d12	819112	409556	1638224	781059	-4.65
83 Perylene-d12	486922	243461	973844	419243	-13.90

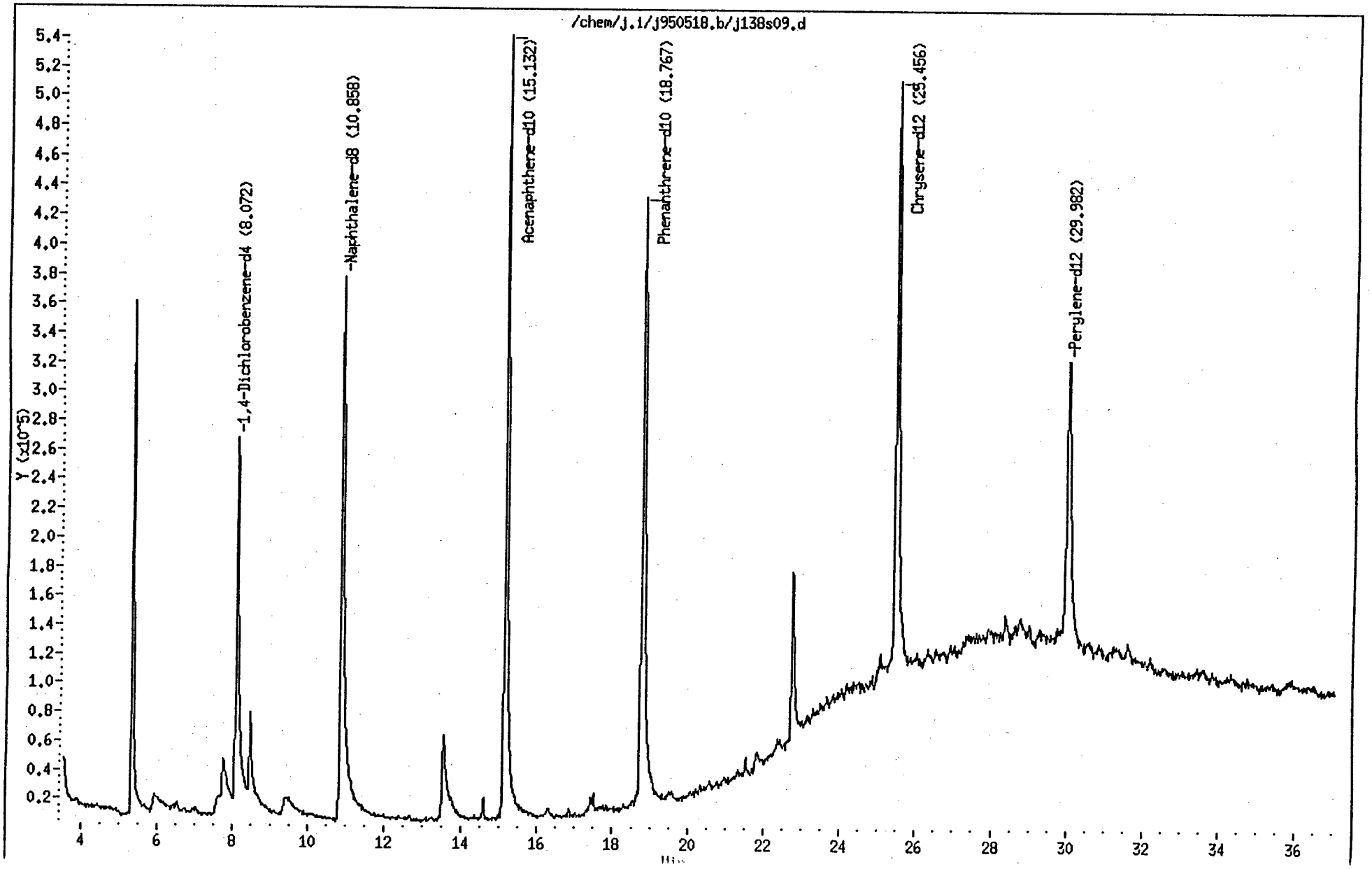
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.06	7.56	8.56	8.07	0.11
12 Naphthalene-d8	10.86	10.36	11.36	10.86	0.01
48 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.04
65 Phenanthrene-d10	18.74	18.24	19.24	18.77	0.13
76 Chrysene-d12	25.44	24.94	25.94	25.46	0.06
83 Perylene-d12	29.98	29.48	30.48	29.98	0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138s09.d
Date : 18-MAY-1995 19:48
Client ID:
Sample Info: 9505512-07B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-006BH 21.5-22

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 15:45:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	11	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	16	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-006BH 21.5-22

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 15:45:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	18	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	7.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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Certificate of Analysis No. H9-9505512-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-006BH 21.5-22

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 15:45:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	5	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

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Certificate of Analysis No. H9-9505512-08

Operational Tech

SAMPLE ID: 025-006BH 21.5-22

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	98	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 22:48:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-08

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-006BH 21.5-22

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 15:45:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	990	ug/Kg
Acenaphthylene	ND	990	ug/Kg
Aniline	ND	990	ug/Kg
Anthracene	ND	990	ug/Kg
Benzo(a)Anthracene	ND	990	ug/Kg
Benzo(b)Fluoranthene	ND	990	ug/Kg
Benzo(k)Fluoranthene	ND	990	ug/Kg
Benzo(a)Pyrene	ND	990	ug/Kg
Benzoic Acid	ND	4800	ug/Kg
Benzo(g,h,i)Perylene	ND	990	ug/Kg
Benzyl alcohol	ND	990	ug/Kg
4-Bromophenylphenyl ether	ND	990	ug/Kg
Butylbenzylphthalate	ND	990	ug/Kg
di-n-Butyl phthalate	ND	990	ug/Kg
Carbazole	ND	990	ug/Kg
4-Chloroaniline	ND	990	ug/Kg
bis(2-Chloroethoxy)Methane	ND	990	ug/Kg
bis(2-Chloroethyl)Ether	ND	990	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	990	ug/Kg
4-Chloro-3-Methylphenol	ND	990	ug/Kg
2-Chloronaphthalene	ND	990	ug/Kg
2-Chlorophenol	ND	990	ug/Kg
4-Chlorophenylphenyl ether	ND	990	ug/Kg
Chrysene	ND	990	ug/Kg
Dibenz(a,h)Anthracene	ND	990	ug/Kg
Dibenzofuran	ND	990	ug/Kg
1,2-Dichlorobenzene	ND	990	ug/Kg
1,3-Dichlorobenzene	ND	990	ug/Kg
1,4-Dichlorobenzene	ND	990	ug/Kg
3,3'-Dichlorobenzidine	ND	990	ug/Kg
2,4-Dichlorophenol	ND	990	ug/Kg
Diethylphthalate	ND	990	ug/Kg
2,4-Dimethylphenol	ND	990	ug/Kg
Dimethyl Phthalate	ND	990	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	2400	ug/Kg
2,4-Dinitrophenol	ND	2400	ug/Kg
2,4-Dinitrotoluene	ND	990	ug/Kg
2,6-Dinitrotoluene	ND	990	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-08

Operational Tech

SAMPLE ID: 025-006BH 21.5-22

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	990	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	990	ug/Kg
Fluoranthene	ND	990	ug/Kg
Fluorene	ND	990	ug/Kg
Hexachlorobenzene	ND	990	ug/Kg
Hexachlorobutadiene	ND	990	ug/Kg
Hexachloroethane	ND	990	ug/Kg
Hexachlorocyclopentadiene	ND	990	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	990	ug/Kg
Isophorone	ND	990	ug/Kg
2-Methylnaphthalene	ND	990	ug/Kg
2-Methylphenol	ND	990	ug/Kg
4-Methylphenol	ND	990	ug/Kg
Naphthalene	ND	990	ug/Kg
2-Nitroaniline	ND	990	ug/Kg
3-Nitroaniline	ND	2400	ug/Kg
4-Nitroaniline	ND	2400	ug/Kg
Nitrobenzene	ND	2400	ug/Kg
2-Nitrophenol	ND	990	ug/Kg
4-Nitrophenol	ND	990	ug/Kg
N-Nitrosodiphenylamine (1)	ND	2400	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	990	ug/Kg
Di-n-Octyl Phthalate	ND	990	ug/Kg
Pentachlorophenol	ND	990	ug/Kg
Phenanthrene	ND	2400	ug/Kg
Phenol	ND	990	ug/Kg
Pyrene	ND	990	ug/Kg
Pyridine	ND	990	ug/Kg
1,2,4-Trichlorobenzene	ND	990	ug/Kg
2,4,5-Trichlorophenol	ND	990	ug/Kg
2,4,6-Trichlorophenol	ND	2400	ug/Kg
	ND	990	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-08

Operational Tech

SAMPLE ID: 025-006BH 21.5-22

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	530 ug/Kg	62	23	120
2-Fluorobiphenyl	530 ug/Kg	83	30	115
Terphenyl-d14	530 ug/Kg	90	18	137
Phenol-d5	820 ug/Kg	83	24	113
2-Fluorophenol	820 ug/Kg	100	25	121
2,4,6-Tribromophenol	820 ug/Kg	44	19	122

ANALYZED BY: PC DATE/TIME: 05/18/95 20:33:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s11.d
Lab Smp Id: 9505512-08A-8240S/1X
Inj Date : 15-MAY-1995 22:48
Operator : HLW Inst ID: k.i
Smp Info : 9505512-08A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 26
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	8 Acetone	58.00	1.514	1.517	(0.714)	10474	180	36(a)
	11 Methylene Chloride	84.00	1.665	1.668	(0.786)	8663	19	4(a)
	17 2-Butanone	43.00	1.968	1.956	(0.929)	24943	60	12(a)
M	2 Xylene (Total)	106.00				20898	27	5
	54 m,p-Xylene(s)	106.00	7.453	7.457	(1.103)	20898	27	5
*	20 Bromochloromethane	128.00	2.120	2.108	(1.000)	59466	250	
*	31 1,4-Difluorobenzene	114.00	2.787	2.790	(1.000)	354279	250	
*	51 Chlorobenzene-d5	117.00	6.756	6.744	(1.000)	258621	250	
$	23 1,2-Dichloroethane-d4	102.00	2.362	2.365	(1.114)	25233	230	46
$	40 Toluene-d8	98.00	4.529	4.532	(0.670)	386223	260	51
$	61 Bromofluorobenzene	95.00	8.863	8.851	(1.312)	143613	240	49

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s11.d
Lab Smp Id: 9505512-08A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	59466	-8.82
31 1,4-Difluorobenzene	411543	205772	823086	354279	-13.91
51 Chlorobenzene-d5	312868	156434	625736	258621	-17.34

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.57
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.11
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.18

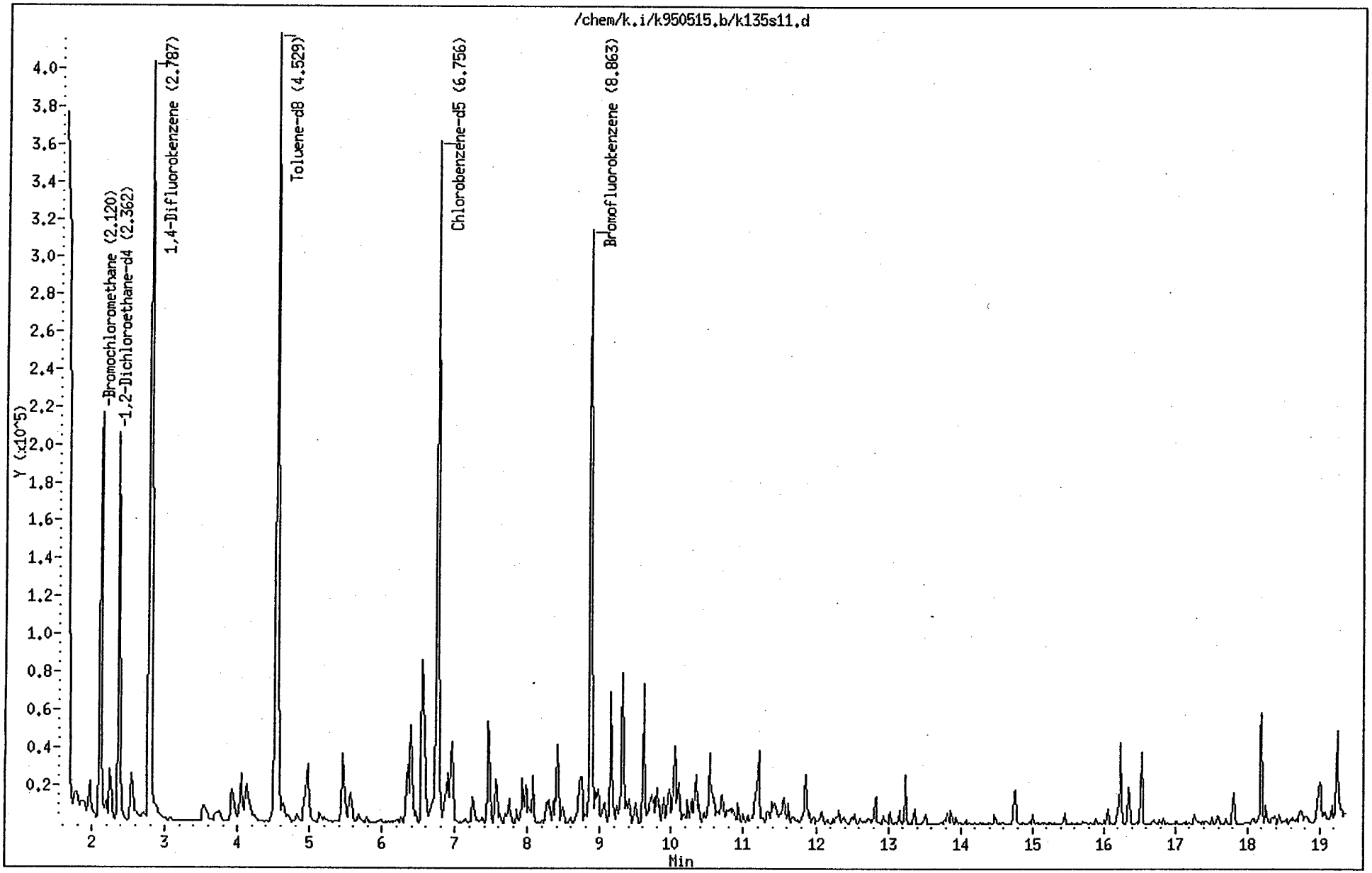
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AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

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Date : 15-MAY-95 22:48
Client ID:
Sample Info: 9505512-08A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



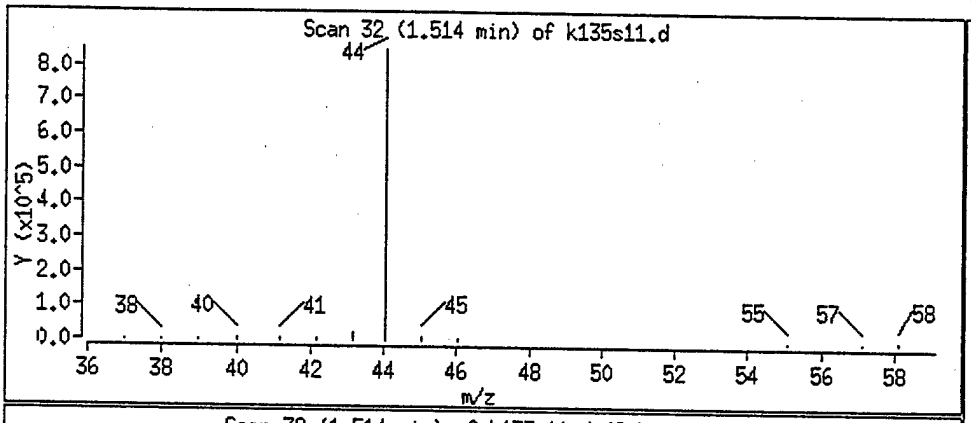
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Date : 15-MAY-95 22:48
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Sample Info: 9505512-08A-8240S/1X

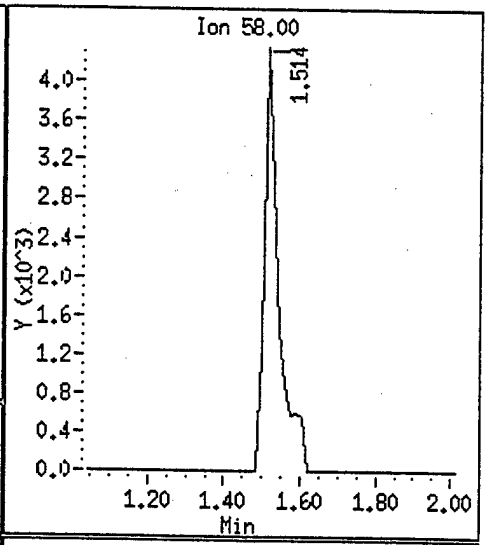
Instrument: k.i

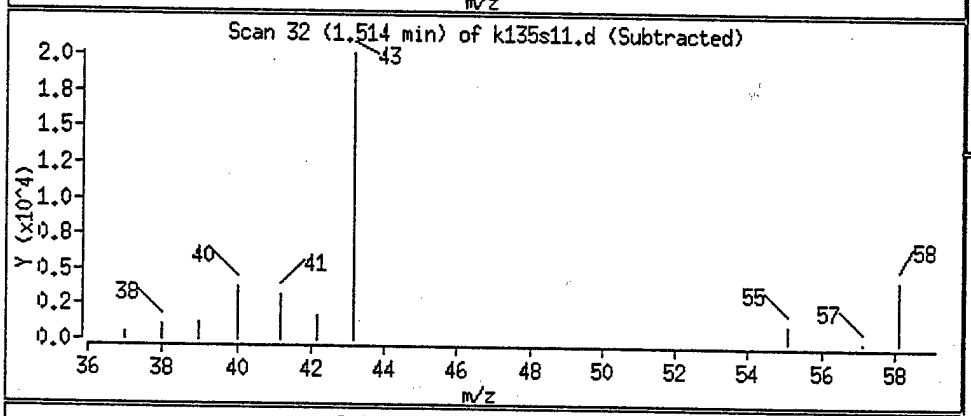
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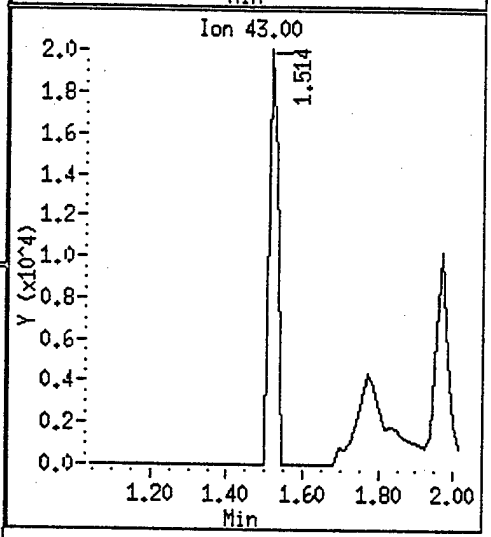
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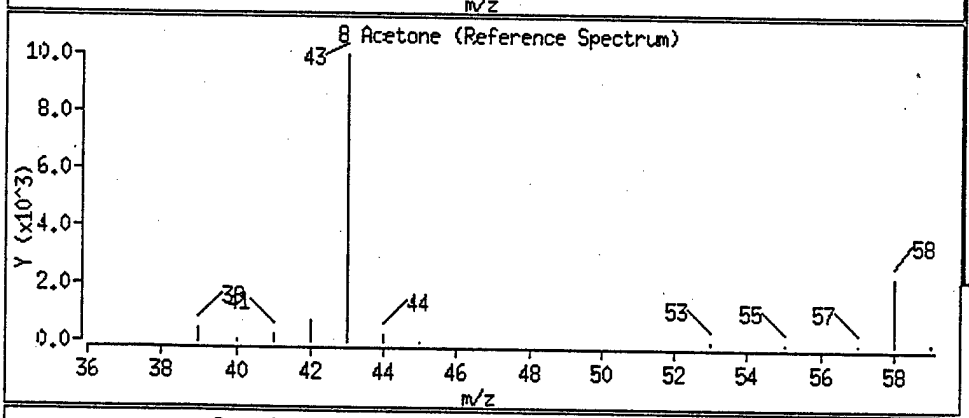
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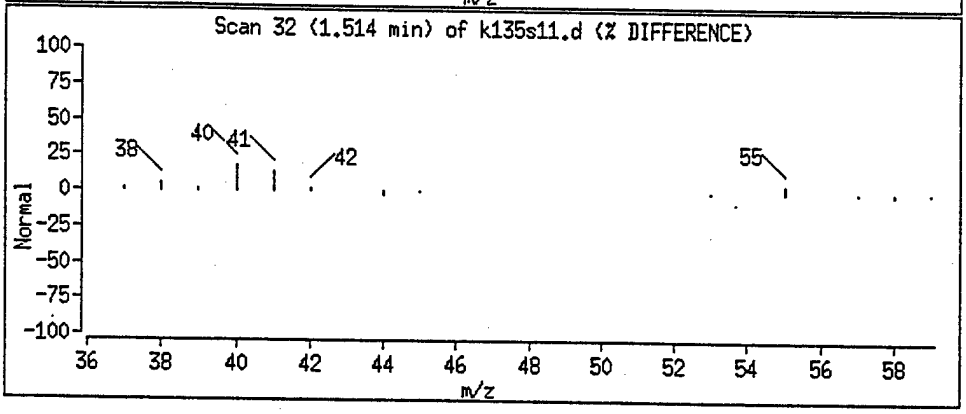








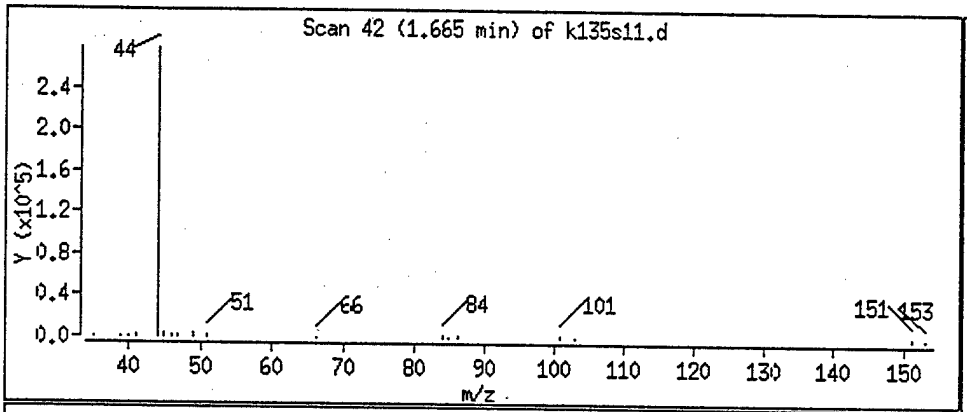


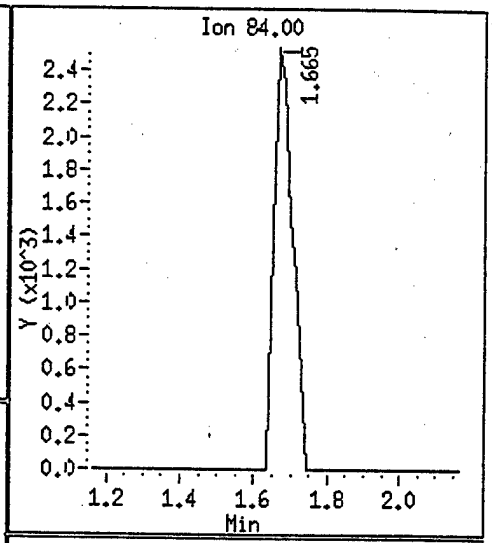


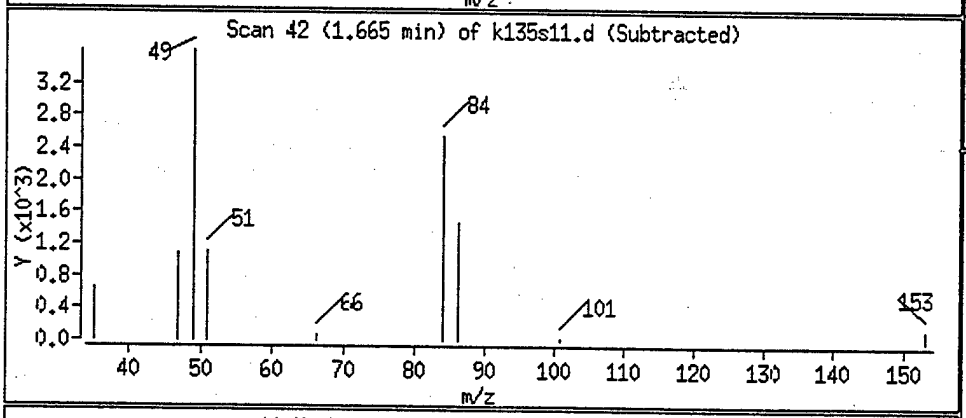
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Date : 15-MAY-95 22:48
Client ID:
Sample Info: 9505512-08A-8240S/1X

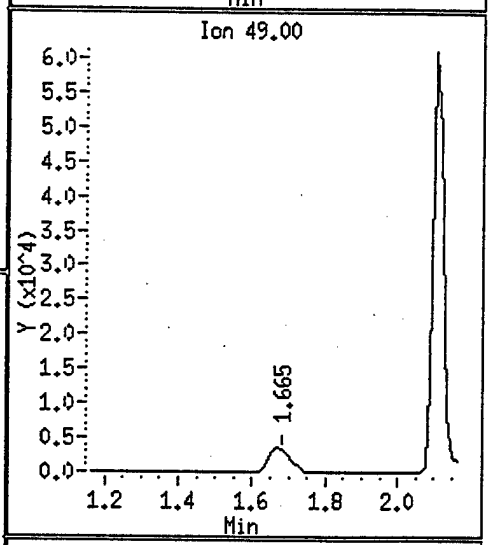
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Operator: HLW
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Column diameter: 0.25

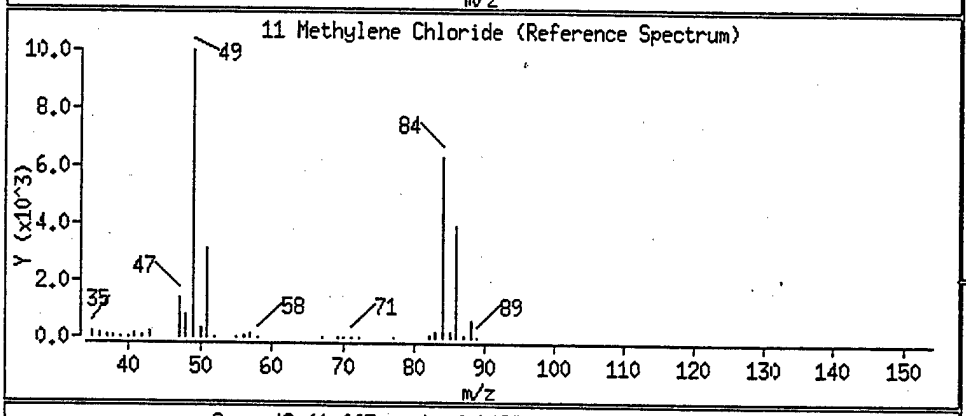
11 Methylene Chloride

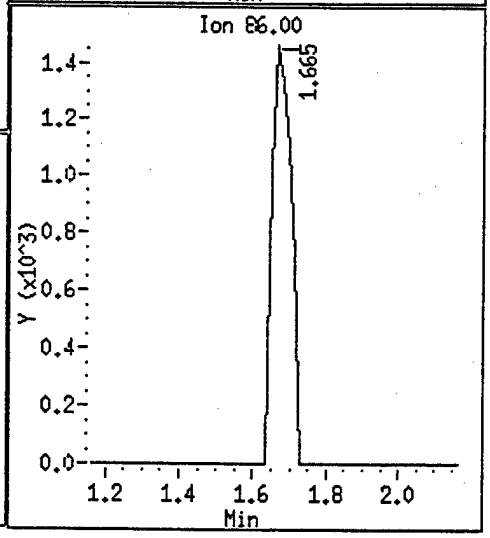


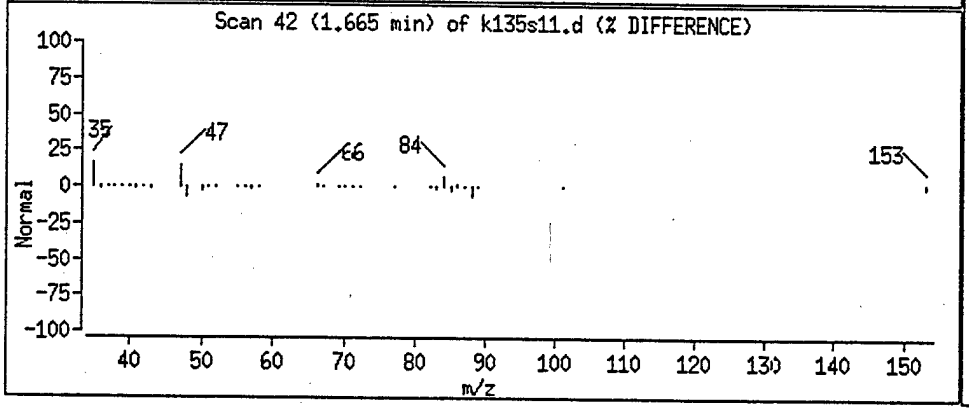












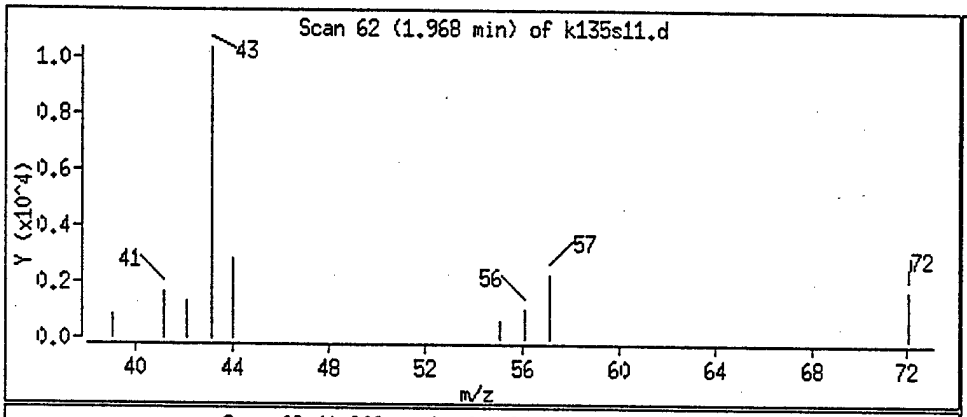
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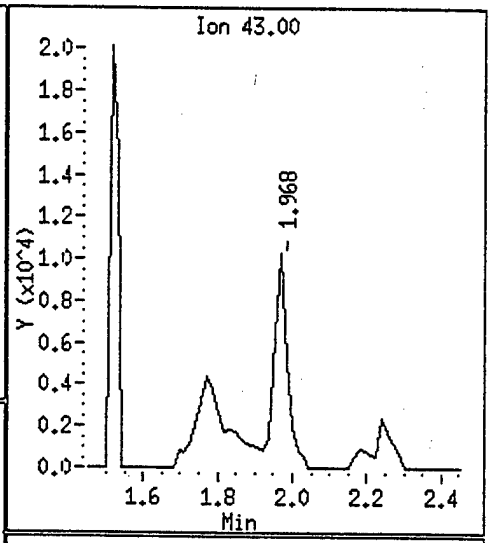
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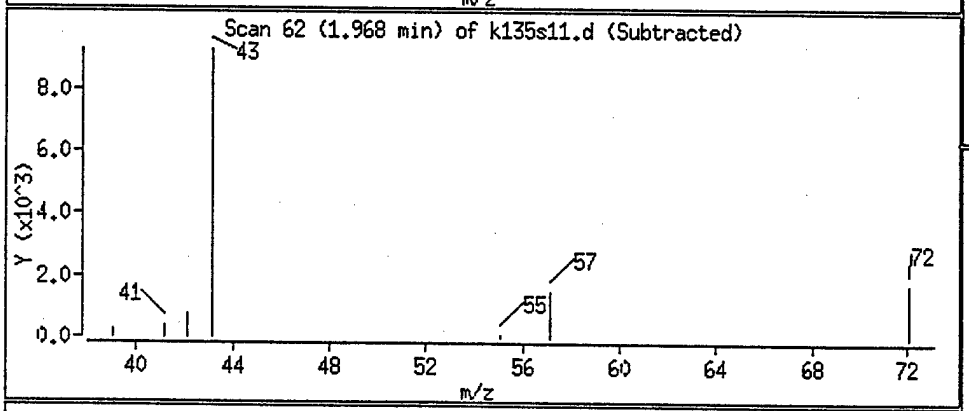
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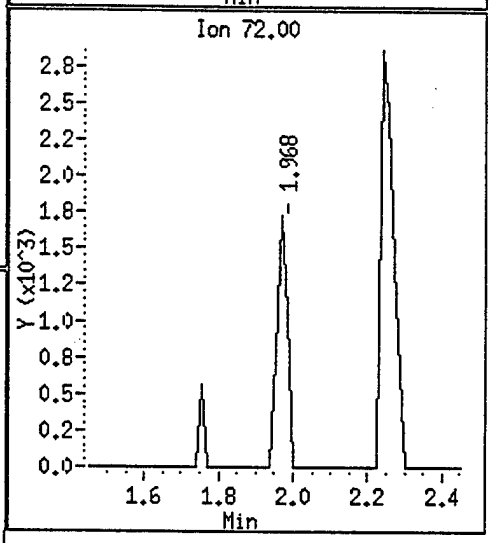
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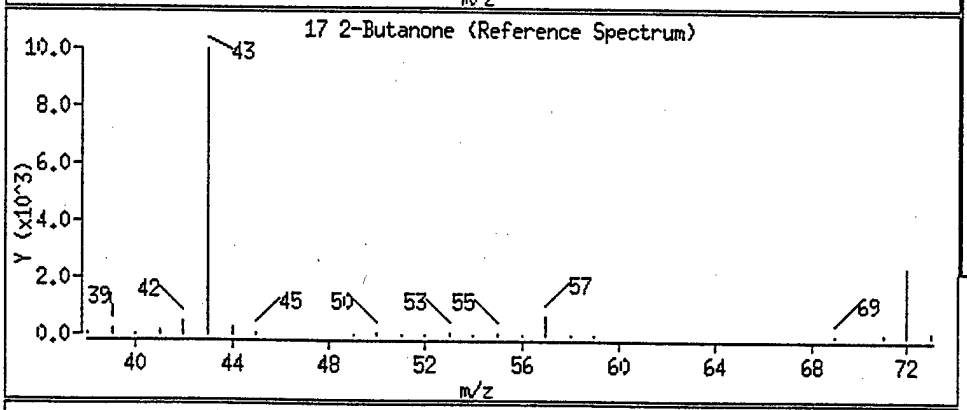
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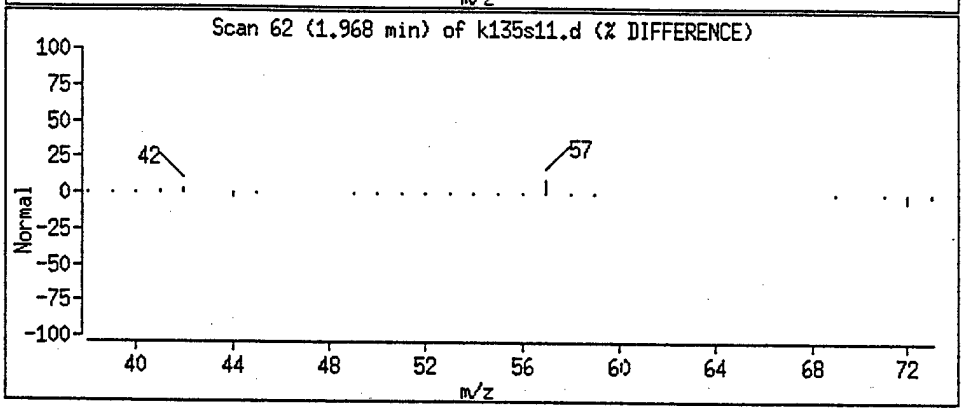












Data File: /chem/k.i/k950515.b/k135s11.d

Date : 15-MAY-95 22:48

Client ID:

Sample Info: 9505512-08A-8240S/1X

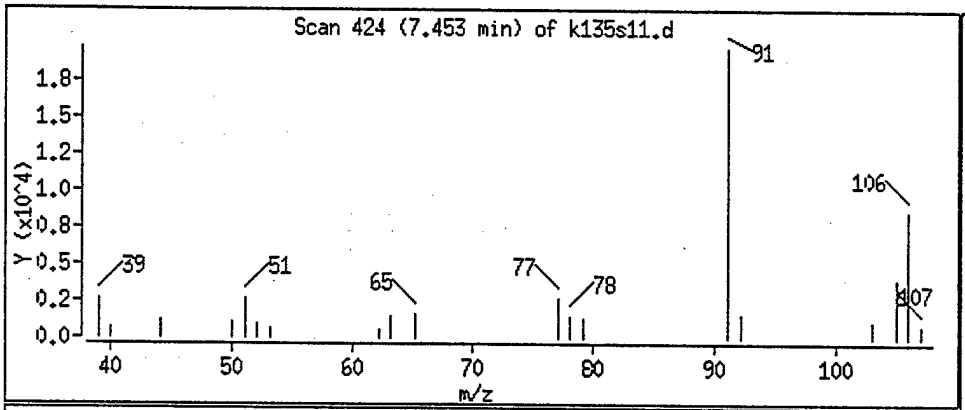
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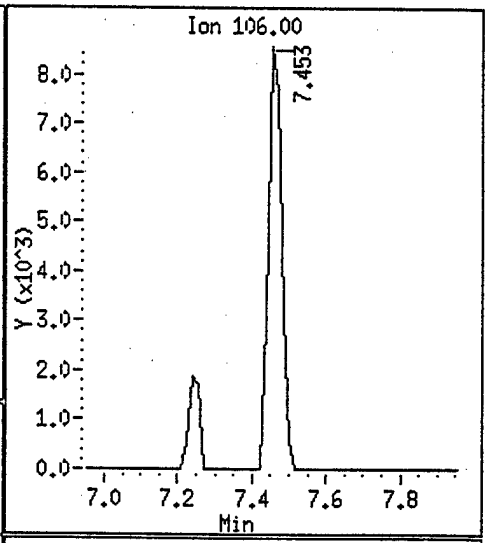
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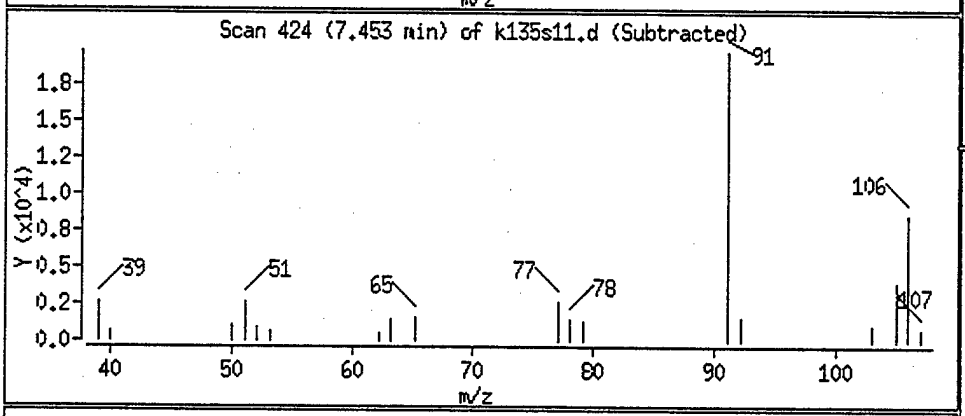
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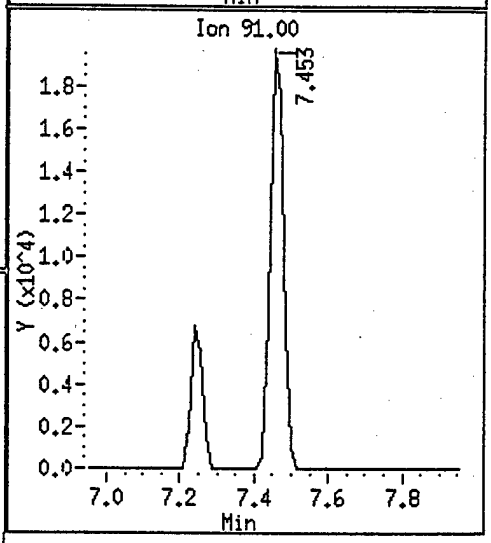
Column diameter: 0.25

54 m,p-Xylene(s)









SPL Houston Labs

Data file : /chem/j.i/j950518.b/j138s10.d
Lab Smp Id: 9505512-08B
Inj Date : 18-MAY-1995 20:33
Operator : PC Inst ID: j.i
Smp Info : 9505512-08B-8270S/1X
Misc Info : E135S1/J135B02/J138CC1
Comment :
Method : /chem/j.i/j950518.b/jclps.m
Meth Date : 18-May-1995 10:36 patti Quant Type: ISTD
Cal Date : 18-MAY-1995 09:08 Cal File: j138cc1.d
Als bottle: 15
Dil Factor: 3.000
Integrator: HP RTE Compound Sublist: 8270.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 11 1,4-Dichlorobenzene-d4	152.00	8.064	8.063	(1.000)	330018	40	
* 32 Naphthalene-d8	136.00	10.863	10.857	(1.000)	1360546	40	
* 48 Acenaphthene-d10	164.00	15.128	15.126	(1.000)	714382	40	
* 65 Phenanthrene-d10	188.00	18.753	18.743	(1.000)	1005184	40	
* 76 Chrysene-d12	240.00	25.443	25.440	(1.000)	848986	40	
* 83 Perylene-d12	264.00	29.986	29.980	(1.000)	469876	40	
$ 23 Nitrobenzene-d5	82.00	9.318	9.275	(0.858)	248848	19	320
$ 41 2-Fluorobiphenyl	172.00	13.506	13.498	(0.893)	614814	26	440
$ 72 Terphenyl-d14	244.00	22.720	22.714	(0.893)	573496	28	470
$ 4 Phenol-d5	99.00	7.475	7.463	(0.927)	484569	41	690
$ 3 2-Fluorophenol	112.00	5.843	5.854	(0.725)	334201	50	830
$ 61 2,4,6-Tribromophenol	329.70	17.283	17.115	(0.922)	67577	22	370 (QM)

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j138s10.d
Lab Smp Id: 9505512-08B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950518.b/jclps.m
Misc Info: E135S1/J135B02/J138CC1

Calibration Date: 05/18/95
Calibration Time: 0908

Level: LOW
Sample Type: SOIL

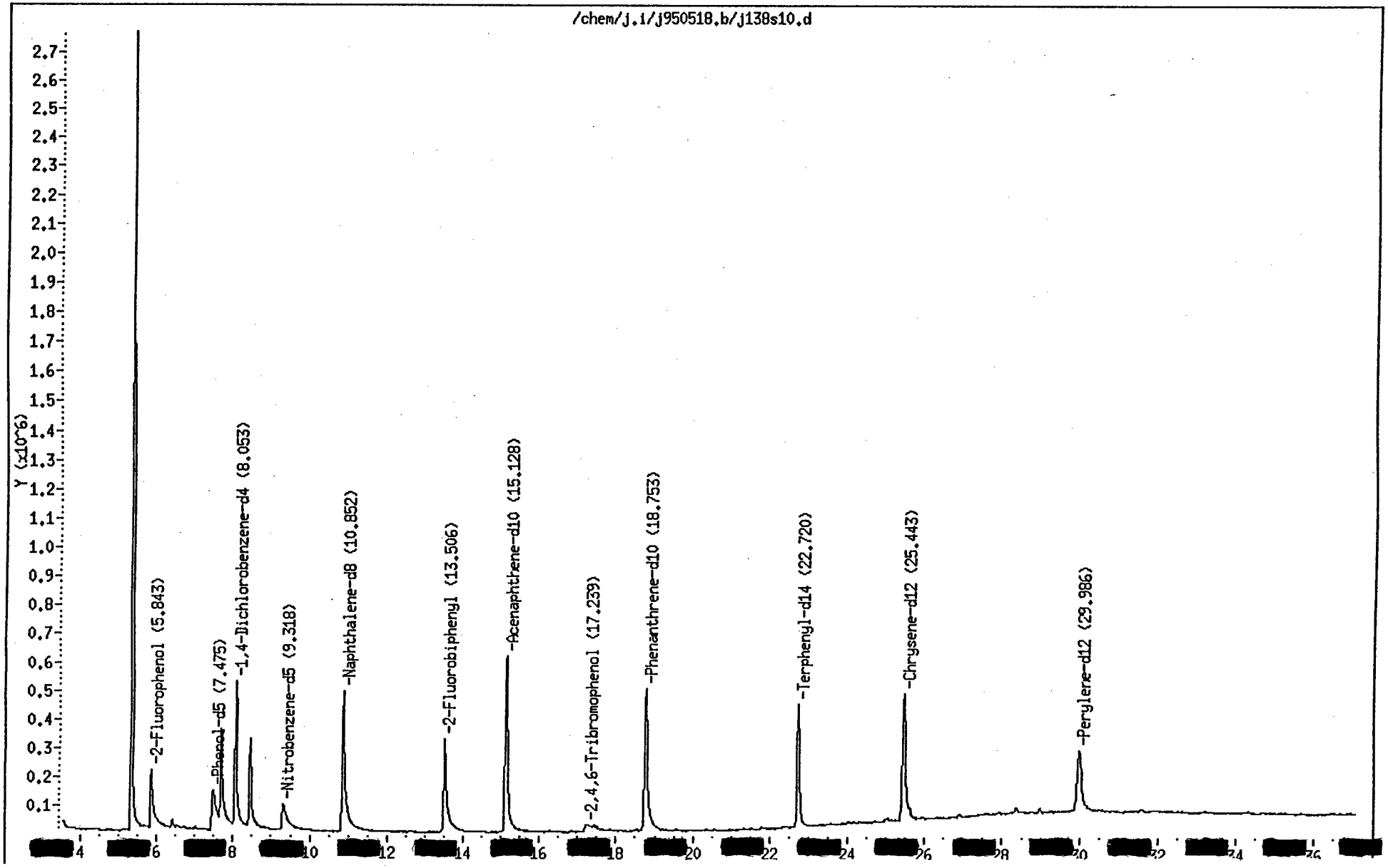
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	289441	144720	578882	330018	14.02
32 Naphthalene-d8	1091185	545592	2182370	1360546	24.69
48 Acenaphthene-d10	650439	325220	1300878	714382	9.83
65 Phenanthrene-d10	940843	470422	1881686	1005184	6.84
76 Chrysene-d12	819112	409556	1638224	848986	3.65
83 Perylene-d12	486922	243461	973844	469876	-3.50

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.06	7.56	8.56	8.06	0.01
32 Naphthalene-d8	10.86	10.36	11.36	10.86	0.05
48 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.01
65 Phenanthrene-d10	18.74	18.24	19.24	18.75	0.05
76 Chrysene-d12	25.44	24.94	25.94	25.44	0.01
83 Perylene-d12	29.98	29.48	30.48	29.99	0.02

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138s10.d
Date : 18-MAY-1995 20:33
Client ID:
Sample Info: 9505512-08B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i
Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 10-11

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	10	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	24	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505512-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 10-11

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	22	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	5.8	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 10-11

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:40:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech

SAMPLE ID: 025-009BH 10-11

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 23:15:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/9

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 10-11

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:40:0
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech

SAMPLE ID: 025-009BH 10-11

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-09

Operational Tech

SAMPLE ID: 025-009BH 10-11

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	84	23	120
2-Fluorobiphenyl	1600 ug/Kg	92	30	115
Terphenyl-d14	1600 ug/Kg	100	18	137
Phenol-d5	2500 ug/Kg	95	24	113
2-Fluorophenol	2500 ug/Kg	115	25	121
2,4,6-Tribromophenol	2500 ug/Kg	77	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 16:55:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s12.d
Lab Smp Id: 9505512-09A-8240S/1X
Inj Date : 15-MAY-1995 23:15
Operator : HLW Inst ID: k.i
Smp Info : 9505512-09A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 27
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.122	2.108	(1.000)	53795	250	
* 31 1,4-Difluorobenzene	114.00	2.788	2.790	(1.000)	325090	250	
* 51 Chlorobenzene-d5	117.00	6.758	6.744	(1.000)	240691	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.364	2.365	(1.114)	22740	230	46
$ 40 Toluene-d8	98.00	4.531	4.532	(0.670)	353937	250	51
$ 61 Bromofluorobenzene	95.00	8.864	8.851	(1.312)	133086	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s12.d
Lab Smp Id: 9505512-09A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	53795	-17.52
31 1,4-Difluorobenzene	411543	205772	823086	325090	-21.01
51 Chlorobenzene-d5	312868	156434	625736	240691	-23.07

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.66
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.05
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.21

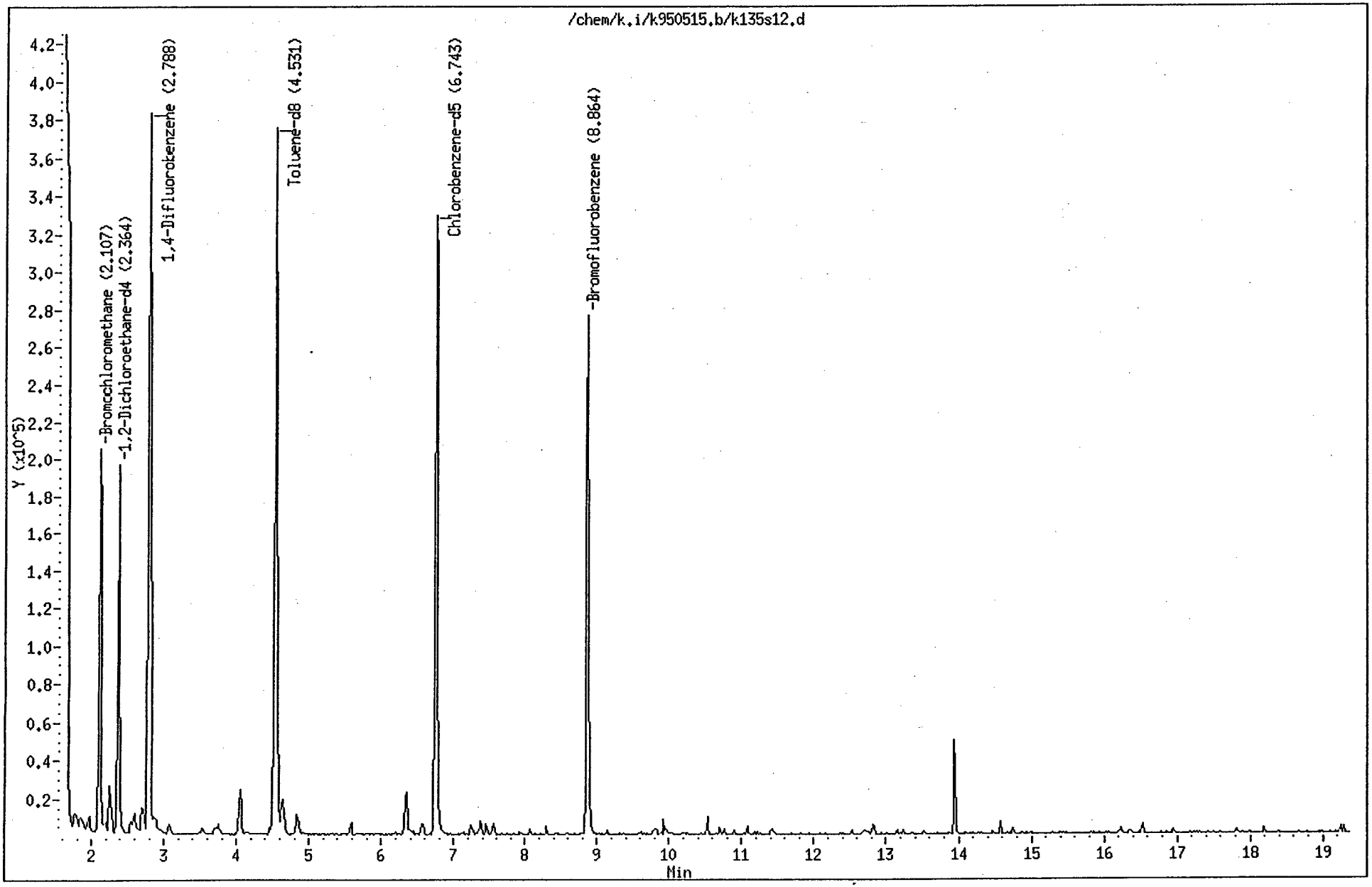
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s12.d
Date : 15-MAY-95 23:15
Client ID:
Sample Info: 9505512-09A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Houston Labs

Data file : /chem/j.i/j950519.b/j139s05.d
Lab Smp Id: 9505512-09B
Inj Date : 19-MAY-1995 16:55
Operator : PC pc
Smp Info : 9505512-09B-8270S/1X
Misc Info : E135S1/J135B02/J139CC1
Comment :
Method : /chem/j.i/j950519.b/jclps.m
Meth Date : 19-May-1995 14:55 patti
Cal Date : 19-MAY-1995 10:06
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j139cc1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
11 1,4-Dichlorobenzene-d4	152.00	7.949	7.945	(1.000)	376138	40	
32 Naphthalene-d8	136.00	10.737	10.738	(1.000)	1360980	40	
48 Acenaphthene-d10	164.00	14.992	14.994	(1.000)	736541	40	
65 Phenanthrene-d10	188.00	18.618	18.611	(1.000)	1035581	40	
76 Chrysene-d12	240.00	25.273	25.284	(1.000)	724219	40	
83 Perylene-d12	264.00	29.744	29.745	(1.000)	487293	40	
23 Nitrobenzene-d5	82.00	9.159	9.157	(0.853)	1056605	81	1300
41 2-Fluorobiphenyl	172.00	13.380	13.378	(0.893)	2160898	88	1500
72 Terphenyl-d14	244.00	22.589	22.580	(0.894)	1747044	96	1600
4 Phenol-d5	99.00	7.340	7.345	(0.923)	1975378	140	2400
3 2-Fluorophenol	112.00	5.749	5.735	(0.723)	1466143	170	2900
61 2,4,6-Tribromophenol	329.70	16.983	16.972	(0.912)	344782	120	1900

Data File: /chem/j.i/j950519.b/j139s05.d
Report Date: 22-May-1995 08:47

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j139s05.d
Lab Smp Id: 9505512-09B
Analysis Type: SV
Client Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	326931	163466	653862	376138	15.05
2 Naphthalene-d8	1205967	602984	2411934	1360980	12.85
48 Acenaphthene-d10	666246	333123	1332492	736541	10.55
65 Phenanthrene-d10	984904	492452	1969808	1035581	5.15
6 Chrysene-d12	787352	393676	1574704	724219	-8.02
83 Perylene-d12	490059	245030	980118	487293	-0.56

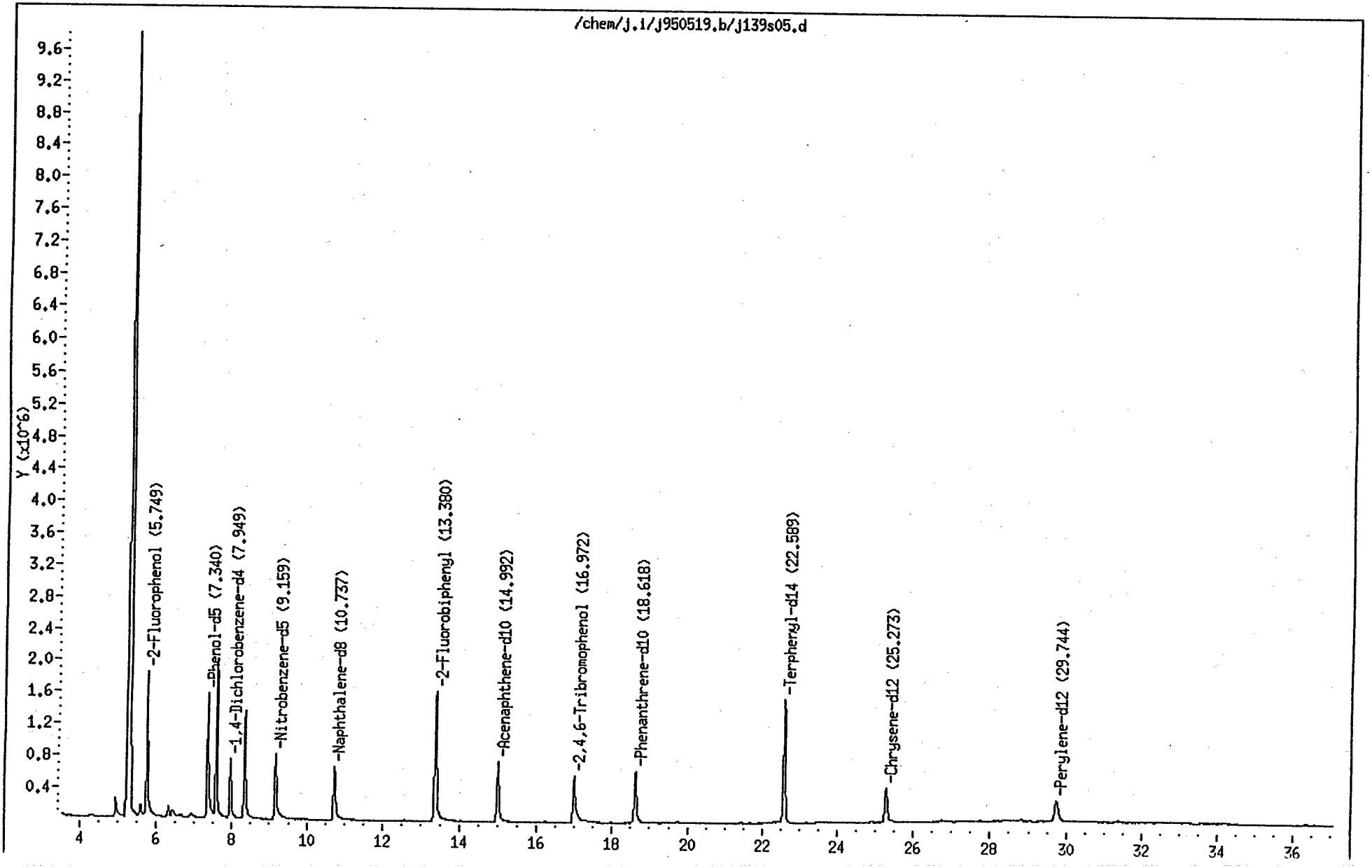
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.05
2 Naphthalene-d8	10.74	10.24	11.24	10.74	-0.01
8 Acenaphthene-d10	14.99	14.49	15.49	14.99	-0.01
65 Phenanthrene-d10	18.61	18.11	19.11	18.62	0.04
6 Chrysene-d12	25.28	24.78	25.78	25.27	-0.04
3 Perylene-d12	29.75	29.25	30.25	29.74	-0.01

EA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139s05.d
Date : 19-MAY-1995 16:55
Client ID:
Sample Info: 9505512-09B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 11-12

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	11	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	18	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
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San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 11-12

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	19	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	5.5	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 11-12

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech

SAMPLE ID: 025-009BH 11-12

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 23:42:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 11-12

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:30:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech

SAMPLE ID: 025-009BH 11-12

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-10

Operational Tech

SAMPLE ID: 025-009BH 11-12

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	90	23	120
2-Fluorobiphenyl	1600 ug/Kg	92	30	115
Terphenyl-d14	1600 ug/Kg	94	18	137
Phenol-d5	2500 ug/Kg	94	24	113
2-Fluorophenol	2500 ug/Kg	113	25	121
2,4,6-Tribromophenol	2500 ug/Kg	77	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 17:40:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s13.d
Lab Smp Id: 9505512-10A-8240S/1X
Inj Date : 15-MAY-1995 23:42
Operator : HLW Inst ID: k.i
Smp Info : 9505512-10A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 28
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.120	2.108	(1.000)	49204	250	
* 31 1,4-Difluorobenzene	114.00	2.787	2.790	(1.000)	303545	250	
* 51 Chlorobenzene-d5	117.00	6.757	6.744	(1.000)	225746	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.362	2.365	(1.114)	20868	230	46
$ 40 Toluene-d8	98.00	4.529	4.532	(0.670)	329484	250	50
$ 61 Bromofluorobenzene	95.00	8.863	8.851	(1.312)	122884	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s13.d
Lab Smp Id: 9505512-10A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	49204	-24.56
31 1,4-Difluorobenzene	411543	205772	823086	303545	-26.24
51 Chlorobenzene-d5	312868	156434	625736	225746	-27.85

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.58
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.11
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.18

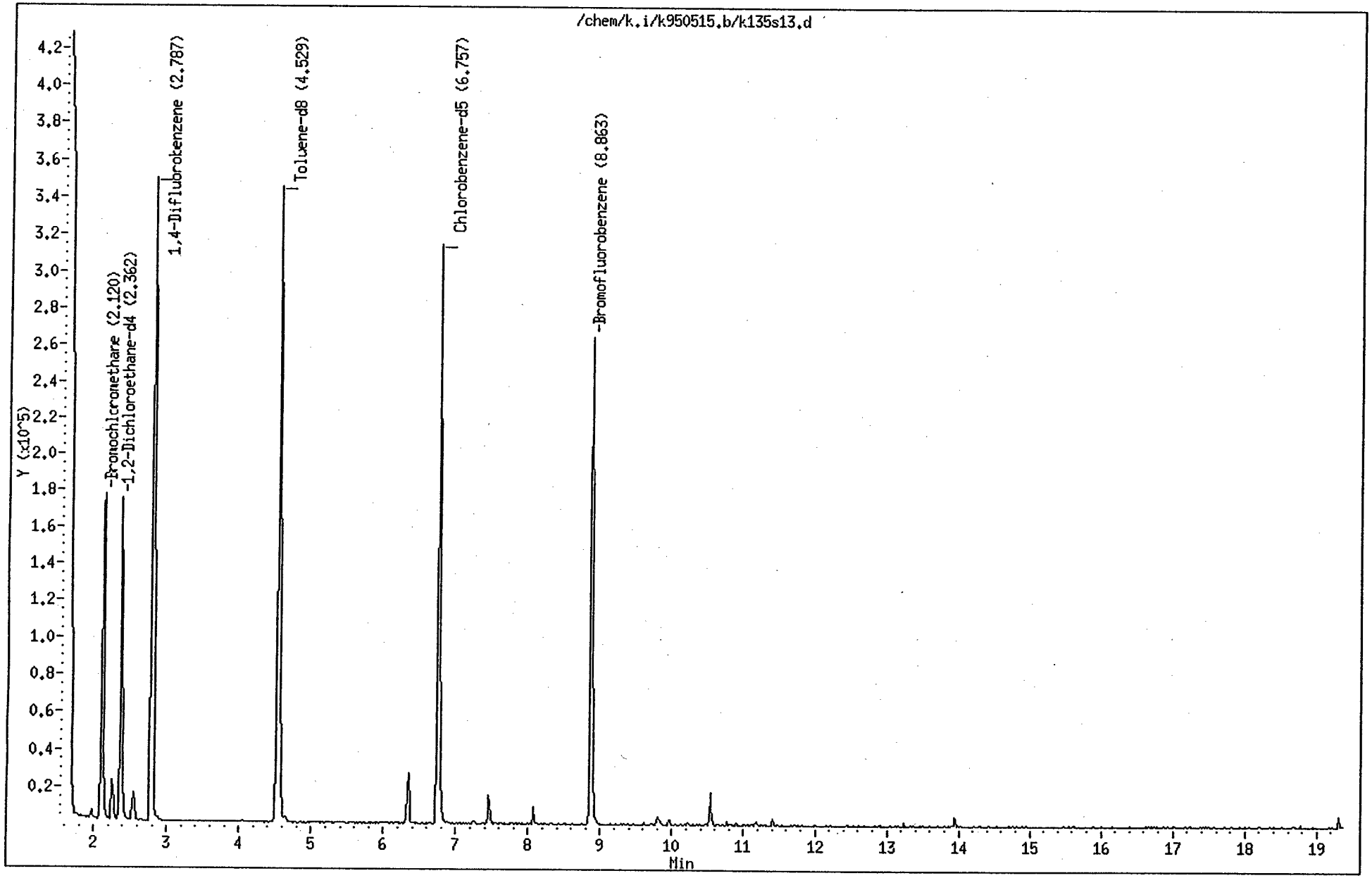
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s13.d
Date : 15-MAY-95 23:42
Client ID:
Sample Info: 9505512-10A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Houston Labs

ata file : /chem/j.i/j950519.b/j139s06.d
ab Smp Id: 9505512-10B
n Date : 19-MAY-1995 17:40
perator : PC pc Inst ID: j.i
mp Info : 9505512-10B-8270S/1X
i c Info : E135S1/J135B02/J139CC1
ment :
ethod : /chem/j.i/j950519.b/jclps.m
eth Date : 22-May-1995 08:53 patti Quant Type: ISTD
a Date : 19-MAY-1995 10:06 Cal File: j139cc1.d
ls bottle: 10
il Factor: 1.000
n egrator: HP RTE Compound Sublist: 8270.sub
arget Version: 3.10

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
1 1,4-Dichlorobenzene-d4	152.00	7.950	7.945	(1.000)	395460	40	
32 Naphthalene-d8	136.00	10.738	10.738	(1.000)	1423375	40	
4 Acenaphthene-d10	164.00	14.992	14.994	(1.000)	758656	40	
6 Phenanthrene-d10	188.00	18.607	18.611	(1.000)	1101565	40	
76 Chrysene-d12	240.00	25.281	25.284	(1.000)	787182	40	
8 Perylene-d12	264.00	29.734	29.745	(1.000)	531334	40	
2 Nitrobenzene-d5	82.00	9.160	9.157	(0.853)	1180003	86	1400
41 2-Fluorobiphenyl	172.00	13.371	13.378	(0.892)	2234331	89	1500
72 Terphenyl-d14	244.00	22.589	22.580	(0.893)	1786285	90	1500
Phenol-d5	99.00	7.339	7.345	(0.923)	2069677	140	2400
2-Fluorophenol	112.00	5.748	5.735	(0.723)	1509200	170	2800
61 2,4,6-Tribromophenol	329.70	16.983	16.972	(0.913)	365692	120	1900

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j139s06.d
Lab Smp Id: 9505512-10B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	326931	163466	653862	395460	20.96
32 Naphthalene-d8	1205967	602984	2411934	1423375	18.03
48 Acenaphthene-d10	666246	333123	1332492	758656	13.87
65 Phenanthrene-d10	984904	492452	1969808	1101565	11.84
76 Chrysene-d12	787352	393676	1574704	787182	-0.02
83 Perylene-d12	490059	245030	980118	531334	8.42

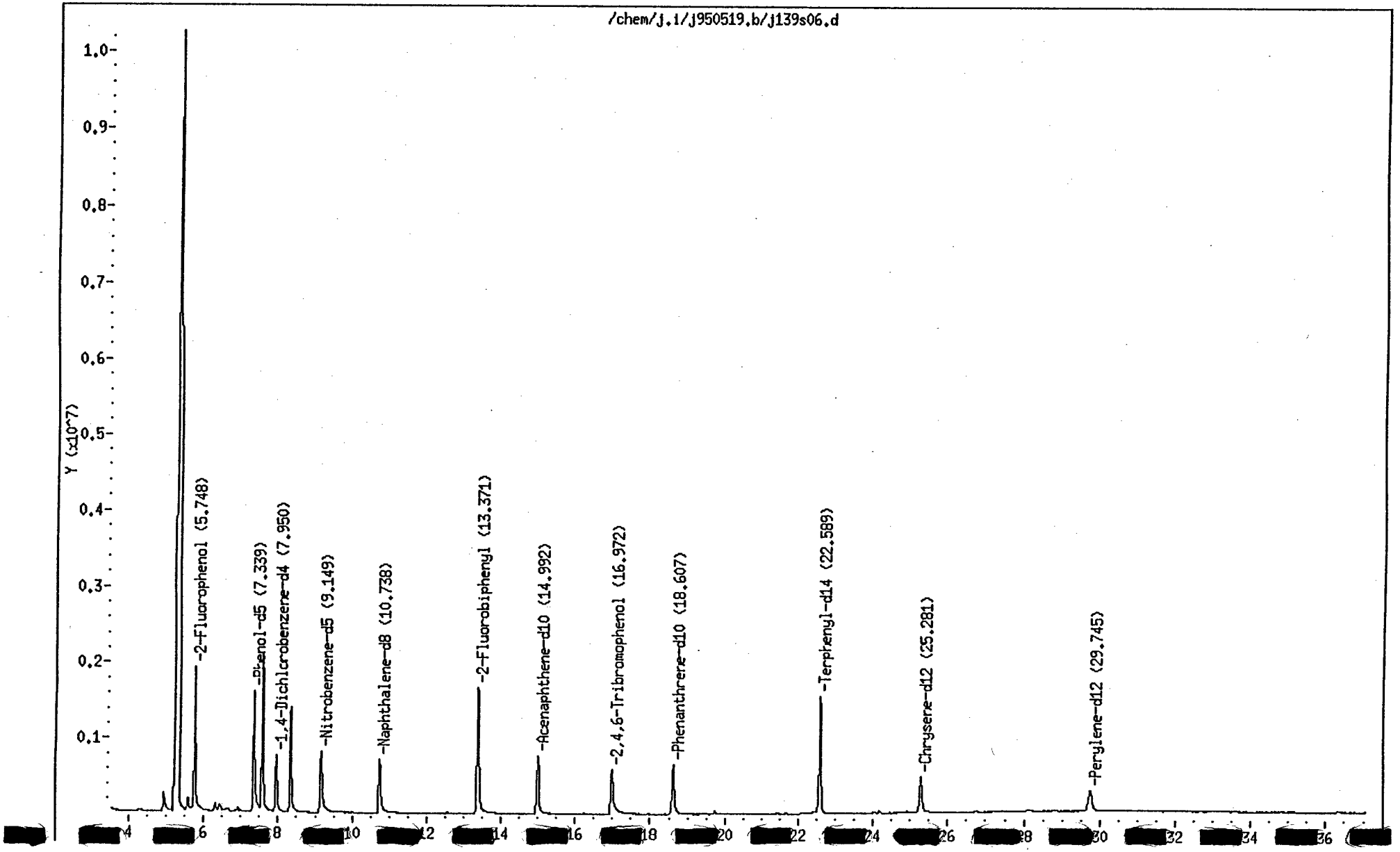
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.06
32 Naphthalene-d8	10.74	10.24	11.24	10.74	-0.01
48 Acenaphthene-d10	14.99	14.49	15.49	14.99	-0.01
65 Phenanthrene-d10	18.61	18.11	19.11	18.61	-0.02
76 Chrysene-d12	25.28	24.78	25.78	25.28	-0.01
83 Perylene-d12	29.75	29.25	30.25	29.73	-0.04

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139s06.d
Date : 19-MAY-1995 17:40
Client ID:
Sample Info: 9505512-10B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 14-14.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/16/95	12	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	ND	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	17	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	ND	0.1	mg/Kg

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505512-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 14-14.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	18	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	3.8	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 14-14.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	8	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech

SAMPLE ID: 025-009BH 14-14.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	94	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	94	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 18:48:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-009BH 14-14.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech

SAMPLE ID: 025-009BH 14-14.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-11

Operational Tech

SAMPLE ID: 025-009BH 14-14.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	83	23	120
2-Fluorobiphenyl	1600 ug/Kg	89	30	115
Terphenyl-d14	1600 ug/Kg	97	18	137
Phenol-d5	2500 ug/Kg	94	24	113
2-Fluorophenol	2500 ug/Kg	111	25	121
2,4,6-Tribromophenol	2500 ug/Kg	87	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 18:25:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISEP if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s02.d
Lab Smp Id: 9505512-11A-8240S/1X
Inj Date : 15-MAY-1995 18:48
Operator : HLW Inst ID: k.i
Smp Info : 9505512-11A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 17
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
	8 Acetone	58.00	1.513	1.517	(0.714)	19176	270	54	(a)
	17 2-Butanone	43.00	1.968	1.956	(0.928)	41575	83	17	(a)
	27 Benzene	78.00	2.544	2.547	(0.913)	54422	21	4	(a)
M	2 Xylene (Total)	106.00				39349	41	8	
	54 m,p-Xylene(s)	106.00	7.468	7.457	(1.105)	39349	41	8	
*	20 Bromochloromethane	128.00	2.119	2.108	(1.000)	71049	250		
*	31 1,4-Difluorobenzene	114.00	2.786	2.790	(1.000)	431096	250		
*	51 Chlorobenzene-d5	117.00	6.756	6.744	(1.000)	321539	250		
$	23 1,2-Dichloroethane-d4	102.00	2.362	2.365	(1.114)	30656	230	47	
$	40 Toluene-d8	98.00	4.528	4.532	(0.670)	466821	250	50	
$	61 Bromofluorobenzene	95.00	8.862	8.851	(1.312)	170948	230	47	

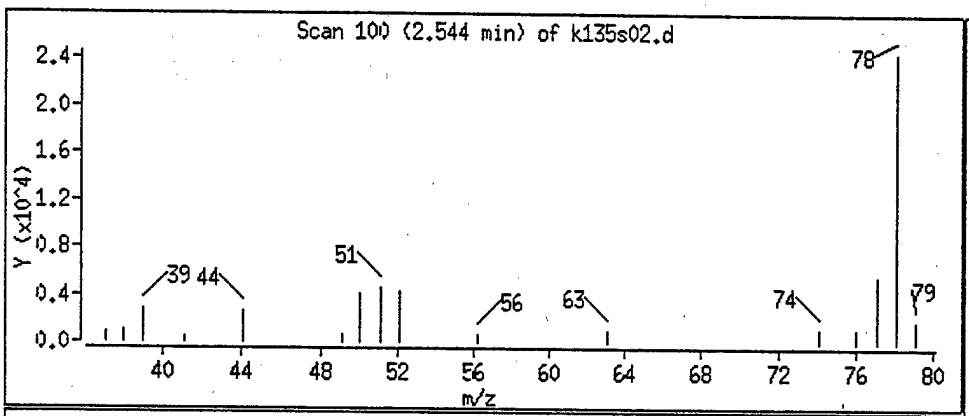
QC Flag Legend

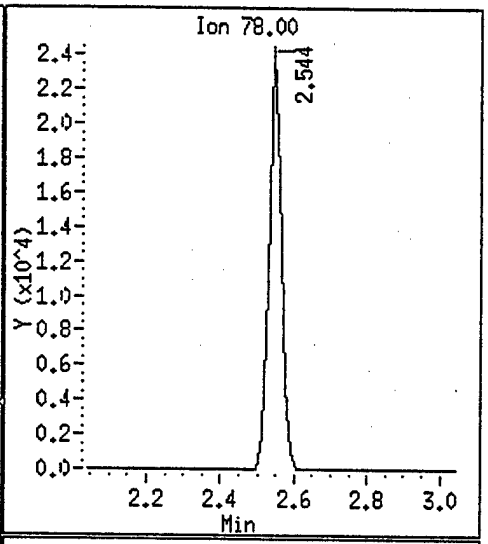
a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

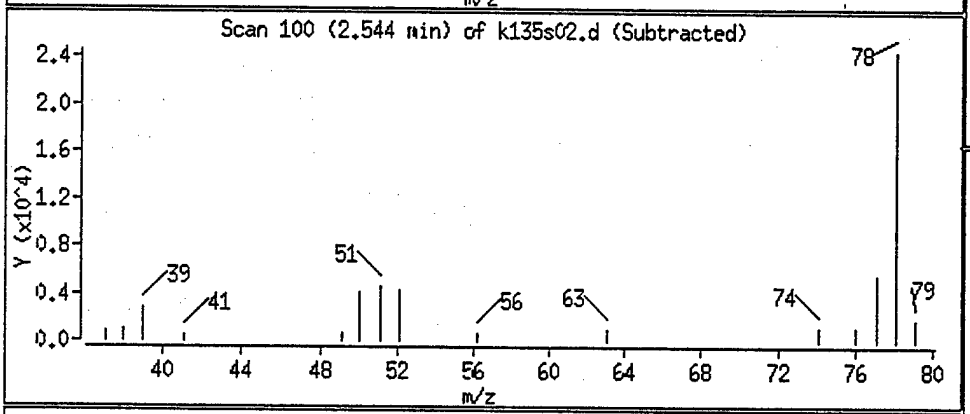
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Date : 15-MAY-95 18:48
Client ID:
Sample Info: 9505512-11A-8240S/1X

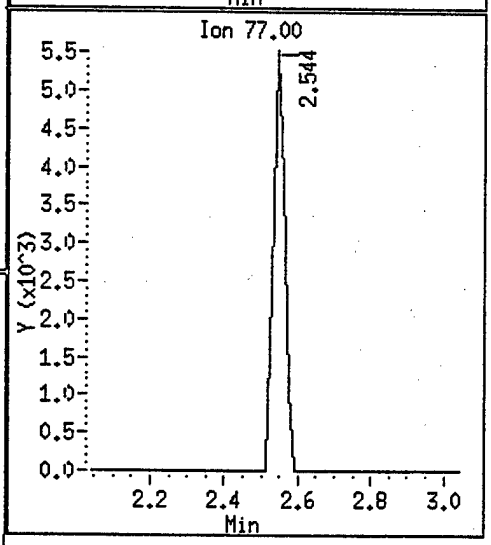
Instrument: k.i
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

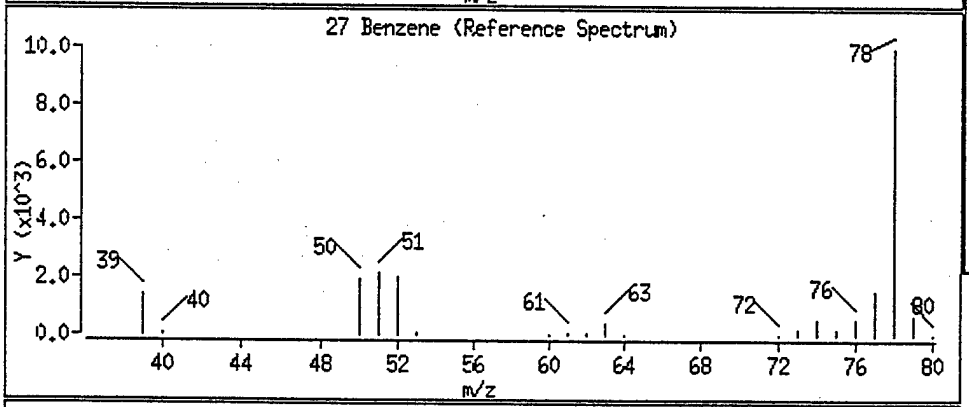
27 Benzene

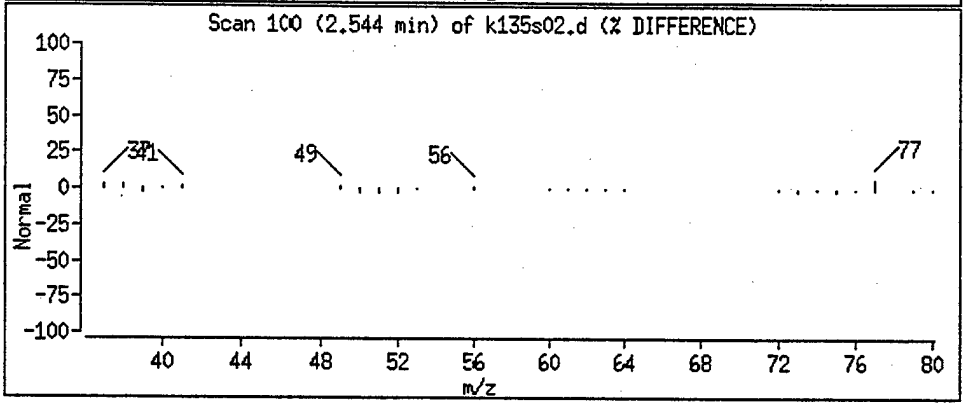










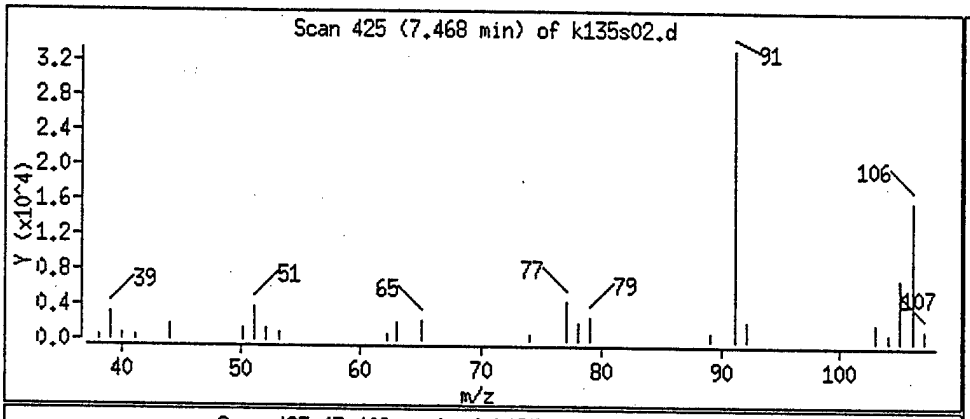


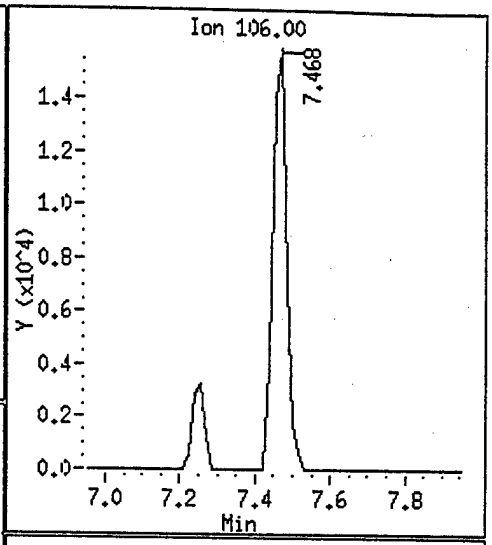
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Date : 15-MAY-95 18:48
Client ID:
Sample Info: 9505512-11A-8240S/1X

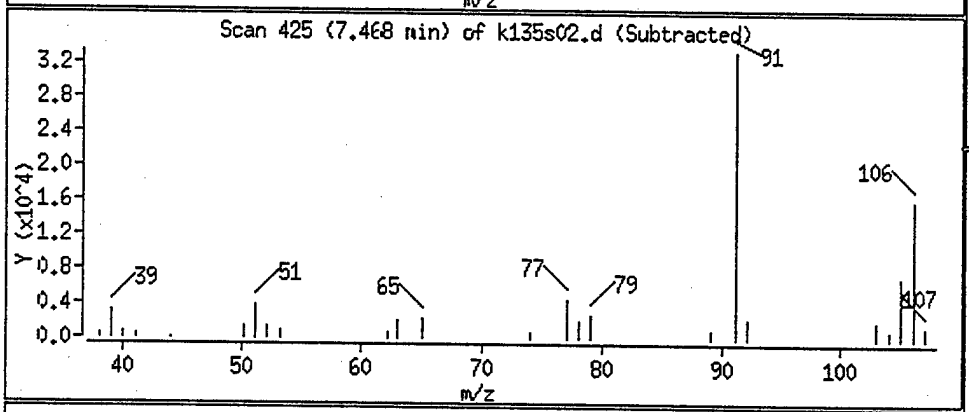
Instrument: k.i

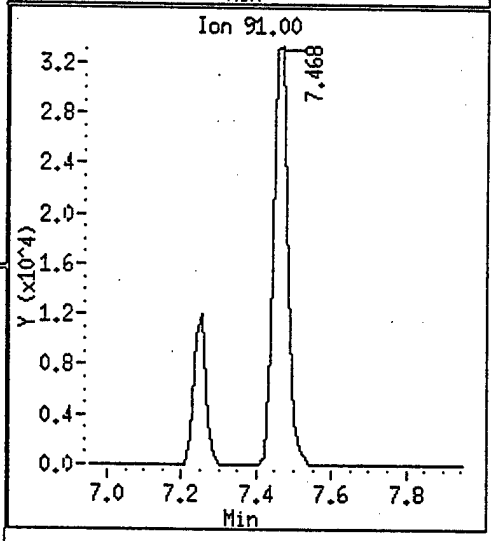
Operator: HLW
Column phase: 30m,hp5ms,0.25u df
Column diameter: 0.25

54 m,p-Xylene(s)









ata File: /chem/j.i/j950519.b/j139s07.d
eport Date: 22-May-1995 10:23

SPL Houston Labs

ata file : /chem/j.i/j950519.b/j139s07.d
ab Smp Id: 9505512-11B
nj Date : 19-MAY-1995 18:25
perator : PC PC
mp Info : 9505512-11B-8270S/1X
isc Info : E135S1/J135B02/J139CC1
omment :
ethod : /chem/j.i/j950519.b/jclps.m
eth Date : 22-May-1995 08:53 patti
al Date : 19-MAY-1995 10:06
ls bottle: 11
il Factor: 1.000
ntegrator: HP RTE
arget Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j139cc1.d

Compound Sublist: 8270.sub

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
11 1,4-Dichlorobenzene-d4	152.00	7.949	7.945	(1.000)	385497	40	
32 Naphthalene-d8	136.00	10.736	10.738	(1.000)	1416701	40	
48 Acenaphthene-d10	164.00	14.991	14.994	(1.000)	750225	40	
65 Phenanthrene-d10	188.00	18.607	18.611	(1.000)	1045241	40	
76 Chrysene-d12	240.00	25.280	25.284	(1.000)	734927	40	
83 Perylene-d12	264.00	29.743	29.745	(1.000)	531383	40	
23 Nitrobenzene-d5	82.00	9.159	9.157	(0.853)	1087741	80	1300
41 2-Fluorobiphenyl	172.00	13.380	13.378	(0.892)	2125391	85	1400
72 Terphenyl-d14	244.00	22.588	22.580	(0.893)	1716362	93	1500
4 Phenol-d5	99.00	7.338	7.345	(0.923)	2009471	140	2400
3 2-Fluorophenol	112.00	5.748	5.735	(0.723)	1445780	170	2800
61 2,4,6-Tribromophenol	329.70	16.983	16.972	(0.913)	393334	130	2200

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j139s07.d
Lab Smp Id: 9505512-11B
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	326931	163466	653862	385497	17.91
32 Naphthalene-d8	1205967	602984	2411934	1416701	17.47
48 Acenaphthene-d10	666246	333123	1332492	750225	12.60
65 Phenanthrene-d10	984904	492452	1969808	1045241	6.13
76 Chrysene-d12	787352	393676	1574704	734927	-6.66
93 Perylene-d12	490059	245030	980118	531383	8.43

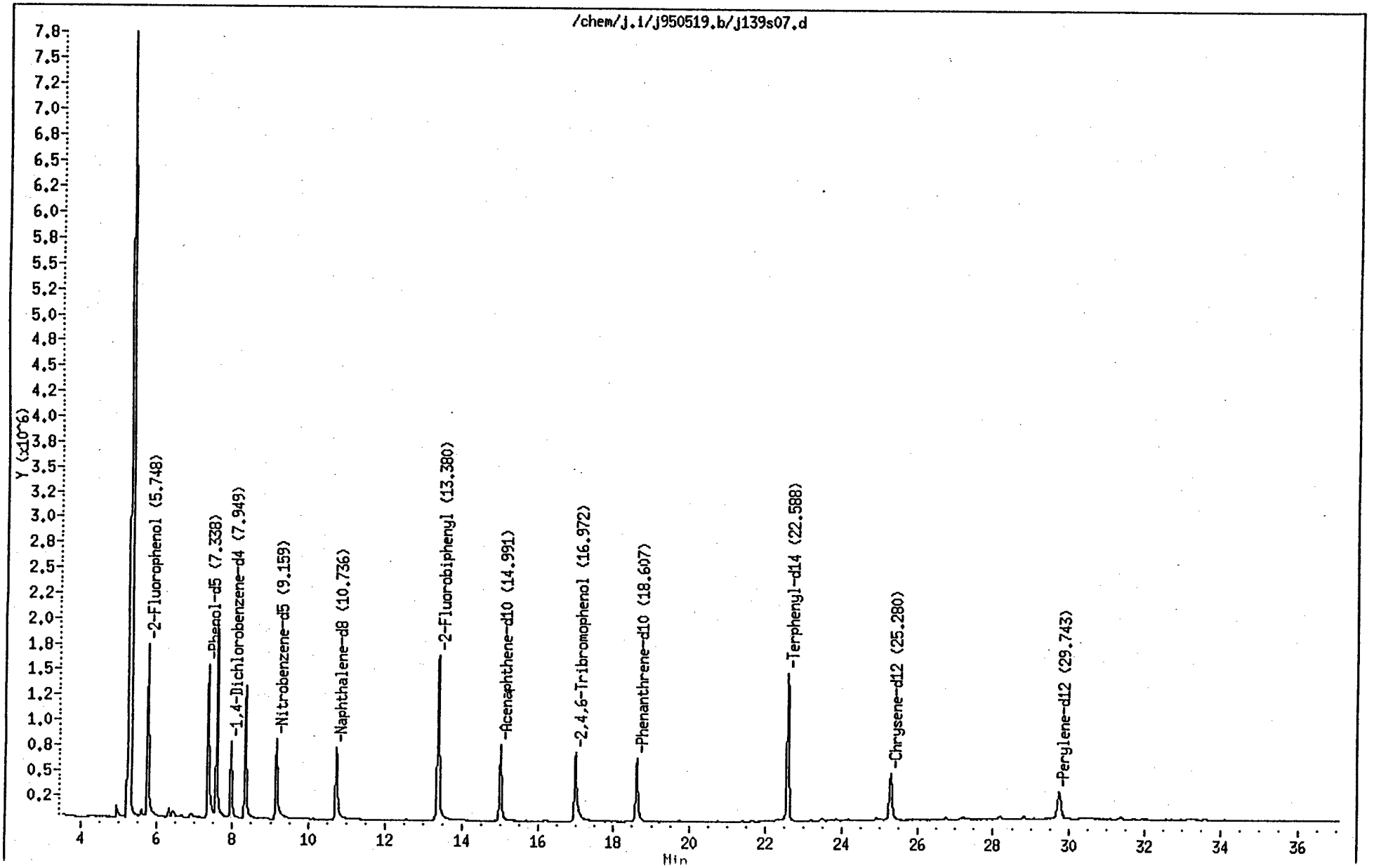
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.05
32 Naphthalene-d8	10.74	10.24	11.24	10.74	-0.02
48 Acenaphthene-d10	14.99	14.49	15.49	14.99	-0.02
65 Phenanthrene-d10	18.61	18.11	19.11	18.61	-0.02
76 Chrysene-d12	25.28	24.78	25.78	25.28	-0.02
93 Perylene-d12	29.75	29.25	30.25	29.74	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139s07.d
Date : 19-MAY-1995 18:25
Client ID:
Sample Info: 9505512-11B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 07/25/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	89.5	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	118	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	1.1	0.1	mg/Kg
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	114	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 07/25/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	7.8	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-12

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

07/25/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	46	5	ug/Kg
Bromodichloromethane	42	5	ug/Kg
Bromoform	37	5	ug/Kg
Bromomethane	31	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	38	5	ug/Kg
Chlorobenzene	43	5	ug/Kg
Chloroethane	35	10	ug/Kg
2-Chloroethylvinylether	47	10	ug/Kg
Chloroform	48	5	ug/Kg
Chloromethane	34	10	ug/Kg
Dibromochloromethane	41	5	ug/Kg
1,1-Dichloroethane	49	5	ug/Kg
1,1-Dichloroethene	36	5	ug/Kg
1,2-Dichloroethane	46	5	ug/Kg
total-1,2-Dichloroethene	84	5	ug/Kg
1,2-Dichloropropane	48	5	ug/Kg
cis-1,3-Dichloropropene	38	5	ug/Kg
trans-1,3-Dichloropropene	42	5	ug/Kg
Ethylbenzene	44	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	40	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	44	5	ug/Kg
Tetrachloroethene	40	5	ug/Kg
Toluene	47	5	ug/Kg
1,1,1-Trichloroethane	46	5	ug/Kg
1,1,2-Trichloroethane	47	5	ug/Kg
Trichloroethene	43	5	ug/Kg
Trichlorofluoromethane	38	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	33	10	ug/Kg
Xylenes (total)	35	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-12

Operational Tech

SAMPLE ID: 25-009BH 14.5'-15' MS

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	96	70	121
Toluene-d8	50 ug/Kg	104	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 19:15:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Data File: /chem/k.i/k950515.b/k135s03.d
Report Date: 15-May-1995 19:31

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s03.d
Lab Smp Id: 9505512-12A-8240S/1X
Inj Date : 15-MAY-95 19:15
Operator : HLW Inst ID: k.i
Smp Info : 9505512-12A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 18
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4	Chloromethane	50.00	1.362	1.365	(0.643)	122356	170	34
5	Vinyl Chloride	62.00	1.407	1.411	(0.664)	116916	160	33
7	Bromomethane	94.00	1.438	1.441	(0.678)	77041	160	31
6	Chloroethane	64.00	1.438	1.441	(0.678)	100601	170	35
9	Trichlorofluoromethane	100.90	1.513	1.517	(0.714)	101911	190	38
8	Acetone	58.00	1.513	1.517	(0.714)	11191	160	33(a)
10	1,1-Dichloroethene	96.00	1.619	1.623	(0.764)	82563	180	36
11	Methylene Chloride	84.00	1.665	1.668	(0.786)	106945	200	40
M 1	1,2-Dichloroethene (total)	96.00				273054	420	84
13	trans-1,2-Dichloroethene	96.00	1.771	1.774	(0.836)	136527	220	45
14	1,1-Dichloroethane	63.00	1.847	1.850	(0.871)	311908	240	49
17	2-Butanone	43.00	1.968	1.956	(0.928)	30719	63	13(a)
19	cis-1,2-Dichloroethene	96.00	1.771	2.047	(0.836)	136527	200	39
21	Chloroform	83.00	2.119	2.108	(1.000)	261482	240	48
24	1,1,1-Trichloroethane	97.00	2.392	2.381	(1.129)	215230	230	46
25	1,2-Dichloroethane	62.00	2.407	2.411	(0.864)	215857	230	46
27	Benzene	78.00	2.544	2.547	(0.913)	616865	230	46
28	Carbon Tetrachloride	117.00	2.574	2.562	(0.924)	146538	190	38
33	1,2-Dichloropropane	63.00	3.074	3.062	(1.103)	166559	240	48
34	Trichloroethene	130.00	3.089	3.078	(1.109)	130734	220	43
35	Bromodichloromethane	83.00	3.210	3.199	(1.152)	171880	210	42
15	2-Chloroethylvinylether	63.00	1.847	1.850	(0.663)	311908	240	47
42	cis-1,3-Dichloropropene	75.00	4.650	4.638	(1.669)	155697	190	38
37	trans-1,3-Dichloropropene	75.00	3.953	3.941	(0.585)	194946	210	42
43	Toluene	92.00	4.635	4.623	(0.686)	347615	240	47
44	1,1,2-Trichloroethane	83.00	4.786	4.775	(0.708)	98821	240	47
46	Dibromochloromethane	129.00	5.392	5.381	(0.798)	106313	210	41
48	Tetrachloroethene	164.00	5.801	5.790	(0.859)	98501	200	40
52	Chlorobenzene	112.00	6.801	6.790	(1.007)	318723	220	43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
M	2 Xylene (Total)	106.00				170981	180	35
	53 Ethylbenzene	106.00	7.241	7.244	(1.072)	170981	220	44
	54 m,p-Xylene(s)	106.00	7.241	7.457	(1.072)	170981	180	35(Q)
	55 Bromoform	173.00	7.817	7.820	(1.157)	63672	180	37
	59 1,1,2,2-Tetrachloroethane	83.00	8.605	8.608	(1.274)	123176	220	44
*	20 Bromochloromethane	128.00	2.119	2.108	(1.000)	68694	250	
*	31 1,4-Difluorobenzene	114.00	2.786	2.790	(1.000)	444474	250	
*	51 Chlorobenzene-d5	117.00	6.756	6.744	(1.000)	325283	250	
$	23 1,2-Dichloroethane-d4	102.00	2.362	2.365	(1.114)	30460	240	48
$	40 Toluene-d8	98.00	4.529	4.532	(0.670)	487199	260	52
$	61 Bromofluorobenzene	95.00	8.862	8.851	(1.312)	177009	240	48

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s03.d
Lab Smp Id: 9505512-12A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	68694	5.33
31 1,4-Difluorobenzene	411543	205772	823086	444474	8.00
51 Chlorobenzene-d5	312868	156434	625736	325283	3.97

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.12	0.55
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.13
51 Chlorobenzene-d5	6.74	6.24	7.24	6.76	0.17

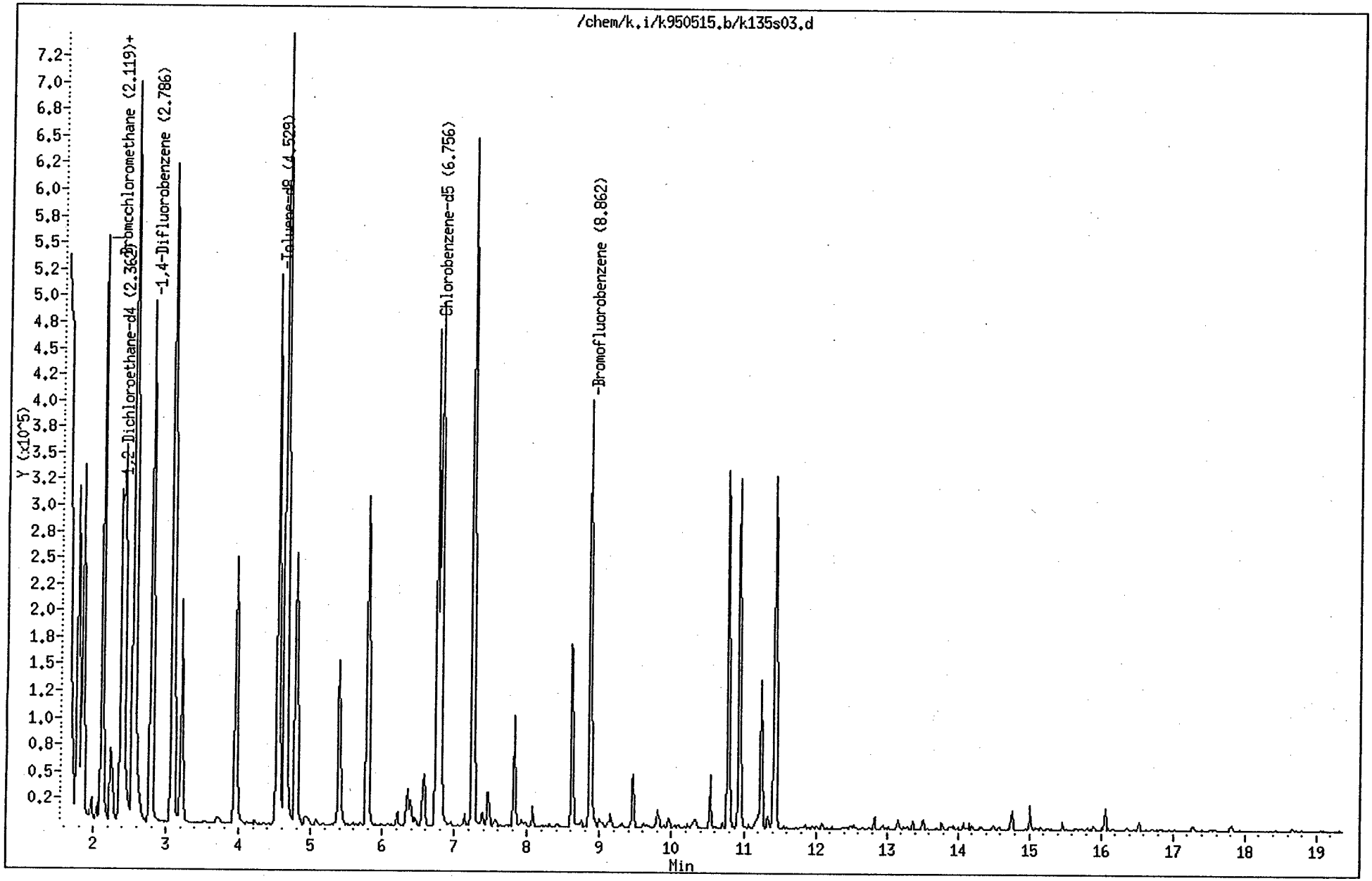
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s03.d
Date : 15-MAY-95 19:15
Client ID:
Sample Info: 9505512-12A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 07/25/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MSD

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Cadmium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	88.7	0.5	mg/Kg
Chromium, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	114	1	mg/Kg
Mercury, Total METHOD 7471 *** Analyzed by: PB Date: 05/24/95	1.0	0.1	mg/Kg
Nickel, Total METHOD 6010 *** Analyzed by: DQ Date: 05/24/95	112	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: MM Date: 05/22/95	05/22/95		
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/22/95	05/22/95		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 07/25/9

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MSD

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:0
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/24/95	7.8	0.4	mg/K

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-13

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

07/25/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 25-009BH 14.5'-15' MSD

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 14:35:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	46	5	ug/Kg
Bromodichloromethane	43	5	ug/Kg
Bromoform	39	5	ug/Kg
Bromomethane	31	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	39	5	ug/Kg
Chlorobenzene	42	5	ug/Kg
Chloroethane	35	10	ug/Kg
2-Chloroethylvinylether	48	10	ug/Kg
Chloroform	48	5	ug/Kg
Chloromethane	34	10	ug/Kg
Dibromochloromethane	42	5	ug/Kg
1,1-Dichloroethane	48	5	ug/Kg
1,1-Dichloroethene	35	5	ug/Kg
1,2-Dichloroethane	47	5	ug/Kg
total-1,2-Dichloroethene	83	5	ug/Kg
1,2-Dichloropropane	48	5	ug/Kg
cis-1,3-Dichloropropene	40	5	ug/Kg
trans-1,3-Dichloropropene	43	5	ug/Kg
Ethylbenzene	42	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	42	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	46	5	ug/Kg
Tetrachloroethene	38	5	ug/Kg
Toluene	46	5	ug/Kg
1,1,1-Trichloroethane	46	5	ug/Kg
1,1,2-Trichloroethane	46	5	ug/Kg
Trichloroethene	43	5	ug/Kg
Trichlorofluoromethane	37	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	33	10	ug/Kg
Xylenes (total)	34	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-13

Operational Tech

SAMPLE ID: 25-009BH 14.5'-15' MSD

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	96	70	121
Toluene-d8	50 ug/Kg	102	84	138
4-Bromofluorobenzene	50 ug/Kg	94	59	113

ANALYZED BY: HLW DATE/TIME: 05/15/95 19:42:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS: *SP* for Target Compound List
Add MOISV if no other fractons.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135s04.d
Lab Smp Id: 9505512-13A-8240S/1X
Inj Date : 15-MAY-95 19:42
Operator : HLW Inst ID: k.i
Smp Info : 9505512-13A-8240S/1X
Misc Info : K135S1/K135B04/K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 19
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	4 Chloromethane	50.00	1.365	1.365	(0.648)	117071	170	34
	5 Vinyl Chloride	62.00	1.410	1.411	(0.669)	109420	160	33
	7 Bromomethane	94.00	1.426	1.441	(0.676)	71721	150	31
	6 Chloroethane	64.00	1.441	1.441	(0.684)	94507	170	35
	9 Trichlorofluoromethane	100.90	1.517	1.517	(0.720)	92660	180	37
	10 1,1-Dichloroethene	96.00	1.607	1.623	(0.763)	76378	170	35
	11 Methylene Chloride	84.00	1.668	1.668	(0.791)	106436	210	42
M	1 1,2-Dichloroethene (total)	96.00				254316	410	83
	13 trans-1,2-Dichloroethene	96.00	1.774	1.774	(0.842)	127158	220	44
	14 1,1-Dichloroethane	63.00	1.850	1.850	(0.878)	290135	240	48
	17 2-Butanone	43.00	1.956	1.956	(0.928)	22501	49	10(a)
	19 cis-1,2-Dichloroethene	96.00	1.774	2.047	(0.842)	127158	190	39
	21 Chloroform	83.00	2.107	2.108	(1.000)	246721	240	48
	24 1,1,1-Trichloroethane	97.00	2.380	2.381	(1.129)	201717	230	46
	25 1,2-Dichloroethane	62.00	2.410	2.411	(0.864)	203388	230	47
	27 Benzene	78.00	2.547	2.547	(0.913)	572088	230	46
	28 Carbon Tetrachloride	117.00	2.562	2.562	(0.918)	138548	200	39
	33 1,2-Dichloropropane	63.00	3.062	3.062	(1.098)	155018	240	48
	34 Trichloroethene	130.00	3.077	3.078	(1.103)	120710	220	43
	35 Bromodichloromethane	83.00	3.198	3.199	(1.147)	163744	220	43
	15 2-Chloroethylvinylether	63.00	1.850	1.850	(0.663)	290135	240	48
	42 cis-1,3-Dichloropropene	75.00	4.638	4.638	(1.663)	153038	200	40
	37 trans-1,3-Dichloropropene	75.00	3.956	3.941	(0.587)	184068	210	43
	43 Toluene	92.00	4.623	4.623	(0.685)	313594	230	46
	44 1,1,2-Trichloroethane	83.00	4.789	4.775	(0.710)	90775	230	46
	46 Dibromochloromethane	129.00	5.395	5.381	(0.800)	101264	210	42
	48 Tetrachloroethene	164.00	5.789	5.790	(0.858)	88451	190	38
	52 Chlorobenzene	112.00	6.805	6.790	(1.009)	292946	210	42
M	2 Xylene (Total)	106.00				154578	170	34

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	53 Ethylbenzene	106.00	7.244	7.244	(1.074)	154578	210	42
	54 m,p-Xylene(s)	106.00	7.244	7.457	(1.074)	154578	170	34 (Q)
	55 Bromoform	173.00	7.820	7.820	(1.160)	63675	200	39
	59 1,1,2,2-Tetrachloroethane	83.00	8.608	8.608	(1.276)	120280	230	46
*	20 Bromochloromethane	128.00	2.107	2.108	(1.000)	64822	250	
*	31 1,4-Difluorobenzene	114.00	2.789	2.790	(1.000)	410601	250	
*	51 Chlorobenzene-d5	117.00	6.744	6.744	(1.000)	304044	250	
$	23 1,2-Dichloroethane-d4	102.00	2.365	2.365	(1.122)	28525	240	48
$	40 Toluene-d8	98.00	4.532	4.532	(0.672)	447317	250	51
$	61 Bromofluorobenzene	95.00	8.865	8.851	(1.315)	163360	240	47

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135s04.d
Lab Smp Id: 9505512-13A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1/K135B04/K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	64822	-0.61
31 1,4-Difluorobenzene	411543	205772	823086	410601	-0.23
51 Chlorobenzene-d5	312868	156434	625736	304044	-2.82

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.11	-0.02
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.01
51 Chlorobenzene-d5	6.74	6.24	7.24	6.74	-0.01

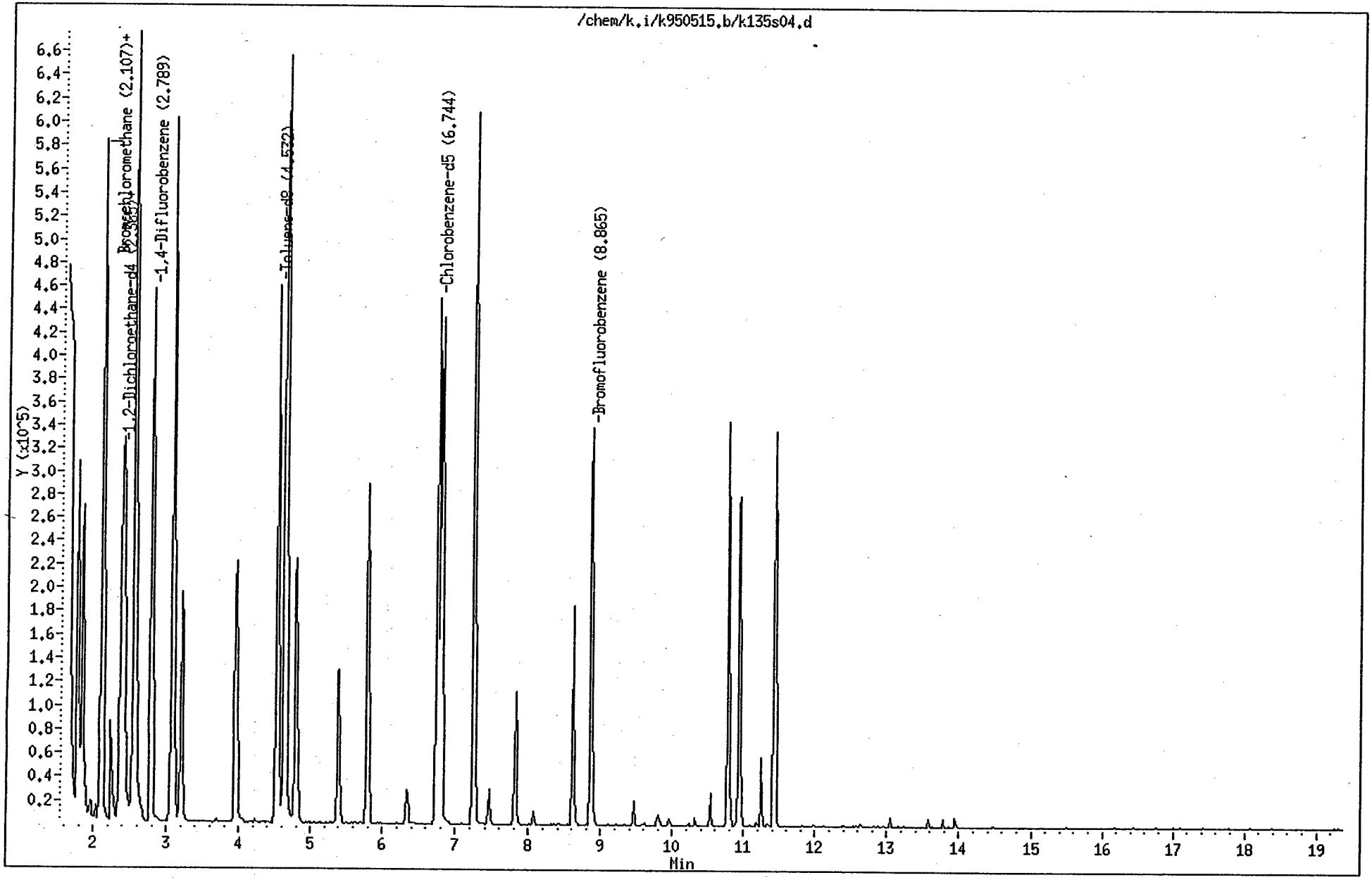
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135s04.d
Date : 15-MAY-95 19:42
Client ID:
Sample Info: 9505512-13A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



CORRECTED COPY

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 07/17/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0 MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

CORRECTED COPY

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

07/17/9

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0 MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:0
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	1300	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	2000	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	2200	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	1100	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	1300	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

CORRECTED COPY

Certificate of Analysis No. H9-9505512-14

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0 MS

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	1600	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	1300	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	1800	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	2000	330	ug/Kg
Pyrene	1300	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	1300	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

CORRECTED COPY

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0 MS

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	86	23	120
2-Fluorobiphenyl	1600 ug/Kg	91	30	115
Terphenyl-d14	1600 ug/Kg	93	18	137
Phenol-d5	2500 ug/Kg	97	24	113
2-Fluorophenol	2500 ug/Kg	115	25	121
2,4,6-Tribromophenol	2500 ug/Kg	97	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 15:24:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Data File: /chem/j.i/j950519.b/j139s03.d
Report Date: 24-May-1995 12:38

SPL Houston Labs

Data file : /chem/j.i/j950519.b/j139s03.d
Lab Smp Id: 9505512-14A
Inj Date : 19-MAY-1995 15:24
Operator : PC PC
Inst ID: j.i
Smp Info : 9505512-14A-8270S/1X
Misc Info : E135S1/J135B02/J139CC1
Comment :
Method : /chem/j.i/j950519.b/jclps.m
Meth Date : 23-May-1995 10:42 patti
Quant Type: ISTD
Inj Date : 19-MAY-1995 10:06
Cal File: j139cc1.d
Inj bottle: 7
QC Sample: MS
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	Phenol	94.00	7.384	7.367	(0.929)	2131301	120	2000 (Q)
9	2-Chlorophenol	128.00	7.602	7.607	(0.956)	1641718	130	2200
	1,4-Dichlorobenzene	146.00	7.984	7.978	(1.004)	1143517	68	1100
	N-Nitroso-di-n-propylamine	70.00	8.890	8.895	(1.118)	737954	76	1300
31	1,2,4-Trichlorobenzene	180.00	10.655	10.651	(0.993)	920030	76	1300
36	4-Chloro-3-methylphenol	107.00	12.180	12.188	(1.135)	1434991	120	2000
	Acenaphthene	153.00	15.079	15.070	(1.006)	1744953	76	1300
51	4-Nitrophenol	109.00	15.505	15.529	(1.034)	270347	94	1600 (Q)
53	2,4-Dinitrotoluene	165.00	15.603	15.606	(1.041)	703395	76	1300
	Pentachlorophenol	266.00	18.354	18.358	(0.986)	344346	110	1800
	Pyrene	202.00	22.168	22.154	(0.877)	2121199	76	1300
11	1,4-Dichlorobenzene-d4	152.00	7.952	7.945	(1.000)	404516	40	
	Naphthalene-d8	136.00	10.731	10.738	(1.000)	1472382	40	
	Acenaphthene-d10	164.00	14.992	14.994	(1.000)	796666	40	
65	Phenanthrene-d10	188.00	18.618	18.611	(1.000)	1115466	40	
76	Chrysene-d12	240.00	25.282	25.284	(1.000)	786178	40	
	Perylene-d12	264.00	29.743	29.745	(1.000)	544664	40	
	Nitrobenzene-d5	82.00	9.152	9.157	(0.853)	1166888	82	1400
41	2-Fluorobiphenyl	172.00	13.380	13.378	(0.892)	2306890	87	1400
	Terphenyl-d14	244.00	22.588	22.580	(0.893)	1761320	89	1500
	Phenol-d5	99.00	7.351	7.345	(0.924)	2176222	140	2400
3	2-Fluorophenol	112.00	5.749	5.735	(0.723)	1577865	170	2900
61	2,4,6-Tribromophenol	329.70	16.978	16.972	(0.912)	469388	150	2400

QC Flag Legend

Q Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

nstrument ID: j.i
ab File ID: j139s03.d
ab Smp Id: 9505512-14A
nalysis Type: SV
uant Type: ISTD
perator: PC
ethod File: /chem/j.i/j950519.b/jclps.m
isc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	326931	163466	653862	404516	23.73
32 Naphthalene-d8	1205967	602984	2411934	1472382	22.09
48 Acenaphthene-d10	666246	333123	1332492	796666	19.58
65 Phenanthrene-d10	984904	492452	1969808	1115466	13.26
76 Chrysene-d12	787352	393676	1574704	786178	-0.15
83 Perylene-d12	490059	245030	980118	544664	11.14

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.08
32 Naphthalene-d8	10.74	10.24	11.24	10.73	-0.07
48 Acenaphthene-d10	14.99	14.49	15.49	14.99	-0.01
65 Phenanthrene-d10	18.61	18.11	19.11	18.62	0.04
76 Chrysene-d12	25.28	24.78	25.78	25.28	-0.01
83 Perylene-d12	29.75	29.25	30.25	29.74	-0.01

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139s03.d
Report Date: 24-May-1995 12:38

SPL Houston Labs

RECOVERY REPORT

Client Name:
Sample Matrix: SOLID
Lab Smp Id: 9505512-14A
Level: LOW
Data Type: MS DATA
SpikeList File: 8270s.spk
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Client SDG: j950519
Fraction: SV

Operator: PC
SampleType: MS
Quant Type: ISTD

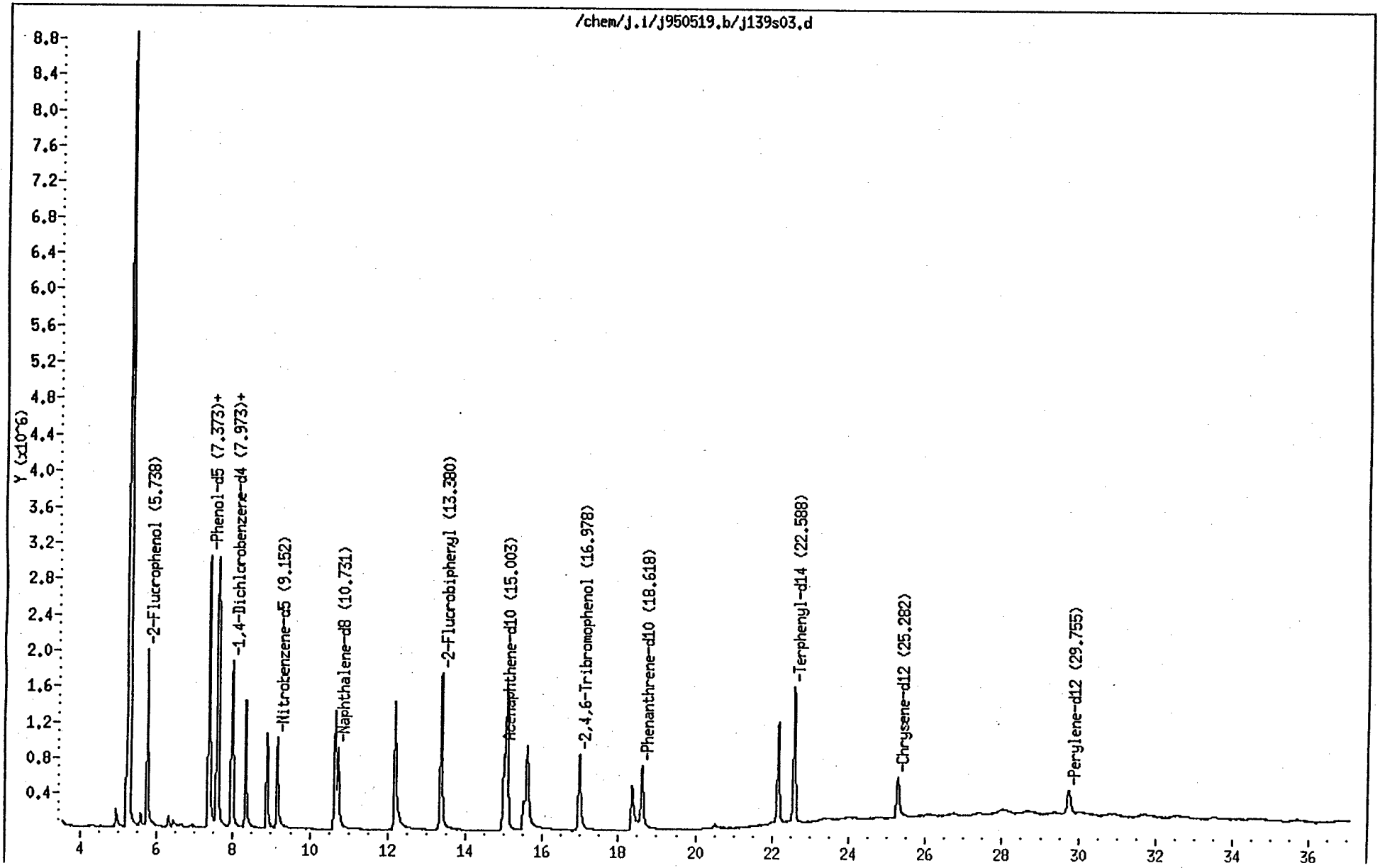
	SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
5	Phenol	2500	2000	80.52	26-90
9	2-Chlorophenol	2500	2200	86.38	25-102
12	1,4-Dichlorobenzen	1600	1100	70.56	28-104
21	N-Nitroso-di-n-pro	1600	1300	79.00	41-126
31	1,2,4-Trichloroben	1600	1300	79.61	38-107
36	4-Chloro-3-methylp	2500	2000	81.12	26-103
49	Acenaphthene	1600	1300	79.06	31-137
51	4-Nitrophenol	2500	1600	62.81	11-114
53	2,4-Dinitrotoluene	1600	1300	79.63	28-89
64	Pentachlorophenol	2500	1800	70.70	17-109
71	Pyrene	1600	1300	78.80	35-142

	SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
23	Nitrobenzene-d5	1600	1400	85.98	23-120
$ 41	2-Fluorobiphenyl	1600	1400	90.80	30-115
72	Terphenyl-d14	1600	1500	92.89	18-137
4	Phenol-d5	2500	2400	97.05	24-113
$ 3	2-Fluorophenol	2500	2900	115.12	25-121
$ 61	2,4,6-Tribromophen	2500	2400	97.38	19-122

Data File: /chem/j.i/j950519.b/j139s03.d
Date : 19-MAY-1995 15:24
Client ID:
Sample Info: 9505512-14A-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-15

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/05/95		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-15

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	1300	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	2000	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	2100	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	1100	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	1300	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-15

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	1800	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	1300	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	1700	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	2000	330	ug/Kg
Pyrene	1300	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	1300	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-15

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	89	23	120
2-Fluorobiphenyl	1600 ug/Kg	93	30	115
Terphenyl-d14	1600 ug/Kg	95	18	137
Phenol-d5	2500 ug/Kg	96	24	113
2-Fluorophenol	2500 ug/Kg	114	25	121
2,4,6-Tribromophenol	2500 ug/Kg	92	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 16:09:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

Data File: /chem/j.i/j950519.b/j139s04.d
Report Date: 24-May-1995 12:38

SPL Houston Labs

Data file : /chem/j.i/j950519.b/j139s04.d
Lab Smp Id: 9505512-15A
Inj Date : 19-MAY-1995 16:09
Operator : PC
Inst ID: j.i
Smp Info : 9505512-15A-8270S/1X
Misc Info : E135S1/J135B02/J139CC1
Comment :
Method : /chem/j.i/j950519.b/jclps.m
Meth Date : 23-May-1995 10:42 patti
Quant Type: ISTD
Acq Date : 19-MAY-1995 10:06
Cal File: j139cc1.d
Vial bottle: 8
QC Sample: MSD
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	Phenol	94.00	7.383	7.367	(0.929)	2086369	120	2000 (Q)
9	2-Chlorophenol	128.00	7.602	7.607	(0.956)	1634112	130	2100
	1,4-Dichlorobenzene	146.00	7.984	7.978	(1.004)	1145398	68	1100
	N-Nitroso-di-n-propylamine	70.00	8.890	8.895	(1.118)	746324	76	1300
31	1,2,4-Trichlorobenzene	180.00	10.654	10.651	(0.993)	919880	76	1300
36	4-Chloro-3-methylphenol	107.00	12.190	12.188	(1.136)	1456977	120	2000
	Acenaphthene	153.00	15.078	15.070	(1.005)	1729057	76	1300
	4-Nitrophenol	109.00	15.514	15.529	(1.034)	309832	110	1800 (Q)
53	2,4-Dinitrotoluene	165.00	15.602	15.606	(1.040)	715181	78	1300
	Pentachlorophenol	266.00	18.362	18.358	(0.986)	338697	100	1700
	Pyrene	202.00	22.165	22.154	(0.877)	2192135	77	1300
11	1,4-Dichlorobenzene-d4	152.00	7.951	7.945	(1.000)	406055	40	
	Naphthalene-d8	136.00	10.730	10.738	(1.000)	1475960	40	
	Acenaphthene-d10	164.00	15.001	14.994	(1.000)	789088	40	
65	Phenanthrene-d10	188.00	18.615	18.611	(1.000)	1160802	40	
76	Chrysene-d12	240.00	25.283	25.284	(1.000)	796206	40	
	Perylene-d12	264.00	29.753	29.745	(1.000)	555242	40	
	Nitrobenzene-d5	82.00	9.162	9.157	(0.854)	1214791	86	1400
41	2-Fluorobiphenyl	172.00	13.379	13.378	(0.892)	2333383	89	1500
	Terphenyl-d14	244.00	22.593	22.580	(0.894)	1818715	91	1500
	Phenol-d5	99.00	7.350	7.345	(0.924)	2167445	140	2400
3	2-Fluorophenol	112.00	5.748	5.735	(0.723)	1574257	170	2900
61	2,4,6-Tribromophenol	329.70	16.977	16.972	(0.912)	461829	140	2300

Flag Legend

Q Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j139s04.d
Lab Smp Id: 9505512-15A
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	326931	163466	653862	406055	24.20
32 Naphthalene-d8	1205967	602984	2411934	1475960	22.39
48 Acenaphthene-d10	666246	333123	1332492	789088	18.44
65 Phenanthrene-d10	984904	492452	1969808	1160802	17.86
76 Chrysene-d12	787352	393676	1574704	796206	1.12
83 Perylene-d12	490059	245030	980118	555242	13.30

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.07
32 Naphthalene-d8	10.74	10.24	11.24	10.73	-0.07
48 Acenaphthene-d10	14.99	14.49	15.49	15.00	0.05
65 Phenanthrene-d10	18.61	18.11	19.11	18.61	0.02
76 Chrysene-d12	25.28	24.78	25.78	25.28	0.00
83 Perylene-d12	29.75	29.25	30.25	29.75	0.03

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

SPL Houston Labs

RECOVERY REPORT

ient Name:
ple Matrix: SOLID
Smp Id: 9505512-15A
evel: LOW
a Type: MS DATA
keList File: 8270s.spk
thod File: /chem/j.i/j950519.b/jclps.m
isc Info: E135S1/J135B02/J139CC1

Client SDG: j950519
Fraction: SV

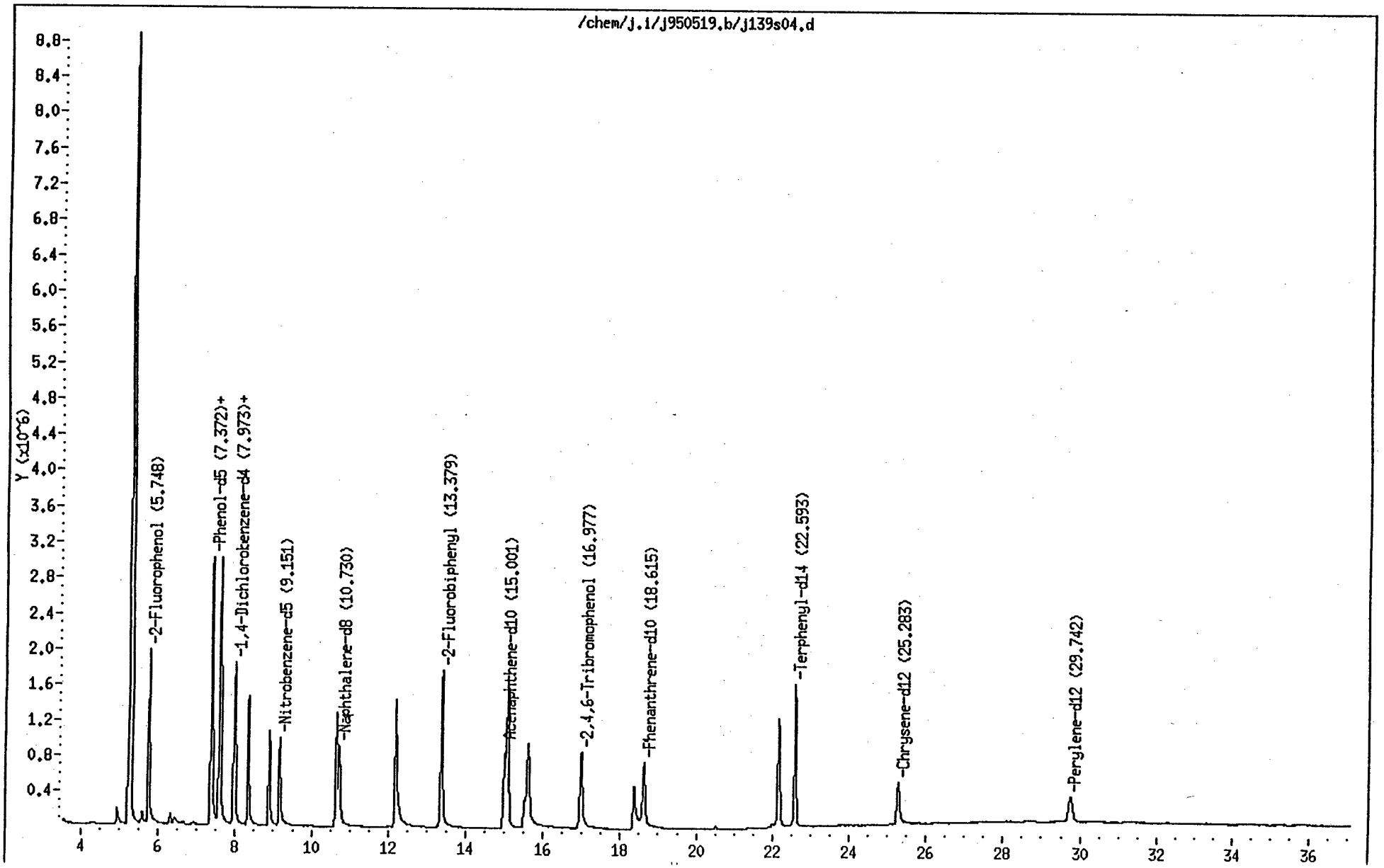
Operator: PC
SampleType: MSD
Quant Type: ISTD

SPIKE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
5 Phenol	2500	2000	78.53	26-90
9 2-Chlorophenol	2500	2100	85.66	25-102
12 1,4-Dichlorobenzen	1600	1100	70.41	28-104
21 N-Nitroso-di-n-pro	1600	1300	79.59	41-126
31 1,2,4-Trichloroben	1600	1300	79.41	38-107
36 4-Chloro-3-methylp	2500	2000	82.17	26-103
49 Acenaphthene	1600	1300	79.09	31-137
51 4-Nitrophenol	2500	1800	72.68	11-114
53 2,4-Dinitrotoluene	1600	1300	81.74	28-89
64 Pentachlorophenol	2500	1700	66.82	17-109
71 Pyrene	1600	1300	80.40	35-142

SURROGATE COMPOUND	CONC ADDED ug/Kg	CONC RECOVERED ug/Kg	% RECOVERED	LIMITS
23 Nitrobenzene-d5	1600	1400	89.29	23-120
41 2-Fluorobiphenyl	1600	1500	92.73	30-115
72 Terphenyl-d14	1600	1500	94.71	18-137
4 Phenol-d5	2500	2400	96.29	24-113
3 2-Fluorophenol	2500	2900	114.42	25-121
61 2,4,6-Tribromophen	2500	2300	92.07	19-122

Data File: /chem/j.i/j950519.b/j139s04.d
Date : 19-MAY-1995 16:09
Client ID:
Sample Info: 9505512-15A-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i
Operator: PC
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

July 18, 1995

Operational Technology
4100 N.W. Loop 410
Ste. 230
San Antonio, Texas

Dear Mr. Escobar:

This letter is concerning your fax datae 6/30/95.

(1) General - Corrected data sheets are enclosed.

(2) Volatiles -
a) All hits that you have listed are below are PQL.
b) Trip blank for wo 9505673 was not received at the laboratory. Kathryn Pritchett was notified of this.

(3) Volatiles - 8010/8020 - Raw data is included in this package.

4) Semivolatile -
a) For samples 5512-07,08 and 5209-01 the extract could not be concentrated to 1 mL. For sanple 5766-06 the chromatograph show the solvent peak to massive in the initial run - therefore it had to be diluted.

b) 9505767-02 should have read 9505767-03 on the raw data.

5) Metals
a) Detection limits for mercury was at 0.4 mg/Kg because the samples were within a batch that had high hits, so the group was reweighed at 0.5g.

b) Re-sending result page.

c) The detection limits for cadmium and nickel could have been acheived if SPL would have analyzed by GFAA instead of ICP. SPL analyzed per COC and not the SOW detection limits.

Sincerely,

Karen Satterfield
Project Manager



OPERATIONAL TECHNOLOGIES
CORPORATION

June 30, 1995

Karen Saterfield
SPL Laboratories Inc.
8880 Interchange Drive
Houston, Texas 77054
(713) 660-0901 FAX: (713) 660-8975

Dear Karen,

The following is a brief summary of some analytical issues questioned on the Duluth Air National Guard Project in Minnesota completed in the early part of May 1995. Please review the following questions and feel free to contact me for any questions regarding the evaluation at (210) 731-0000 (ext. 188).

Sincerely,

Mark Escobar
Project Chemist

Enclosure: As stated

OPERATIONAL TECHNOLOGIES
CORPORATION

Questions Regarding Validation on Duluth Air National Guard Site Investigation Duluth, Minnesota 1315-197/1315-213 Southern Petroleum Laboratories, Inc. Houston, Texas

***General*:** **In reference to Sample 026-001BH 2-2.5 listed on Chain of Custody #9505164 sampled on 5/3/95, the Sample Identification needs to be corrected to read 026-001BH 2'-2.5' from 026-00BH 2'-2.5'. Also, Samples 025-009BH 14.5'-15' MS and MSD listed on Chain of Custody #9505512 sampled on 5/12/95, the Sample Identifications need to be corrected to read 25-009BH 14.5'-15' MS and MSD from 025-009BH 14'-14.5'.**

Volatiles/EPA SW846 (8240)

1. Several hits were not documented on the report forms after they were verified on the raw data as being detected compounds. These samples are as followed:

Sample	Compound	Concentration
025-009BH 14-14.5	Acetone	54 ug/kg
(H9-9505512-11)	2-Butanone	17 ug/kg
025-006BH 21.5-22	Acetone	36 ug/kg
(H9-9505512-08)	2-Butanone	12 ug/kg
025-011BH 6.5-7	Acetone	53 ug/kg
(H9-9505512-07)	2-Butanone	15 ug/kg

*These samples are missing these values listed above on the Report Forms. Please provide and explanation for "ND" flags.

2. **Sample 017-004TB (H9-9505673-14)** was not analyzed for and submitted with no Report Form nor any raw data with chromatograms. Please provide missing information.

Volatile/EPA SW846 (8010 & 8020)

1. The following samples were **not** provided with **Raw data and Chromatograms** accompanying the Sample Report Forms for both analyses SW846-8010/8020:

Sample	Lab ID#
025-002MW-GW1	H9-9505714-08
025-003A-GW01	H9-9505767-06
025-003MW-GW04	H9-9505767-05
025-TB	H9-9505767-04
025-001MW-GW01	H9-9505767-03
025-003-RB	H9-9505767-01

Semivolatiles/EPA SW846 (8270)

1. The following samples listed were analyzed with a dilution factor incorporated and did not give an explanation in the narrative as to why they were performed. Please provide with an explanation.

Sample	Lab ID	Dilution Factor
026-003BH 0.5-1.5	H9-9505209-01	2X
017-031BH 5'-5.5'	H9-9505766-06	3X
025-011BH 6.5-7	H9-9505512-07	10X
025-006BH 21.5-22	H9-9505512-08	3X

2. **Sample 025-001MW-GW01 (H9-9505767-03)** was missing Raw Data and Chromatograms that accompanied the Report Forms.

3. **Sample SI-002FB (H9-9505767-02)** was noted on the Chain of Custody to perform a Semi-volatile analysis but the laboratory received the sample broken and informed us of not being able to perform the analysis. But, Raw data was accompanied with the data package and not documented on the report forms.

Metals/EPA SW846 (6010-7000)

1. The **detection limits** for the following samples were at **0.4 mg/kg** and should have been reported at **0.25 mg/kg**. Please provide an explanation.

Sample	Lab ID
017-021BH 1.5-2	H9-9505766-02
017-021BH 5-5.5	H9-9505766-03
017-029BH 1.5-2.0	H9-9505766-03
017-029BH 1.5-2	H9-9505766-04
017-030BH 1.5-2	H9-9505766-05
017-031BH 5-5.5	H9-9505766-06
017-031BH 1.5-2	H9-9505766-07
017-032BH 1.5-2	H9-9505766-08
017-031BH 1.5-2 MS	H9-9505766-09
017-031BH 1.5-2 MSD	H9-9505766-10
017-029BH Field Dup	H9-9505766-11

2. **Sample 026-001BH 2-2.5 (H9-9505164-01)**: No sample results were reported for **Chromium and Cadmium** on the sample report forms. Please provide this needed information.

3. For a majority of the **SOIL** sample analyses, the detection limit for **Cadmium** at **8 mg/kg** was not at what was to have been set at according to the SOW at **0.5 mg/kg**. For a majority of the **WATER** sample analyses, the detection limit for **Cadmium** at **0.004 mg/l** was not set as it was supposed to be at **0.0006 mg/l** as per SOW, and **Nickel's** detection limit of **0.02 mg/l** was not set accordingly as per SOW detection limit of **0.01 mg/l**. Please provide an explanation for this reasoning.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0 MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/15/95	05/15/95		

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/31/95

PROJECT: Duluth
SITE: IRP Site 25
SAMPLED BY: Operational Technology
SAMPLE ID: 025-008BH 10.5-11.0 MS

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/12/95 10:46:00
DATE RECEIVED: 05/13/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	1300	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	2000	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	2200	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	1100	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	1300	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0 MS

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	1600	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	1300	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	1800	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	2000	330	ug/Kg
Pyrene	1300	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	1300	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505512-14

Operational Tech

SAMPLE ID: 025-008BH 10.5-11.0 MS

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	86	23	120
2-Fluorobiphenyl	1600 ug/Kg	91	30	115
Terphenyl-d14	1600 ug/Kg	93	18	137
Phenol-d5	2500 ug/Kg	97	24	113
2-Fluorophenol	2500 ug/Kg	115	25	121
2,4,6-Tribromophenol	2500 ug/Kg	97	19	122

ANALYZED BY: PC DATE/TIME: 05/19/95 15:24:00
EXTRACTED BY: JK DATE/TIME: 05/15/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 06/01/9

PROJECT: Duluth ANGB/DULUTH SI
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026-00BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/03/95 15:40:0
DATE RECEIVED: 05/04/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/12/95	05/12/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/15/95	2.8	0.4	mg/K

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

06/01/95

PROJECT: Duluth ANGB/DULUTH SI
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026-001BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/03/95 15:40:00
DATE RECEIVED: 05/04/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech

SAMPLE ID: 026-001BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	90	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	88	59	113

ANALYZED BY: HLW DATE/TIME: 05/08/95 18:34:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

06/01/95

PROJECT: Duluth ANGB/DULUTH SI
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026-00BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/03/95 15:40:00
DATE RECEIVED: 05/04/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech

SAMPLE ID: 026-00BH 2-2.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505164-01

Operational Tech

SAMPLE ID: 026-00BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	79	23	120
2-Fluorobiphenyl	1600 ug/Kg	85	30	115
Terphenyl-d14	1600 ug/Kg	101	18	137
Phenol-d5	2500 ug/Kg	58	24	113
2-Fluorophenol	2500 ug/Kg	47	25	121
2,4,6-Tribromophenol	2500 ug/Kg	108	19	122

ANALYZED BY: LH DATE/TIME: 05/16/95 20:22:00
EXTRACTED BY: JK DATE/TIME: 05/12/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

WORK ORDER NUMBER: 95 - 05 - 512

Approved for release by:

M. Scott Sample

M. Scott Sample, Laboratory Director *Date:* 6/1/95

Karen Satterfield

Karen Satterfield, Project Manager *Date:* 5/31/95

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

CASE NARRATIVE

WORK ORDER NO.: 9505512

Southern Petroleum Laboratories (SPL) is pleased to present the results of laboratory analyses to Operational Technologies. The samples were received at our laboratory on May 13, 1995 at a temperature of 3 degrees Celsius. The following is a brief narrative of the laboratory analyses.

Due to the high values of chromium detected in the samples, all soil samples were analyzed by method 6010 instead of method 7196 except for sample 025-008BH 10.5-11.0. Sample 025-009BH-14.5-15 was selected by the client as the matrix spike and matrix spike duplicate, however due to an error at the laboratory another sample was selected as the matrix spike and matrix spike duplicate for semivolatile analysis. The semivolatile matrix spike was sample 025-008BH 10.5-11.0.

Based on the conditions of the samples, procedures performed and the quality controls implemented for this project, the following exceptions were noted for this data package:

1) All surrogates were acceptable for the semi-volatile analysis except for 2-fluorophenol in samples 025-008BH 14.5-15.0, 025-010BH 6-6.5 and 025-011BH 2-2.5.

If I can be of further assistance or answer any questions, please do not hesitate to contact me at (713)660-0901 ext 103.

Karen Satterfield
Project Manager

QUALITY CONTROL

DOCUMENTATION

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 504A37 SAS No.: ____ SDG NO.: 505512

Matrix Spike - EPA Sample No.: CPMW - 1

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	57	114	61-145
Trichloroethene	50.0	0	54	108	71-120
Benzene	50.0	0	54	108	76-127
Toluene	50.0	0	54	108	76-125
Chlorobenzene	50.0	0	51	102	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	54	108	5	14	61-145
Trichloroethene	50.0	52	104	4	14	71-120
Benzene	50.0	51	102	6	11	76-127
Toluene	50.0	51	102	6	13	76-125
Chlorobenzene	50.0	48	96	6	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 1

Idelis Williams, Q C Officer

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 505512 SAS No.: ____ SDG NO.: 505512

Matrix Spike - EPA Sample No.: 025-009BH 14-14.5

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
1,1-Dichloroethene	50.0	0	49	98	59-172
Trichloroethene	50.0	0	43	86	62-137
Benzene	50.0	0	46	92	66-142
Toluene	50.0	0	47	94	59-139
Chlorobenzene	50.0	0	43	86	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
1,1-Dichloroethene	50.0	48	96	2	22	59-172
Trichloroethene	50.0	43	86	0	24	62-137
Benzene	50.0	46	92	0	21	66-142
Toluene	50.0	46	92	2	21	59-139
Chlorobenzene	50.0	42	84	2	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

FORM III VOA - 2

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: M950515113701

Reported on: 05/23/95 16:07
Analyzed on: 05/15/95 11:17
Analyst: GT

METHOD 624/2840 M135B01

Compound	Result	Detection Limit	Units
Chloromethane	ND	10	ug/L
Vinyl Chloride	ND	10	ug/L
Bromomethane	ND	10	ug/L
Chloroethane	ND	10	ug/L
Trichlorofluoromethane	ND	5	ug/L
Acetone	ND	100	ug/L
1,1-Dichloroethene	ND	5	ug/L
Methylene Chloride	ND	5	ug/L
Carbon Disulfide	ND	5	ug/L
1,1-Dichloroethane	ND	5	ug/L
1,2-Dichloroethene (total)	ND	5	ug/L
Vinyl Acetate	ND	10	ug/L
2-Butanone	ND	20	ug/L
Chloroform	ND	5	ug/L
1,1,1-Trichloroethane	ND	5	ug/L
1,2-Dichloroethane	ND	5	ug/L
Benzene	ND	5	ug/L
Carbon Tetrachloride	ND	5	ug/L
1,2-Dichloropropane	ND	5	ug/L
Trichloroethene	ND	5	ug/L
Bromodichloromethane	ND	5	ug/L
2-Chloroethylvinylether	ND	10	ug/L
4-Methyl-2-Pentanone	ND	10	ug/L
cis-1,3-Dichloropropene	ND	5	ug/L
trans-1,3-Dichloropropene	ND	5	ug/L
Toluene	ND	5	ug/L
1,1,2-Trichloroethane	ND	5	ug/L
2-Hexanone	ND	10	ug/L
Dibromochloromethane	ND	5	ug/L
Tetrachloroethene	ND	5	ug/L
Chlorobenzene	ND	5	ug/L
Xylene (Total)	ND	5	ug/L
Ethylbenzene	ND	5	ug/L
Bromoform	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Blank QC Report

Matrix: Aqueous
Sample ID: BLANK
Batch: M950515113701

Reported on: 05/23/95 16:07
Analyzed on: 05/15/95 11:17
Analyst: GT

METHOD 624/2840 M135B01

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/L
1,1,2,2-Tetrachloroethane	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	99	76-114	% Recovery
Toluene-d8	104	88-110	% Recovery
Bromofluorobenzene	97	86-115	% Recovery

Samples in Batch 9505512-01

Notes

ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950515.b/m135b01.d
Lab Smp Id:
Inj Date : 15-MAY-1995 11:17
Operator : GT Inst ID: m.i
Smp Info : BLANK-8240W/1X
Misc Info : M135W1/M135B01/M135CW1
Comment :
Method : /chem/m.i/m950515.b/mvoclpw.m
Meth Date : 15-May-1995 11:48 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 10:50 Cal File: m135cw1.d
Als bottle: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 16 Bromochloromethane	128.00	3.980	3.981	(1.000)	56207	250	
$ 18 1,2-Dichloroethane-d4	102.00	4.776	4.763	(1.200)	20548	250	50
* 23 1,4-Difluorobenzene	114.00	5.809	5.797	(1.000)	342224	250	
$ 31 Toluene-d8	98.00	8.465	8.453	(0.773)	440190	260	52
* 37 Chlorobenzene-d5	117.00	10.944	10.948	(1.000)	308764	250	
$ 46 Bromofluorobenzene	95.00	13.158	13.162	(1.202)	185313	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m135b01.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950515.b/mvoclpw.m
Misc Info: M135W1/M135B01/M135CW1

Calibration Date: 05/15/95
Calibration Time: 1050

Level: LOW
Sample Type: WATER

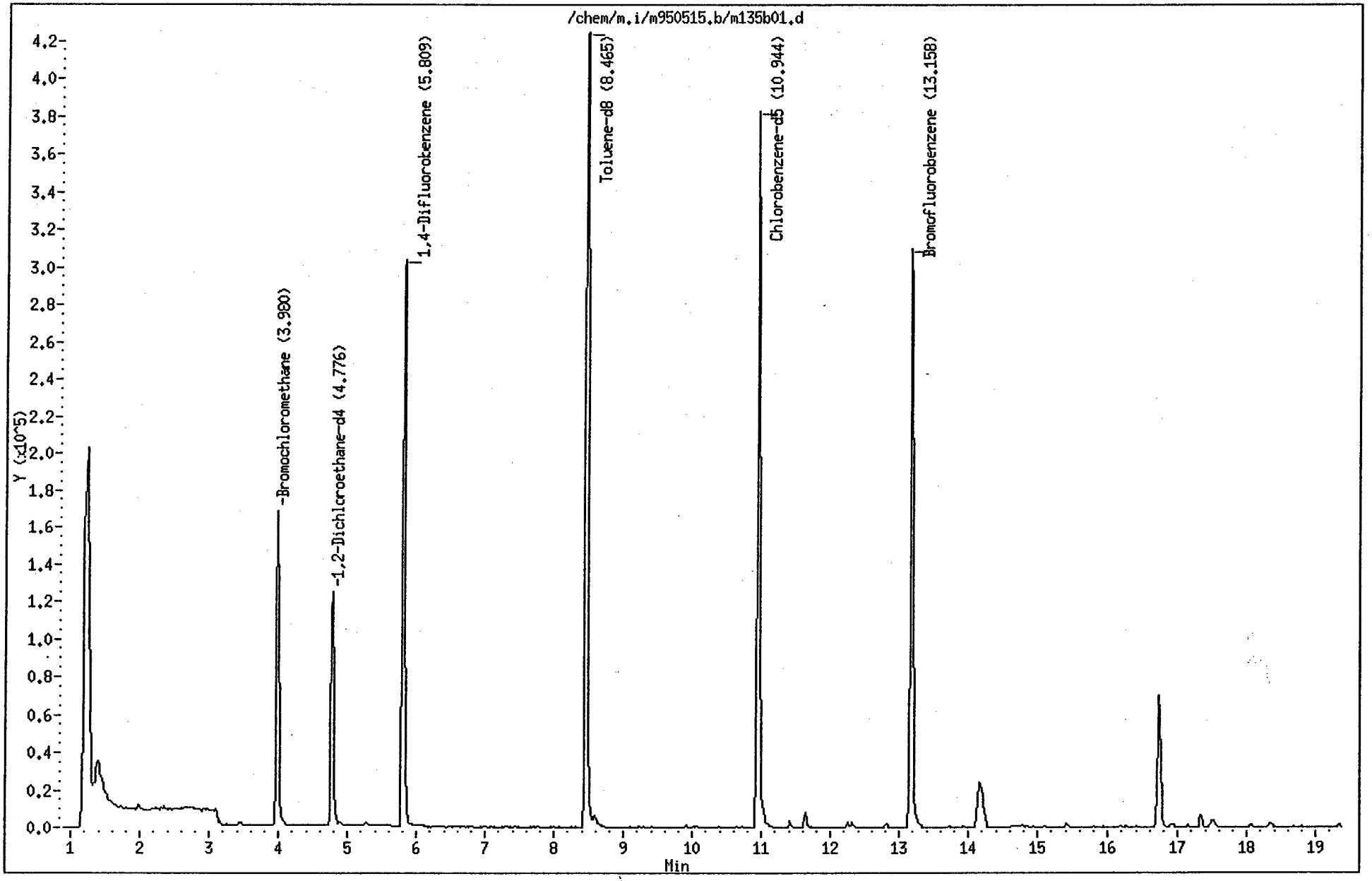
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	57929	28964	115858	56207	-2.97
23 1,4-Difluorobenzene	354872	177436	709744	342224	-3.56
37 Chlorobenzene-d5	333021	166510	666042	308764	-7.28

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	3.98	3.48	4.48	3.98	-0.04
23 1,4-Difluorobenzene	5.80	5.30	6.30	5.81	0.22
37 Chlorobenzene-d5	10.95	10.45	11.45	10.94	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950515.b/m135b01.d
Date : 15-MAY-1995 11:17
Client ID:
Sample Info: BLANK-8240W/1X
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i
Operator: GT
Column diameter: 0.25



SPL Blank QC Report

Matrix: Soil
Sample ID: BLANK
Batch: K950515094856

Reported on: 05/23/95 16:3
Analyzed on: 05/15/95 17:01
Analyst: HLW

METHOD 8240 **K135B04**

Compound	Result	Detection Limit	Units
1,2-Dichloroethene (total)	ND	5	ug/Kg
Xylene (Total)	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Chloroethane	ND	10	ug/Kg
Bromomethane	ND	10	ug/Kg
Acetone	ND	100	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
Methylene Chloride	ND	5	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Chloroform	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
Benzene	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: K950515094856

Reported on: 05/23/95 16:34
Analyzed on: 05/15/95 17:01
Analyst: HLW

METHOD 8240 **K135B04**

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	100	70-121	% Recovery
Toluene-d8	99	84-138	% Recovery
Bromofluorobenzene	97	59-113	% Recovery

Samples in Batch 9505512-02 9505512-03 9505512-04 9505512-05
9505512-06 9505512-07 9505512-08 9505512-09
9505512-10 9505512-11 9505512-12 9505512-13

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950515.b/k135b04.d
Lab Smp Id: BLANK-8240S/1X
Inj Date : 15-MAY-1995 17:01
Operator : HLW Inst ID: k.i
Smp Info : BLANK-8240S/1X
Misc Info : K135S1//K135CS3
Comment :
Method : /chem/k.i/k950515.b/kvoclps.m
Meth Date : 15-May-1995 17:24 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.105	2.108	(1.000)	75138	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.362	2.365	(1.122)	34530	250	50
* 31 1,4-Difluorobenzene	114.00	2.787	2.790	(1.000)	461614	250	
$ 40 Toluene-d8	98.00	4.514	4.532	(0.670)	501240	250	50
* 51 Chlorobenzene-d5	117.00	6.741	6.744	(1.000)	347432	250	
$ 61 Bromofluorobenzene	95.00	8.847	8.851	(1.312)	192414	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135b04.d
Lab Smp Id: BLANK-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950515.b/kvoclps.m
Misc Info: K135S1//K135CS3

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	75138	15.21
31 1,4-Difluorobenzene	411543	205772	823086	461614	12.17
51 Chlorobenzene-d5	312868	156434	625736	347432	11.05

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.10	-0.15
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	-0.11
51 Chlorobenzene-d5	6.74	6.24	7.24	6.74	-0.05

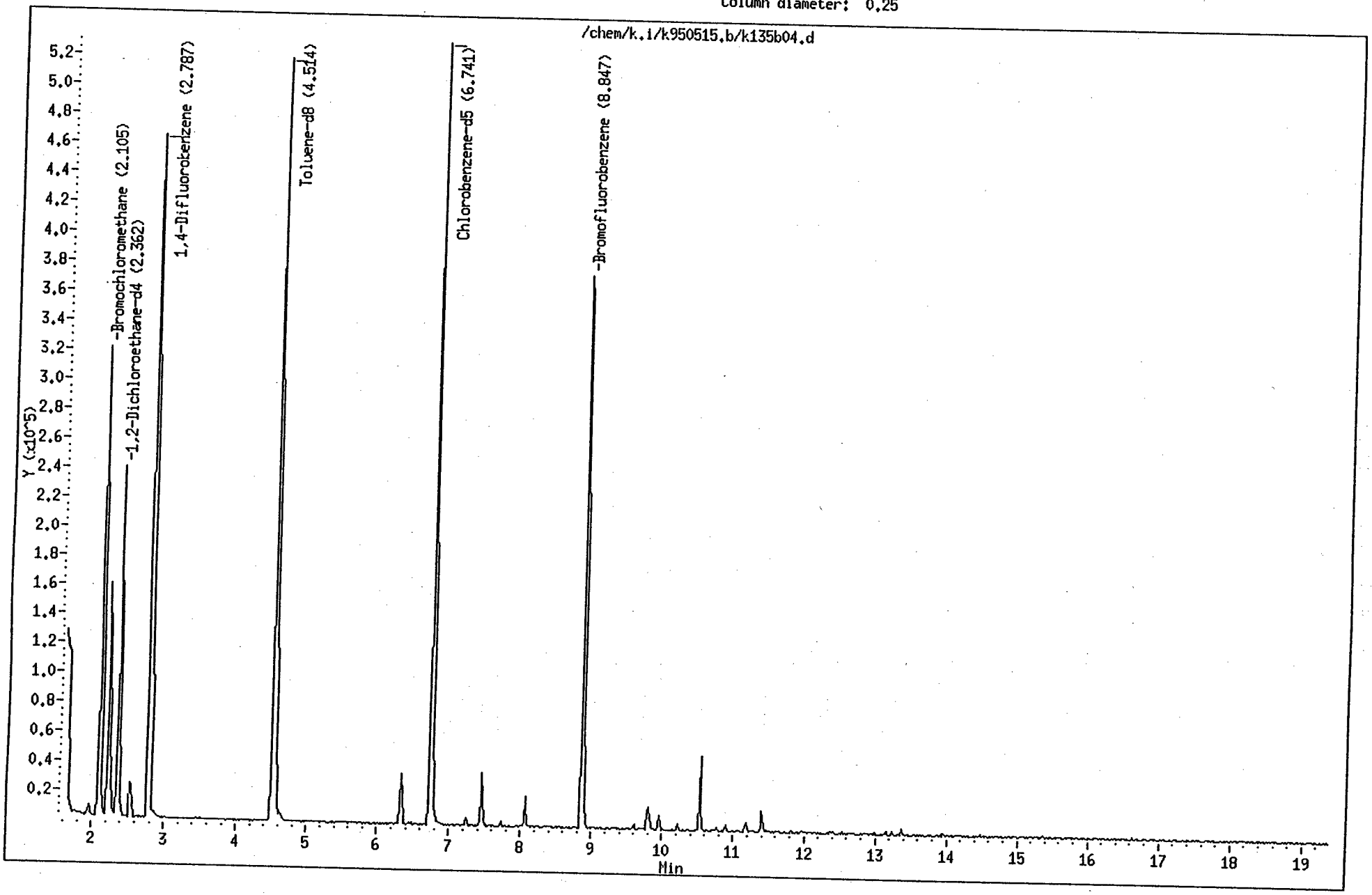
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950515.b/k135b04.d
Date : 15-MAY-1995 17:01
Client ID:
Sample Info: BLANK-8240S/1X

Instrument: k.i

Column phase: 30m,hp5ms,0.25u df

Operator: HLW
Column diameter: 0.25



Matrix: Soil
Sample ID: BLANK
Batch: K950517094856

Reported on: 05/23/95 16:07
Analyzed on: 05/17/95 13:36
Analyst: HLW

METHOD 8240 **K137B02**

Compound	Result	Detection Limit	Units
1,2-Dichloroethene (total)	ND	5	ug/Kg
Xylene (Total)	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Chloroethane	ND	10	ug/Kg
Bromomethane	ND	10	ug/Kg
Acetone	ND	100	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
Methylene Chloride	ND	5	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Chloroform	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
Benzene	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Blank QC Report

Matrix: Soil
Sample ID: BLANK
Batch: K950517094856

Reported on: 05/23/95 16:07
Analyzed on: 05/17/95 13:36
Analyst: HLW

METHOD 8240 **K137B02**

Compound	Result	Detection Limit	Units
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg

Surrogate	Result	QC Criteria	Units
1,2-Dichloroethane-d4	95	70-121	% Recovery
Toluene-d8	99	84-138	% Recovery
Bromofluorobenzene	102	59-113	% Recovery

Samples in Batch 9505512-06

Notes

ND - Not detected.

Idelis Williams, QC Officer

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950517.b/k137b02.d
Lab Smp Id: BLANK-8240S/1X
Inj Date : 17-MAY-1995 13:36
Operator : HLW Inst ID: k.i
Smp Info : BLANK-8240S/1X
Misc Info : K137S1//K137CS2
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 17-May-1995 13:34 hillery Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22 Cal File: k137cs1.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.123	2.119	(1.000)	64436	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.380	2.377	(1.121)	27639	240	48
* 31 1,4-Difluorobenzene	114.00	2.805	2.801	(1.000)	377177	250	
$ 40 Toluene-d8	98.00	4.547	4.543	(0.671)	414022	250	50
* 51 Chlorobenzene-d5	117.00	6.775	6.771	(1.000)	277392	250	
$ 61 Bromofluorobenzene	95.00	8.881	8.877	(1.311)	161818	250	51

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k137b02.d
Lab Smp Id: BLANK-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950517.b/kvoclps.m
Misc Info: K137S1//K137CS2

Calibration Date: 05/17/95
Calibration Time: 1122

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	62852	31426	125704	64436	2.52
31 1,4-Difluorobenzene	396843	198422	793686	377177	-4.96
51 Chlorobenzene-d5	295653	147826	591306	277392	-6.18

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.18
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.14
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.06

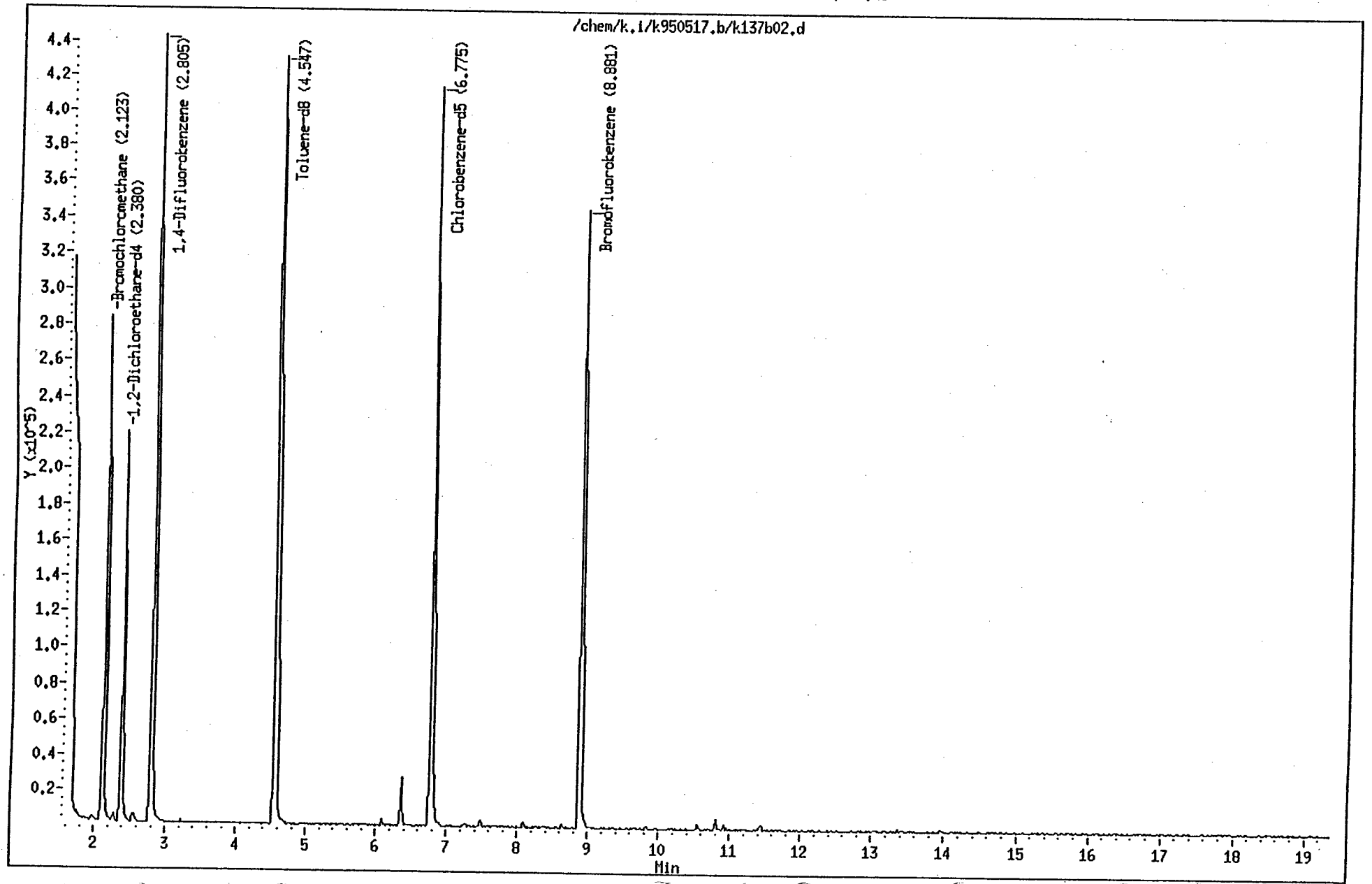
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950517.b/k137b02.d
Date : 17-MAY-1995 13:36
Client ID:
Sample Info: BLANK-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/m.i/m950515.b/m135bf1.d

Date : 15-MAY-95 10:16

Client ID:

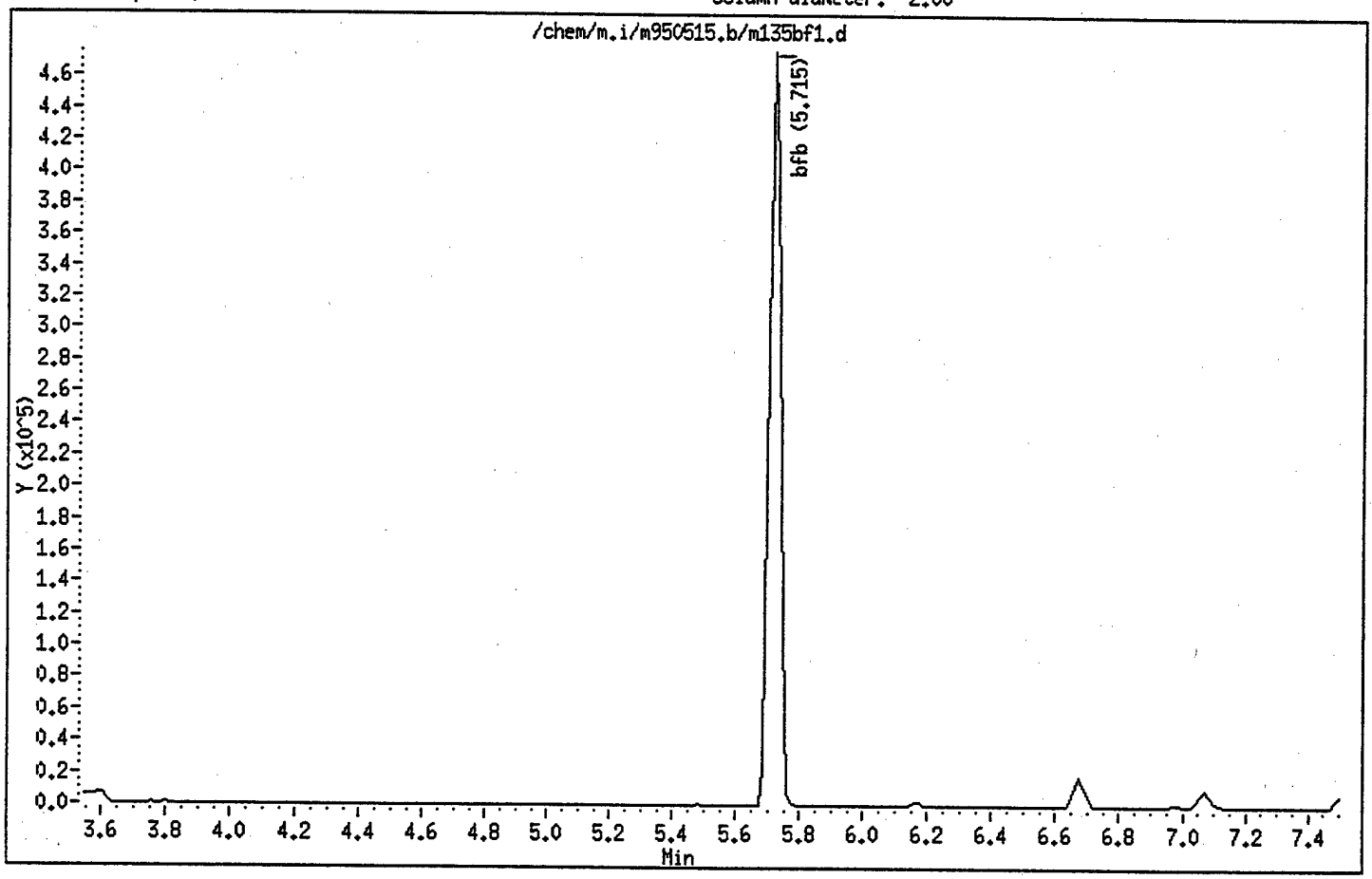
Instrument: m.i

Sample Info: 50 NG

Operator: GT

Column phase:

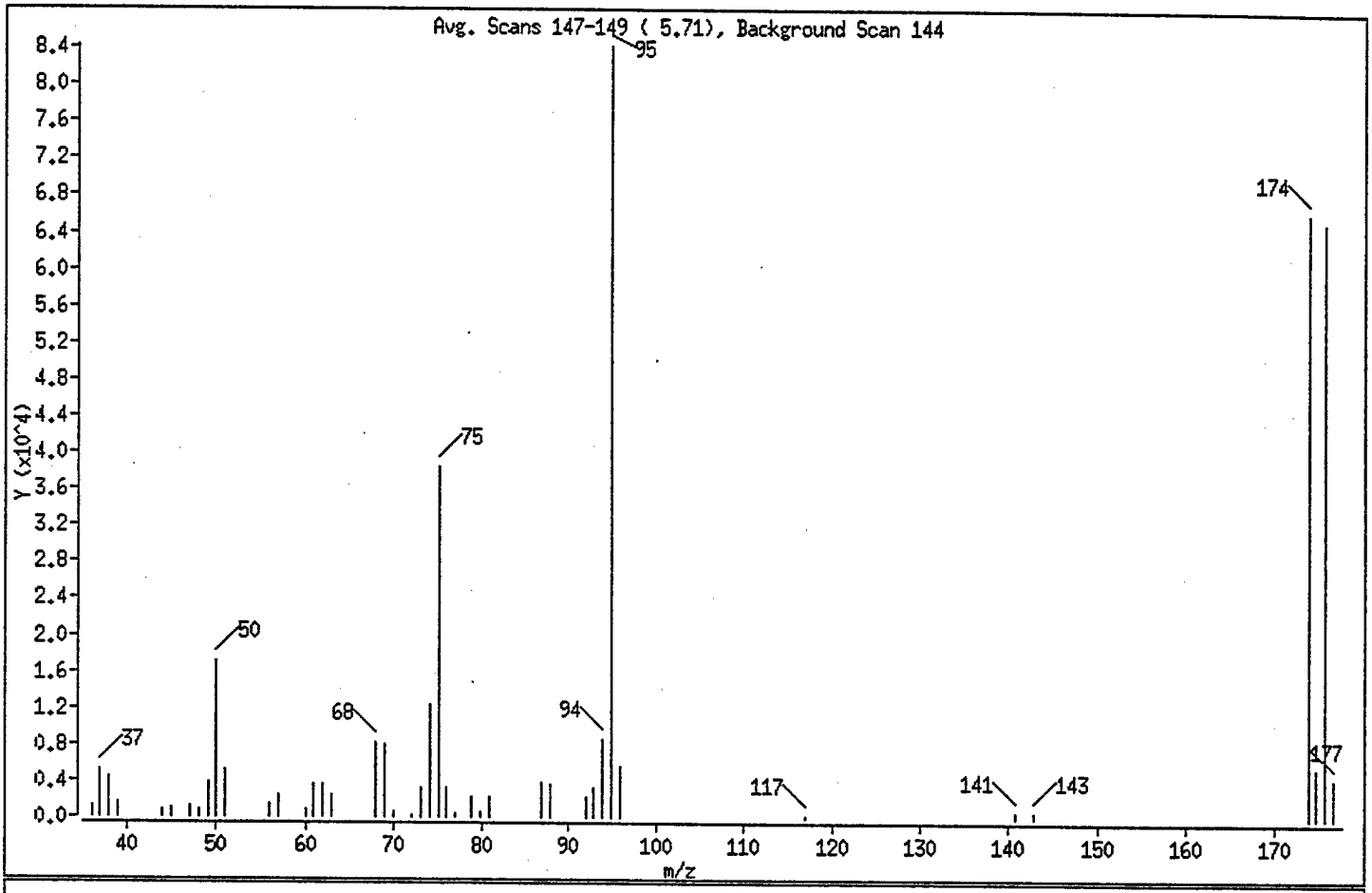
Column diameter: 2.00



Data File: /chem/m.i/m950515.b/m135bf1.d
Date : 15-MAY-95 10:16
Client ID:
Sample Info: 50 NG

Instrument: m.i
Operator: GT
Column diameter: 2.00

Column phase:
1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.39
75	30.00 - 60.00% of mass 95	45.66
96	5.00 - 9.00% of mass 95	6.68
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	78.64
175	5.00 - 9.00% of mass 174	6.55 (8.33)
176	95.00 - 101.00% of mass 174	77.52 (98.57)
177	5.00 - 9.00% of mass 176	5.23 (6.75)

Data File: /chem/m.i/m950515.b/m135bf1.d
Date : 15-MAY-95 10:16
Client ID:
Sample Info: 50 NG

Instrument: m.i
Operator: GT
Column diameter: 2.00

Column phase:

Data File: m135bf1.d
Spectrum : Avg. Scans 147-149 (5.71), Background Scan 144
Largest m/z: 94.95
Number of peaks: 43

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.05	1101	56.00	1295	74.00	12407	93.95	8656
36.90	5179	57.00	2442	75.00	38456	94.95	84216
38.00	4338	59.95	861	75.95	3147	95.95	5625
39.00	1601	60.95	3665	76.95	369	116.90	185
43.95	840	61.95	3504	78.85	2123	140.80	501
44.95	896	62.90	2402	79.90	572	142.90	527
47.00	1100	67.95	8245	80.80	2161	173.90	66232
48.00	732	68.95	7957	86.95	3725	174.90	5518
49.00	3839	69.95	598	87.90	3511	175.90	65280
49.95	17168	72.00	167	92.00	2158	176.90	4407
50.95	5155	73.00	3269	92.95	3138		

Data File: /chem/k.i/k950514.b/k135bf1.d

Date : 15-MAY-95 11:42

Client ID:

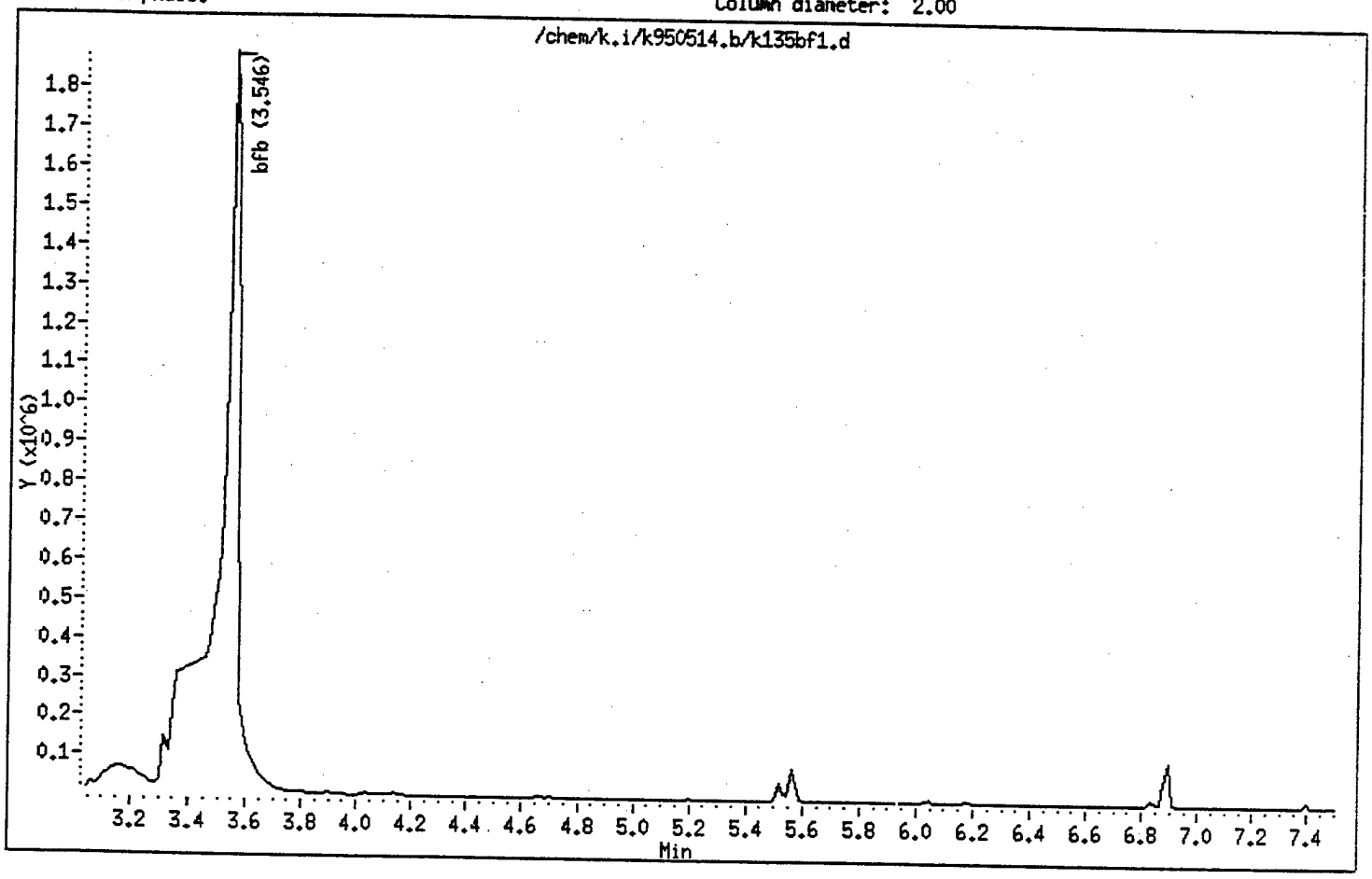
Sample Info: BFB 50 NG

Instrument: k.i

Operator:

Column phase:

Column diameter: 2.00



Data File: /chem/k.i/k950514.b/k135bf1.d

Date : 15-MAY-95 11:42

Client ID:

Instrument: k.i

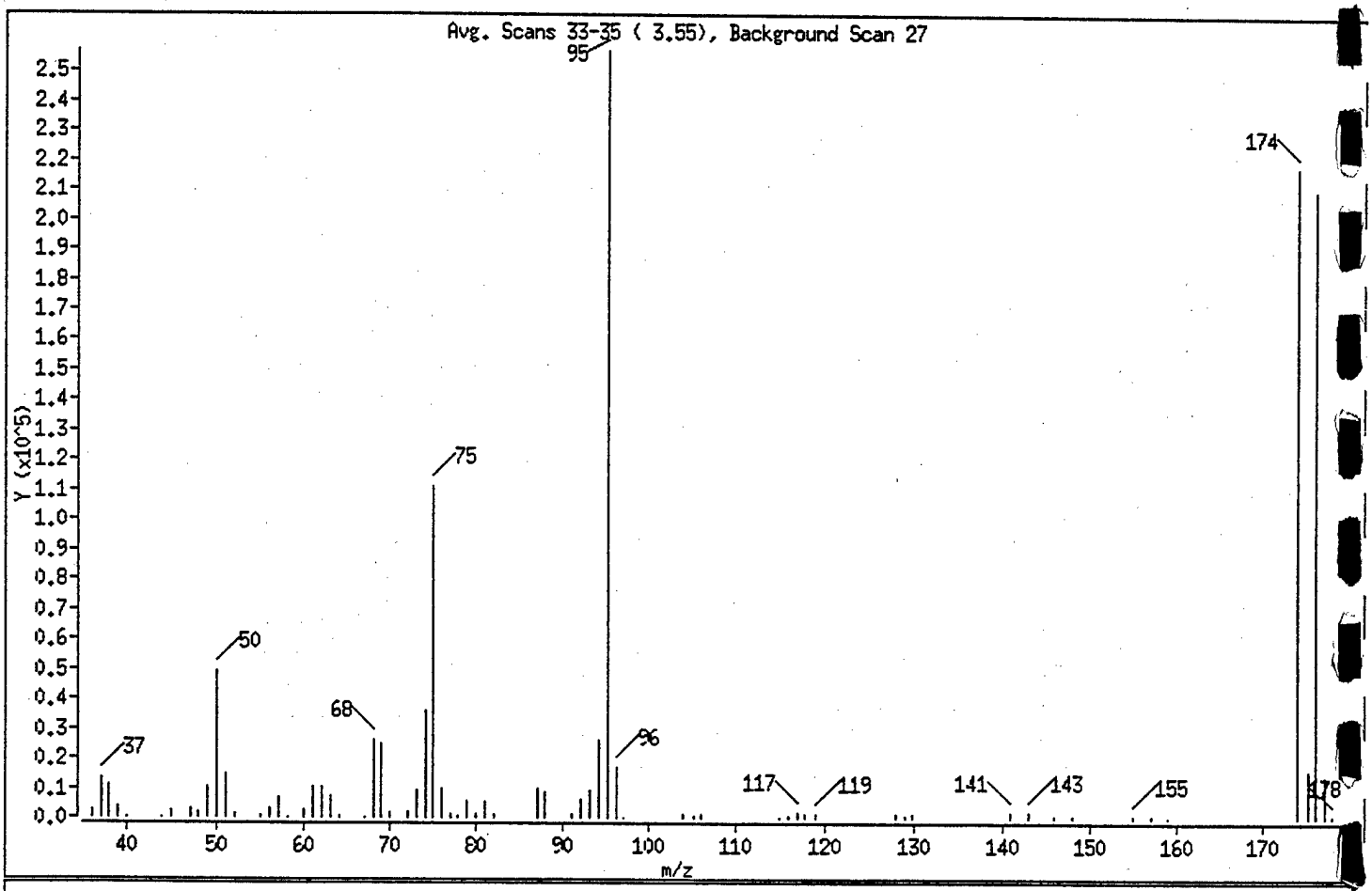
Sample Info: BFB 50 NG

Operator:

Column phase:

Column diameter: 2.00

1 bfb



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.23
75	30.00 - 60.00% of mass 95	43.34
96	5.00 - 9.00% of mass 95	6.66
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	84.90
175	5.00 - 9.00% of mass 174	6.10 (7.19)
176	95.00 - 101.00% of mass 174	81.69 (96.22)
177	5.00 - 9.00% of mass 176	5.38 (6.58)

Data File: /chem/k.i/k950514.b/k135bf1.d
Date : 15-MAY-95 11:42
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i
Operator:
Column phase:
Column diameter: 2.00

Data File: k135bf1.d
Spectrum : Avg. Scans 33-35 (3.55), Background Scan 27
Largest m/z: 95.10
Number of peaks: 69

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	2515	61.05	10510	82.05	1369	127.95	957
37.10	13604	62.05	10407	87.05	9529	128.95	485
38.10	10847	63.05	7444	87.95	8630	129.95	981
39.10	3869	64.15	880	91.10	1108	140.95	1761
40.10	26	67.05	229	92.10	6051	142.95	1911
44.05	27	68.05	26192	93.10	9377	145.95	384
45.05	2337	69.05	25024	94.10	26128	147.95	711
47.05	2916	70.05	1706	95.10	256832	155.10	571
48.05	1611	72.10	1552	96.10	17104	157.00	422
49.05	10141	73.10	9086	97.10	248	159.00	192
50.05	49392	74.10	35888	103.95	1171	174.00	218048
51.10	14558	75.10	111320	105.05	510	175.10	15677
52.10	956	76.10	9673	106.05	1162	176.00	209792
55.10	362	77.00	1239	115.00	189	177.00	13812
56.10	3315	78.00	724	116.00	841	177.90	403
57.10	6440	79.00	5388	117.00	1553		
58.10	184	80.00	1335	117.90	915		
60.10	2135	81.05	5449	119.00	1315		

Data File: /chem/k.i/k950517.b/k137bf1.d

Date : 17-MAY-95 10:51

Client ID:

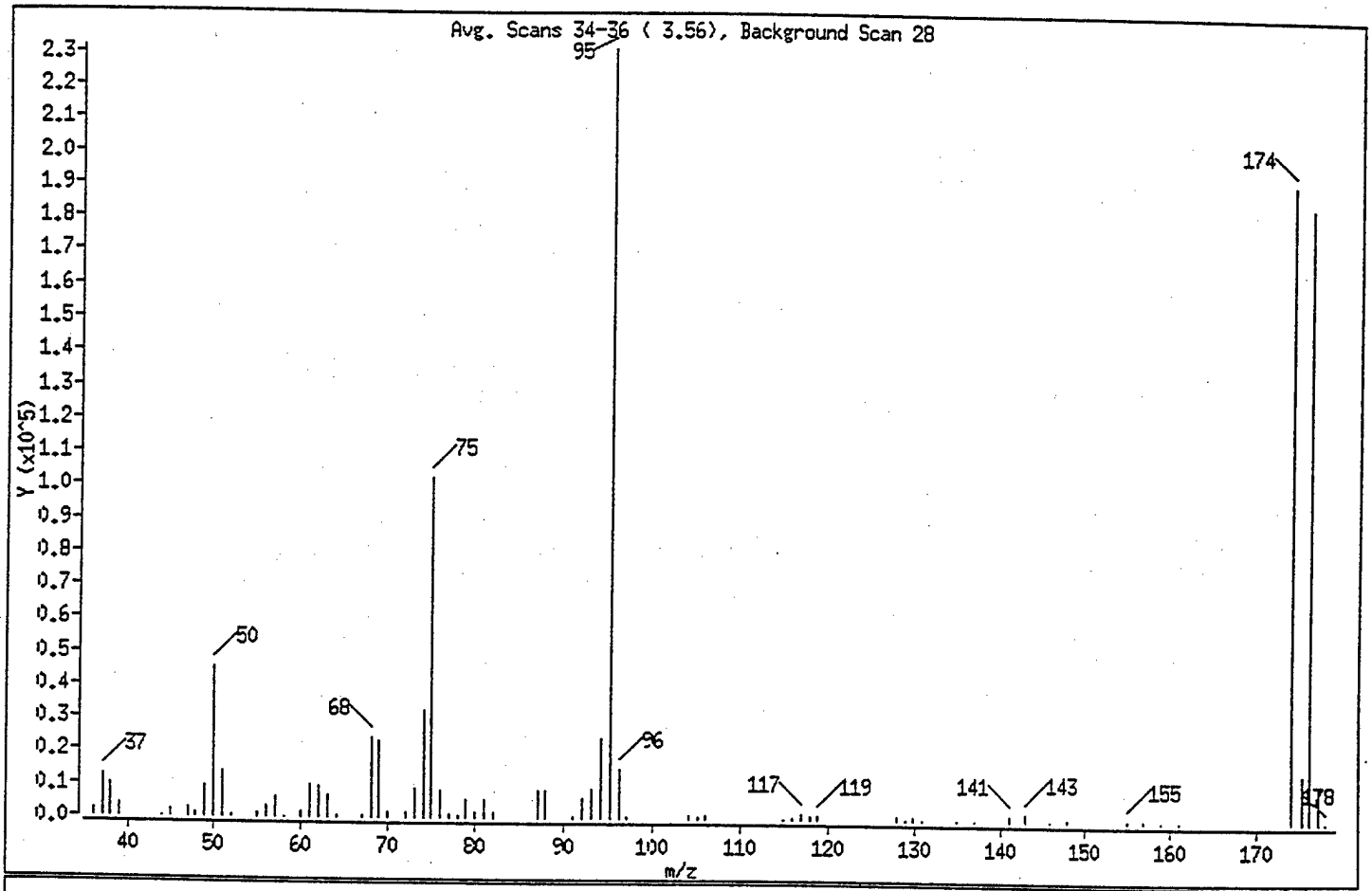
Sample Info: BFB 50 NG

Instrument: k.i

Operator:

Column phase:
1 bfb

Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	19.64
75	30.00 - 60.00% of mass 95	44.28
96	5.00 - 9.00% of mass 95	6.48
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 120.00% of mass 95	82.74
175	5.00 - 9.00% of mass 174	6.06 (7.32)
176	95.00 - 101.00% of mass 174	79.74 (96.37)
177	5.00 - 9.00% of mass 176	5.04 (6.32)

Data File: /chem/k.i/k950517.b/k137bf1.d
Date : 17-MAY-95 10:51
Client ID:
Sample Info: BFB 50 NG

Instrument: k.i
Operator:
Column phase:
Column diameter: 2.00

Data File: k137bf1.d
Spectrum : Avg. Scans 34-36 (3.56), Background Scan 28
Largest m/z: 95.10
Number of peaks: 72

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.10	2256	63.05	6474	91.00	574	134.90	204
37.10	12862	64.15	744	92.10	5984	136.90	221
38.10	10080	67.05	386	93.10	8824	141.05	1468
39.10	3628	68.05	24232	94.10	23976	142.95	2229
44.05	109	69.05	22744	95.10	231552	145.95	221
45.05	2275	70.05	1663	96.10	15009	147.85	710
47.05	2971	72.10	1402	97.00	527	155.00	469
48.05	1262	73.10	8868	104.05	1041	156.90	402
49.05	9557	74.10	32024	105.05	547	158.90	192
50.05	45488	75.10	102544	105.95	1096	160.95	167
51.10	13883	76.10	8447	115.00	177	174.00	191616
52.10	745	77.00	1115	116.00	770	175.10	14034
55.10	877	78.10	754	117.00	1374	176.00	184640
56.10	3208	79.00	5222	118.00	875	177.00	11672
57.10	6014	80.00	1442	118.90	1147	177.90	220
58.10	169	81.05	5380	127.95	907		
60.10	1898	82.05	1381	128.95	222		
61.05	9877	87.05	8353	129.95	956		
62.05	9471	87.95	8235	131.00	185		

Data File: /chem/k.i/k950517.b/k137bf1.d

Date : 17-MAY-95 10:51

Client ID:

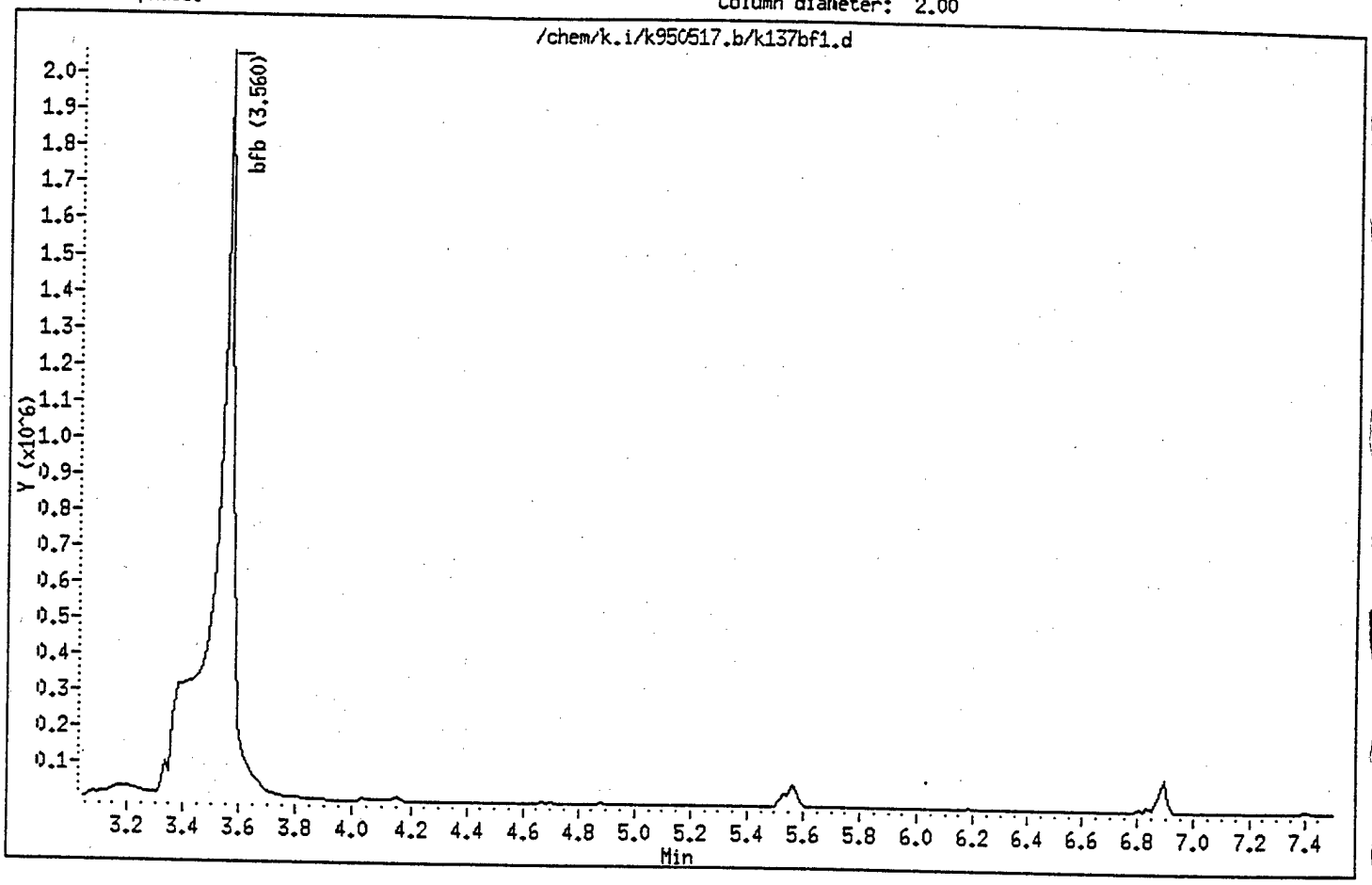
Sample Info: BFB 50 NG

Instrument: k.i

Operator:

Column phase:

Column diameter: 2.00



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 11-MAY-1995 17:53
End Cal Date : 11-MAY-1995 17:53
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/m.i/m950511.b/mvoclpw.m
Cal Date : 12-May-1995 10:10 jimmy
Curve Type : Average

Calibration File Names:
Level 1: /chem/m.i/m950511.b/m131iw1a.d
Level 2: /chem/m.i/m950511.b/m131iw2.d
Level 3: /chem/m.i/m950511.b/m131iw3.d
Level 4: /chem/m.i/m950511.b/m131iw4.d
Level 5: /chem/m.i/m950511.b/m131iw5.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	1 Chloromethane	1.94451	1.46170	1.45531	1.52158	1.34697	1.54601	14.973
	2 Vinyl Chloride	1.36288	1.11165	1.16697	1.23985	1.10697	1.19767	8.919
	3 Bromomethane	1.47888	1.10452	1.09863	1.15049	1.12931	1.19237	13.544
	4 Chloroethane	1.09146	0.70121	0.71279	0.73649	0.78381	0.80515	20.263
	5 Trichlorofluoromethane	1.96013	1.89284	1.90638	2.07709	1.97184	1.96166	3.713
	6 Acetone	0.21009	0.23725	0.15849	0.18287	0.15952	0.18964	17.898
	7 1,1-Dichloroethene	1.56942	1.13891	1.17983	1.30980	1.21261	1.28211	13.459
	8 Methylene Chloride	2.33584	1.51729	1.49425	1.70241	1.55747	1.72145	20.498
M	12 1,2-Dichloroethene (total)	2.80302	1.85846	1.88154	2.17690	1.94613	2.13321	18.521
	9 Carbon Disulfide	5.08405	3.79102	4.03938	4.52031	4.12612	4.31218	11.709
	10 trans-1,2-Dichloroethene	2.63922	1.73450	1.75598	2.01284	1.79719	1.98794	19.142
	11 1,1-Dichloroethane	5.03355	3.26317	3.29585	3.78957	3.34722	3.74587	20.042
	13 Vinyl Acetate	4.40816	4.16519	3.95262	4.47090	4.06569	4.21251	5.260
	14 2-Butanone	1.15563	1.17347	0.99485	1.02306	0.95539	1.06048	9.260
	15 cis-1,2-Dichloroethene	2.96682	1.98242	2.00710	2.34096	2.09506	2.27847	17.998
	17 Chloroform	5.26317	3.50957	3.45979	4.11057	3.71286	4.01119	18.581
	19 1,1,1-Trichloroethane	0.55180	0.39121	0.38928	0.45080	0.41047	0.43871	15.474
	20 1,2-Dichloroethane	3.57792	2.67982	2.70410	3.11180	2.76349	2.96743	12.912
	21 Benzene	1.86182	1.26065	1.21862	1.34918	1.21258	1.38057	19.884
	22 Carbon Tetrachloride	0.40543	0.34366	0.34923	0.40118	0.37000	0.37390	7.655
	24 1,2-Dichloropropane	0.43648	0.32494	0.32524	0.36224	0.32238	0.35426	13.787
	25 Trichloroethene	0.42532	0.29964	0.29351	0.33260	0.29542	0.32930	17.003
	26 Bromodichloromethane	0.60809	0.45851	0.47713	0.55248	0.49691	0.51862	11.790
	27 2-Chloroethylvinylether	0.43648	0.32494	0.32524	0.36224	0.32238	0.35426	13.787
	28 4-Methyl-2-Pentanone	0.37824	0.31531	0.31406	0.34765	0.30600	0.33225	9.104
	29 cis-1,3-Dichloropropene	0.66640	0.50647	0.52491	0.58833	0.55289	0.56780	11.127
	30 trans-1,3-Dichloropropene	0.51564	0.43723	0.44819	0.53026	0.49150	0.48456	8.424

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 11-MAY-1995 17:53
End Cal Date : 11-MAY-1995 17:53
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/m.i/m950511.b/mvoclpw.m
Cal Date : 12-May-1995 10:10 jimmy
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	32 Toluene	1.35582	0.87623	0.88771	1.03293	0.94404	1.01935	19.428
	33 1,1,2-Trichloroethane	0.27838	0.22907	0.22766	0.26877	0.24542	0.24986	9.204
	34 2-Hexanone	0.31265	0.29476	0.29787	0.32735	0.29183	0.30489	4.885
	35 Dibromochloromethane	0.33655	0.28889	0.29782	0.35434	0.32932	0.32139	8.507
	36 Tetrachloroethene	0.45037	0.31563	0.32289	0.37364	0.34834	0.36217	15.003
	38 Chlorobenzene	1.39412	0.92775	0.89561	1.03441	0.94125	1.03863	19.768
M	39 Xylene (Total)	0.86264	0.57692	0.56419	0.64912	0.59523	0.64962	18.997
	40 Ethylbenzene	0.71749	0.47393	0.46438	0.54057	0.49404	0.53808	19.421
	41 m,p-Xylene(s)	0.87103	0.58509	0.57477	0.65594	0.59822	0.65701	18.826
	42 Bromoform	0.20070	0.19124	0.20357	0.24739	0.23587	0.21575	11.309
	43 Styrene	1.56211	1.03833	1.00271	1.17785	1.07490	1.17118	19.479
	44 o-Xylene	0.84587	0.56056	0.54304	0.63548	0.58926	0.63484	19.382
	45 1,1,2,2-Tetrachloroethane	0.39679	0.35268	0.34796	0.40718	0.37886	0.37669	6.948
$	18 1,2-Dichloroethane-d4	0.38748	0.38627	0.39586	0.39067	0.40713	0.39348	2.156
$	31 Toluene-d8	1.47083	1.39170	1.39456	1.42559	1.44777	1.42609	2.391
$	46 Bromofluorobenzene	0.61366	0.61299	0.60393	0.62492	0.61630	0.61436	1.225

SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950511.b/m131iw1a.d
Lab Smp Id:
Inj Date : 11-MAY-1995 17:53
Operator : GT Inst ID: m.i
Smp Info : STD 010
Misc Info : M131W1/M131B01/M131IW3
Comment :
Method : /chem/m.i/m950511.b/mvoclpw.m
Meth Date : 12-May-1995 10:08 jimmy Quant Type: ISTD
Cal Date : 11-MAY-1995 14:38 Cal File: m131iw3.d
Als bottle: 10 Calibration Sample, Level: 1
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	1 Chloromethane	50.00	1.398	1.398	(0.347)	21908	50	63
	2 Vinyl Chloride	62.00	1.472	1.472	(0.366)	15355	50	57
	3 Bromomethane	94.00	1.649	1.649	(0.410)	16662	50	62
	4 Chloroethane	64.00	1.708	1.708	(0.424)	12297	50	68
	5 Trichlorofluoromethane	100.90	1.944	1.944	(0.483)	22084	50	50
	6 Acetone	58.00	1.988	1.988	(0.494)	2367	50	55
	7 1,1-Dichloroethene	96.00	2.268	2.268	(0.564)	17682	50	61
	8 Methylene Chloride	84.00	2.446	2.446	(0.608)	26317	50	68
M	12 1,2-Dichloroethene (total)	96.00				63161	100	130
	9 Carbon Disulfide	76.00	2.519	2.519	(0.626)	57280	50	59
	10 trans-1,2-Dichloroethene	96.00	2.874	2.874	(0.714)	29735	50	66
	11 1,1-Dichloroethane	63.00	3.110	3.110	(0.773)	56711	50	67
	13 Vinyl Acetate	43.00	3.184	3.184	(0.791)	49665	50	52
	14 2-Butanone	43.00	3.479	3.479	(0.864)	13020	50	54 (a)
	15 cis-1,2-Dichloroethene	96.00	3.774	3.774	(0.938)	33426	50	65
	17 Chloroform	83.00	4.039	4.039	(1.004)	59298	50	66
	19 1,1,1-Trichloroethane	97.00	4.822	4.822	(0.824)	38912	50	63
	20 1,2-Dichloroethane	62.00	4.940	4.940	(1.227)	40311	50	60
	21 Benzene	78.00	5.309	5.309	(0.907)	131292	50	67 (M)
	22 Carbon Tetrachloride	117.00	5.323	5.323	(0.909)	28590	50	54
	24 1,2-Dichloropropane	63.00	6.445	6.445	(1.101)	30780	50	62
	25 Trichloroethene	130.00	6.475	6.475	(1.106)	29993	50	64
	26 Bromodichloromethane	83.00	6.711	6.711	(1.146)	42881	50	59
	27 2-Chloroethylvinylether	63.00	6.445	6.445	(1.101)	30780	50	62
	28 4-Methyl-2-Pentanone	43.00	7.744	7.744	(1.323)	26673	50	57
	29 cis-1,3-Dichloropropene	75.00	7.773	7.773	(1.328)	46993	50	59
	30 trans-1,3-Dichloropropene	75.00	8.570	8.570	(1.464)	36362	50	53
	32 Toluene	92.00	8.629	8.629	(0.785)	83387	50	66 (M)
	33 1,1,2-Trichloroethane	83.00	8.762	8.762	(1.497)	19631	50	56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.264	9.264	(0.843)	19229	50	51
	35 Dibromochloromethane	129.00	9.529	9.529	(1.628)	23733	50	52
	36 Tetrachloroethene	164.00	9.957	9.957	(0.906)	27699	50	62
	38 Chlorobenzene	112.00	11.049	11.049	(1.005)	85743	50	67 (M)
M	39 Xylene (Total)	106.00				159166	150	200
	40 Ethylbenzene	106.00	11.463	11.463	(1.043)	44128	50	67
	41 m,p-Xylene(s)	106.00	11.684	11.684	(1.063)	107142	100	130
	42 Bromoform	173.00	12.215	12.215	(2.086)	14153	50	46
	43 Styrene	104.00	12.289	12.289	(1.118)	96075	50	67
	44 o-Xylene	106.00	12.363	12.363	(1.125)	52024	50	67
	45 1,1,2,2-Tetrachloroethane	83.00	12.865	12.865	(1.171)	24404	50	53
*	16 Bromochloromethane	128.00	4.025	4.025	(1.000)	56333	250	
*	23 1,4-Difluorobenzene	114.00	5.855	5.855	(1.000)	352590	250	
*	37 Chlorobenzene-d5	117.00	10.990	10.990	(1.000)	307516	250	
$	18 1,2-Dichloroethane-d4	102.00	4.822	4.822	(1.198)	21828	250	250
$	31 Toluene-d8	98.00	8.511	8.511	(0.774)	452305	250	260
$	46 Bromofluorobenzene	95.00	13.204	13.204	(1.201)	188710	250	250

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m131iw1a.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950511.b/mvoclpw.m
Misc Info: M131W1/M131B01/M131IW3

Calibration Date: 05/11/95
Calibration Time: 1438

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	56482	28241	112964	56333	-0.26
23 1,4-Difluorobenzene	349700	174850	699400	352590	0.83
37 Chlorobenzene-d5	317682	158841	635364	307516	-3.20

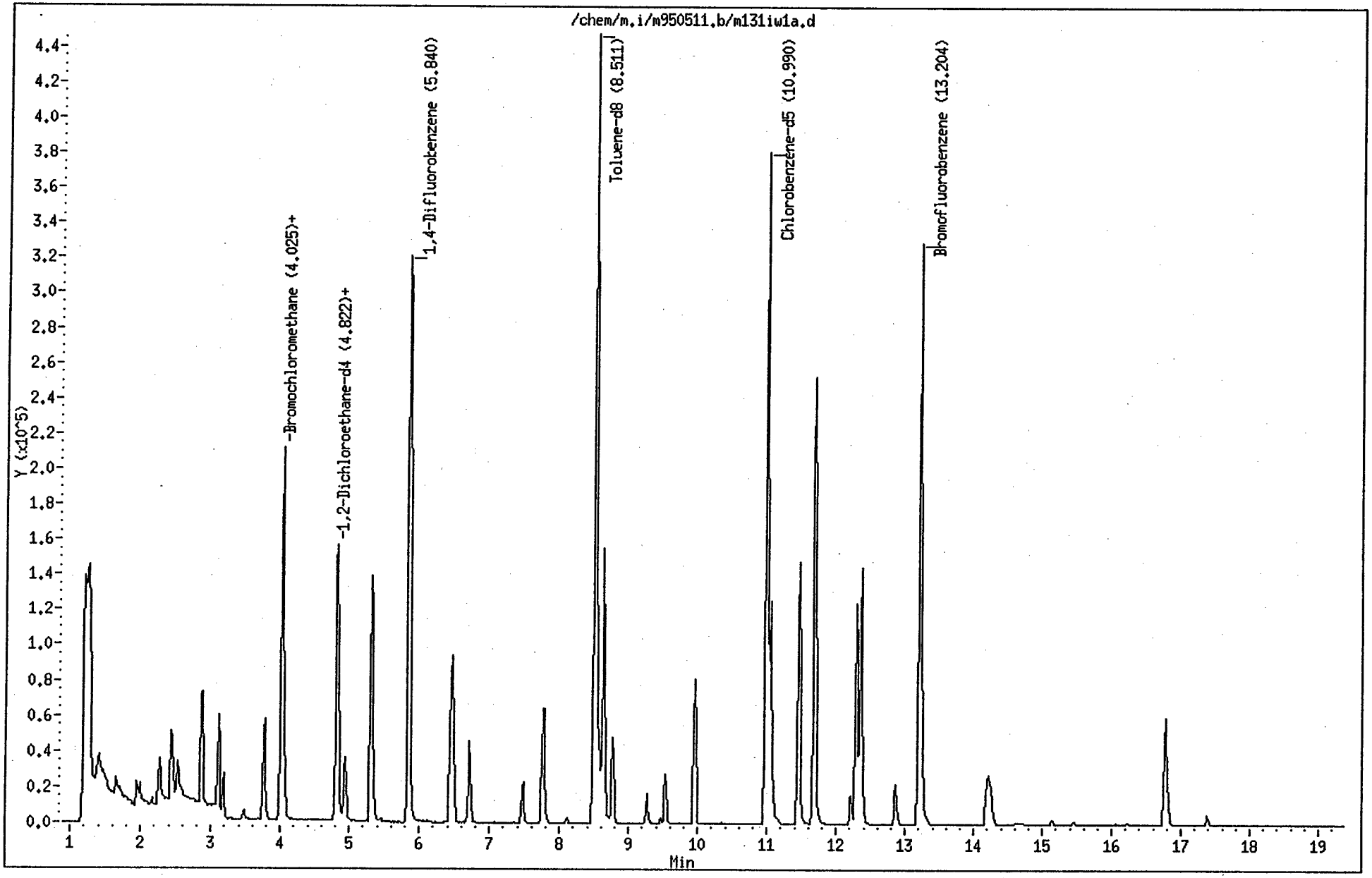
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	4.01	3.51	4.51	4.02	0.35
23 1,4-Difluorobenzene	5.84	5.34	6.34	5.85	0.23
37 Chlorobenzene-d5	10.98	10.48	11.48	10.99	0.12

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950511.b/m131iw1a.d
Date : 11-MAY-1995 17:53
Client ID:
Sample Info: STD 010
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950511.b/m131iw2.d
Lab Smp Id:
Inj Date : 11-MAY-1995 14:10
Operator : GT Inst ID: m.i
Smp Info : STD 020
Misc Info : M131W1/M131B01/M131IW3
Comment :
Method : /chem/m.i/m950511.b/mvoclpw.m
Meth Date : 12-May-1995 10:08 jimmy Quant Type: ISTD
Cal Date : 11-MAY-1995 14:38 Cal File: m131iw3.d
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
1	Chloromethane	50.00	1.398	1.398	(0.349)	32604	100	94
2	Vinyl Chloride	62.00	1.472	1.472	(0.367)	24796	100	93
3	Bromomethane	94.00	1.649	1.649	(0.411)	24637	100	93
4	Chloroethane	64.00	1.693	1.693	(0.422)	15641	100	87
5	Trichlorofluoromethane	100.90	1.944	1.944	(0.485)	42221	100	96
6	Acetone	58.00	1.988	1.988	(0.496)	5292	100	120
7	1,1-Dichloroethene	96.00	2.254	2.254	(0.562)	25404	100	89
8	Methylene Chloride	84.00	2.431	2.431	(0.606)	33844	100	88
M 12	1,2-Dichloroethene (total)	96.00				82908	200	170
9	Carbon Disulfide	76.00	2.519	2.519	(0.628)	84561	100	88
10	trans-1,2-Dichloroethene	96.00	2.859	2.859	(0.713)	38689	100	87
11	1,1-Dichloroethane	63.00	3.110	3.110	(0.775)	72787	100	87
13	Vinyl Acetate	43.00	3.169	3.169	(0.790)	92907	100	99
14	2-Butanone	43.00	3.464	3.464	(0.864)	26175	100	110
15	cis-1,2-Dichloroethene	96.00	3.759	3.759	(0.937)	44219	100	87
17	Chloroform	83.00	4.025	4.025	(1.004)	78283	100	87
19	1,1,1-Trichloroethane	97.00	4.822	4.822	(0.826)	53090	100	89
20	1,2-Dichloroethane	62.00	4.925	4.925	(1.228)	59775	100	90
21	Benzene	78.00	5.294	5.294	(0.906)	171080	100	91
22	Carbon Tetrachloride	117.00	5.309	5.309	(0.909)	46637	100	92
24	1,2-Dichloropropane	63.00	6.430	6.430	(1.101)	44097	100	92
25	Trichloroethene	130.00	6.460	6.460	(1.106)	40664	100	91
26	Bromodichloromethane	83.00	6.696	6.696	(1.147)	62224	100	88
27	2-Chloroethylvinylether	63.00	6.430	6.430	(1.101)	44097	100	92
28	4-Methyl-2-Pentanone	43.00	7.729	7.729	(1.323)	42790	100	95
29	cis-1,3-Dichloropropene	75.00	7.759	7.759	(1.328)	68732	100	89
30	trans-1,3-Dichloropropene	75.00	8.556	8.556	(1.465)	59335	100	90
32	Toluene	92.00	8.615	8.615	(0.785)	110627	100	86
33	1,1,2-Trichloroethane	83.00	8.748	8.748	(1.498)	31087	100	92

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.249	9.249	(0.843)	37215	100	97
	35 Dibromochloromethane	129.00	9.515	9.515	(1.629)	39205	100	90
	36 Tetrachloroethene	164.00	9.943	9.943	(0.906)	39849	100	87
	38 Chlorobenzene	112.00	11.035	11.035	(1.005)	117132	100	89
M	39 Xylene (Total)	106.00				218513	300	270
	40 Ethylbenzene	106.00	11.448	11.448	(1.043)	59835	100	88
	41 m,p-Xylene(s)	106.00	11.670	11.670	(1.063)	147740	200	180
	42 Bromoform	173.00	12.201	12.201	(2.089)	25953	100	89
	43 Styrene	104.00	12.290	12.290	(1.120)	131093	100	89
	44 o-Xylene	106.00	12.349	12.349	(1.125)	70773	100	88
	45 1,1,2,2-Tetrachloroethane	83.00	12.850	12.850	(1.171)	44527	100	94
*	16 Bromochloromethane	128.00	4.010	4.010	(1.000)	55764	250	
*	23 1,4-Difluorobenzene	114.00	5.840	5.840	(1.000)	339270	250	
*	37 Chlorobenzene-d5	117.00	10.976	10.976	(1.000)	315633	250	
$	18 1,2-Dichloroethane-d4	102.00	4.807	4.807	(1.199)	21540	250	240
$	31 Toluene-d8	98.00	8.496	8.496	(0.774)	439265	250	240
$	46 Bromofluorobenzene	95.00	13.190	13.190	(1.202)	193480	250	250

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m131iw2.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950511.b/mvoclpw.m
Misc Info: M131W1/M131B01/M131IW3

Calibration Date: 05/11/95
Calibration Time: 1438

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	56482	28241	112964	55764	-1.27
23 1,4-Difluorobenzene	349700	174850	699400	339270	-2.98
37 Chlorobenzene-d5	317682	158841	635364	315633	-0.64

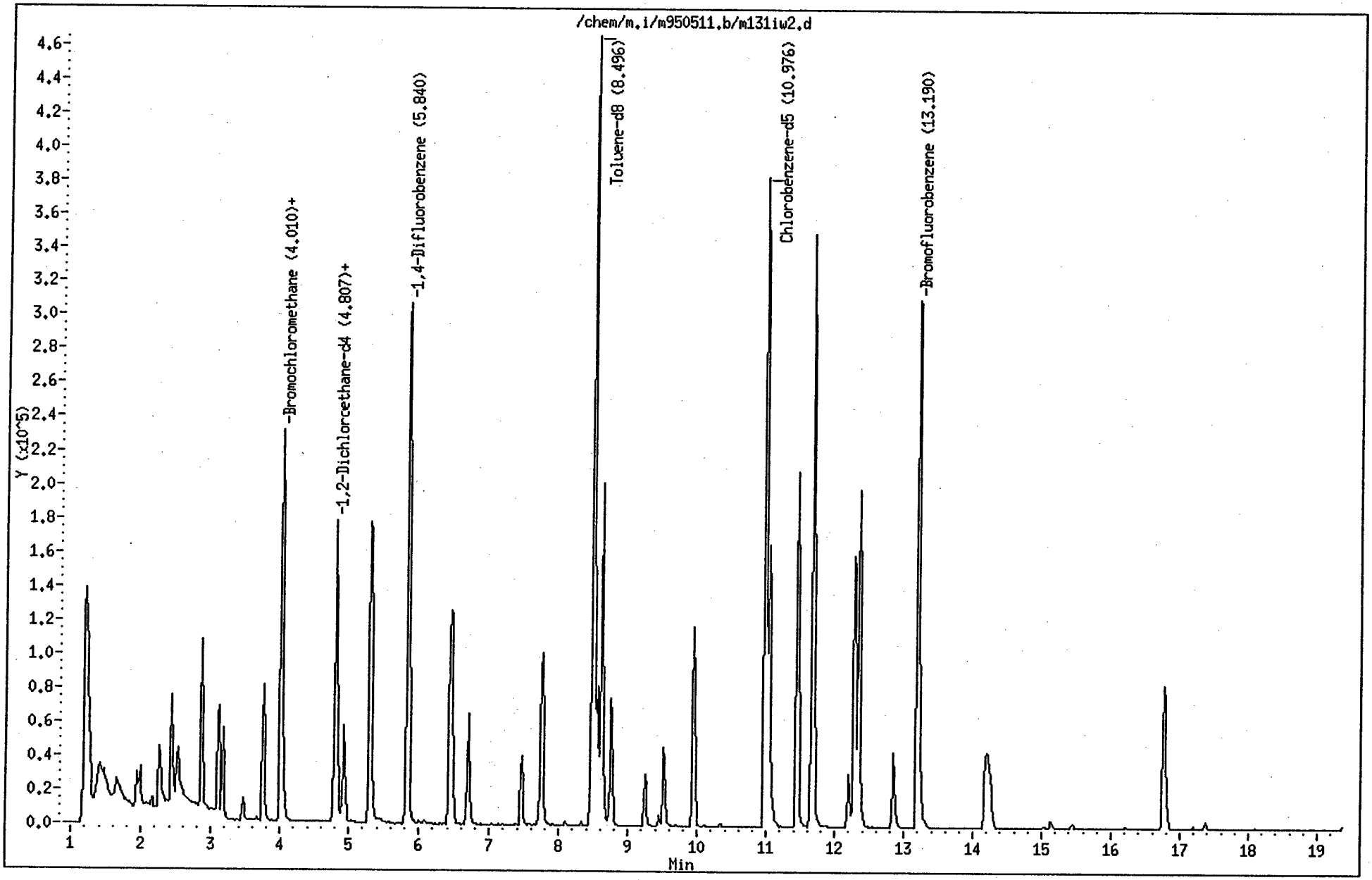
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	4.01	3.51	4.51	4.01	-0.02
23 1,4-Difluorobenzene	5.84	5.34	6.34	5.84	-0.02
37 Chlorobenzene-d5	10.98	10.48	11.48	10.98	-0.01

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950511.b/m131iw2.d
Date : 11-MAY-1995 14:10
Client ID:
Sample Info: STD 020
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950511.b/m131iw3.d
Lab Smp Id:
Inj Date : 11-MAY-1995 14:38
Operator : GT Inst ID: m.i
Smp Info : STD 050
Misc Info : M131W1/M131B01/M131IW3
Comment :
Method : /chem/m.i/m950511.b/mvoclpw.m
Meth Date : 12-May-1995 10:09 jimmy Quant Type: ISTD
Cal Date : 11-MAY-1995 14:38 Cal File: m131iw3.d
Als bottle: 3 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	1 Chloromethane	50.00	1.398	1.398	(0.348)	82199	250	240
	2 Vinyl Chloride	62.00	1.472	1.472	(0.367)	65913	250	240
	3 Bromomethane	94.00	1.649	1.649	(0.411)	62053	250	230
	4 Chloroethane	64.00	1.708	1.708	(0.426)	40260	250	220
	5 Trichlorofluoromethane	100.90	1.944	1.944	(0.485)	107676	250	240
	6 Acetone	58.00	1.988	1.988	(0.496)	8952	250	210
	7 1,1-Dichloroethene	96.00	2.269	2.269	(0.566)	66639	250	230
	8 Methylene Chloride	84.00	2.431	2.431	(0.606)	84398	250	220
M	12 1,2-Dichloroethene (total)	96.00				212546	500	440
	9 Carbon Disulfide	76.00	2.520	2.520	(0.628)	228152	250	230
	10 trans-1,2-Dichloroethene	96.00	2.859	2.859	(0.713)	99181	250	220
	11 1,1-Dichloroethane	63.00	3.110	3.110	(0.775)	186156	250	220
	13 Vinyl Acetate	43.00	3.169	3.169	(0.790)	223252	250	230
	14 2-Butanone	43.00	3.465	3.465	(0.864)	56191	250	230
	15 cis-1,2-Dichloroethene	96.00	3.760	3.760	(0.937)	113365	250	220
	17 Chloroform	83.00	4.025	4.025	(1.004)	195416	250	220
	19 1,1,1-Trichloroethane	97.00	4.822	4.822	(0.826)	136130	250	220
	20 1,2-Dichloroethane	62.00	4.926	4.926	(1.228)	152733	250	230
	21 Benzene	78.00	5.310	5.310	(0.909)	426153	250	220
	22 Carbon Tetrachloride	117.00	5.324	5.324	(0.912)	122126	250	230
	24 1,2-Dichloropropane	63.00	6.431	6.431	(1.101)	113738	250	230
	25 Trichloroethene	130.00	6.461	6.461	(1.106)	102639	250	220
	26 Bromodichloromethane	83.00	6.697	6.697	(1.147)	166854	250	230
	27 2-Chloroethylvinylether	63.00	6.431	6.431	(1.101)	113738	250	230
	28 4-Methyl-2-Pentanone	43.00	7.730	7.730	(1.323)	109826	250	240
	29 cis-1,3-Dichloropropene	75.00	7.760	7.760	(1.328)	183561	250	230
	30 trans-1,3-Dichloropropene	75.00	8.557	8.557	(1.465)	156732	250	230
	32 Toluene	92.00	8.616	8.616	(0.785)	282011	250	220
	33 1,1,2-Trichloroethane	83.00	8.749	8.749	(1.498)	79614	250	230

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.251	9.251	(0.843)	94629	250	240
	35 Dibromochloromethane	129.00	9.516	9.516	(1.629)	104149	250	230
	36 Tetrachloroethene	164.00	9.944	9.944	(0.906)	102577	250	220
	38 Chlorobenzene	112.00	11.037	11.037	(1.005)	284520	250	220
M	39 Xylene (Total)	106.00				537700	750	650
	40 Ethylbenzene	106.00	11.450	11.450	(1.043)	147524	250	220
	41 m,p-Xylene(s)	106.00	11.671	11.671	(1.063)	365186	500	440
	42 Bromoform	173.00	12.203	12.203	(2.089)	71189	250	240
	43 Styrene	104.00	12.291	12.291	(1.120)	318543	250	210
	44 o-Xylene	106.00	12.351	12.351	(1.125)	172514	250	210
	45 1,1,2,2-Tetrachloroethane	83.00	12.852	12.852	(1.171)	110542	250	230
*	16 Bromochloromethane	128.00	4.011	4.011	(1.000)	56482	250	
*	23 1,4-Difluorobenzene	114.00	5.841	5.841	(1.000)	349700	250	
*	37 Chlorobenzene-d5	117.00	10.977	10.977	(1.000)	317682	250	
$	18 1,2-Dichloroethane-d4	102.00	4.808	4.808	(1.199)	22359	250	250
$	31 Toluene-d8	98.00	8.498	8.498	(0.774)	443026	250	240
$	46 Bromofluorobenzene	95.00	13.192	13.192	(1.202)	191858	250	240

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m131iw3.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950511.b/mvoclpw.m
Misc Info: M131W1/M131B01/M131IW3

Calibration Date: 05/11/95
Calibration Time: 1438

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	56482	28241	112964	56482	0.00
23 1,4-Difluorobenzene	349700	174850	699400	349700	0.00
37 Chlorobenzene-d5	317682	158841	635364	317682	0.00

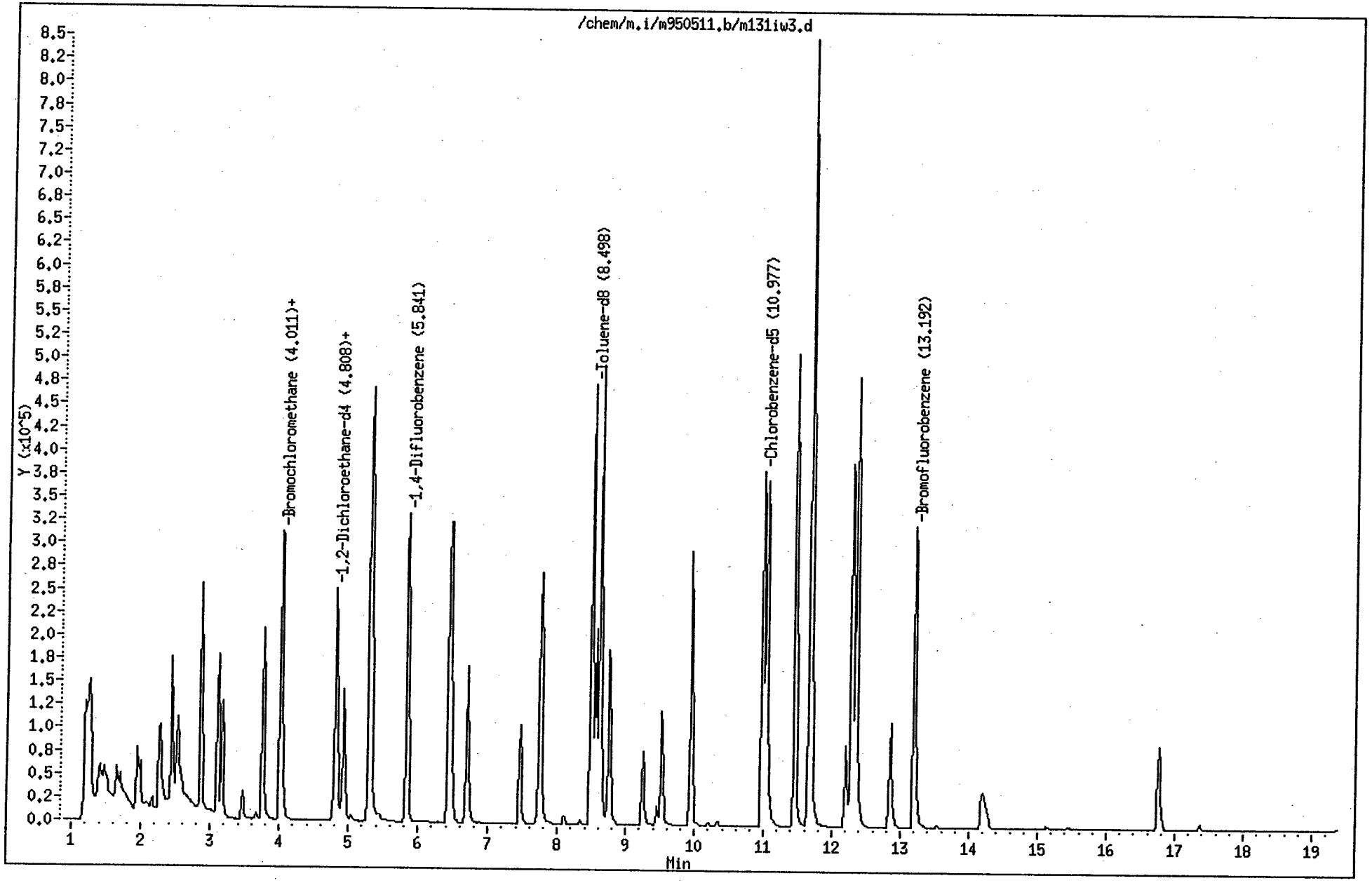
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	4.01	3.51	4.51	4.01	0.00
23 1,4-Difluorobenzene	5.84	5.34	6.34	5.84	0.00
37 Chlorobenzene-d5	10.98	10.48	11.48	10.98	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950511.b/m131iw3.d
Date : 11-MAY-1995 14:38
Client ID:
Sample Info: STD 050
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950511.b/m131iw4.d
Lab Smp Id:
Inj Date : 11-MAY-1995 15:06
Operator : GT
Inst ID: m.i
Smp Info : STD 100
Misc Info : M131W1/M131B01/M131IW3
Comment :
Method : /chem/m.i/m950511.b/mvoclpw.m
Meth Date : 12-May-1995 10:09 jimmy
Quant Type: ISTD
Cal Date : 11-MAY-1995 14:38
Cal File: m131iw3.d
Als bottle: 4
Calibration Sample, Level: 4
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	1 Chloromethane	50.00	1.398	1.398	(0.348)	170800	500	490
	2 Vinyl Chloride	62.00	1.472	1.472	(0.367)	139176	500	520
	3 Bromomethane	94.00	1.649	1.649	(0.411)	129145	500	480
	4 Chloroethane	64.00	1.708	1.708	(0.426)	82673	500	460
	5 Trichlorofluoromethane	100.90	1.944	1.944	(0.485)	233157	500	530
	6 Acetone	58.00	1.989	1.989	(0.496)	20527	500	480
	7 1,1-Dichloroethene	96.00	2.269	2.269	(0.566)	147028	500	510
	8 Methylene Chloride	84.00	2.432	2.432	(0.606)	191099	500	490
M	12 1,2-Dichloroethene (total)	96.00				488722	1000	1000
	9 Carbon Disulfide	76.00	2.520	2.520	(0.628)	507414	500	520
	10 trans-1,2-Dichloroethene	96.00	2.860	2.860	(0.713)	225945	500	510
	11 1,1-Dichloroethane	63.00	3.111	3.111	(0.776)	425387	500	500
	13 Vinyl Acetate	43.00	3.170	3.170	(0.790)	501867	500	530
	14 2-Butanone	43.00	3.465	3.465	(0.864)	114840	500	480
	15 cis-1,2-Dichloroethene	96.00	3.761	3.761	(0.937)	262777	500	510
	17 Chloroform	83.00	4.026	4.026	(1.004)	461420	500	510
	19 1,1,1-Trichloroethane	97.00	4.823	4.823	(0.826)	313765	500	510
	20 1,2-Dichloroethane	62.00	4.927	4.927	(1.228)	349306	500	520
	21 Benzene	78.00	5.311	5.311	(0.909)	939056	500	490
	22 Carbon Tetrachloride	117.00	5.326	5.326	(0.912)	279230	500	540
	24 1,2-Dichloropropane	63.00	6.433	6.433	(1.101)	252129	500	510
	25 Trichloroethene	130.00	6.462	6.462	(1.106)	231499	500	500
	26 Bromodichloromethane	83.00	6.699	6.699	(1.147)	384537	500	530
	27 2-Chloroethylvinylether	63.00	6.433	6.433	(1.101)	252129	500	510
	28 4-Methyl-2-Pentanone	43.00	7.732	7.732	(1.323)	241968	500	520
	29 cis-1,3-Dichloropropene	75.00	7.761	7.761	(1.328)	409491	500	520
	30 trans-1,3-Dichloropropene	75.00	8.558	8.558	(1.465)	369069	500	550
	32 Toluene	92.00	8.618	8.618	(0.784)	638614	500	510
	33 1,1,2-Trichloroethane	83.00	8.751	8.751	(1.498)	187069	500	540

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.253	9.253	(0.842)	202387	500	540
	35 Dibromochloromethane	129.00	9.518	9.518	(1.629)	246627	500	550
	36 Tetrachloroethene	164.00	9.946	9.946	(0.905)	231004	500	520
	38 Chlorobenzene	112.00	11.053	11.053	(1.005)	639530	500	500
M	39 Xylene (Total)	106.00				1203961	1500	1500
	40 Ethylbenzene	106.00	11.452	11.452	(1.042)	334207	500	500
	41 m,p-Xylene(s)	106.00	11.674	11.674	(1.062)	811076	1000	1000
	42 Bromoform	173.00	12.205	12.205	(2.089)	172188	500	570
	43 Styrene	104.00	12.294	12.294	(1.118)	728210	500	500
	44 o-Xylene	106.00	12.353	12.353	(1.124)	392885	500	500
	45 1,1,2,2-Tetrachloroethane	83.00	12.855	12.855	(1.169)	251740	500	540
*	16 Bromochloromethane	128.00	4.012	4.012	(1.000)	56126	250	
*	23 1,4-Difluorobenzene	114.00	5.842	5.842	(1.000)	348010	250	
*	37 Chlorobenzene-d5	117.00	10.994	10.994	(1.000)	309127	250	
$	18 1,2-Dichloroethane-d4	102.00	4.809	4.809	(1.199)	21927	250	250
$	31 Toluene-d8	98.00	8.499	8.499	(0.773)	440687	250	250
$	46 Bromofluorobenzene	95.00	13.194	13.194	(1.200)	193179	250	250

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m131iw4.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950511.b/mvoclpw.m
Misc Info: M131W1/M131B01/M131IW3

Calibration Date: 05/11/95
Calibration Time: 1438

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	56482	28241	112964	56126	-0.63
23 1,4-Difluorobenzene	349700	174850	699400	348010	-0.48
37 Chlorobenzene-d5	317682	158841	635364	309127	-2.69

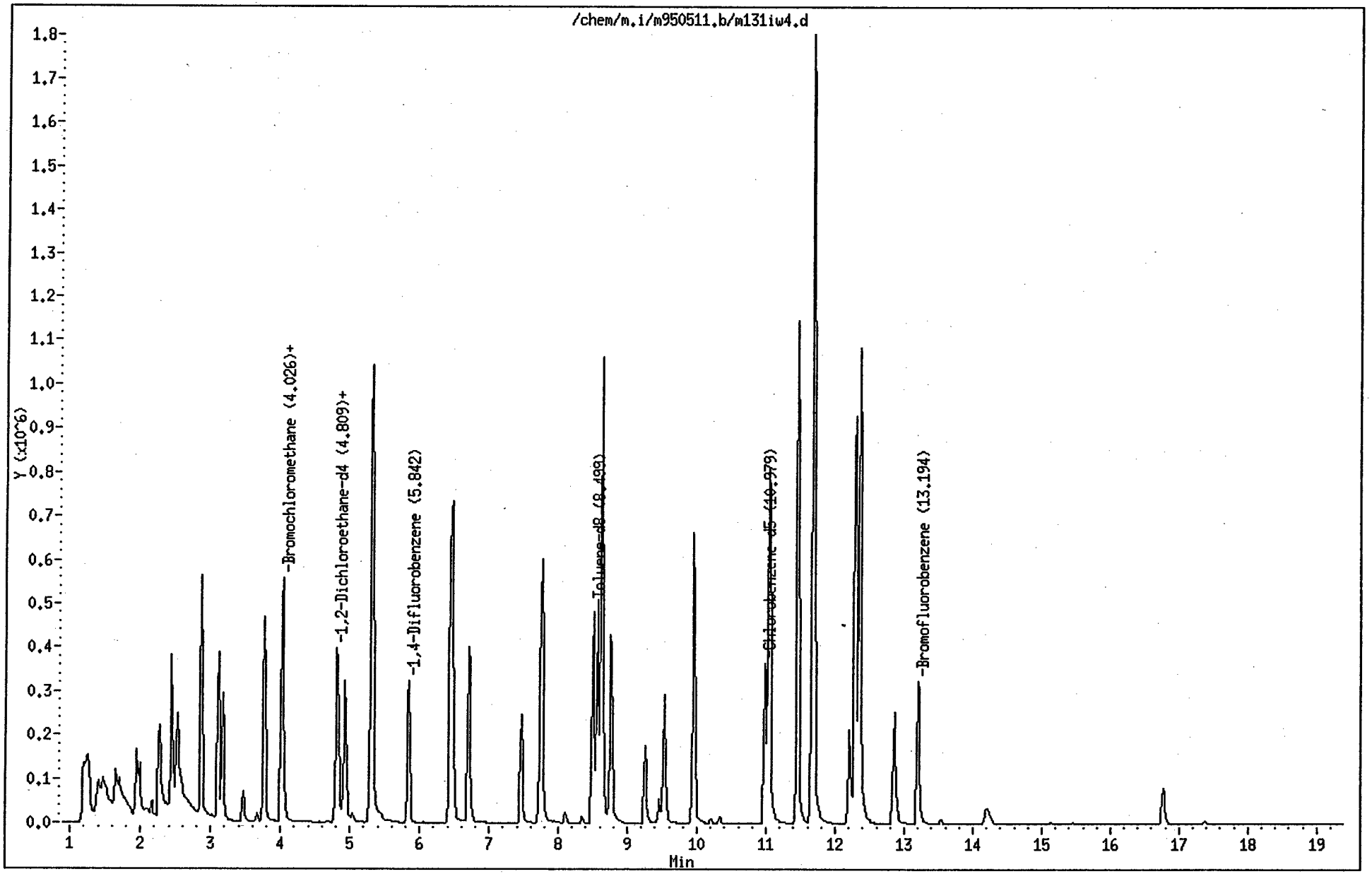
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	4.01	3.51	4.51	4.01	0.02
23 1,4-Difluorobenzene	5.84	5.34	6.34	5.84	0.02
37 Chlorobenzene-d5	10.98	10.48	11.48	10.99	0.15

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950511.b/m131iw4.d
Date : 11-MAY-1995 15:06
Client ID:
Sample Info: STD 100
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950511.b/m131iw5.d
Lab Smp Id:
Inj Date : 11-MAY-1995 15:34
Operator : GT Inst ID: m.i
Smp Info : STD 200
Misc Info : M131W1/M131B01/M131IW3
Comment :
Method : /chem/m.i/m950511.b/mvoclpw.m
Meth Date : 12-May-1995 10:09 jimmy Quant Type: ISTD
Cal Date : 11-MAY-1995 14:38 Cal File: m131iw3.d
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
1	Chloromethane	50.00	1.398	1.398	(0.348)	309275	1000	870
2	Vinyl Chloride	62.00	1.457	1.457	(0.363)	254170	1000	920
3	Bromomethane	94.00	1.649	1.649	(0.411)	259298	1000	950
4	Chloroethane	64.00	1.693	1.693	(0.422)	179968	1000	970
5	Trichlorofluoromethane	100.90	1.944	1.944	(0.485)	452751	1000	1000
6	Acetone	58.00	1.989	1.989	(0.496)	36627	1000	840
7	1,1-Dichloroethene	96.00	2.269	2.269	(0.566)	278424	1000	940
8	Methylene Chloride	84.00	2.432	2.432	(0.606)	357608	1000	900
M 12	1,2-Dichloroethene (total)	96.00				893693	2000	1800(A)
9	Carbon Disulfide	76.00	2.521	2.521	(0.628)	947391	1000	960
10	trans-1,2-Dichloroethene	96.00	2.860	2.860	(0.713)	412650	1000	900
11	1,1-Dichloroethane	63.00	3.112	3.112	(0.775)	768549	1000	890
13	Vinyl Acetate	43.00	3.171	3.171	(0.790)	933514	1000	960
14	2-Butanone	43.00	3.466	3.466	(0.864)	219365	1000	900
15	cis-1,2-Dichloroethene	96.00	3.761	3.761	(0.937)	481043	1000	920
17	Chloroform	83.00	4.027	4.027	(1.004)	852502	1000	920
19	1,1,1-Trichloroethane	97.00	4.824	4.824	(0.826)	586288	1000	940
20	1,2-Dichloroethane	62.00	4.928	4.928	(1.228)	634520	1000	930
21	Benzene	78.00	5.312	5.312	(0.909)	1731960	1000	880
22	Carbon Tetrachloride	117.00	5.326	5.326	(0.912)	528474	1000	990
24	1,2-Dichloropropane	63.00	6.434	6.434	(1.101)	460464	1000	910
25	Trichloroethene	130.00	6.478	6.478	(1.109)	421954	1000	900
26	Bromodichloromethane	83.00	6.700	6.700	(1.147)	709742	1000	960
27	2-Chloroethylvinylether	63.00	6.434	6.434	(1.101)	460464	1000	910
28	4-Methyl-2-Pentanone	43.00	7.733	7.733	(1.323)	437062	1000	920
29	cis-1,3-Dichloropropene	75.00	7.762	7.762	(1.328)	789708	1000	970
30	trans-1,3-Dichloropropene	75.00	8.560	8.560	(1.465)	702022	1000	1000
32	Toluene	92.00	8.634	8.634	(0.785)	1173686	1000	930
33	1,1,2-Trichloroethane	83.00	8.767	8.767	(1.500)	350540	1000	980

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.254	9.254	(0.842)	362818	1000	960
	35 Dibromochloromethane	129.00	9.534	9.534	(1.632)	470379	1000	1000
	36 Tetrachloroethene	164.00	9.961	9.961	(0.906)	433082	1000	960
	38 Chlorobenzene	112.00	11.054	11.054	(1.005)	1170220	1000	910
M	39 Xylene (Total)	106.00				2220091	3000	2700
	40 Ethylbenzene	106.00	11.467	11.467	(1.043)	614223	1000	920
	41 m,p-Xylene(s)	106.00	11.689	11.689	(1.063)	1487491	2000	1800
	42 Bromoform	173.00	12.206	12.206	(2.089)	336893	1000	1100
	43 Styrene	104.00	12.294	12.294	(1.118)	1336374	1000	920
	44 o-Xylene	106.00	12.368	12.368	(1.125)	732600	1000	930
	45 1,1,2,2-Tetrachloroethane	83.00	12.856	12.856	(1.169)	471019	1000	1000
*	16 Bromochloromethane	128.00	4.012	4.012	(1.000)	57402	250	
*	23 1,4-Difluorobenzene	114.00	5.843	5.843	(1.000)	357081	250	
*	37 Chlorobenzene-d5	117.00	10.994	10.994	(1.000)	310815	250	
$	18 1,2-Dichloroethane-d4	102.00	4.809	4.809	(1.199)	23370	250	260
$	31 Toluene-d8	98.00	8.501	8.501	(0.773)	449989	250	250
$	46 Bromofluorobenzene	95.00	13.210	13.210	(1.202)	191556	250	250

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m131iw5.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950511.b/mvoclpw.m
Misc Info: M131W1/M131B01/M131IW3

Calibration Date: 05/11/95
Calibration Time: 1438

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	56482	28241	112964	57402	1.63
23 1,4-Difluorobenzene	349700	174850	699400	357081	2.11
37 Chlorobenzene-d5	317682	158841	635364	310815	-2.16

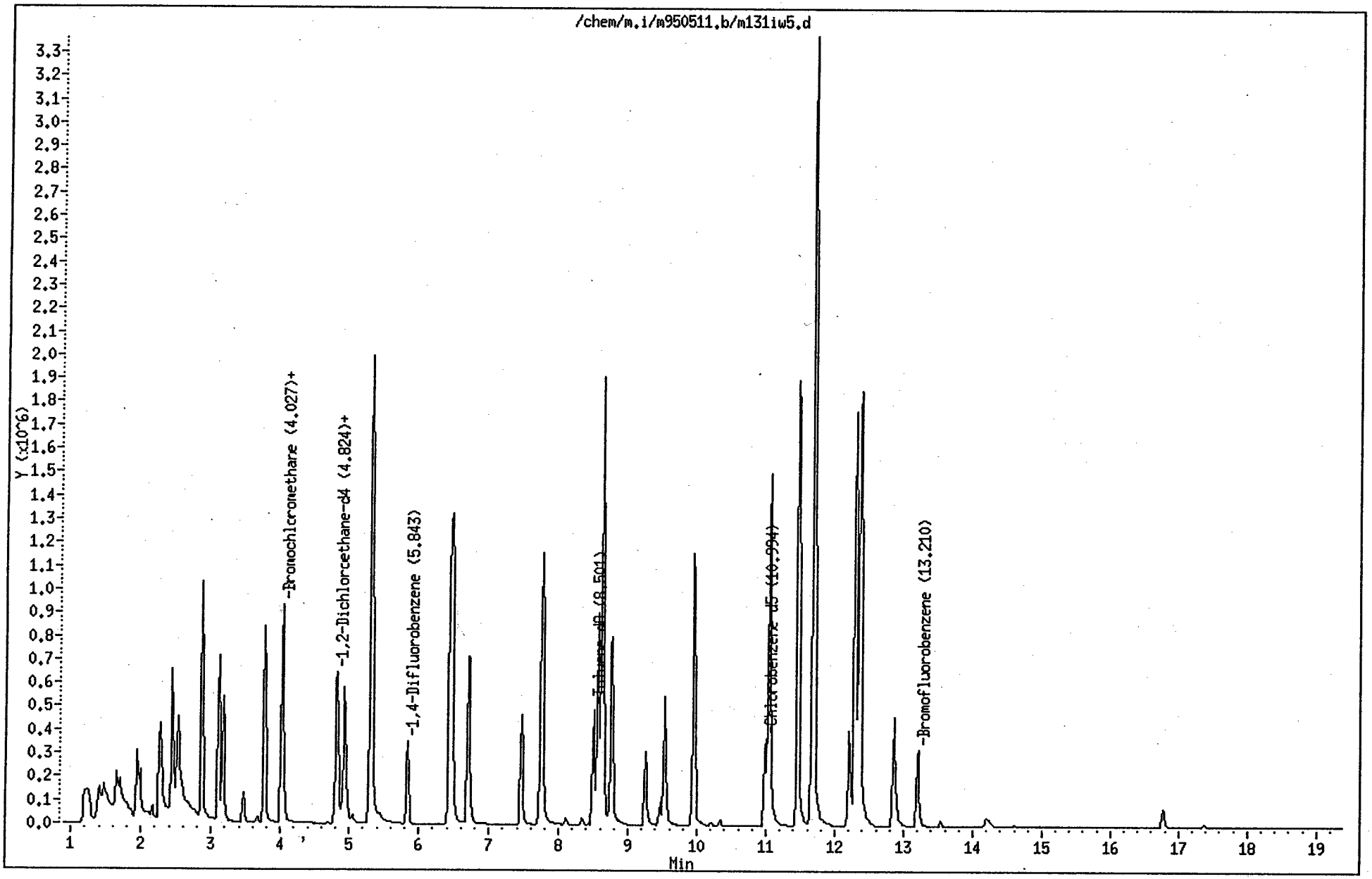
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	4.01	3.51	4.51	4.01	0.04
23 1,4-Difluorobenzene	5.84	5.34	6.34	5.84	0.04
37 Chlorobenzene-d5	10.98	10.48	11.48	10.99	0.16

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950511.b/m131iw5.d
Date : 11-MAY-1995 15:34
Client ID:
Sample Info: STD 200
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvoclps.m
Cal Date : 09-May-1995 18:14 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/k.i/k950502.b/k122is1e.d
Level 2: /chem/k.i/k950502.b/k122is2e.d
Level 3: /chem/k.i/k950502.b/k122cs7.d
Level 4: /chem/k.i/k950502.b/k122is4e.d
Level 5: /chem/k.i/k950502.b/k122is5e.d

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	4 Chloromethane	2.61598	2.81482	2.12233	2.24403	2.45830	2.45109	11.367
	5 Vinyl Chloride	2.65380	2.94683	2.27075	2.29473	2.52382	2.53798	10.993
	7 Bromomethane	2.11466	2.01524	1.61752	1.66188	1.78547	1.83895	11.862
	6 Chloroethane	1.70772	2.47252	1.96573	1.98068	2.14242	2.05381	13.687
	9 Trichlorofluoromethane	1.49304	2.08578	2.00085	1.92770	2.26966	1.95541	14.741
	8 Acetone	0.27178	0.26116	0.28834	0.18784	0.20866	0.24356	17.700
	10 1,1-Dichloroethene	1.85538	2.17717	2.01911	2.00216	2.12934	2.03663	6.147
	11 Methylene Chloride	2.38104	2.68890	2.40798	2.23657	2.35295	2.41349	6.930
M	1 1,2-Dichloroethene (total)	2.48786	2.60735	2.54327	2.57358	2.54340	2.55109	1.730
	12 Carbon Disulfide	7.61210	8.72426	7.92999	7.84861	8.50089	8.12317	5.767
	13 trans-1,2-Dichloroethene	2.45393	2.74754	2.54113	2.51774	2.65500	2.58307	4.537
	14 1,1-Dichloroethane	4.64531	5.12809	4.72981	4.78124	4.76879	4.81065	3.851
	16 Vinyl Acetate	4.39095	4.67428	4.62771	4.19908	3.81329	4.34106	8.099
	17 2-Butanone	2.07727	1.95040	2.25063	1.42863	1.46330	1.83405	20.182
	19 cis-1,2-Dichloroethene	2.52179	2.46715	2.54541	2.62942	2.43180	2.51911	3.022
	21 Chloroform	4.03686	4.22412	3.99063	3.86111	4.20345	4.06323	3.740
	24 1,1,1-Trichloroethane	3.10851	3.57553	3.17577	3.10886	3.55489	3.30471	7.247
	25 1,2-Dichloroethane	0.46771	0.44242	0.46820	0.45167	0.45093	0.45619	2.487
	27 Benzene	1.45923	1.42676	1.47373	1.47356	1.42845	1.45235	1.608
	28 Carbon Tetrachloride	0.37727	0.36450	0.38452	0.39331	0.40772	0.38546	4.232
	33 1,2-Dichloropropane	0.39723	0.37732	0.40855	0.37269	0.37777	0.38671	3.990
	34 Trichloroethene	0.33210	0.31444	0.34870	0.32128	0.32473	0.32825	3.986
	35 Bromodichloromethane	0.41562	0.40335	0.45507	0.41056	0.44324	0.42557	5.255
	15 2-Chloroethylvinylether	0.76056	0.69309	0.74966	0.77129	0.68699	0.73232	5.381
	38 4-Methyl-2-Pentanone	0.36838	0.41150	0.43019	0.23238	0.26823	0.34214	25.631
	42 cis-1,3-Dichloropropene	0.39013	0.36628	0.41665	0.38134	0.39805	0.39049	4.810
	37 trans-1,3-Dichloropropene	0.66711	0.74886	0.70980	0.62420	0.74084	0.69816	7.498

SPL Labs

INITIAL CALIBRATION DATA

Start Cal Date : 02-MAY-1995 20:30
End Cal Date : 02-MAY-1995 21:27
Quant Method : ISTD
Origin : Included
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/k.i/k950502.b/kvoclps.m
Cal Date : 09-May-1995 18:14 hillery
Curve Type : Average

	Compound	50 Level 1	100 Level 2	250 Level 3	500 Level 4	1000 Level 5	RRF	% RSD
	43 Toluene	1.22134	1.32245	1.18326	1.04139	1.17488	1.18866	8.504
	44 1,1,2-Trichloroethane	0.34616	0.33240	0.31910	0.27189	0.31178	0.31627	8.874
	45 2-Hexanone	0.35970	0.60509	0.51642	0.14372	0.31633	0.38825	46.295
	46 Dibromochloromethane	0.36006	0.38294	0.37802	0.33114	0.40668	0.37177	7.573
	48 Tetrachloroethene	0.41111	0.43522	0.40448	0.35990	0.40363	0.40287	6.757
	52 Chlorobenzene	1.13558	1.08935	1.14714	1.12095	1.06593	1.11179	3.019
M	2 Xylene (Total)	0.69398	0.81685	0.69844	0.69500	0.67635	0.71612	7.953
	53 Ethylbenzene	0.59157	0.65401	0.60740	0.59508	0.59898	0.60941	4.204
	54 m,p-Xylene(s)	0.71166	0.83335	0.73199	0.70548	0.65004	0.72650	9.222
	55 Bromoform	0.17950	0.21853	0.21733	0.20692	0.24260	0.21298	10.719
	57 Styrene	1.03398	1.23180	1.04130	1.08557	1.25174	1.12888	9.316
	58 o-Xylene	0.65863	0.78384	0.63135	0.67405	0.72897	0.69537	8.765
	59 1,1,2,2-Tetrachloroethane	0.36578	0.44209	0.33519	0.32841	0.31594	0.35748	14.192
$	23 1,2-Dichloroethane-d4	0.46776	0.54303	0.42892	0.45129	0.52086	0.48237	9.941
$	40 Toluene-d8	1.71636	1.89329	1.54687	1.47209	1.67607	1.66093	9.799
$	61 Bromofluorobenzene	0.65848	0.66793	0.55819	0.46477	0.53858	0.57759	14.826

SPL Labs

Volatiles by 8240

ata file : /chem/k.i/k950502.b/k122is1e.d
Lab Smp Id: 10 PPB STD 8240S
Inj Date : 02-MAY-1995 20:30
perator : HLW Inst ID: k.i
Smp Info : 10 PPB STD 8240S
Misc Info :
omment :
ethod : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
ls bottle: 9
il Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
arget Version: 3.10

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4 Chloromethane	50.00	1.348	1.392	(0.636)	43102	62	12
5 Vinyl Chloride	62.00	1.394	1.422	(0.657)	43725	58	12 (Q)
7 Bromomethane	94.00	1.424	1.437	(0.671)	34842	65	13
6 Chloroethane	64.00	1.439	1.437	(0.679)	28137	43	9 (aQ)
9 Trichlorofluoromethane	100.90	1.515	1.528	(0.714)	24600	37	7
8 Acetone	58.00	1.515	1.513	(0.714)	4478	47	9 (aQM)
10 1,1-Dichloroethene	96.00	1.621	1.619	(0.764)	30570	46	9
11 Methylene Chloride	84.00	1.667	1.665	(0.786)	39231	49	10
1 1,2-Dichloroethene (total)	96.00				81982	98	20
12 Carbon Disulfide	76.00	1.712	1.710	(0.807)	125420	48	10
13 trans-1,2-Dichloroethene	96.00	1.773	1.786	(0.836)	40432	48	10
14 1,1-Dichloroethane	63.00	1.848	1.846	(0.871)	76538	49	10
16 Vinyl Acetate	43.00	1.863	1.862	(0.879)	72347	47	9 (a)
17 2-Butanone	43.00	1.970	1.952	(0.929)	34226	46	9 (a)
19 cis-1,2-Dichloroethene	96.00	2.045	2.043	(0.964)	41550	50	10
21 Chloroform	83.00	2.121	2.119	(1.000)	66513	50	10
24 1,1,1-Trichloroethane	97.00	2.394	2.392	(1.129)	51217	49	10
25 1,2-Dichloroethane	62.00	2.409	2.407	(0.864)	47068	50	10
27 Benzene	78.00	2.545	2.543	(0.913)	146848	50	10
28 Carbon Tetrachloride	117.00	2.576	2.574	(0.924)	37966	49	10
33 1,2-Dichloropropane	63.00	3.076	3.074	(1.103)	39975	49	10
34 Trichloroethene	130.00	3.091	3.089	(1.109)	33421	48	10
35 Bromodichloromethane	83.00	3.212	3.210	(1.152)	41826	46	9
15 2-Chloroethylvinylether	63.00	1.848	1.846	(0.663)	76538	51	10
38 4-Methyl-2-Pentanone	43.00	4.061	3.998	(1.457)	37072	43	8 (a)
42 cis-1,3-Dichloropropene	75.00	4.651	4.634	(1.669)	39260	47	9
37 trans-1,3-Dichloropropene	75.00	3.954	3.953	(0.587)	47187	47	9
43 Toluene	92.00	4.636	4.634	(0.688)	86390	52	10
44 1,1,2-Trichloroethane	83.00	4.788	4.771	(0.710)	24485	54	11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.424	5.347	(0.804)	25443	35	7(a)
	46 Dibromochloromethane	129.00	5.394	5.377	(0.800)	25468	48	10
	48 Tetrachloroethene	164.00	5.788	5.786	(0.858)	29079	51	10
	52 Chlorobenzene	112.00	6.803	6.801	(1.009)	80324	49	10
M	2 Xylene (Total)	106.00				147264	150	30
	53 Ethylbenzene	106.00	7.242	7.241	(1.074)	41944	49	10
	54 m,p-Xylene(s)	106.00	7.455	7.468	(1.106)	100677	97	19
	55 Bromoform	173.00	7.818	7.815	(1.160)	12697	41	8
	57 Styrene	104.00	8.015	8.013	(1.189)	73137	50	10
	58 o-Xylene	106.00	8.061	8.074	(1.196)	46587	52	10
	59 1,1,2,2-Tetrachloroethane	83.00	8.621	8.604	(1.279)	25873	54	
*	20 Bromochloromethane	128.00	2.121	2.119	(1.000)	82382	250	
*	31 1,4-Difluorobenzene	114.00	2.788	2.786	(1.000)	503171	250	
*	51 Chlorobenzene-d5	117.00	6.742	6.756	(1.000)	353668	250	
$	23 1,2-Dichloroethane-d4	102.00	2.364	2.362	(1.114)	7707	54	[illegible](R)
$	40 Toluene-d8	98.00	4.530	4.528	(0.672)	121404	55	[illegible](R)
$	61 Bromofluorobenzene	95.00	8.864	8.847	(1.315)	46577	59	[illegible](R)

QC Flag Legend

a - Target compound detected but, quantitated amount [illegible] Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is1e.d
Lab Smp Id: 10 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	82382	6.43
31 1,4-Difluorobenzene	488350	244175	976700	503171	3.03
51 Chlorobenzene-d5	357839	178920	715678	353668	-1.17

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.10
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.07
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.19

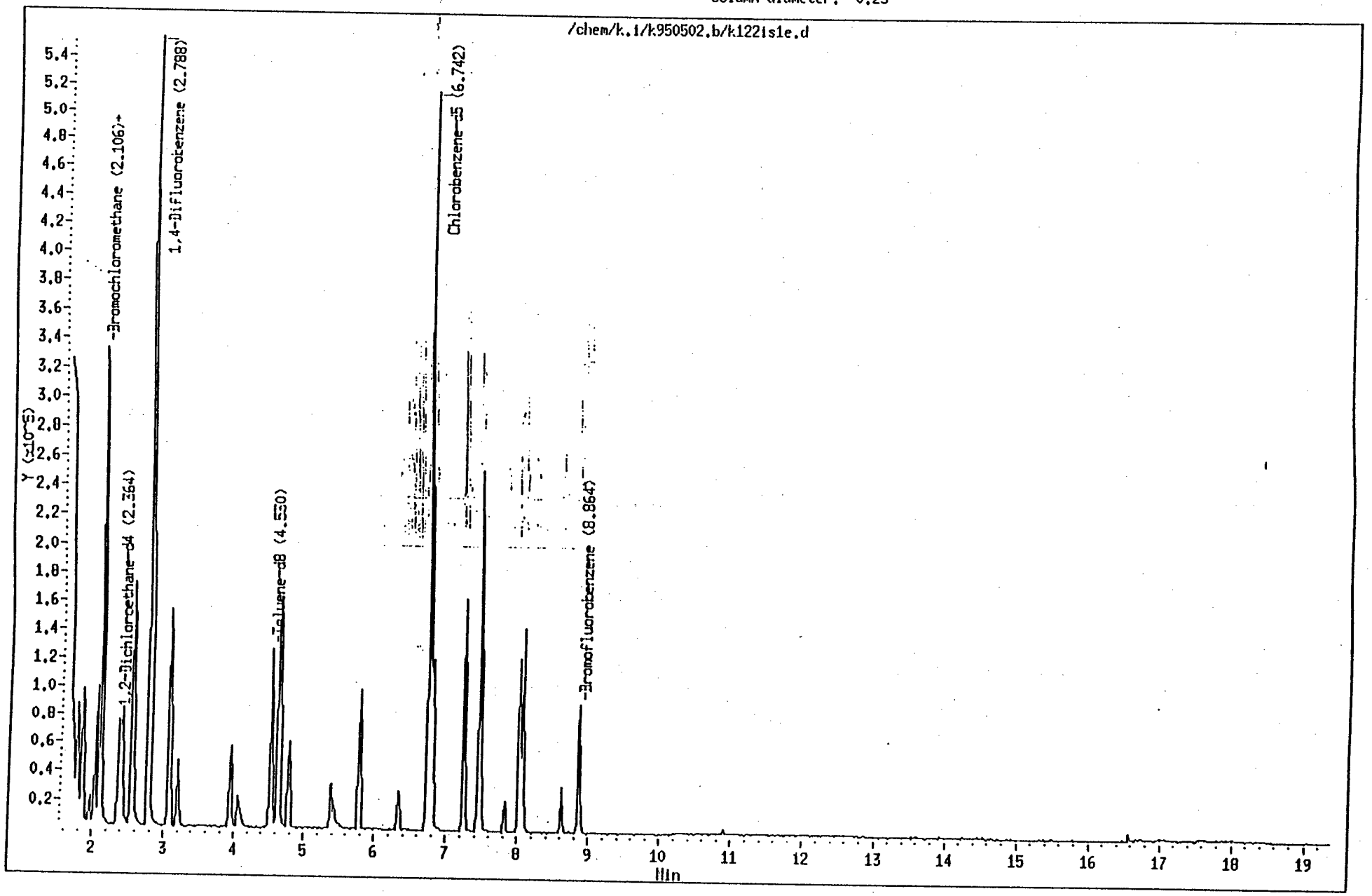
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k122is1e.d
Date : 02-MAY-1995 20:30
Client ID:
Sample Info: 10 PPB SID 8240S

Instrument: k.1

Operator: MLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/k.i/k950502.b/k122is2e.d
Report Date: 10-May-1995 12:24

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Inj Date : 02-MAY-1995 19:54
Operator : HLW Inst ID: k.i
Smp Info : 20 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 8
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4 Chloromethane	50.00	1.362	1.392	(0.643)	81838	130	26
5 Vinyl Chloride	62.00	1.392	1.422	(0.657)	85676	130	26 (QM)
7 Bromomethane	94.00	1.438	1.437	(0.678)	58591	120	25
6 Chloroethane	64.00	1.453	1.437	(0.685)	71886	120	25 (Q)
9 Trichlorofluoromethane	100.00	1.529	1.528	(0.721)	60642	100	21
8 Acetone	58.00	1.514	1.513	(0.714)	7593	90	18 (aQM)
10 1,1-Dichloroethene	96.00	1.620	1.619	(0.764)	63299	110	22
11 Methylene Chloride	84.00	1.665	1.665	(0.786)	78177	110	22
1 1,2-Dichloroethene (total)	96.00				151612	200	41
12 Carbon Disulfide	76.00	1.710	1.710	(0.807)	253649	110	22
13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	79882	110	22
14 1,1-Dichloroethane	63.00	1.847	1.846	(0.871)	149094	110	22
16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	135900	100	20
17 2-Butanone	43.00	1.968	1.952	(0.928)	56706	87	17 (a)
19 cis-1,2-Dichloroethene	96.00	2.044	2.043	(0.964)	71730	97	19
21 Chloroform	83.00	2.120	2.119	(1.000)	122812	100	21
24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	103955	110	22
25 1,2-Dichloroethane	62.00	2.408	2.407	(0.864)	95170	94	19
27 Benzene	78.00	2.544	2.543	(0.913)	306916	97	19
28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	78408	95	19
33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	81167	92	18
34 Trichloroethene	130.00	3.089	3.089	(1.109)	67641	90	18
35 Bromodichloromethane	83.00	3.211	3.210	(1.152)	86766	89	18
15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	149094	92	18
38 4-Methyl-2-Pentanone	43.00	4.029	3.998	(1.446)	88519	96	19
42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.663)	78792	88	18
37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.586)	99671	100	21
43 Toluene	92.00	4.635	4.634	(0.688)	176014	110	22
44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.710)	44241	100	21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.392	5.347	(0.800)	80536	120	23
	46 Dibromochloromethane	129.00	5.392	5.377	(0.800)	50968	100	20
	48 Tetrachloroethene	164.00	5.786	5.786	(0.858)	57926	110	22
	52 Chlorobenzene	112.00	6.302	6.301	(1.009)	144990	95	19
M	2 Xylene (Total)	106.00				326160	350	70
	53 Ethylbenzene	106.00	7.241	7.241	(1.074)	87047	110	22
	54 m,p-Xylene(s)	106.00	7.453	7.468	(1.106)	221833	230	46
	55 Bromoform	173.00	7.817	7.816	(1.160)	29086	100	20
	57 Styrene	104.00	8.014	8.013	(1.189)	163949	120	24
	58 o-Xylene	106.00	8.059	8.074	(1.196)	104327	120	25
	59 1,1,2,2-Tetrachloroethane	83.00	8.605	8.604	(1.276)	58841	130	26
*	20 Bromochloromethane	128.00	2.120	2.119	(1.000)	72685	250	
*	31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	537784	250	
*	51 Chlorobenzene-d5	117.00	6.741	6.756	(1.000)	332743	250	
S	23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	15788	130	25 (R)
S	40 Toluene-d8	98.00	4.529	4.528	(0.672)	251991	120	24 (R)
S	61 Bromofluorobenzene	95.00	8.862	8.847	(1.315)	88899	120	24 (R)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
Q - Qualifier signal failed the ratio test.
R - Spike/Surrogate failed recovery limits.
M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is2e.d
Lab Smp Id: 20 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	307408	153704	154816	72685	-6.10
31 1,4-Difluorobenzene	488350	244175	976700	537784	10.12
51 Chlorobenzene-d5	357839	178920	715678	332743	-7.01

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.03
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.02
51 Chlorobenzene-d5	6.76	6.26	7.26	6.74	-0.22

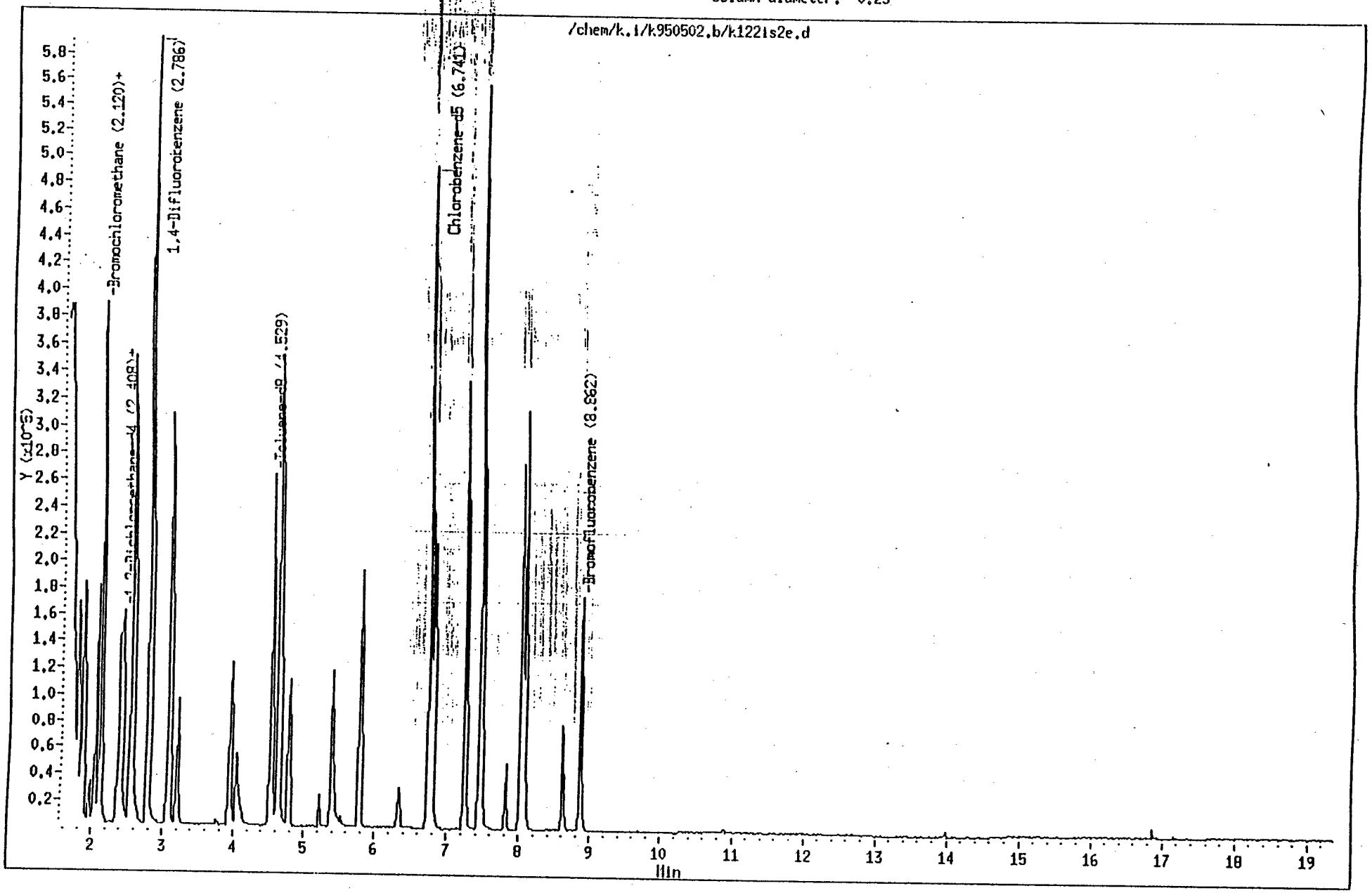
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s2e.d
Date : 02-MAY-1995 19:54
Client ID:
Sample Info: 20 PPB STD 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLW
Column diameter: 0.25



SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/ki22cs7.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 02-MAY-1995 18:00
Operator : HLW
Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery
Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00
Cal File: ki22cs7.d
Als bottle: 5
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
4 Chloromethane	50.00	1.361	1.392	(0.642)	164285	250	50
5 Vinyl Chloride	62.00	1.407	1.422	(0.664)	175774	250	50
7 Bromomethane	94.00	1.437	1.437	(0.678)	125209	250	50
6 Chloroethane	64.00	1.437	1.437	(0.678)	152163	250	50
9 Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	154882	250	50
8 Acetone	58.00	1.513	1.513	(0.714)	22320	250	50(a)
10 1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	156295	250	50
11 Methylene Chloride	84.00	1.665	1.665	(0.785)	186397	250	50
1 1,2-Dichloroethene (total)	96.00				393739	500	100
12 Carbon Disulfide	76.00	1.710	1.710	(0.807)	613845	250	50
13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	196704	250	50
14 1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	366125	250	50
16 Vinyl Acetate	43.00	1.861	1.862	(0.878)	358222	250	50
17 2-Butanone	43.00	1.968	1.952	(0.928)	174217	250	50
19 cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	197035	250	50
21 Chloroform	83.00	2.119	2.119	(1.000)	308907	250	50
24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	245830	250	50
25 1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	228647	250	50
27 Benzene	78.00	2.543	2.543	(0.913)	719698	250	50
28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	197782	250	50
33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	199516	250	50
34 Trichloroethene	130.00	3.089	3.089	(1.109)	170287	250	50
35 Bromodichloromethane	83.00	3.210	3.210	(1.152)	222234	250	50
15 2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	366096	250	50
38 4-Methyl-2-Pentanone	43.00	4.013	3.998	(1.441)	210082	250	50
42 cis-1,3-Dichloropropene	75.00	4.649	4.634	(1.669)	203470	250	50
37 trans-1,3-Dichloropropene	75.00	3.952	3.953	(0.585)	253995	250	50
43 Toluene	92.00	4.634	4.634	(0.686)	423416	250	50
44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	114187	250	50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.377	5.347	(0.796)	184794	250	50
	46 Dibromochloromethane	129.00	5.392	5.377	(0.798)	135271	250	50
	48 Tetrachloroethene	164.00	5.801	5.786	(0.859)	144739	250	50
	52 Chlorobenzene	112.00	6.801	6.801	(1.007)	410492	250	50
M	2 Xylene (Total)	106.00				749788	750	150
	53 Ethylbenzene	106.00	7.240	7.241	(1.072)	217352	250	50
	54 m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	523866	500	100
	55 Bromoform	173.00	7.816	7.816	(1.157)	77770	250	50
	57 Styrene	104.00	8.013	8.013	(1.186)	372618	250	50
	58 o-Xylene	106.00	8.074	8.074	(1.195)	225922	250	50
	59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	119944	250	50
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	77408	250	
*	31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	488350	250	
*	51 Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	357839	250	
$	23 1,2-Dichloroethane-d4	102.00	2.361	2.362	(1.114)	33202	250	50
$	40 Toluene-d8	98.00	4.528	4.528	(0.670)	553531	250	50
$	61 Bromofluorobenzene	95.00	8.862	8.847	(1.312)	199743	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122cs7.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	77408	0.00
31 1,4-Difluorobenzene	488350	244175	976700	488350	0.00
51 Chlorobenzene-d5	357839	178920	715678	357839	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

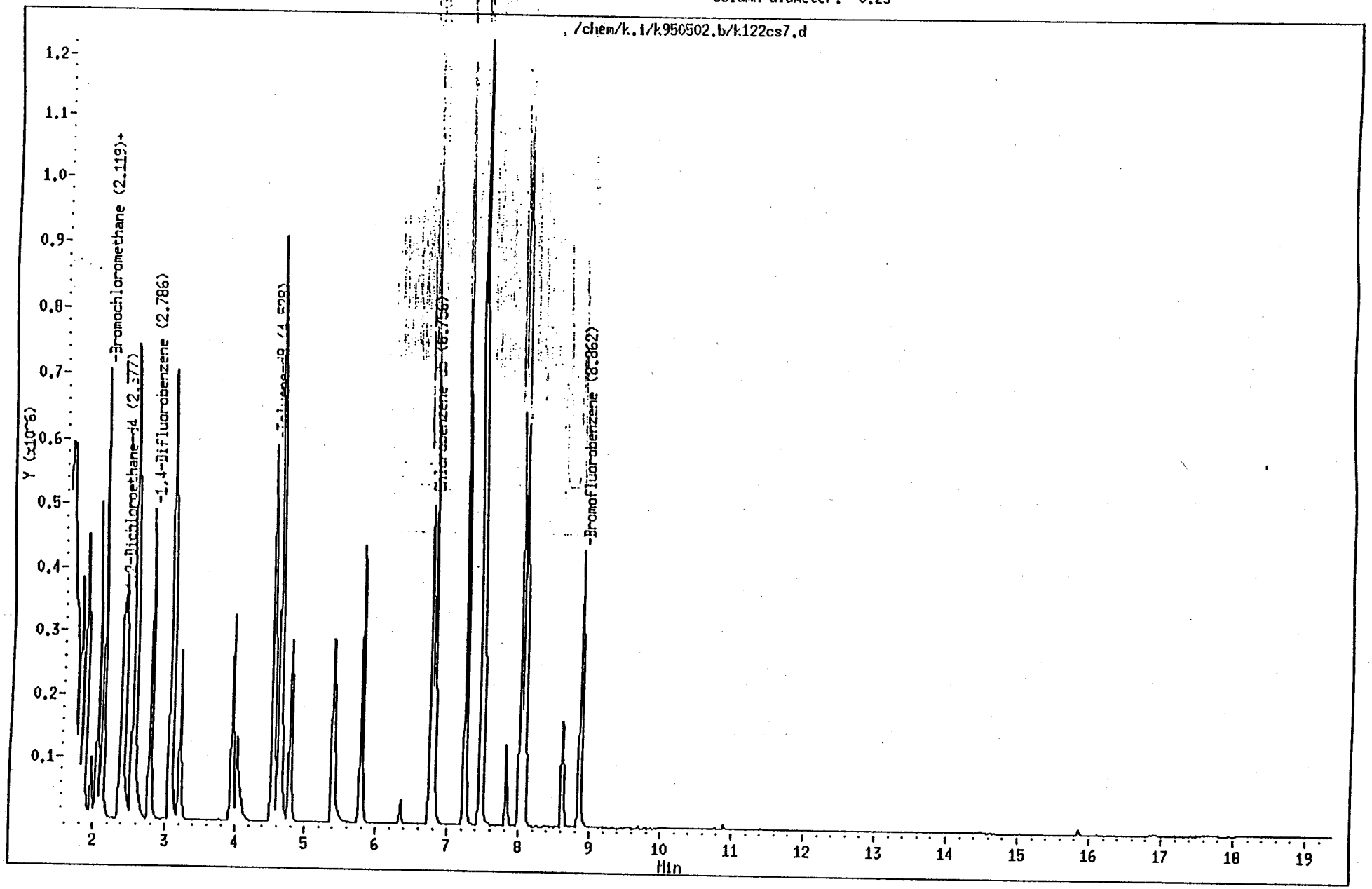
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k122cs7.d
Date : 02-MAY-1995 10:00
Client ID:
Sample Info: 50 PPB STD 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLW
Column diameter: 0.25



Data File: /chem/k.i/k950502.b/k122is4e.d
Report Date: 10-May-1995 12:25

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Inj Date : 02-MAY-1995 21:00
Operator : HLW Inst ID: k.i
Smp Info : 100 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 9
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10 Compound Sublist: normal.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
4 Chloromethane	50.00	1.377	1.392	(0.650)	363004	530	100
5 Vinyl Chloride	62.00	1.422	1.422	(0.671)	371205	500	100
7 Bromomethane	94.00	1.437	1.437	(0.678)	268832	510	100
6 Chloroethane	64.00	1.437	1.437	(0.678)	320402	500	100
9 Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	311932	480	96
8 Acetone	58.00	1.513	1.513	(0.714)	30386	320	65(a)
10 1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	323877	500	99
11 Methylene Chloride	84.00	1.665	1.665	(0.785)	361796	460	93
1 1,2-Dichloroethene (total)	96.00				832625	1000	200
12 Carbon Disulfide	76.00	1.725	1.710	(0.814)	1269622	490	99
13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	407280	500	99
14 1,1-Dichloroethane	63.00	1.847	1.946	(0.871)	773432	500	100
16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	679260	450	91
17 2-Butanone	43.00	1.953	1.952	(0.921)	231101	320	63
19 cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	425345	520	100
21 Chloroform	83.00	2.119	2.119	(1.000)	624589	480	97
24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	502902	490	98
25 1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	452921	480	96
27 Benzene	78.00	2.544	2.543	(0.913)	1477643	500	100
28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	394399	510	100
33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	373720	460	91
34 Trichloroethene	130.00	3.089	3.089	(1.109)	322170	460	92
35 Bromodichloromethane	83.00	3.210	3.210	(1.152)	411699	450	90
15 2-Chloroethylvinylether	63.00	1.847	1.846	(0.663)	773432	510	100
38 4-Methyl-2-Pentanone	43.00	4.013	3.998	(1.441)	233024	270	54
42 cis-1,3-Dichloropropene	75.00	4.635	4.634	(1.664)	382393	460	92
37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.585)	481365	440	88
43 Toluene	92.00	4.635	4.634	(0.686)	803091	440	88
44 1,1,2-Trichloroethane	83.00	4.786	4.771	(0.708)	209676	430	85

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.377	5.347	(0.796)	110835	140	28
	46 Dibromochloromethane	129.00	5.392	5.377	(0.798)	255368	440	88
	48 Tetrachloroethene	164.00	5.786	5.786	(0.856)	277544	440	89
	52 Chlorobenzene	112.00	6.801	6.801	(1.007)	864442	490	98
M	2 Xylene (Total)	106.00				1607895	1500	300
	53 Ethylbenzene	106.00	7.241	7.241	(1.072)	458911	490	98
	54 m,p-Xylene(s)	106.00	7.453	7.468	(1.103)	1088090	960	190
	55 Bromoform	173.00	7.816	7.816	(1.157)	159567	480	95
	57 Styrene	104.00	8.013	8.013	(1.186)	837162	520	100
	58 o-Xylene	106.00	8.059	8.074	(1.193)	519805	530	110
	59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	253257	490	98
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	808820	250	50
*	31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	501386	250	50
*	51 Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	385585	250	50
$	23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	73003	530	100(R)
$	40 Toluene-d8	98.00	4.528	4.528	(0.670)	1135233	480	95(R)
$	61 Bromofluorobenzene	95.00	8.847	8.847	(1.310)	358413	420	83(R)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is4e.d
Lab Smp Id: 100 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	780882	4.49
31 1,4-Difluorobenzene	488350	244175	976700	501386	2.67
51 Chlorobenzene-d5	357839	178920	715678	385585	17.75

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.01
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

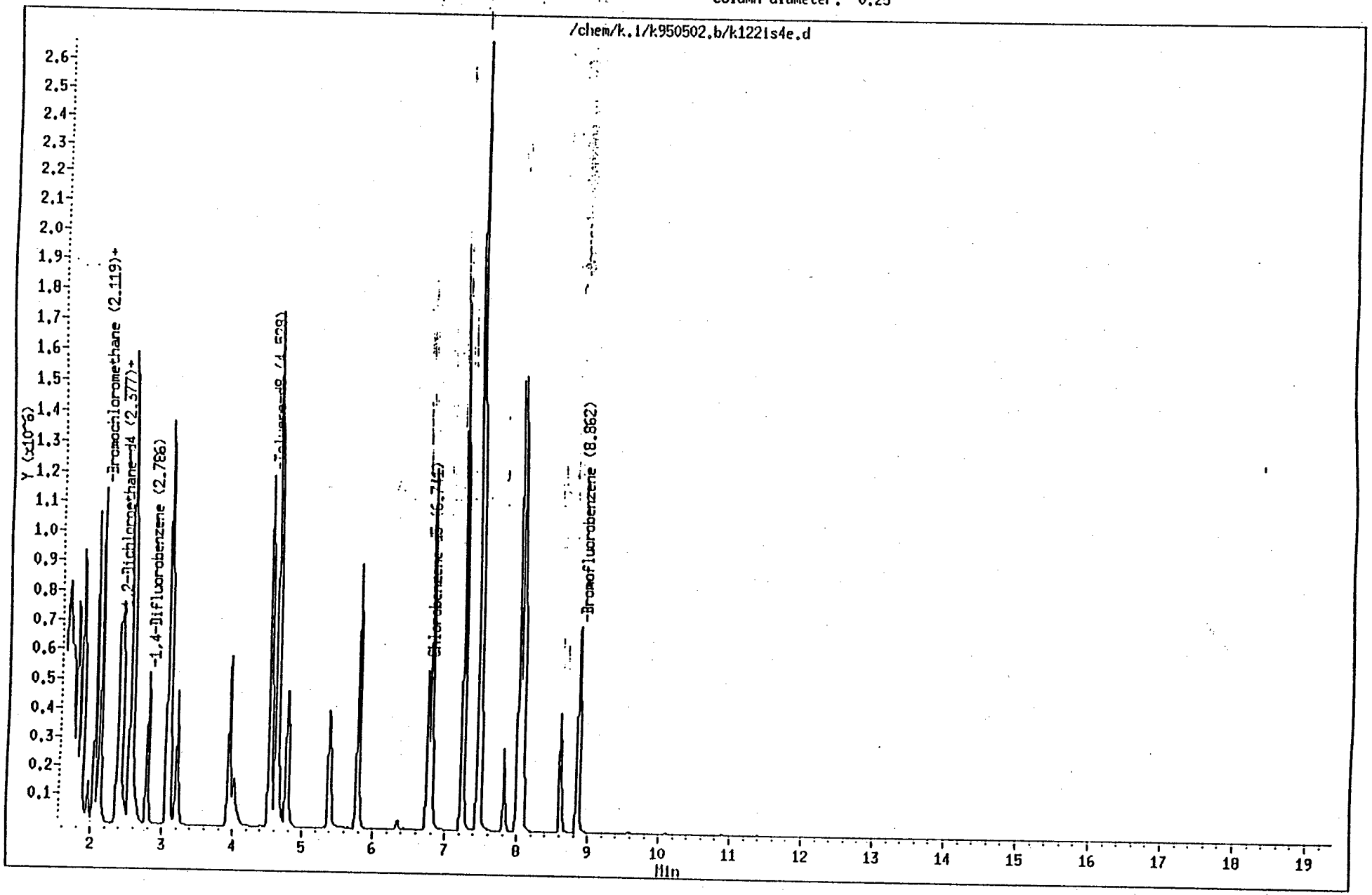
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s4e.d
Date : 02-MAY-1995 21:00
Client ID:
Sample Info: 100 PPB SID 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLW
Column diameter: 0.25



Data File: /chem/k.i/k950502.b/k122is5e.d
Report Date: 10-May-1995 12:25

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950502.b/k122is5e.d
Lab Smp Id: 200 PPB STD 8240S
Inj Date : 02-MAY-1995 21:27
Operator : HLW Inst ID: k.i
Smp Info : 200 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950502.b/kvoclps.m
Meth Date : 10-May-1995 12:23 hillery Quant Type: ISTD
Cal Date : 02-MAY-1995 18:00 Cal File: k122cs7.d
Als bottle: 10
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
4 Chloromethane	50.00	1.392	1.392	(0.657)	585728	1200	230
5 Vinyl Chloride	62.00	1.422	1.422	(0.671)	704004	1100	220
7 Bromomethane	94.00	1.437	1.437	(0.678)	498045	1100	220
6 Chloroethane	64.00	1.437	1.437	(0.678)	597616	1100	220
9 Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	633109	1100	230
8 Acetone	58.00	1.513	1.513	(0.714)	58205	720	140
10 1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	593966	1000	210
11 Methylene Chloride	84 00	1.665	1.665	(0.785)	656340	980	200
1 1,2-Dichloroethene (total)	96.00				1418932	2000	400(A)
12 Carbon Disulfide	76.00	1.710	1.710	(0.807)	2371271	1100	210
13 trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	740595	1000	210
14 1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	1330224	1000	200
16 Vinyl Acetate	43.00	1.862	1.862	(0.878)	1063693	920	160
17 2-Butanone	43.00	1.952	1.952	(0.921)	408178	650	130
19 cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	678337	960	190
21 Chloroform	83.00	2.119	2.119	(1.000)	1172526	1000	210
24 1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	991614	1100	220
25 1,2-Dichloroethane	62.00	2.407	2.407	(0.864)	973142	960	190
27 Benzene	78.00	2.543	2.543	(0.913)	2765913	970	190
28 Carbon Tetrachloride	117.00	2.574	2.574	(0.924)	789468	1100	210
33 1,2-Dichloropropane	63.00	3.074	3.074	(1.103)	731473	920	180
34 Trichloroethene	130.00	3.089	3.089	(1.109)	628771	930	190
35 Bromodichloromethane	83.00	3.210	3.210	(1.152)	859246	970	190
15 2-Chloroethylvinylether	63.00	1.846	1.846	(0.663)	1330224	920	180
38 4-Methyl-2-Pentanone	43.00	3.998	3.998	(1.435)	519380	620	120
42 cis-1,3-Dichloropropene	75.00	4.634	4.634	(1.664)	770745	960	190
37 trans-1,3-Dichloropropene	75.00	3.953	3.953	(0.585)	993745	1000	210
43 Toluene	92.00	4.634	4.634	(0.686)	1575951	990	200
44 1,1,2-Trichloroethane	83.00	4.771	4.771	(0.706)	418215	980	200

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.347	5.347	(0.791)	424312	610	120
	46 Dibromochloromethane	129.00	5.377	5.377	(0.796)	545513	1100	220
	48 Tetrachloroethene	164.00	5.786	5.786	(0.356)	541413	1000	200
	52 Chlorobenzene	112.00	6.801	6.801	(1.007)	1429806	930	180
M	2 Xylene (Total)	106.00				2721696	2900	580
	53 Ethylbenzene	106.00	7.241	7.241	(1.072)	803456	990	200
	54 m,p-Xylene(s)	106.00	7.468	7.468	(1.105)	1743881	1800	360
	55 Bromoform	173.00	7.816	7.816	(1.157)	325417	1100	220
	57 Styrene	104.00	8.013	8.013	(1.186)	1679049	1200	240(A)
	58 o-Xylene	106.00	8.074	8.074	(1.195)	977815	1200	230
	59 1,1,2,2-Tetrachloroethane	83.00	8.604	8.604	(1.274)	423790	940	190
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	69736	250	
*	31 1,4-Difluorobenzene	114.00	2.786	2.786	(1.000)	484077	250	
*	51 Chlorobenzene-d5	117.00	6.756	6.756	(1.000)	335343	250	
$	23 1,2-Dichloroethane-d4	102.00	2.362	2.362	(1.114)	145292	1200	240(AR)
$	40 Toluene-d8	98.00	4.528	4.528	(0.670)	2248228	1100	220(AR)
$	61 Bromofluorobenzene	95.00	8.847	8.847	(1.310)	722436	960	190(R)

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
R - Spike/Surrogate failed recovery limits.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k122is5e.d
Lab Smp Id: 200 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950502.b/kvoclps.m
Misc Info:

Calibration Date: 05/02/95
Calibration Time: 1800

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	77408	38704	154816	69736	-9.91
31 1,4-Difluorobenzene	488350	244175	976700	484077	-0.87
51 Chlorobenzene-d5	357839	178920	715678	335343	-6.29

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.01
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.76	6.26	7.26	6.76	0.00

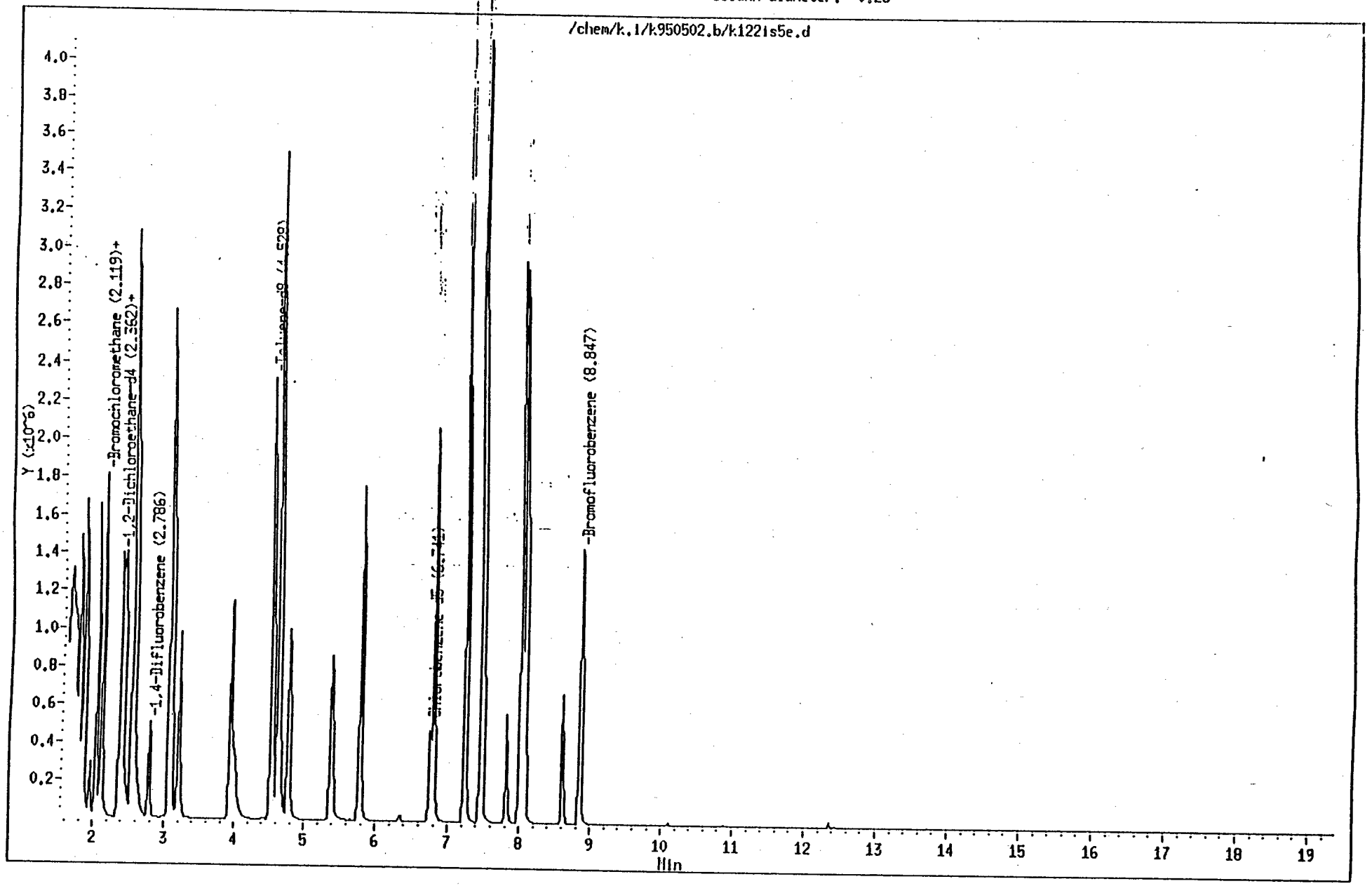
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.1/k950502.b/k1221s5e.d
Date : 02-MAY-1995 21:27
Client ID:
Sample Info: 200 PPB STD 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.1

Operator: MLW
Column diameter: 0.25



Data File: /chem/m.i/m950515.b/m135cw1.d
Report Date: 15-May-1995 11:54

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: m.i
Lab File ID: m135cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 15-MAY-1995 10:50
Init. Calibration Date(s): 05/11/95 05/11/95
Init. Calibration Times: 17:53 17:53
Method File: /chem/m.i/m950515.b/mvoclpw.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D	
	1 Chloromethane	1.546	1.095	0.010	29.2	100.0	
	2 Vinyl Chloride	1.198	1.224	0.100	2.2	25.0	
	3 Bromomethane	1.192	1.267	0.100	6.3	25.0	
	4 Chloroethane	0.805	0.591	0.010	26.6	100.0	
	5 Trichlorofluoromethane	1.962	1.479	0.010	24.6	100.0	
	6 Acetone	0.190	0.130	0.010	31.6	100.0	
	7 1,1-Dichloroethene	1.282	1.391	0.100	8.5	25.0	
	8 Methylene Chloride	1.721	1.083	0.010	37.1	100.0	
M	12 1,2-Dichloroethene (total)	2.133	1.643	0.010	23.0	100.0	
	9 Carbon Disulfide	4.312	2.895	0.010	32.9	100.0	
	10 trans-1,2-Dichloroethene	1.988	1.483	0.010	25.4	100.0	
	11 1,1-Dichloroethane	3.746	2.861	0.200	23.6	25.0	
	13 Vinyl Acetate	4.213	4.276	0.010	1.5	100.0	
	14 2-Butanone	1.060	0.867	0.010	18.2	100.0	
	15 cis-1,2-Dichloroethene	2.278	1.802	0.010	20.9	25.0	
	17 Chloroform	4.011	3.267	0.200	18.6	25.0	
	19 1,1,1-Trichloroethane	0.439	0.342	0.100	22.0	25.0	
	20 1,2-Dichloroethane	2.967	2.506	0.100	15.5	25.0	
	21 Benzene	1.381	1.073	0.500	22.3	25.0	
	22 Carbon Tetrachloride	0.374	0.299	0.100	20.0	25.0	
	24 1,2-Dichloropropane	0.354	0.294	0.010	16.9	100.0	
	25 Trichloroethene	0.329	0.272	0.300	17.5	25.0	<-
	26 Bromodichloromethane	0.519	0.444	0.200	14.4	25.0	
	27 2-Chloroethylvinylether	0.354	0.294	0.010	16.9	100.0	
	28 4-Methyl-2-Pentanone	0.332	0.279	0.010	15.9	100.0	
	29 cis-1,3-Dichloropropene	0.568	0.469	0.100	17.4	25.0	
	30 trans-1,3-Dichloropropene	0.485	0.435	0.100	10.3	25.0	
	32 Toluene	1.019	0.797	0.400	21.8	25.0	
	33 1,1,2-Trichloroethane	0.250	0.226	0.100	9.5	25.0	
	34 2-Hexanone	0.305	0.200	0.010	34.5	100.0	
	35 Dibromochloromethane	0.321	0.298	0.100	7.1	25.0	
	36 Tetrachloroethene	0.362	0.296	0.200	18.3	25.0	
	38 Chlorobenzene	1.039	0.813	0.500	21.7	25.0	
M	39 Xylene (Total)	0.650	0.524	0.300	19.4	25.0	
	40 Ethylbenzene	0.538	0.427	0.100	20.6	25.0	
	41 m,p-Xylene(s)	0.657	0.533	0.300	18.9	25.0	
	42 Bromoform	0.216	0.224	0.100	3.8	25.0	
	43 Styrene	1.171	0.909	0.300	22.4	25.0	
	44 o-Xylene	0.635	0.505	0.300	20.4	25.0	
	45 1,1,2,2-Tetrachloroethane	0.377	0.348	0.300	7.7	25.0	

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: m.i
Lab File ID: m135cw1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 15-MAY-1995 10:50
Init. Calibration Date(s): 05/11/95 05/11/95
Init. Calibration Times: 17:53 17:53
Method File: /chem/m.i/m950515.b/mvoclpw.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 18 1,2-Dichloroethane-d4	0.393	0.368	0.010	6.5	100.0
$ 31 Toluene-d8	1.426	1.366	0.010	4.2	25.0
$ 46 Bromofluorobenzene	0.614	0.618	0.010	0.7	25.0

SPL Labs

Volatiles by 624/8240

Data file : /chem/m.i/m950515.b/m135cw1.d
Lab Smp Id:
Inj Date : 15-MAY-1995 10:50
Operator : GT
Inst ID: m.i
Smp Info : STD 050
Misc Info : M135W1/M135B01/M135CW1
Comment :
Method : /chem/m.i/m950515.b/mvoclpw.m
Meth Date : 15-May-1995 11:48 hillery
Quant Type: ISTD
Cal Date : 15-MAY-1995 10:50
Cal File: m135cw1.d
Als bottle: 1
Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
	1 Chloromethane	50.00	1.398	1.398	(0.351)	63449	250	180
	2 Vinyl Chloride	62.00	1.457	1.457	(0.366)	70904	250	260 (M)
	3 Bromomethane	94.00	1.649	1.649	(0.414)	73417	250	260 (M)
	4 Chloroethane	64.00	1.693	1.693	(0.425)	34218	250	180
	5 Trichlorofluoromethane	100.90	1.929	1.929	(0.485)	85678	250	190
	6 Acetone	58.00	1.974	1.974	(0.496)	7519	250	170
	7 1,1-Dichloroethene	96.00	2.254	2.254	(0.566)	80602	250	270 (M)
	8 Methylene Chloride	84.00	2.416	2.416	(0.607)	62735	250	160
M	12 1,2-Dichloroethene (total)	96.00				190306	500	380
	9 Carbon Disulfide	76.00	2.505	2.505	(0.629)	167721	250	170
	10 trans-1,2-Dichloroethene	96.00	2.845	2.845	(0.715)	85919	250	190
	11 1,1-Dichloroethane	63.00	3.081	3.081	(0.774)	165752	250	190
	13 Vinyl Acetate	43.00	3.140	3.140	(0.789)	247719	250	250
	14 2-Butanone	43.00	3.435	3.435	(0.863)	50233	250	200
	15 cis-1,2-Dichloroethene	96.00	3.730	3.730	(0.937)	104387	250	200
	17 Chloroform	83.00	3.981	3.981	(1.000)	189239	250	200
	19 1,1,1-Trichloroethane	97.00	4.778	4.778	(0.824)	121419	250	190
	20 1,2-Dichloroethane	62.00	4.896	4.896	(1.230)	145191	250	210
	21 Benzene	78.00	5.265	5.265	(0.908)	380732	250	190
	22 Carbon Tetrachloride	117.00	5.280	5.280	(0.911)	106158	250	200
	24 1,2-Dichloropropane	63.00	6.402	6.402	(1.104)	104426	250	210
	25 Trichloroethene	130.00	6.431	6.431	(1.109)	96410	250	210
	26 Bromodichloromethane	83.00	6.668	6.668	(1.150)	157496	250	210
	27 2-Chloroethylvinylether	63.00	6.402	6.402	(1.104)	104426	250	210
	28 4-Methyl-2-Pentanone	43.00	7.686	7.686	(1.326)	99106	250	210
	29 cis-1,3-Dichloropropene	75.00	7.715	7.715	(1.331)	166535	250	210
	30 trans-1,3-Dichloropropene	75.00	8.527	8.527	(1.471)	154242	250	220
	32 Toluene	92.00	8.586	8.586	(0.784)	265457	250	200
	33 1,1,2-Trichloroethane	83.00	8.719	8.719	(1.504)	80244	250	230

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	34 2-Hexanone	43.00	9.221	9.221	(0.842)	66519	250	160
	35 Dibromochloromethane	129.00	9.487	9.487	(1.637)	105897	250	230
	36 Tetrachloroethene	164.00	9.915	9.915	(0.906)	98523	250	200
	38 Chlorobenzene	112.00	11.007	11.007	(1.005)	270818	250	200
M	39 Xylene (Total)	106.00				523085	750	600
	40 Ethylbenzene	106.00	11.420	11.420	(1.043)	142268	250	200
	41 m,p-Xylene(s)	106.00	11.642	11.642	(1.063)	354824	500	400
	42 Bromoform	173.00	12.158	12.158	(2.097)	79495	250	260
	43 Styrene	104.00	12.247	12.247	(1.119)	302710	250	190
	44 o-Xylene	106.00	12.321	12.321	(1.125)	168261	250	200
	45 1,1,2,2-Tetrachloroethane	83.00	12.823	12.823	(1.171)	115812	250	230
*	16 Bromochloromethane	128.00	3.981	3.981	(1.000)	57929	250	
*	23 1,4-Difluorobenzene	114.00	5.797	5.797	(1.000)	354872	250	
*	37 Chlorobenzene-d5	117.00	10.948	10.948	(1.000)	333021	250	
$	18 1,2-Dichloroethane-d4	102.00	4.763	4.763	(1.196)	21314	250	230
$	31 Toluene-d8	98.00	8.453	8.453	(0.772)	454811	250	240
$	46 Bromofluorobenzene	95.00	13.162	13.162	(1.202)	205940	250	250

QC Flag Legend

M - Compound response manually integrated.

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: m.i
Lab File ID: m135cw1.d
Lab Smp Id:
Analysis Type: VOA
Quant Type: ISTD
Operator: GT
Method File: /chem/m.i/m950515.b/mvoclpw.m
Misc Info: M135W1/M135B01/M135CW1

Calibration Date: 05/15/95
Calibration Time: 1050

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	57929	28964	115858	57929	0.00
23 1,4-Difluorobenzene	354872	177436	709744	354872	0.00
37 Chlorobenzene-d5	333021	166510	666042	333021	0.00

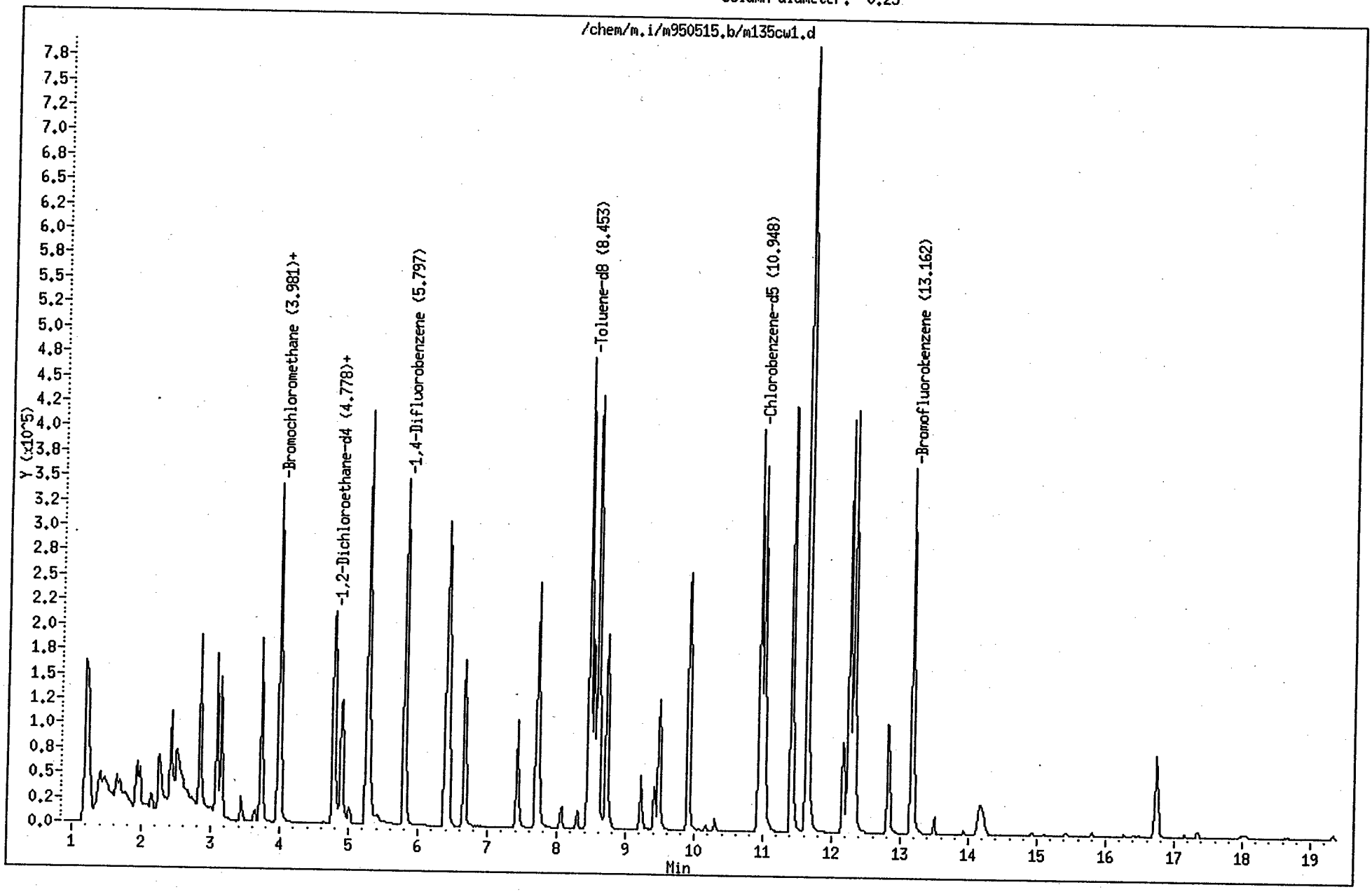
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
16 Bromochloromethane	3.98	3.48	4.48	3.98	0.00
23 1,4-Difluorobenzene	5.80	5.30	6.30	5.80	0.00
37 Chlorobenzene-d5	10.95	10.45	11.45	10.95	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/m.i/m950515.b/m135cw1.d
Date : 15-MAY-1995 10:50
Client ID:
Sample Info: STD 050
Purge Volume: 5.0
Column phase: 30m,hp5ms,0.25u df

Instrument: m.i

Operator: GT
Column diameter: 0.25



Data File: /chem/k.i/k950514.b/k135cs3.d
Report Date: 15-May-1995 13:53

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k135cs3.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 15-MAY-1995 13:34
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950514.b/kvoclps.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	4 Chloromethane	2.451	2.620	0.010	6.9	40.0
	5 Vinyl Chloride	2.538	2.583	0.100	1.8	25.0
	7 Bromomethane	1.839	1.788	0.100	2.8	25.0
	6 Chloroethane	2.054	2.101	0.010	2.3	40.0
	9 Trichlorofluoromethane	1.955	1.943	0.010	0.7	40.0
	8 Acetone	0.244	0.247	0.010	1.6	100.0
	10 1,1-Dichloroethene	2.037	1.693	0.100	16.9	25.0
	11 Methylene Chloride	2.413	1.942	0.010	19.5	40.0
M	1 1,2-Dichloroethene (total)	2.551	2.369	0.010	7.1	40.0
	12 Carbon Disulfide	8.123	6.536	0.010	19.5	40.0
	13 trans-1,2-Dichloroethene	2.583	2.220	0.010	14.1	40.0
	14 1,1-Dichloroethane	4.811	4.670	0.200	2.9	25.0
	16 Vinyl Acetate	4.341	3.438	0.010	20.8	100.0
	17 2-Butanone	1.834	1.761	0.010	4.0	100.0
	19 cis-1,2-Dichloroethene	2.519	2.517	0.010	0.1	100.0
	21 Chloroform	4.063	3.961	0.200	2.5	25.0
	24 1,1,1-Trichloroethane	3.305	3.380	0.100	2.3	25.0
	25 1,2-Dichloroethane	0.456	0.531	0.100	16.4	25.0
	27 Benzene	1.452	1.504	0.500	3.5	25.0
	28 Carbon Tetrachloride	0.385	0.433	0.100	12.2	25.0
	33 1,2-Dichloropropane	0.387	0.393	0.010	1.7	25.0
	34 Trichloroethene	0.328	0.339	0.300	3.4	25.0
	35 Bromodichloromethane	0.426	0.463	0.010	8.9	100.0
	15 2-Chloroethylvinylether	0.732	0.740	0.010	1.1	100.0
	38 4-Methyl-2-Pentanone	0.342	0.377	0.010	10.3	100.0
	42 cis-1,3-Dichloropropene	0.390	0.463	0.200	18.5	25.0
	37 trans-1,3-Dichloropropene	0.698	0.704	0.100	0.9	25.0
	43 Toluene	1.189	1.133	0.400	4.7	25.0
	44 1,1,2-Trichloroethane	0.316	0.323	0.100	2.0	25.0
	45 2-Hexanone	0.388	0.138	0.010	64.3	100.0
	46 Dibromochloromethane	0.372	0.396	0.100	6.6	25.0
	48 Tetrachloroethene	0.403	0.379	0.200	6.0	25.0
	52 Chlorobenzene	1.112	1.134	0.500	2.0	25.0
M	2 Xylene (Total)	0.716	0.750	0.300	4.8	25.0
	53 Ethylbenzene	0.609	0.603	0.300	1.0	25.0
	54 m,p-Xylene(s)	0.727	0.750	0.300	3.2	25.0
	55 Bromoform	0.213	0.265	0.100	24.5	25.0
	57 Styrene	1.129	1.160	0.300	2.8	25.0
	58 o-Xylene	0.695	0.751	0.300	8.0	25.0
	59 1,1,2,2-Tetrachloroethane	0.357	0.426	0.300	19.2	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k135cs3.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 15-MAY-1995 13:34
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950514.b/kvoclps.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 23 1,2-Dichloroethane-d4	0.482	0.462	0.010	4.3	40.0
$ 40 Toluene-d8	1.661	1.451	0.010	12.6	40.0
$ 61 Bromofluorobenzene	0.578	0.570	0.200	1.2	25.0

Data File: /chem/k.i/k950514.b/k135cs3.d
Report Date: 15-May-1995 13:54

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950514.b/k135cs3.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 15-MAY-1995 13:34
Operator : HLW Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950514.b/kvoclps.m
Meth Date : 15-May-1995 13:53 hillery Quant Type: ISTD
Cal Date : 15-MAY-1995 13:34 Cal File: k135cs3.d
Als bottle: 7
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
4	Chloromethane	50.00	1.365	1.365	(0.648)	170891	250	50	
5	Vinyl Chloride	62.00	1.411	1.411	(0.669)	168434	250	50	
7	Bromomethane	94.00	1.441	1.441	(0.684)	116595	250	50	
6	Chloroethane	64.00	1.441	1.441	(0.684)	137012	250	50	
9	Trichlorofluoromethane	100.90	1.517	1.517	(0.720)	126690	250	50	
8	Acetone	58.00	1.517	1.517	(0.720)	16134	250	50	(a)
10	1,1-Dichloroethene	96.00	1.623	1.623	(0.770)	110388	250	50	
11	Methylene Chloride	84.00	1.668	1.668	(0.792)	126666	250	50	
M 1	1,2-Dichloroethene (total)	96.00				308969	500	100	
12	Carbon Disulfide	76.00	1.699	1.699	(0.806)	426253	250	50	
13	trans-1,2-Dichloroethene	96.00	1.774	1.774	(0.842)	144791	250	50	
14	1,1-Dichloroethane	63.00	1.850	1.850	(0.878)	304604	250	50	
16	Vinyl Acetate	43.00	1.865	1.865	(0.885)	224211	250	50	
17	2-Butanone	43.00	1.956	1.956	(0.928)	114834	250	50	
19	cis-1,2-Dichloroethene	96.00	2.047	2.047	(0.971)	164178	250	50	
21	Chloroform	83.00	2.108	2.108	(1.000)	258331	250	50	
24	1,1,1-Trichloroethane	97.00	2.381	2.381	(1.129)	220420	250	50	
25	1,2-Dichloroethane	62.00	2.411	2.411	(0.864)	218546	250	50	
27	Benzene	78.00	2.547	2.547	(0.913)	618873	250	50	
28	Carbon Tetrachloride	117.00	2.562	2.562	(0.919)	178026	250	50	
33	1,2-Dichloropropane	63.00	3.062	3.062	(1.098)	161872	250	50	
34	Trichloroethene	130.00	3.078	3.078	(1.103)	139648	250	50	
35	Bromodichloromethane	83.00	3.199	3.199	(1.147)	190727	250	50	
15	2-Chloroethylvinylether	63.00	1.850	1.850	(0.663)	304604	250	50	
38	4-Methyl-2-Pentanone	43.00	4.017	4.017	(1.440)	155328	250	50	
42	cis-1,3-Dichloropropene	75.00	4.638	4.638	(1.663)	190404	250	50	
37	trans-1,3-Dichloropropene	75.00	3.941	3.941	(0.584)	220314	250	50	
43	Toluene	92.00	4.623	4.623	(0.685)	354501	250	50	
44	1,1,2-Trichloroethane	83.00	4.775	4.775	(0.708)	100914	250	50	

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.396	5.396	(0.800)	43308	250	50
	46 Dibromochloromethane	129.00	5.381	5.381	(0.798)	123940	250	50
	48 Tetrachloroethene	164.00	5.790	5.790	(0.858)	118541	250	50
	52 Chlorobenzene	112.00	6.790	6.790	(1.007)	354788	250	50
M	2 Xylene (Total)	106.00				704413	750	150
	53 Ethylbenzene	106.00	7.244	7.244	(1.074)	188756	250	50
	54 m,p-Xylene(s)	106.00	7.457	7.457	(1.106)	469360	500	100
	55 Bromoform	173.00	7.820	7.820	(1.159)	82980	250	50
	57 Styrene	104.00	8.017	8.017	(1.189)	363062	250	50
	58 o-Xylene	106.00	8.063	8.063	(1.195)	235053	250	50
	59 1,1,2,2-Tetrachloroethane	83.00	8.608	8.608	(1.276)	133319	250	50
*	20 Bromochloromethane	128.00	2.108	2.108	(1.000)	65219	250	
*	31 1,4-Difluorobenzene	114.00	2.790	2.790	(1.000)	411543	250	
*	51 Chlorobenzene-d5	117.00	6.744	6.744	(1.000)	312868	250	
$	23 1,2-Dichloroethane-d4	102.00	2.365	2.365	(1.122)	30100	250	50
$	40 Toluene-d8	98.00	4.532	4.532	(0.672)	453937	250	50
$	61 Bromofluorobenzene	95.00	8.851	8.851	(1.312)	178464	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k135cs3.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950514.b/kvoclps.m
Misc Info:

Calibration Date: 05/15/95
Calibration Time: 1334

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	65219	32610	130438	65219	0.00
31 1,4-Difluorobenzene	411543	205772	823086	411543	0.00
51 Chlorobenzene-d5	312868	156434	625736	312868	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.11	1.61	2.61	2.11	0.00
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.79	0.00
51 Chlorobenzene-d5	6.74	6.24	7.24	6.74	0.00

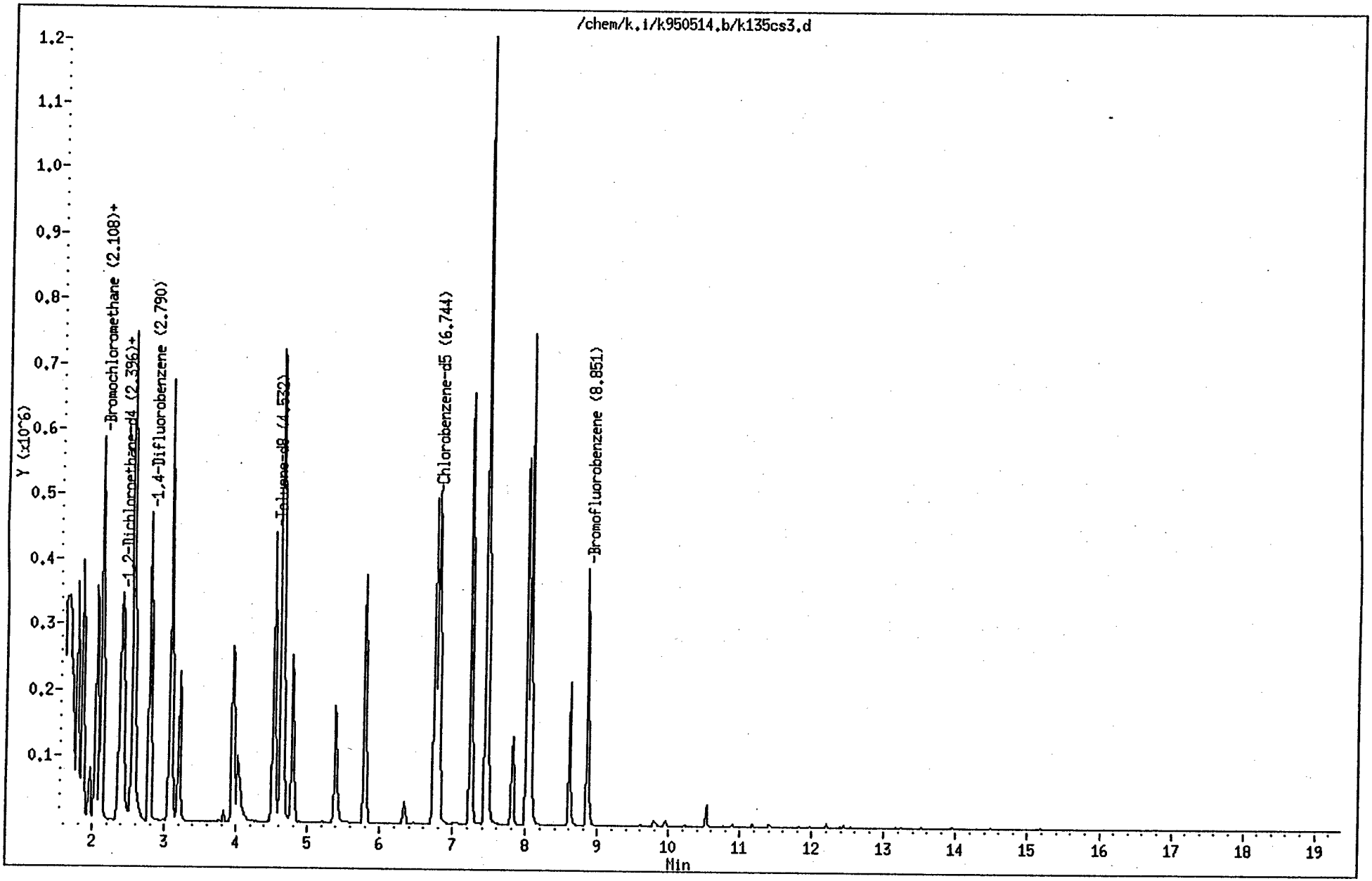
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950514.b/k135cs3.d
Date : 15-MAY-1995 13:34
Client ID:
Sample Info: 50 PPB STD 8240S

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/k.i/k950517.b/k137cs1.d
Report Date: 17-May-1995 13:34

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k137cs1.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 17-MAY-1995 11:22
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/kvoclps.m

	COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
	4 Chloromethane	2.451	3.079	0.010	25.6	40.0
	5 Vinyl Chloride	2.538	2.998	0.100	18.1	25.0
	7 Bromomethane	1.839	1.949	0.100	6.0	25.0
	6 Chloroethane	2.054	2.500	0.010	21.7	40.0
	9 Trichlorofluoromethane	1.955	2.261	0.010	15.6	40.0
	8 Acetone	0.244	0.292	0.010	20.1	100.0
	10 1,1-Dichloroethene	2.037	1.968	0.100	3.4	25.0
	11 Methylene Chloride	2.413	2.208	0.010	8.5	40.0
M	1 1,2-Dichloroethene (total)	2.551	2.490	0.010	2.4	40.0
	12 Carbon Disulfide	8.123	7.635	0.010	6.0	40.0
	13 trans-1,2-Dichloroethene	2.583	2.467	0.010	4.5	40.0
	14 1,1-Dichloroethane	4.811	4.786	0.200	0.5	25.0
	16 Vinyl Acetate	4.341	3.333	0.010	23.2	100.0
	17 2-Butanone	1.834	1.799	0.010	1.9	100.0
	19 cis-1,2-Dichloroethene	2.519	2.513	0.010	0.2	100.0
	21 Chloroform	4.063	4.127	0.200	1.6	25.0
	24 1,1,1-Trichloroethane	3.305	3.472	0.100	5.1	25.0
	25 1,2-Dichloroethane	0.456	0.531	0.100	16.4	25.0
	27 Benzene	1.452	1.467	0.500	1.0	25.0
	28 Carbon Tetrachloride	0.385	0.433	0.100	12.4	25.0
	33 1,2-Dichloropropane	0.387	0.395	0.010	2.1	25.0
	34 Trichloroethene	0.328	0.330	0.300	0.7	25.0
	35 Bromodichloromethane	0.426	0.471	0.010	10.6	100.0
	15 2-Chloroethylvinylether	0.732	0.758	0.010	3.5	100.0
	38 4-Methyl-2-Pentanone	0.342	0.363	0.010	6.0	100.0
	42 cis-1,3-Dichloropropene	0.390	0.442	0.200	13.1	25.0
	37 trans-1,3-Dichloropropene	0.698	0.703	0.100	0.7	25.0
	43 Toluene	1.189	1.132	0.400	4.8	25.0
	44 1,1,2-Trichloroethane	0.316	0.310	0.100	1.9	25.0
	45 2-Hexanone	0.388	0.149	0.010	61.7	100.0
	46 Dibromochloromethane	0.372	0.387	0.100	4.0	25.0
	48 Tetrachloroethene	0.403	0.370	0.200	8.2	25.0
	52 Chlorobenzene	1.112	1.116	0.500	0.4	25.0
M	2 Xylene (Total)	0.716	0.717	0.300	0.1	25.0
	53 Ethylbenzene	0.609	0.590	0.300	3.1	25.0
	54 m,p-Xylene(s)	0.727	0.726	0.300	0.1	25.0
	55 Bromoform	0.213	0.247	0.100	16.0	25.0
	57 Styrene	1.129	1.140	0.300	1.0	25.0
	58 o-Xylene	0.695	0.699	0.300	0.5	25.0
	59 1,1,2,2-Tetrachloroethane	0.357	0.400	0.300	11.9	25.0

SPL Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: k.i
Lab File ID: k137cs1.d
Analysis Type: SOIL
Lab Sample ID: 50 PPB STD 8240S
Quant Type: ISTD

Injection Date: 17-MAY-1995 11:22
Init. Calibration Date(s): 05/02/95 05/02/95
Init. Calibration Times: 20:30 21:27
Method File: /chem/k.i/k950517.b/kvoclps.m

COMPOUND	RRF	RF250	MIN RRF	%D	MAX %D
$ 23 1,2-Dichloroethane-d4	0.482	0.450	0.010	6.6	40.0
$ 40 Toluene-d8	1.661	1.507	0.010	9.2	40.0
$ 61 Bromofluorobenzene	0.578	0.574	0.200	0.6	25.0

Data File: /chem/k.i/k950517.b/k137cs1.d
Report Date: 17-May-1995 13:35

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950517.b/k137cs1.d
Lab Smp Id: 50 PPB STD 8240S
Inj Date : 17-MAY-1995 11:22
Operator : HLW
Inst ID: k.i
Smp Info : 50 PPB STD 8240S
Misc Info :
Comment :
Method : /chem/k.i/k950517.b/kvoclps.m
Meth Date : 17-May-1995 13:34 hillery
Quant Type: ISTD
Cal Date : 17-MAY-1995 11:22
Cal File: k137cs1.d
Als bottle: 4
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
4	Chloromethane	50.00	1.362	1.362	(0.642)	193545	250	50
5	Vinyl Chloride	62.00	1.407	1.407	(0.664)	188440	250	50
7	Bromomethane	94.00	1.437	1.437	(0.678)	122512	250	50
6	Chloroethane	64.00	1.452	1.452	(0.685)	157128	250	50
9	Trichlorofluoromethane	100.90	1.528	1.528	(0.721)	142126	250	50
8	Acetone	58.00	1.528	1.528	(0.721)	18380	250	50(a)
10	1,1-Dichloroethene	96.00	1.619	1.619	(0.764)	123713	250	50
11	Methylene Chloride	84.00	1.665	1.665	(0.785)	138771	250	50
M 1	1,2-Dichloroethene (total)	96.00				313046	500	100
12	Carbon Disulfide	76.00	1.710	1.710	(0.807)	479903	250	50
13	trans-1,2-Dichloroethene	96.00	1.786	1.786	(0.843)	155076	250	50
14	1,1-Dichloroethane	63.00	1.846	1.846	(0.871)	300835	250	50
16	Vinyl Acetate	43.00	1.862	1.862	(0.878)	209479	250	50
17	2-Butanone	43.00	1.968	1.968	(0.928)	113070	250	50
19	cis-1,2-Dichloroethene	96.00	2.043	2.043	(0.964)	157970	250	50
21	Chloroform	83.00	2.119	2.119	(1.000)	259400	250	50
24	1,1,1-Trichloroethane	97.00	2.392	2.392	(1.129)	218250	250	50
25	1,2-Dichloroethane	62.00	2.407	2.407	(0.859)	210647	250	50
27	Benzene	78.00	2.559	2.559	(0.913)	582240	250	50
28	Carbon Tetrachloride	117.00	2.574	2.574	(0.919)	171999	250	50
33	1,2-Dichloropropane	63.00	3.074	3.074	(1.097)	156726	250	50
34	Trichloroethene	130.00	3.089	3.089	(1.103)	131113	250	50
35	Bromodichloromethane	83.00	3.210	3.210	(1.146)	186823	250	50
15	2-Chloroethylvinylether	63.00	1.846	1.846	(0.659)	300835	250	50
38	4-Methyl-2-Pentanone	43.00	4.028	4.028	(1.438)	143928	250	50
42	cis-1,3-Dichloropropene	75.00	4.650	4.650	(1.660)	175225	250	50
37	trans-1,3-Dichloropropene	75.00	3.968	3.968	(0.586)	207841	250	50
43	Toluene	92.00	4.650	4.650	(0.687)	334726	250	50
44	1,1,2-Trichloroethane	83.00	4.801	4.801	(0.709)	91769	250	50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
	45 2-Hexanone	43.00	5.422	5.422	(0.801)	43911	250	50
	46 Dibromochloromethane	129.00	5.407	5.407	(0.799)	114293	250	50
	48 Tetrachloroethene	164.00	5.801	5.801	(0.857)	109364	250	50
	52 Chlorobenzene	112.00	6.816	6.816	(1.007)	330012	250	50
M	2 Xylene (Total)	106.00				635999	750	150
	53 Ethylbenzene	106.00	7.256	7.256	(1.072)	174518	250	50
	54 m,p-Xylene(s)	106.00	7.468	7.468	(1.103)	429292	500	100
	55 Bromoform	173.00	7.831	7.831	(1.157)	73022	250	50
	57 Styrene	104.00	8.028	8.028	(1.186)	337103	250	50
	58 o-Xylene	106.00	8.074	8.074	(1.192)	206707	250	50
	59 1,1,2,2-Tetrachloroethane	83.00	8.619	8.619	(1.273)	118223	250	50
*	20 Bromochloromethane	128.00	2.119	2.119	(1.000)	62852	250	
*	31 1,4-Difluorobenzene	114.00	2.801	2.801	(1.000)	396843	250	
*	51 Chlorobenzene-d5	117.00	6.771	6.771	(1.000)	295653	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.377	(1.122)	28311	250	50
$	40 Toluene-d8	98.00	4.543	4.543	(0.671)	445653	250	50
$	61 Bromofluorobenzene	95.00	8.877	8.877	(1.311)	169752	250	50

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k137cs1.d
Lab Smp Id: 50 PPB STD 8240S
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950517.b/kvoclps.m
Misc Info:

Calibration Date: 05/17/95
Calibration Time: 1122

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	62852	31426	125704	62852	0.00
31 1,4-Difluorobenzene	396843	198422	793686	396843	0.00
51 Chlorobenzene-d5	295653	147826	591306	295653	0.00

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	0.00
31 1,4-Difluorobenzene	2.80	2.30	3.30	2.80	0.00
51 Chlorobenzene-d5	6.77	6.27	7.27	6.77	0.00

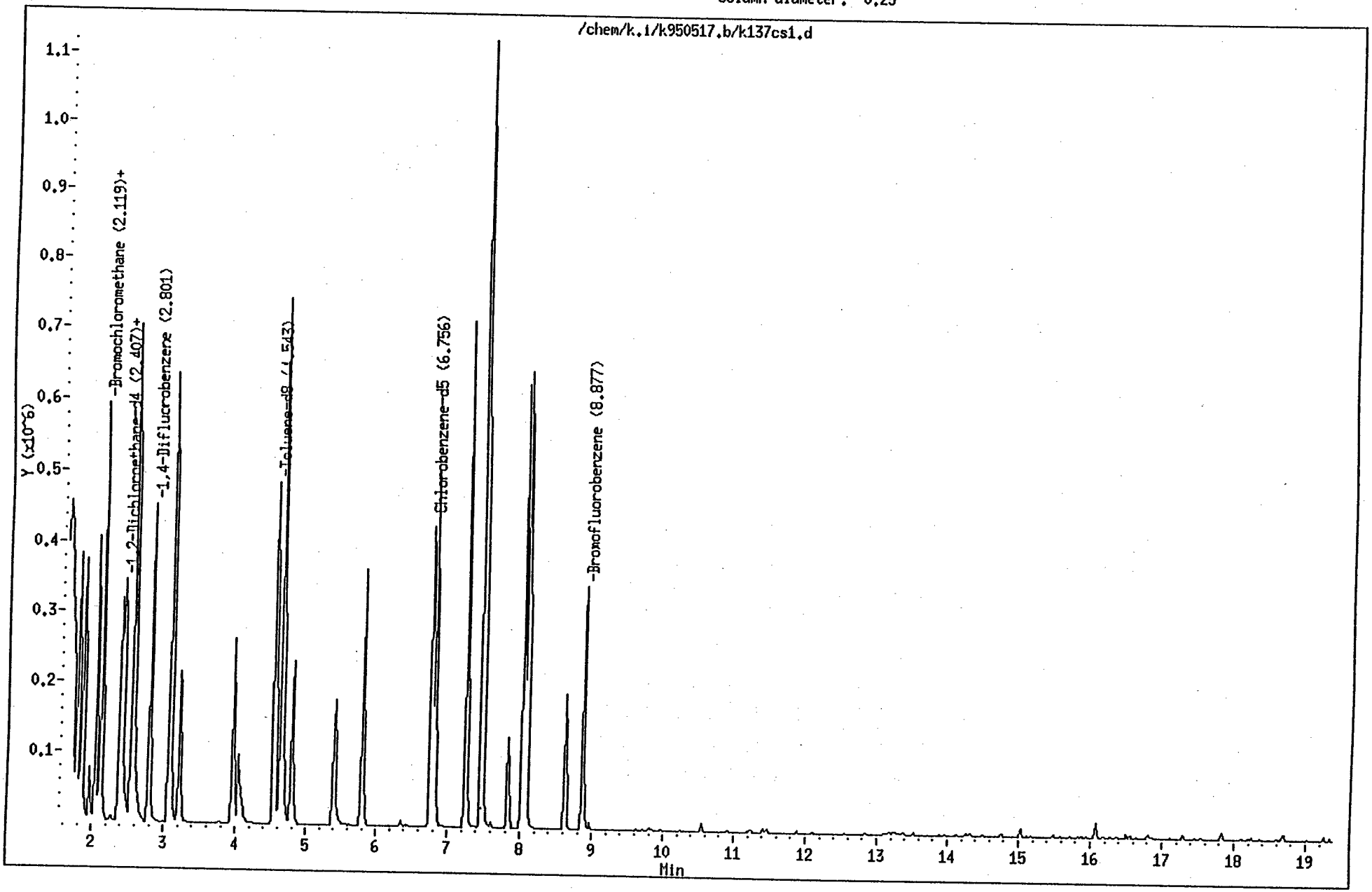
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950517.b/k137cs1.d
Date : 17-MAY-1995 11:22
Client ID:
Sample Info: 50 PPB STD 8240S

Column phase: 30m,hp5ms,0.25u df

Instrument: k.i

Operator: HLW
Column diameter: 0.25



3B

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: 505512 SAS No.: ___ SDG NO.: 505512

Matrix Spike - EPA Sample No.: 025-008BH 10.5-11.0

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC#	QC LIMIT REC.
Phenol	2500	0	2000	80	26- 90
2-Chlorophenol	2500	0	2200	88	25-102
1,4-Dichlorobenzene	1600	0	1100	69	28-104
N-Nitroso-di-n-prop.(1)	1600	0	1300	81	41-126
1,2,4-Trichlorobenzene	1600	0	1300	81	38-107
4-Chloro-3-methylphenol	2500	0	2000	80	26-103
Acenaphthene	1600	0	1300	81	31-137
4-Nitrophenol	2500	0	1600	64	11-114
2,4-Dinitrotoluene	1600	0	1300	81	28- 89
Pentachlorophenol	2500	0	1800	72	17-109
Pyrene	1600	0	1300	81	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
Phenol	2500	2000	80	0	35	26- 90
2-Chlorophenol	2500	2100	84	5	50	25-102
1,4-Dichlorobenzene	1600	1100	69	0	27	28-104
N-Nitroso-di-n-prop.(1)	1600	1300	81	0	38	41-126
1,2,4-Trichlorobenzene	1600	1300	81	0	23	38-107
4-Chloro-3-methylphenol	2500	2000	80	0	33	26-103
Acenaphthene	1600	1300	81	0	19	31-137
4-Nitrophenol	2500	1800	72	12	50	11-114
2,4-Dinitrotoluene	1600	1300	81	0	47	28- 89
Pentachlorophenol	2500	1700	68	6	47	17-109
Pyrene	1600	1300	81	0	36	35-142

(1) N-Nitroso-di-n-propylamine

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits.

FORM III SV - 2

Idells Williams, QC Officer

3A

WATER SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SPL HOUSTON Contract: _____

Lab Code: SPL Case No.: BLANK SAS No.: ____ SDG NO.: 505512

Matrix Spike - EPA Sample No.: BLK01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC#	QC LIMIT REC.
Phenol	75	0	36	48	12-110
2-Chlorophenol	75	0	39	52	27-123
1,4-Dichlorobenzene	50	0	30	60	36- 97
N-Nitroso-di-n-propylamin	50	0	32	64	41-116
1,2,4-Trichlorobenzene	50	0	31	62	39- 98
4-Chloro-3-methylphenol	75	0	46	61	23- 97
Acenaphthene	50	0	30	60	46-118
4-Nitrophenol	75	0	56	75	10- 80
2,4-Dinitrotoluene	50	0	35	70	24- 96
Pentachlorophenol	75	0	27	36	9-103
Pyrene	50	0	28	56	26-127

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC#	% RPD	QC LIMIT RPD	QC LIMIT REC.
Phenol	75	37	49	2	42	12-110
2-Chlorophenol	75	43	57	9	40	27-123
1,4-Dichlorobenzene	50	31	62	3	28	36- 97
N-Nitroso-di-n-propylamin	50	31	62	3	38	41-116
1,2,4-Trichlorobenzene	50	31	62	0	28	39- 98
4-Chloro-3-methylphenol	75	48	64	5	42	23- 97
Acenaphthene	50	34	68	13	31	46-118
4-Nitrophenol	75	52	69	8	50	10- 80
2,4-Dinitrotoluene	50	35	70	0	38	24- 96
Pentachlorophenol	75	22	29	22	50	9-103
Pyrene	50	27	54	4	31	26-127

\# Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC Limits

RPD: 0 out of 11 outside limits

Spike Recovery: 0 out of 22 outside limits

FORM III SV - 1

Idelis Williams, QC Officer

Data File: /chem/j.i/j950519.b/j135b02.d
Report Date: 19-May-1995 15:26

SPL Houston Labs

Data file : /chem/j.i/j950519.b/j135b02.d
Lab Smp Id:
Inj Date : 19-MAY-1995 10:51
Operator : PC
Smp Info : BLANK-8270S/1X
Misc Info : E135S1/J135B02/J139CC1
Comment :
Method : /chem/j.i/j950519.b/jclps.m
Meth Date : 19-May-1995 14:55 patti
Cal Date : 19-MAY-1995 10:06
Cal bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j139cc1.d

Compound Sublist: BLK.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
2-Fluorophenol	112.00	5.725	5.735	(0.721)	1498576	150	2500
Phenol-d5	99.00	7.326	7.345	(0.923)	1897477	120	2000
1,4-Dichlorobenzene-d4	152.00	7.937	7.945	(1.000)	433691	40	
Nitrobenzene-d5	82.00	9.146	9.157	(0.853)	1165049	77	1300
Naphthalene-d8	136.00	10.725	10.738	(1.000)	1570968	40	
2-Fluorobiphenyl	172.00	13.372	13.378	(0.892)	2181004	86	1400
Acenaphthene-d10	164.00	14.994	14.994	(1.000)	764585	40	
2,4,6-Tribromophenol	329.70	16.963	16.972	(0.912)	403939	120	2000
Phenanthrene-d10	188.00	18.607	18.611	(1.000)	1155552	40	
Terphenyl-d14	244.00	22.581	22.580	(0.894)	1908115	88	1500
Chrysene-d12	240.00	25.272	25.284	(1.000)	865491	40	
Perylene-d12	264.00	29.737	29.745	(1.000)	485349	40	

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135b02.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950519.b/jclps.m
Misc Info: E135S1/J135B02/J139CC1

Calibration Date: 05/19/95
Calibration Time: 1006

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	326931	163466	653862	433691	32.66
32 Naphthalene-d8	1205967	602984	2411934	1570968	30.27
48 Acenaphthene-d10	666246	333123	1332492	764585	14.76
65 Phenanthrene-d10	984904	492452	1969808	1155552	17.33
76 Chrysene-d12	787352	393676	1574704	865491	9.92
83 Perylene-d12	490059	245030	980118	485349	-0.96

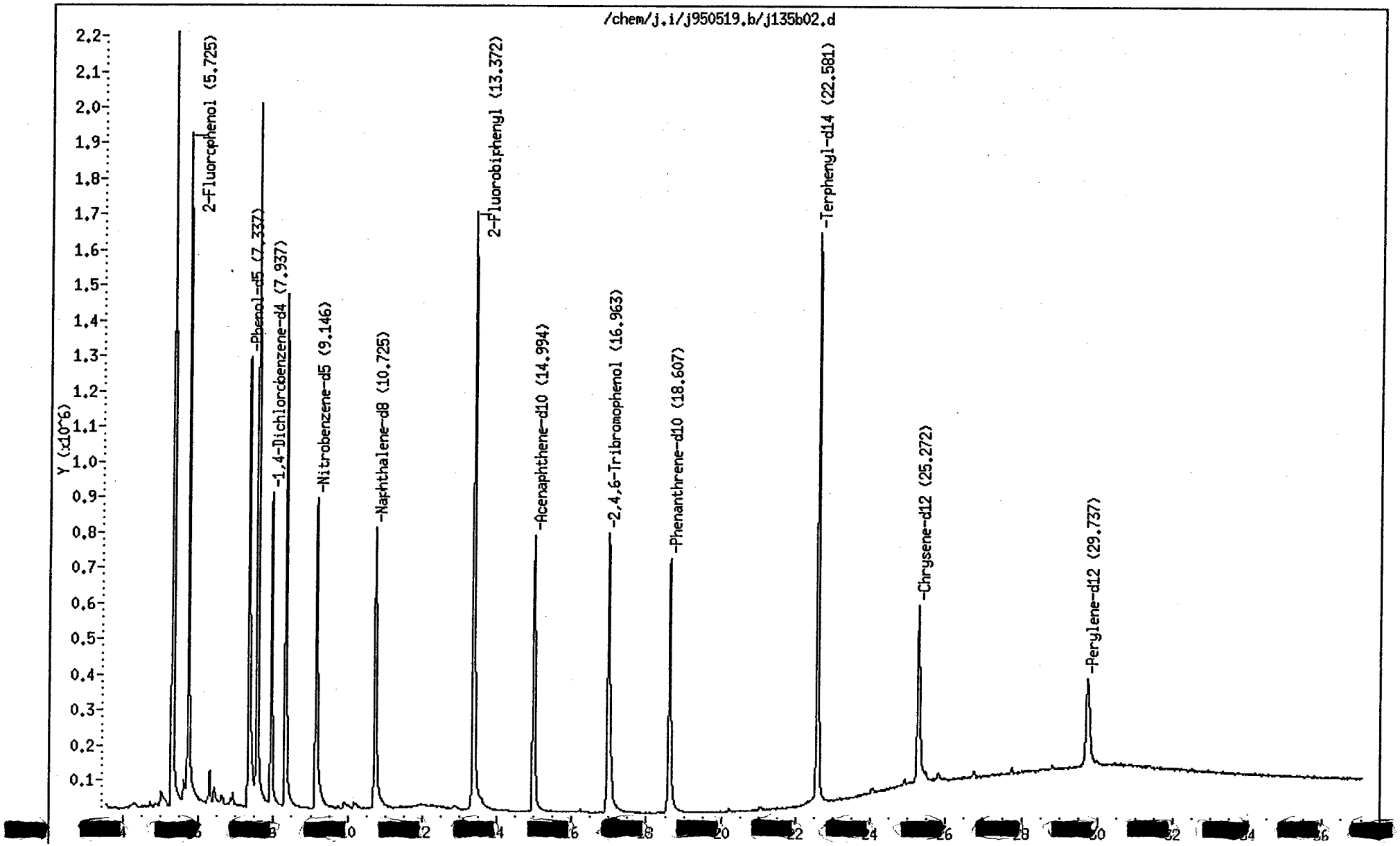
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.94	-0.11
32 Naphthalene-d8	10.74	10.24	11.24	10.73	-0.12
48 Acenaphthene-d10	14.99	14.49	15.49	14.99	0.00
65 Phenanthrene-d10	18.61	18.11	19.11	18.61	-0.02
76 Chrysene-d12	25.28	24.78	25.78	25.27	-0.05
83 Perylene-d12	29.75	29.25	30.25	29.74	-0.03

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j135b02.d
Date : 19-MAY-1995 10:51
Client ID:
Sample Info: BLANK-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



Matrix: Soil
Sample ID: BLANK
Batch: E950515044703

Reported on: 05/23/95 15:0
Analyzed on: 05/19/95 10:51
Analyst: PC

METHOD 8270

Compound	Result	Detection Limit	Units
Pyridine	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
bis(2-Chloroethyl)ether	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
bis(2-chloroisopropyl)ethe	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
N-Nitroso-di-n-propylamine	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Nitrobenzene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Benzoic acid	ND	1600	ug/Kg
bis(2-Chloroethoxy)methane	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
4-Chloro-3-methylphenol	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
Dimethylphthalate	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Soil
Sample ID: BLANK
Batch: E950515044703

Reported on: 05/23/95 15:00
Analyzed on: 05/19/95 10:51
Analyst: PC

METHOD 8270

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	330	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
Acenaphthene	ND	330	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
Dibenzofuran	ND	330	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
4-Chlorophenyl-phenylether	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
4,6-Dinitro-2-methylphenol	ND	800	ug/Kg
n-Nitrosodiphenylamine	ND	330	ug/Kg
1,2-Diphenylhydrazine	ND	330	ug/Kg
4-Bromophenyl-phenylether	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
Di-n-butylphthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
Benzo[a]anthracene	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
bis(2-Ethylhexyl)phthalate	ND	330	ug/Kg
Di-n-octylphthalate	ND	330	ug/Kg
Benzo[b]fluoranthene	ND	330	ug/Kg
Benzo[k]fluoranthene	ND	330	ug/Kg
Benzo[a]pyrene	ND	330	ug/Kg
Indeno[1,2,3-cd]pyrene	ND	330	ug/Kg
Dibenz[a,h]anthracene	ND	330	ug/Kg

Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Blank QC Report

Matrix: Soil
Sample ID: BLANK
Batch: E950515044703

Reported on: 05/23/95 15:00
Analyzed on: 05/19/95 10:51
Analyst: PC

METHOD 8270

Compound	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	330	ug/Kg

Surrogate	Result	QC Criteria	Units
2-Fluorophenol	102	25-121	% Recovery
Phenol-d5	79	24-113	% Recovery
Nitrobenzene-d5	80	23-120	% Recovery
2-Fluorobiphenyl	89	30-115	% Recovery
2,4,6-Tribromophenol	81	19-122	% Recovery
Terphenyl-d14	91	18-137	% Recovery

Samples in Batch 9505512-02 9505512-03 9505512-04 9505512-05
9505512-06 9505512-07 9505512-08 9505512-09
9505512-10 9505512-11 9505512-14 9505512-15

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 05/23/95 15:00
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Pyridine	ND	5	ug/L
Phenol	ND	5	ug/L
Aniline	ND	5	ug/L
bis(2-Chloroethyl)ether	ND	5	ug/L
2-Chlorophenol	ND	5	ug/L
1,3-Dichlorobenzene	ND	5	ug/L
1,4-Dichlorobenzene	ND	5	ug/L
Benzyl alcohol	ND	5	ug/L
1,2-Dichlorobenzene	ND	5	ug/L
2-Methylphenol	ND	5	ug/L
bis(2-chloroisopropyl)ethe	ND	5	ug/L
4-Methylphenol	ND	5	ug/L
N-Nitroso-di-n-propylamine	ND	5	ug/L
Hexachloroethane	ND	5	ug/L
Nitrobenzene	ND	5	ug/L
Isophorone	ND	5	ug/L
2-Nitrophenol	ND	25	ug/L
2,4-Dimethylphenol	ND	5	ug/L
Benzoic acid	ND	25	ug/L
bis(2-Chloroethoxy)methane	ND	5	ug/L
2,4-Dichlorophenol	ND	5	ug/L
1,2,4-Trichlorobenzene	ND	5	ug/L
Naphthalene	ND	5	ug/L
4-Chloroaniline	ND	5	ug/L
Hexachlorobutadiene	ND	5	ug/L
4-Chloro-3-methylphenol	ND	5	ug/L
2-Methylnaphthalene	ND	5	ug/L
Hexachlorocyclopentadiene	ND	5	ug/L
2,4,6-Trichlorophenol	ND	5	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2-Chloronaphthalene	ND	5	ug/L
2-Nitroaniline	ND	25	ug/L
Dimethylphthalate	ND	5	ug/L
2,6-Dinitrotoluene	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 05/23/95 15:00
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Acenaphthylene	ND	5	ug/L
3-Nitroaniline	ND	25	ug/L
Acenaphthene	ND	5	ug/L
2,4-Dinitrophenol	ND	25	ug/L
4-Nitrophenol	ND	25	ug/L
Dibenzofuran	ND	5	ug/L
2,4-Dinitrotoluene	ND	5	ug/L
Diethylphthalate	ND	5	ug/L
4-Chlorophenyl-phenylether	ND	5	ug/L
Fluorene	ND	5	ug/L
4-Nitroaniline	ND	25	ug/L
4,6-Dinitro-2-methylphenol	ND	25	ug/L
n-Nitrosodiphenylamine	ND	5	ug/L
1,2-Diphenylhydrazine	ND	5	ug/L
4-Bromophenyl-phenylether	ND	5	ug/L
Hexachlorobenzene	ND	5	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	5	ug/L
Anthracene	ND	5	ug/L
Carbazole	ND	5	ug/L
Di-n-butylphthalate	ND	5	ug/L
Fluoranthene	ND	5	ug/L
Pyrene	ND	5	ug/L
Butylbenzylphthalate	ND	5	ug/L
3,3'-Dichlorobenzidine	ND	5	ug/L
Benzo[a]anthracene	ND	5	ug/L
Chrysene	ND	5	ug/L
bis(2-Ethylhexyl)phthalate	ND	5	ug/L
Di-n-octylphthalate	ND	5	ug/L
Benzo[b]fluoranthene	ND	5	ug/L
Benzo[k]fluoranthene	ND	5	ug/L
Benzo[a]pyrene	ND	5	ug/L
Indeno[1,2,3-cd]pyrene	ND	5	ug/L
Dibenz[a,h]anthracene	ND	5	ug/L

Notes
ND - Not detected.

Idelis Williams, QC Officer

Matrix: Aqueous
Sample ID: BLANK
Batch: E950518041714

Reported on: 05/23/95 15:00
Analyzed on: 05/22/95 11:49
Analyst: LH

METHOD 8270/625 BLANK H138B01

Compound	Result	Detection Limit	Units
Benzo[g,h,i]perylene	ND	5	ug/L

Surrogate	Result	QC Criteria	Units
2-Fluorophenol	54	21-110	% Recovery
Phenol-d5	58	10-110	% Recovery
Nitrobenzene-d5	64	35-114	% Recovery
2-Fluorobiphenyl	75	43-116	% Recovery
2,4,6-Tribromophenol	74	10-123	% Recovery
Terphenyl-d14	72	33-141	% Recovery

Samples in Batch 9505512-01
Notes
ND - Not detected.

Idelis Williams, QC Officer

SPL Houston Labs

Data file : /chem/h.i/h950522.b/h138b01.d
Lab Smp Id:
Inj Date : 22-MAY-1995 11:49
Operator : LH Inst ID: h.i
Smp Info : BLANK-8270W/1X
Misc Info : E138C1/H138B01/H142CC1
Comment :
Method : /chem/h.i/h950522.b/hclpw.m
Meth Date : 22-May-1995 15:19 liping Quant Type: ISTD
Cal Date : 22-MAY-1995 10:35 Cal File: h142cc1.d
Als bottle: 2
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: BLK.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
$ 3 2-Fluorophenol	112.00	3.321	3.320	(0.765)	2914389	81	40
$ 4 Phenol-d5	99.00	4.055	4.055	(0.934)	3742198	88	44
* 11 1,4-Dichlorobenzene-d4	152.00	4.340	4.340	(1.000)	922221	40	
$ 23 Nitrobenzene-d5	82.00	4.850	4.861	(0.878)	2349612	64	32
* 32 Naphthalene-d8	136.00	5.525	5.537	(1.000)	3533399	40	
$ 41 2-Fluorobiphenyl	172.00	6.616	6.615	(0.906)	3903583	75	37
* 48 Acenaphthene-d10	164.00	7.303	7.303	(1.000)	1735082	40	
$ 61 2,4,6-Tribromophenol	329.70	8.109	8.120	(0.922)	787164	110	55
* 65 Phenanthrene-d10	188.00	8.796	8.796	(1.000)	2304171	40	
$ 72 Terphenyl-d14	244.00	10.432	10.432	(0.897)	2828861	72	36
* 76 Chrysene-d12	240.00	11.629	11.641	(1.000)	1551972	40	
* 83 Perylene-d12	264.00	13.810	13.821	(1.000)	973027	40	

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h138b01.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950522.b/hclpw.m
Misc Info: E138C1/H138B01/H142CC1

Calibration Date: 05/22/95
Calibration Time: 1035

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	846816	423408	1693632	922221	8.90
32 Naphthalene-d8	3123628	1561814	6247256	3533399	13.12
48 Acenaphthene-d10	1557742	778871	3115484	1735082	11.38
65 Phenanthrene-d10	2030569	1015284	4061138	2304171	13.47
76 Chrysene-d12	1465667	732834	2931334	1551972	5.89
83 Perylene-d12	1077186	538593	2154372	973027	-9.67

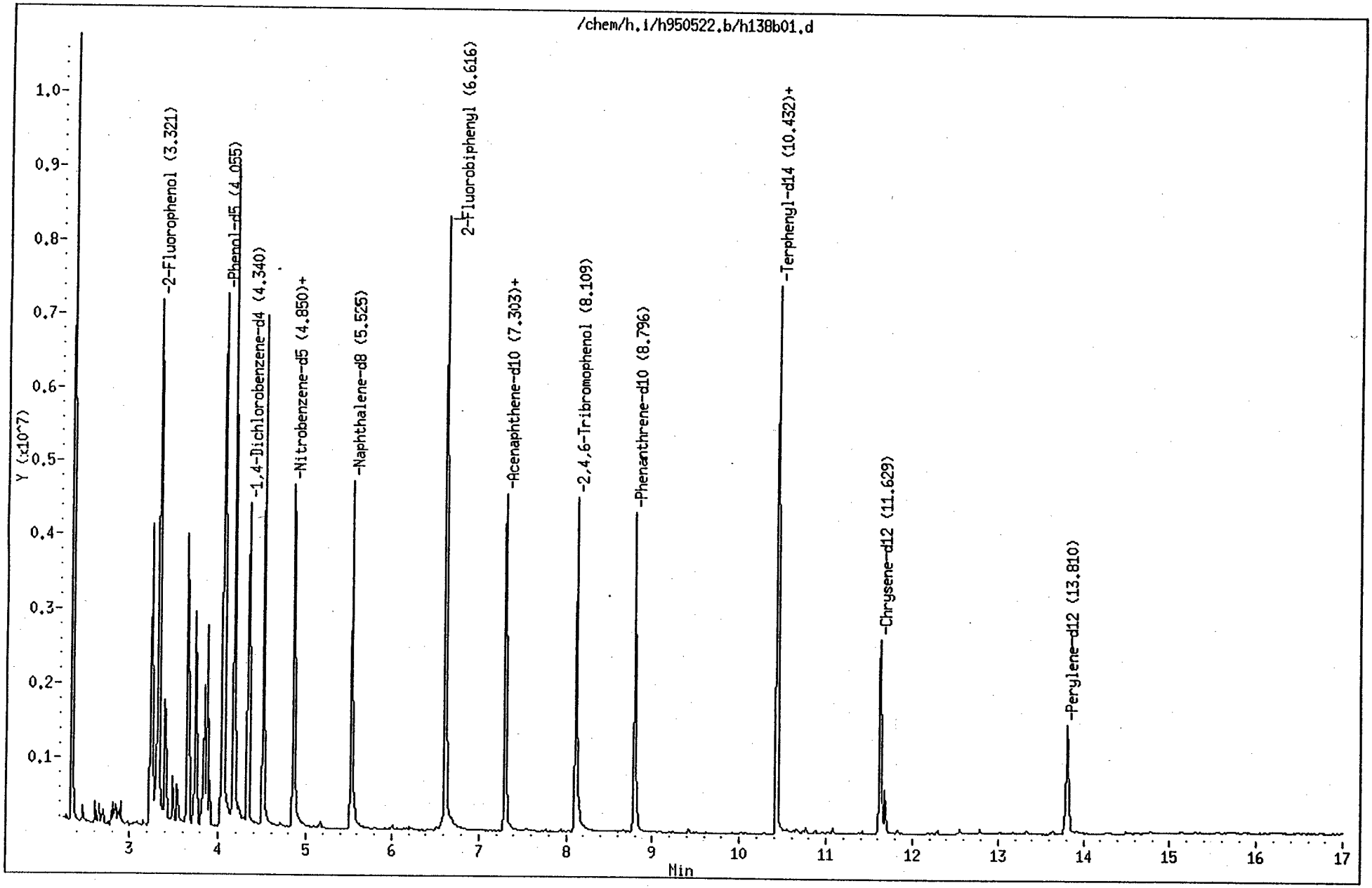
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.34	3.84	4.84	4.34	0.01
32 Naphthalene-d8	5.54	5.04	6.04	5.53	-0.21
48 Acenaphthene-d10	7.30	6.80	7.80	7.30	0.01
65 Phenanthrene-d10	8.80	8.30	9.30	8.80	0.00
76 Chrysene-d12	11.64	11.14	12.14	11.63	-0.10
83 Perylene-d12	13.82	13.32	14.32	13.81	-0.08

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950522.b/h138b01.d
Date : 22-MAY-95 11:49
Client ID:
Sample Info: BLANK-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



[redacted]ta File: /chem/j.i/j950518.b/j138df01.d

Date : 18-MAY-95 08:54

[redacted]ient ID:

Instrument: j.i

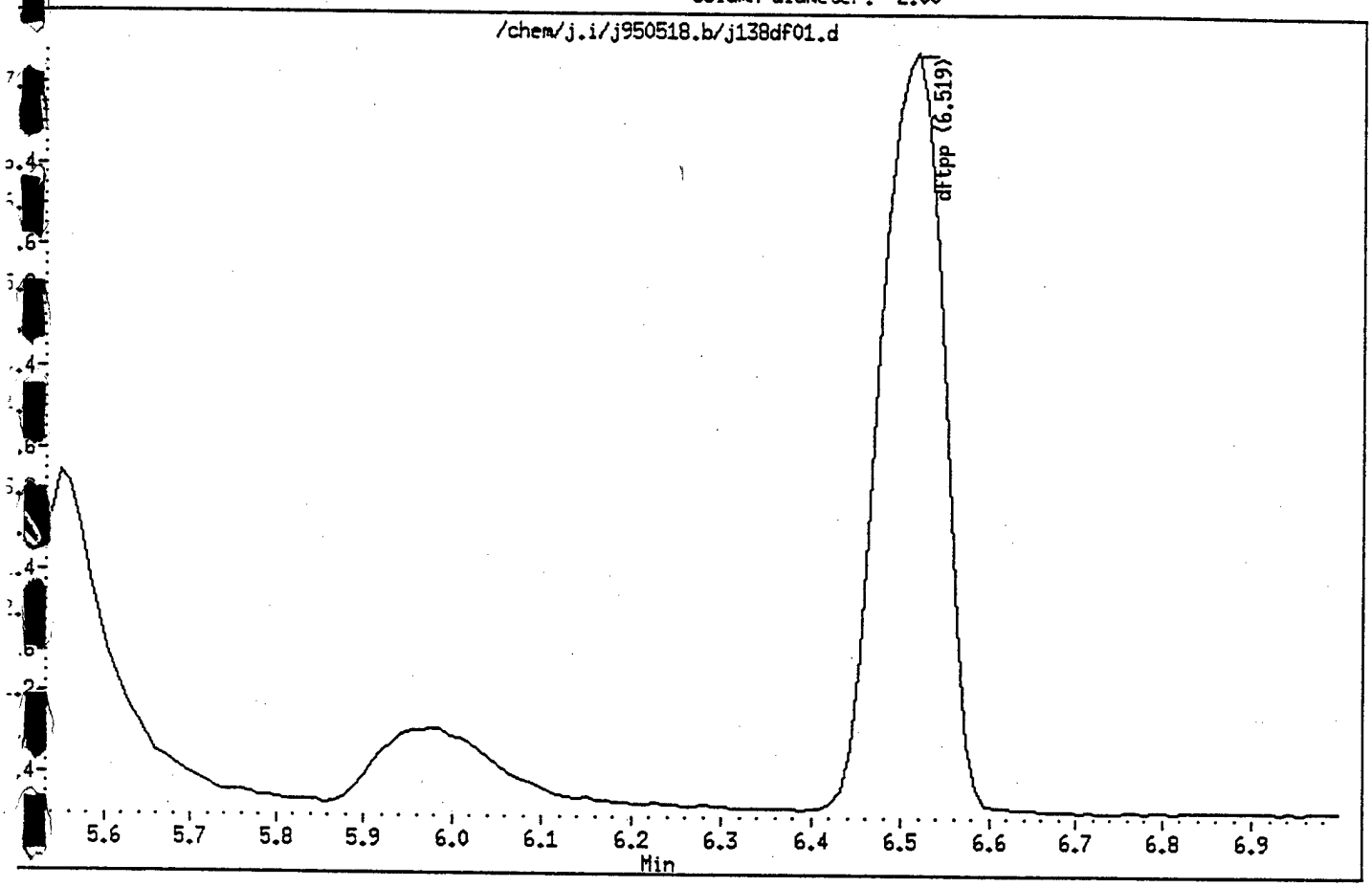
[redacted]mple Info: 50 NG DFTPP

Volume Injected (uL): 2.0

Operator: PC

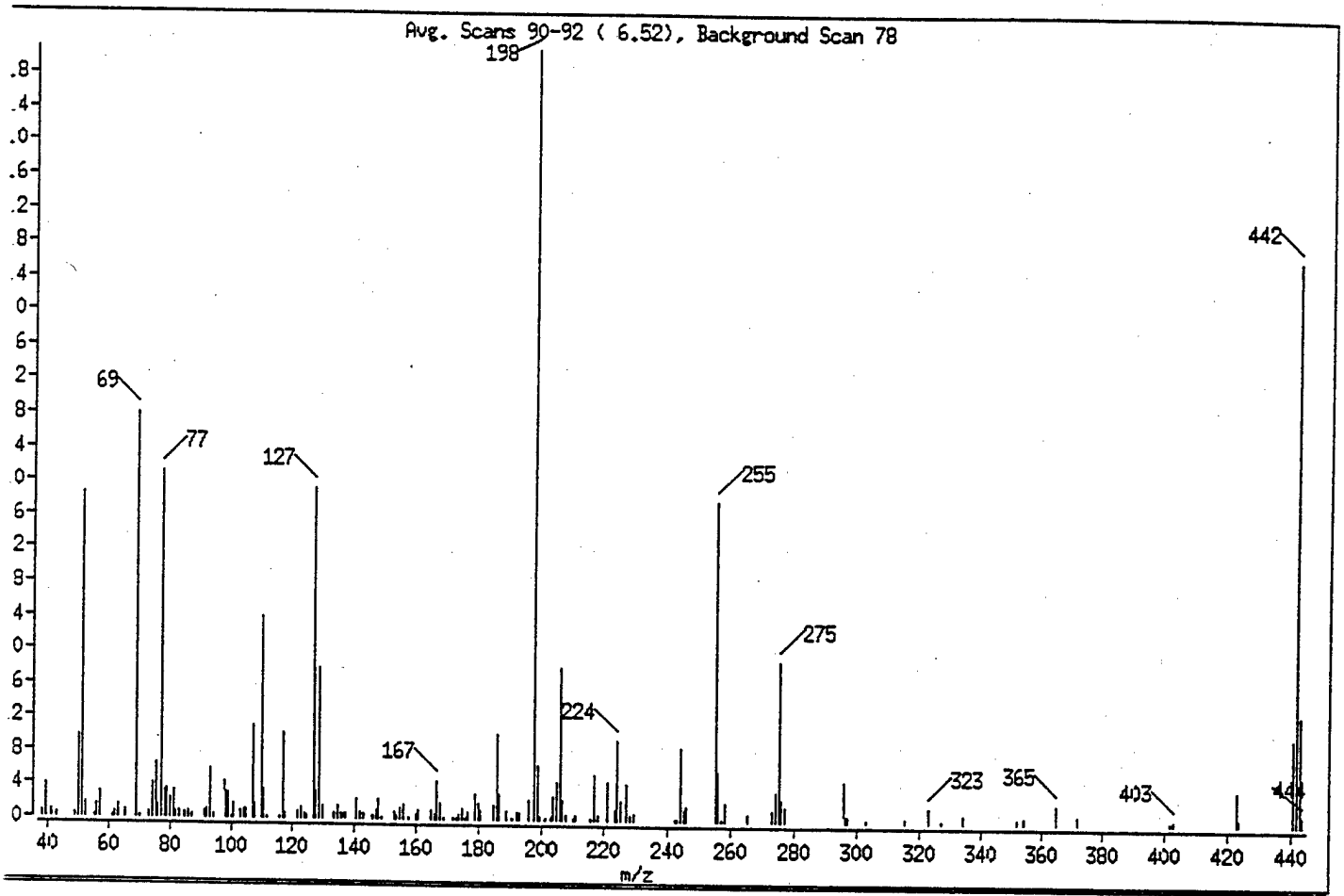
[redacted]lumn phase:

Column diameter: 2.00



Data File: /chem/j.i/j950518.b/j138df01.d
Date : 18-MAY-95 08:54
Client ID:
Sample Info: 50 NG DFTPP
Volume Injected (uL): 2.0
Column phase:
1 dftpp

Instrument: j.i
Operator: PC
Column diameter: 2.00



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	42.22
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	52.70
70	Less than 2.00% of mass 69	0.19 (0.36)
127	40.00 - 60.00% of mass 198	43.13
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.97
275	10.00 - 30.00% of mass 198	20.92
365	Greater than 0.75% of mass 198	2.37
441	Present, but less than mass 443	11.09
442	40.00 - 110.00% of mass 198	73.19
443	17.00 - 23.00% of mass 442	14.14 (19.32)

Data File: /chem/j.i/j950518.b/j138df01.d

Date : 18-MAY-95 08:54

Client ID:

Instrument: j.i

Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0

Operator: PC

Column phase:

Column diameter: 2.00

Data File: j138df01.d
Spectrum : Avg. Scans 90-92 (6.52), Background Scan 78
Largest m/z: 197.95
Number of peaks: 154

m/z	Y	m/z	Y	m/z	Y	m/z	Y
37.95	594	103.00	759	166.95	4444	226.95	4307
39.05	3903	103.90	1045	167.95	1873	227.95	617
41.05	841	104.90	1117	168.95	216	228.90	827
43.05	535	107.00	11058	171.85	190	241.90	289
49.00	365	107.90	1795	172.95	212	243.00	197
50.00	9793	110.00	23904	173.95	706	244.00	8591
51.00	38456	110.90	3488	174.85	1323	245.00	1273
52.00	1827	112.00	238	175.95	218	245.80	1628
55.00	297	116.10	283	176.85	850	254.90	37952
55.90	1582	116.90	10023	178.95	3047	256.00	5710
57.00	2932	117.90	673	179.95	1915	256.90	166
60.90	200	122.00	835	180.95	1100	257.90	2202
61.90	659	123.00	1331	184.95	1696	265.00	936
62.90	1491	124.00	671	186.05	10165	273.00	1252
65.00	963	124.80	403	186.95	3010	274.00	3425
68.90	48000	127.00	39280	188.85	971	275.00	19048
69.90	174	128.00	3195	190.95	209	275.90	2554
73.00	645	129.00	17928	191.95	925	276.90	1673
74.00	3989	130.00	1465	192.95	870	295.90	4680
75.00	6363	133.90	626	195.95	2348	296.90	599
76.00	1505	135.00	1613	197.95	91080	303.00	190
77.00	41232	136.10	585	198.95	6352	315.00	378
78.00	3202	136.90	691	199.85	372	322.95	1663
79.00	3348	140.85	2422	201.65	190	326.95	171
79.90	2371	141.95	794	202.95	430	333.95	923
81.00	3134	142.85	590	203.95	2713	351.95	372
81.90	717	145.85	415	205.05	4502	353.95	627
82.90	913	146.95	1179	206.05	18048	364.95	2161
85.00	648	147.85	2385	207.05	2399	371.95	866
85.90	910	148.75	196	207.95	748	402.05	167
86.90	508	152.95	823	210.05	175	402.95	376
91.00	890	153.95	386	210.85	749	423.00	3858
92.00	999	154.95	1219	215.75	169	424.00	731
93.00	5729	155.95	1627	216.95	5426	441.10	10099
93.90	411	157.95	198	217.95	551	442.00	66664

Data File: /chem/j.i/j950518.b/j138df01.d

Date : 18-MAY-95 08:54

Client ID:

Instrument: j.i

Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0

Operator: PC

Column phase:

Column diameter: 2.00

Data File: j138df01.d
Spectrum : Avg. Scans 90-92 (6.52), Background Scan 78
Largest m/z: 197.95
Number of peaks: 154

m/z	Y	m/z	Y	m/z	Y	m/z	Y
97.90	4215	159.95	630	221.05	4593	443.00	12881
98.90	3067	160.85	1073	223.15	1240	444.00	1047
100.00	226	164.85	1140	224.05	9443		
100.90	1652	165.95	691	224.95	2473		

[redacted] File: /chem/j.i/j950519.b/j139df3.d

[redacted]ate : 19-MAY-95 09:52

Cl[redacted]nt ID:

[redacted]le Info: 50 NG DFTPP

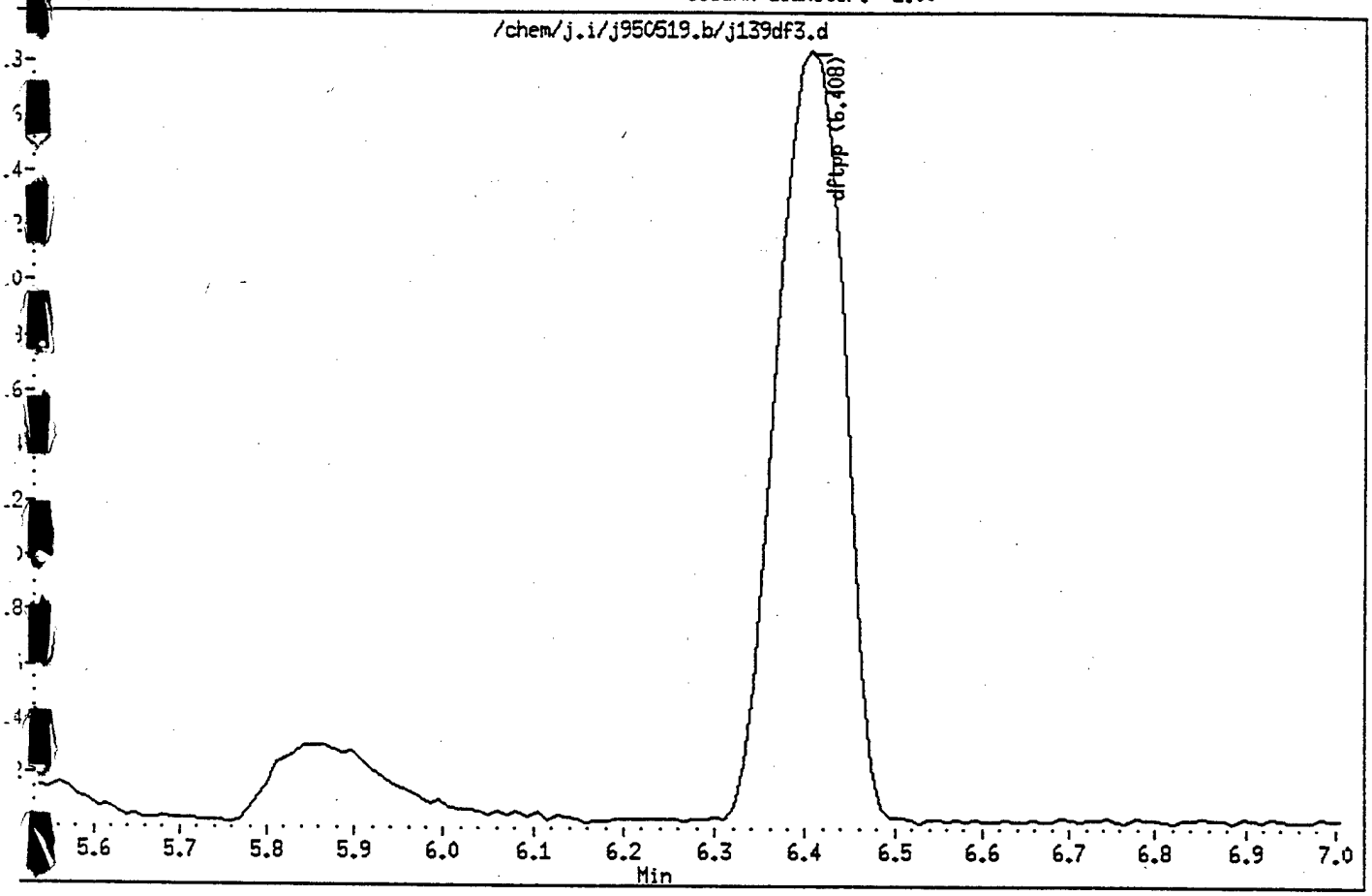
[redacted]olume Injected (uL): 2.0

Co[redacted]mn phase:

Instrument: j.i

Operator: PC

Column diameter: 2.00



Data File: /chem/j.i/j950519.b/j139df3.d

Date : 19-MAY-95 09:52

Client ID:

Instrument: j.i

Sample Info: 50 NG DFTPP

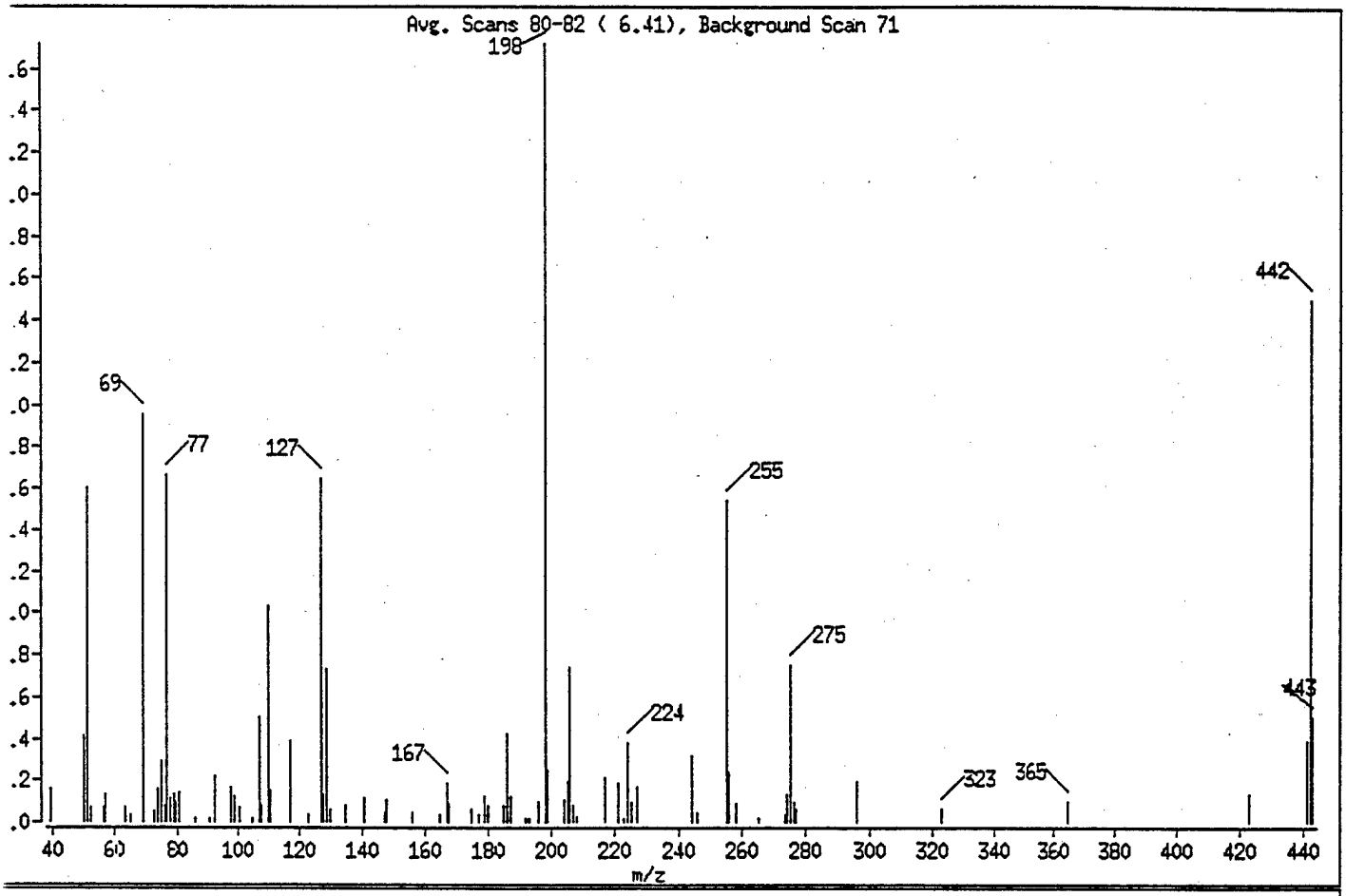
Volume Injected (uL): 2.0

Operator: PC

Column phase:

Column diameter: 2.00

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	43.08
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	52.56
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	44.30
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.66
275	10.00 - 30.00% of mass 198	20.01
365	Greater than 0.75% of mass 198	2.52
441	Present, but less than mass 443	10.30
442	40.00 - 110.00% of mass 198	67.25
443	17.00 - 23.00% of mass 442	13.43 (19.97)

Data File: /chem/j.i/j950519.b/j139df3.d

Date : 19-MAY-95 09:52

Client ID: Instrument: j.i

Sample Info: 50 NG DFTPP

Volume Injected (uL): 2.0 Operator: PC

Column phase: Column diameter: 2.00

Data File: j139df3.d
Spectrum : Avg. Scans 80-82 (6.41), Background Scan 71
Largest m/z: 197.95
Number of peaks: 84

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.05	1563	99.00	1235	176.95	388	244.00	3133
50.00	4107	100.80	681	178.95	1251	245.80	475
51.00	16028	105.00	212	179.85	759	254.90	15376
51.90	743	107.00	4977	184.95	760	255.90	2362
56.00	697	108.00	767	185.95	4259	258.00	915
57.00	1301	110.00	10320	186.95	1199	265.00	173
63.00	717	110.90	1484	191.95	178	273.00	347
65.10	354	117.00	3859	192.95	182	273.90	1310
68.90	19552	123.00	354	195.95	1009	275.00	7443
72.90	551	127.00	16480	197.95	37200	276.00	988
74.00	1615	128.00	1332	198.95	2479	276.90	604
74.90	2924	128.90	7263	204.05	1064	295.90	1950
76.00	811	129.90	624	204.95	1920	322.95	590
77.00	16624	135.00	749	206.05	7370	364.85	936
78.00	1136	140.95	1143	207.05	766	422.90	1345
78.90	1299	146.95	442	207.95	225	441.10	3831
79.90	1003	147.95	1092	216.95	2149	442.00	25016
80.90	1451	155.95	450	221.05	1808	443.00	4995
86.00	206	164.85	380	222.95	213		
91.00	201	166.85	1836	224.05	3805		
92.90	2228	167.85	914	225.05	929		
97.90	1692	174.95	574	226.85	1698		

Data File: /chem/j.i/j950522.b/j142df2.d

Date : 22-MAY-95 10:29

Client ID:

Sample Info: 50 NG DFTPP

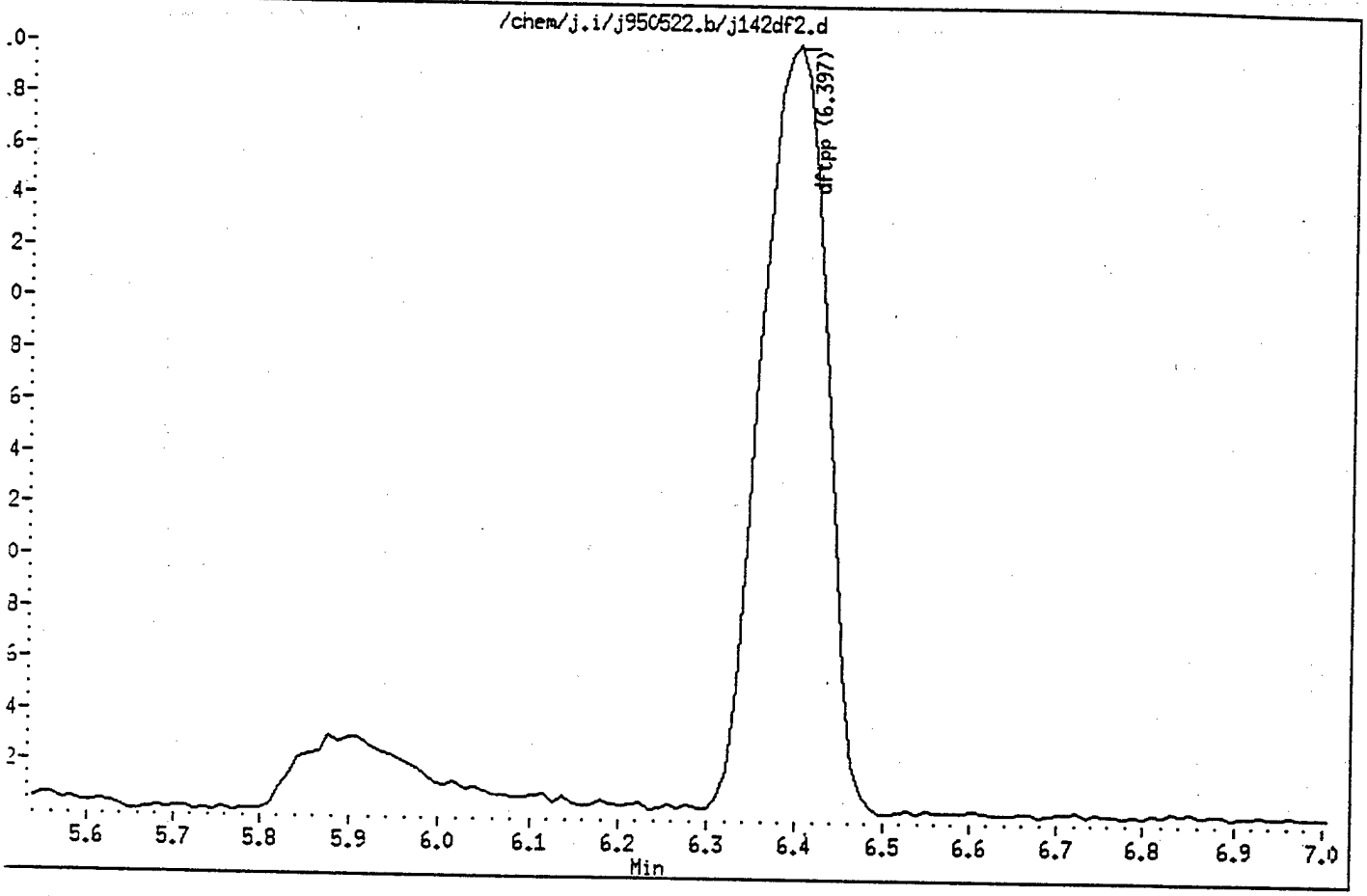
Volume Injected (uL): 2.0

Column phase:

Instrument: j.i

Operator: PC

Column diameter: 2.00



Data File: /chem/j.i/j950522.b/j142df2.d

[redacted]e : 22-MAY-95 10:29

[redacted]lient ID:

Instrument: j.i

[redacted]ple Info: 50 NG DFTPP

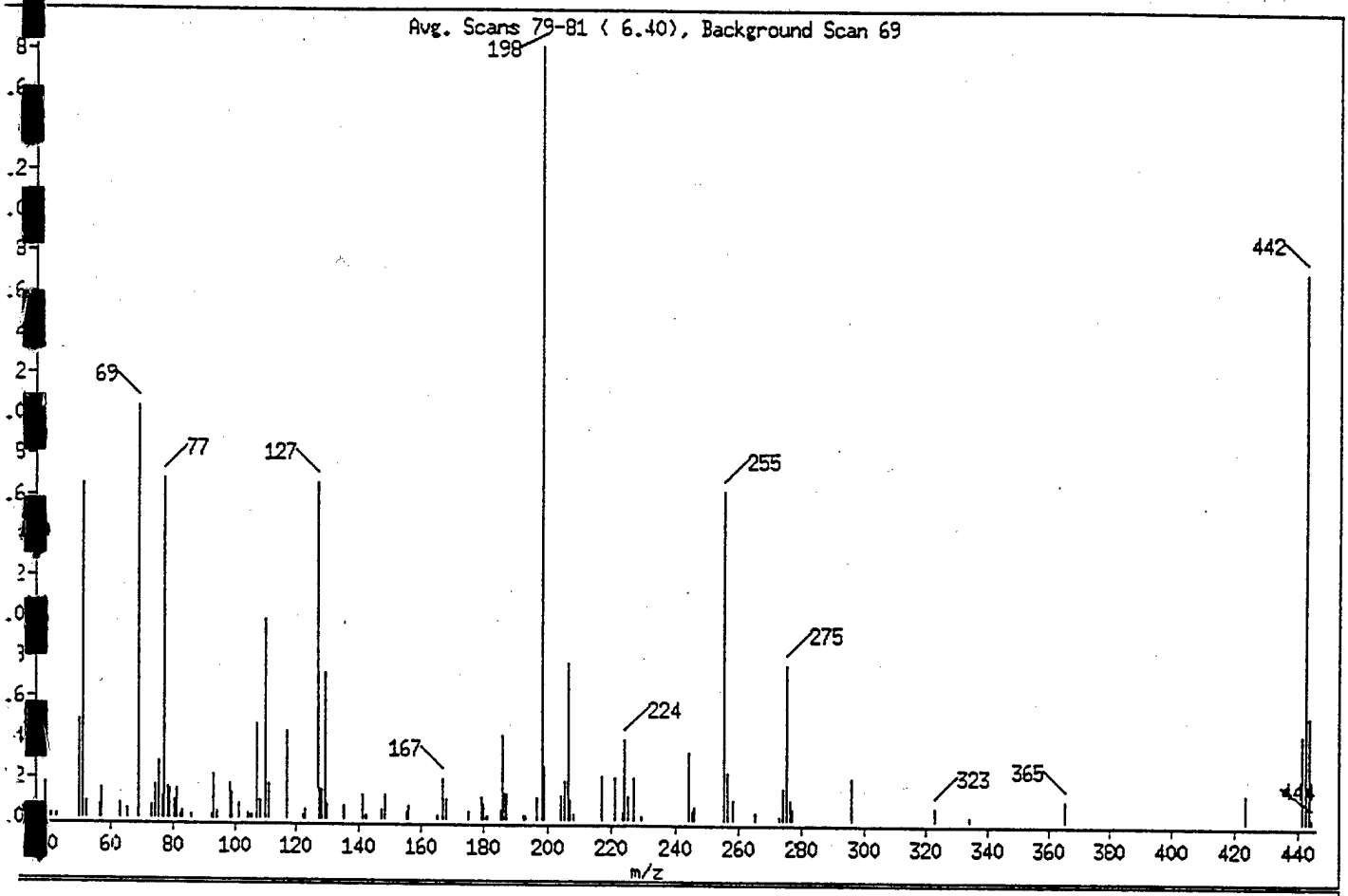
[redacted]ume Injected (uL): 2.0

Operator: PC

[redacted]olumn phase:

Column diameter: 2.00

1 [redacted]ftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 60.00% of mass 198	43.17
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	53.33
70	Less than 2.00% of mass 69	0.00 (0.00)
127	40.00 - 60.00% of mass 198	43.50
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.91
275	10.00 - 30.00% of mass 198	20.09
365	Greater than 0.75% of mass 198	2.56
441	Present, but less than mass 443	11.36
442	40.00 - 110.00% of mass 198	71.14
443	17.00 - 23.00% of mass 442	13.75 (19.33)

Data File: /chem/j.i/j950522.b/j142df2.d
Date : 22-MAY-95 10:29
Client ID:
Instrument: j.i
Sample Info: 50 NG DFTPP
Volume Injected (uL): 2.0
Operator: PC
Column phase:
Column diameter: 2.00

Data File: j142df2.d
Spectrum : Avg. Scans 79-81 (6.40), Background Scan 69
Largest m/z: 197.95
Number of peaks: 97

m/z	Y	m/z	Y	m/z	Y	m/z	Y
39.05	1718	93.90	369	166.95	1941	228.90	166
41.05	193	97.90	1710	167.95	971	244.00	3361
42.95	178	98.90	1288	174.95	402	244.90	408
50.00	4873	100.80	730	178.95	1058	245.80	656
51.00	16464	103.90	231	179.95	694	254.90	16216
52.00	840	104.90	208	180.95	187	256.00	2315
56.00	621	107.00	4711	185.05	406	257.90	1014
57.00	1398	108.00	920	185.95	4116	264.90	397
63.00	703	110.00	9845	186.85	1280	272.90	170
64.90	426	111.00	1673	191.95	194	274.00	1574
68.90	20336	116.90	4331	192.95	198	275.00	7662
73.00	587	121.90	198	195.95	1096	276.00	974
74.00	1661	122.90	414	197.95	38136	277.00	559
74.90	2837	127.00	16584	198.85	2636	295.90	2067
76.10	1097	128.00	1406	203.95	1196	322.95	626
77.00	16768	129.00	7231	205.05	1864	333.85	205
78.00	1504	129.90	743	205.95	7725	364.95	978
78.90	1437	134.90	599	206.95	981	423.00	1351
79.90	863	140.85	1193	208.05	228	441.00	4334
80.90	1426	141.85	178	216.85	2202	442.00	27128
82.00	169	147.05	448	220.95	2037	443.00	5244
82.90	371	147.95	1161	223.05	379	444.00	187
85.90	170	154.95	358	224.05	3931		
92.00	207	155.95	602	224.95	1205		
92.90	2158	164.95	149	226.95	2088		

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Calibration File Names:
Level 1: /chem/j.i/j950515.b/j135ic1.d
Level 2: /chem/j.i/j950515.b/j135ic2.d
Level 3: /chem/j.i/j950515.b/j135ic3.d
Level 4: /chem/j.i/j950515.b/j135ic4.d
Level 5: /chem/j.i/j950515.b/j135ic5.d

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	___ RRF	% RSD
2 Pyridine	0.95105	1.26705	1.23502	1.33160	1.48833	1.25461	15.601
5 Phenol	1.51832	1.65443	1.58304	1.72973	2.00205	1.69751	11.054
6 Aniline	1.36393	1.76985	1.74905	1.92722	2.16595	1.79520	16.327
7 bis(2-Chloroethyl)ether	1.25411	1.48762	1.45620	1.46936	1.54893	1.44325	7.728
9 2-Chlorophenol	1.02696	1.23674	1.15397	1.23144	1.29693	1.18921	8.740
10 1,3-Dichlorobenzene	1.34917	1.49659	1.38271	1.45601	1.48908	1.43471	4.578
12 1,4-Dichlorobenzene	1.60006	1.67907	1.54190	1.52079	1.54718	1.57780	4.037
13 Benzyl alcohol	0.53329	0.79005	0.82283	0.89240	0.98200	0.80411	20.933
15 1,2-Dichlorobenzene	1.50220	1.52238	1.37536	1.38949	1.44032	1.44595	4.536
16 2-Methylphenol	1.19543	1.35725	1.32818	1.36100	1.48673	1.34572	7.718
17 ortho-Cresol	1.19543	1.35725	1.32818	1.43178	1.48673	1.35987	8.165
18 bis(2-chloroisopropyl)ether	1.76798	1.76851	1.70940	1.71433	1.82264	1.75657	2.647
19 4-Methylphenol	1.05392	1.30252	1.42666	1.38146	1.41489	1.31589	11.722
20 meta,para-Cresol	1.05886	1.30252	1.42666	1.48284	1.41489	1.33715	12.621
21 N-Nitroso-di-n-propylamine	0.87335	1.06493	1.06762	1.07818	1.15447	1.04771	9.945
22 Hexachloroethane	0.69094	0.69528	0.62342	0.62498	0.65254	0.65743	5.263
24 Nitrobenzene	0.28587	0.32718	0.32549	0.36702	0.37957	0.33703	11.059
25 Isophorone	0.76857	0.85821	0.78532	0.81508	0.82607	0.81065	4.331
26 2-Nitrophenol	0.13155	0.14223	0.16652	0.19168	0.20758	0.16791	19.118
27 2,4-Dimethylphenol	0.33771	0.36339	0.33649	0.35681	0.36466	0.35181	3.912
28 Benzoic acid	0.06016	0.04836	0.11869	0.18084	0.15672	0.11295	51.464
29 bis(2-Chloroethoxy)methane	0.42222	0.46401	0.43459	0.44374	0.45735	0.44438	3.800
30 2,4-Dichlorophenol	0.25343	0.29339	0.28143	0.29478	0.30151	0.28491	6.678
31 1,2,4-Trichlorobenzene	0.30741	0.32200	0.29045	0.30527	0.31109	0.30724	3.706
33 Naphthalene	1.01228	1.05065	0.96870	1.00463	1.01642	1.01053	2.898
34 4-Chloroaniline	0.40672	0.43940	0.40261	0.41762	0.42253	0.41778	3.473

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
35 Hexachlorobutadiene	0.16723	0.16702	0.15373	0.15764	0.16195	0.16151	3.647
36 4-Chloro-3-methylphenol	0.27010	0.31639	0.30299	0.31421	0.31424	0.30359	6.403
37 2-Methylnaphthalene	0.71152	0.72896	0.68681	0.70283	0.70093	0.70621	2.196
38 Hexachlorocyclopentadiene	0.08166	0.15446	0.18379	0.23183	0.26697	0.18374	38.979
39 2,4,6-Trichlorophenol	0.28606	0.33348	0.32647	0.38371	0.41647	0.34924	14.647
40 2,4,5-Trichlorophenol	0.27887	0.37871	0.36262	0.37822	0.37673	0.35503	12.137
42 2-Chloronaphthalene	1.07462	1.14790	1.04047	1.09629	1.14040	1.09994	4.098
43 2-Nitroaniline	0.26045	0.30646	0.32759	0.35965	0.36334	0.32350	13.093
44 Dimethylphthalate	1.33503	1.45003	1.17295	1.13198	1.13770	1.24554	11.327
45 2,6-Dinitrotoluene	0.19775	0.23250	0.26006	0.27051	0.27623	0.24741	13.117
46 Acenaphthylene	1.89377	1.98018	1.81003	1.86750	1.89947	1.89019	3.255
47 3-Nitroaniline	0.24880	0.29390	0.30926	0.31630	0.33588	0.30083	10.891
49 Acenaphthene	1.10308	1.15985	1.06041	1.08599	1.10991	1.10385	3.322
50 2,4-Dinitrophenol	0.01312	0.03990	0.06599	0.10986	0.13994	0.07376	69.684
51 4-Nitrophenol	0.10125	0.09981	0.12493	0.12426	0.12827	0.11571	12.054
52 Dibenzofuran	1.60012	1.70641	1.57273	1.65040	1.66645	1.63922	3.247
53 2,4-Dinitrotoluene	0.22118	0.31857	0.35206	0.39893	0.38067	0.33428	20.987
54 Diethylphthalate	1.29307	1.16339	1.07643	1.08836	1.08674	1.14160	8.017
55 4-Chlorophenyl-phenylether	0.60706	0.64523	0.59312	0.61902	0.50838	0.59456	8.720
56 Fluorene	1.27759	1.36248	1.23577	1.28125	1.26119	1.28366	3.706
57 4-Nitroaniline	0.21402	0.28985	0.25758	0.28689	0.31079	0.27183	13.782
58 4,6-Dinitro-2-methylphenol	0.03059	0.05007	0.09116	0.15279	0.16501	0.09792	61.232
59 n-Nitrosodiphenylamine	0.51655	0.55847	0.50740	0.51665	0.49939	0.51969	4.394
60 1,2-Diphenylhydrazine	2.08860	2.25724	2.09159	2.52856	2.40385	2.27397	8.504
62 4-Bromophenyl-phenylether	0.21346	0.23072	0.21828	0.22724	0.21989	0.22192	3.143
63 Hexachlorobenzene	0.23804	0.25488	0.23514	0.29216	0.28083	0.26021	9.787
64 Pentachlorophenol	0.07041	0.09786	0.10596	0.13378	0.14153	0.10991	26.098
66 Phenanthrene	1.21947	1.39737	1.29086	1.62620	1.56750	1.42028	12.280
67 Anthracene	1.23143	1.19931	1.09424	1.29253	1.25997	1.21550	6.256
68 Carbazole	1.02126	1.13742	0.97197	1.20739	1.17657	1.10292	9.218
69 Di-n-butylphthalate	1.29031	1.43356	1.34818	1.64157	1.62900	1.46852	10.936
70 Fluoranthene	1.07541	1.10480	1.00195	1.25405	1.25060	1.13736	9.798
71 Pyrene	1.33167	1.47384	1.36535	1.43146	1.45975	1.41241	4.352
73 Butylbenzylphthalate	0.77066	0.86319	0.76986	0.81568	0.82800	0.80948	4.919

SPL Houston Labs

INITIAL CALIBRATION DATA

Start Cal Date : 15-MAY-1995 15:27
End Cal Date : 15-MAY-1995 17:42
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/j.i/j950515.b/jclpw.m
Cal Date : 21-May-1995 14:24 hillery
Curve Type : Average

	Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
74	3,3'-Dichlorobenzidine	0.39914	0.42903	0.40834	0.44206	0.45633	0.42698	5.513
75	Benzo[a]anthracene	1.22568	1.28194	1.19877	1.22823	1.26654	1.24023	2.707
77	Chrysene	1.14333	1.20407	1.10284	1.18931	1.15540	1.15899	3.441
78	bis(2-Ethylhexyl)phthalate	1.06264	1.15854	1.05292	1.09392	1.11358	1.09632	3.868
79	Di-n-octylphthalate	2.56522	3.05460	2.92959	3.23091	3.34981	3.02603	10.041
80	Benzo[b]fluoranthene	1.68789	1.88018	1.96569	2.05254	2.22508	1.96227	10.168
81	Benzo[k]fluoranthene	1.66504	1.81921	1.51041	1.60892	1.48518	1.61775	8.293
82	Benzo[a]pyrene	1.41684	1.53858	1.45954	1.51435	1.54723	1.49531	3.719
84	Indeno[1,2,3-cd]pyrene	1.34560	1.43852	1.29149	1.33980	1.41585	1.36625	4.391
85	Dibenz[a,h]anthracene	1.13755	1.23807	1.10419	1.14280	1.21980	1.16848	4.921
86	Benzo[g,h,i]perylene	1.07314	1.11446	1.00801	1.04609	1.12547	1.07343	4.520
96	Benzidine	0.23696	0.40586	0.33322	0.43468	0.44840	0.37182	23.543
$ 3	2-Fluorophenol	0.53676	0.60858	0.58345	0.78905	0.89782	0.68313	22.467
$ 4	Phenol-d5	1.27175	1.56530	1.53071	1.64719	1.81856	1.56670	12.694
$ 8	2-Chlorophenol-d4	0.98505	1.16531	1.06248	1.15564	1.20282	1.11426	7.969
$ 14	1,2-Dichlorobenzene-d4	0.38858	0.43736	0.37932	0.40981	0.41932	0.40688	5.747
$ 23	Nitrobenzene-d5	0.28758	0.32000	0.32625	0.37035	0.38320	0.33747	11.565
$ 41	2-Fluorobiphenyl	1.22535	1.30328	1.21468	1.26964	1.32263	1.26712	3.720
$ 61	2,4,6-Tribromophenol	0.09140	0.10858	0.10962	0.11966	0.11882	0.10962	10.387
$ 72	Terphenyl-d14	0.90836	1.01420	0.94580	1.00700	1.01611	0.97829	4.979

Data File: /chem/j.i/j950515.b/j135ic1.d
Report Date: 16-May-1995 13:16

SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic1.d
Lab Smp Id:
Inj Date : 15-MAY-1995 15:27
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950515 STD020
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Cal Date : 15-MAY-1995 14:43
Cls bottle: 2
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 1

Compound Sublist: Std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
2 Pyridine	79.00	4.136	4.136	(0.514)	149998	20	15
5 Phenol	94.00	7.462	7.462	(0.927)	239466	20	18
6 Aniline	93.00	7.484	7.484	(0.930)	215115	20	15
7 bis(2-Chloroethyl)ether	93.00	7.571	7.571	(0.940)	197795	20	17
9 2-Chlorophenol	128.00	7.702	7.702	(0.957)	161969	20	17
10 1,3-Dichlorobenzene	146.00	7.974	7.974	(0.991)	212788	20	19
12 1,4-Dichlorobenzene	146.00	8.084	8.084	(1.004)	252358	20	20
13 Benzyl alcohol	108.00	8.411	8.411	(1.045)	84109	20	13(M)
15 1,2-Dichlorobenzene	146.00	8.465	8.465	(1.051)	236923	20	21
16 2-Methylphenol	108.00	8.662	8.662	(1.076)	188540	20	18
18 bis(2-chloroisopropyl)ether	45.00	8.694	8.694	(1.080)	278842	20	20
19 4-Methylphenol	108.00	8.989	8.989	(1.116)	166221	20	16(M)
21 N-Nitroso-di-n-propylamine	70.00	8.989	8.989	(1.116)	137742	20	17
22 Hexachloroethane	117.00	9.109	9.109	(1.131)	108974	20	21
24 Nitrobenzene	77.00	9.294	9.294	(0.857)	184415	20	17
25 Isophorone	82.00	9.817	9.817	(0.905)	495813	20	19
26 2-Nitrophenol	139.00	10.024	10.024	(0.925)	84866	20	16(aM)
27 2,4-Dimethylphenol	107.00	10.154	10.154	(0.937)	217862	20	19
28 Benzoic acid	122.00	10.623	10.623	(0.980)	38807	20	11(aQM)
29 bis(2-Chloroethoxy)methane	93.00	10.351	10.351	(0.955)	272381	20	19
30 2,4-Dichlorophenol	162.00	10.590	10.590	(0.977)	163487	20	18
31 1,2,4-Trichlorobenzene	180.00	10.754	10.754	(0.992)	198316	20	20
33 Naphthalene	128.00	10.885	10.885	(1.004)	653030	20	20
34 4-Chloroaniline	127.00	11.093	11.093	(1.023)	262378	20	19
35 Hexachlorobutadiene	225.00	11.333	11.333	(1.045)	107879	20	21
36 4-Chloro-3-methylphenol	107.00	12.301	12.301	(1.135)	174247	20	18
37 2-Methylnaphthalene	142.00	12.530	12.530	(1.156)	459009	20	20
38 Hexachlorocyclopentadiene	237.00	13.096	13.096	(0.867)	29991	20	9(a)
39 2,4,6-Trichlorophenol	196.00	13.314	13.314	(0.882)	105065	20	16

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
0 2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.889)	102426	20	16 (a)
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.908)	394689	20	20
43 2-Nitroaniline	65.00	14.056	14.056	(0.931)	95660	20	16 (a)
4 Dimethylphthalate	163.00	14.579	14.579	(0.965)	490332	20	21
5 2,6-Dinitrotoluene	165.00	14.732	14.732	(0.975)	72630	20	16 (M)
46 Acenaphthylene	152.00	14.721	14.721	(0.975)	695549	20	20
7 3-Nitroaniline	138.00	15.091	15.091	(0.999)	91381	20	16 (a)
9 Acenaphthene	153.00	15.179	15.179	(1.005)	405143	20	20
50 2,4-Dinitrophenol	184.00	15.441	15.441	(1.022)	4818	20	4 (aQM)
51 4-Nitrophenol	109.00	15.659	15.659	(1.037)	37186	20	18 (aQM)
2 Dibenzofuran	168.00	15.582	15.582	(1.032)	587696	20	20
2,4-Dinitrotoluene	165.00	15.713	15.713	(1.040)	81234	20	13
54 Diethylphthalate	149.00	16.324	16.324	(1.081)	474922	20	23
4-Chlorophenyl-phenylether	204.00	16.444	16.444	(1.089)	222961	20	20
Fluorene	166.00	16.422	16.422	(1.087)	469236	20	20
57 4-Nitroaniline	138.00	16.619	16.619	(1.100)	78607	20	16 (aQ)
4,6-Dinitro-2-methylphenol	198.00	16.728	16.728	(0.893)	16469	20	6 (aM)
n-Nitrosodiphenylamine	169.00	16.750	16.750	(0.895)	278110	20	20
60 1,2-Diphenylhydrazine	77.00	16.826	16.826	(0.899)	1124508	20	18
62 4-Bromophenyl-phenylether	248.00	17.633	17.633	(0.942)	114929	20	19
Hexachlorobenzene	283.70	17.993	17.993	(0.961)	128163	20	18
Pentachlorophenol	266.00	18.472	18.472	(0.987)	37907	20	13 (aM)
66 Phenanthrene	178.00	18.778	18.778	(1.003)	656565	20	17
Anthracene	178.00	18.887	18.887	(1.009)	663009	20	20
Carbazole	167.00	19.323	19.323	(1.032)	549851	20	18
69 Di-n-butylphthalate	149.00	20.324	20.324	(1.086)	694710	20	18
70 Fluoranthene	202.00	21.726	21.726	(1.160)	579004	20	19
Pyrene	202.00	22.271	22.271	(0.877)	567285	20	19
73 Butylbenzylphthalate	149.00	23.980	23.980	(0.944)	328298	20	19
74 3,3'-Dichlorobenzidine	252.00	25.341	25.341	(0.997)	170030	20	19 (M)
Benzo[a]anthracene	228.00	25.352	25.352	(0.998)	522134	20	20
Chrysene	228.00	25.474	25.474	(1.003)	487055	20	20
78 bis(2-Ethylhexyl)phthalate	149.00	25.605	25.605	(1.008)	452678	20	19
Di-n-octylphthalate	149.00	27.413	27.413	(0.917)	752106	20	17
Benzo[b]fluoranthene	252.00	28.633	28.633	(0.958)	494877	20	17
81 Benzo[k]fluoranthene	252.00	28.666	28.666	(0.959)	488178	20	20 (M)
82 Benzo[a]pyrene	252.00	29.703	29.703	(0.993)	415409	20	19
Indeno[1,2,3-cd]pyrene	276.00	34.468	34.468	(1.153)	394521	20	20
Dibenz[a,h]anthracene	278.00	34.534	34.534	(1.155)	333522	20	19
86 Benzo[g,h,i]perylene	276.00	35.788	35.788	(1.197)	314637	20	20
1,4-Dichlorobenzene-d4	152.00	8.051	8.051	(1.000)	315435	40	
Naphthalene-d8	136.00	10.842	10.842	(1.000)	1290219	40	
48 Acenaphthene-d10	164.00	15.102	15.102	(1.000)	734566	40	
Phenanthrene-d10	188.00	18.723	18.723	(1.000)	1076808	40	
Chrysene-d12	240.00	25.407	25.407	(1.000)	851991	40	
83 Perylene-d12	264.00	29.900	29.900	(1.000)	586387	40	
23 Nitrobenzene-d5	82.00	9.261	9.261	(0.854)	185519	20	17
2-Fluorobiphenyl	172.00	13.478	13.478	(0.892)	450050	20	19
Terphenyl-d14	244.00	22.696	22.696	(0.893)	386959	20	18

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.440	7.440	(0.924)	200578	20	16
3 2-Fluorophenol	112.00	5.843	5.843	(0.726)	84656	20	16 (QM)
61 2,4,6-Tribromophenol	329.70	17.078	17.078	(0.912)	49211	20	17
17 ortho-Cresol	108.00	8.662	8.662	(1.076)	188540	20	18
20 meta,para-Cresol	108.00	8.989	8.989	(1.116)	167000	20	16 (aM)
96 Benzidine	184.00	22.118	22.118	(0.871)	100944	20	13 (aM)

QC Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation (BLOQ).
- Qualifier signal failed the ratio test.
- Compound response manually integrated.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

trument ID: j.i
ab File ID: j135ic1.d
ab Smp Id:
lysis Type: SV
nt Type: ISTD
perator: PC
hod File: /chem/j.i/j950515.b/jclpw.m
c Info: 950515 STD020

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	310288	155144	620576	315435	1.66
2 Naphthalene-d8	1245807	622904	2491614	1290219	3.56
48 Acenaphthene-d10	707154	353577	1414308	734566	3.88
65 Phenanthrene-d10	1039593	519796	2079186	1076808	3.58
6 Chrysene-d12	791981	395990	1583962	851991	7.58
83 Perylene-d12	481272	240636	962544	586387	21.84

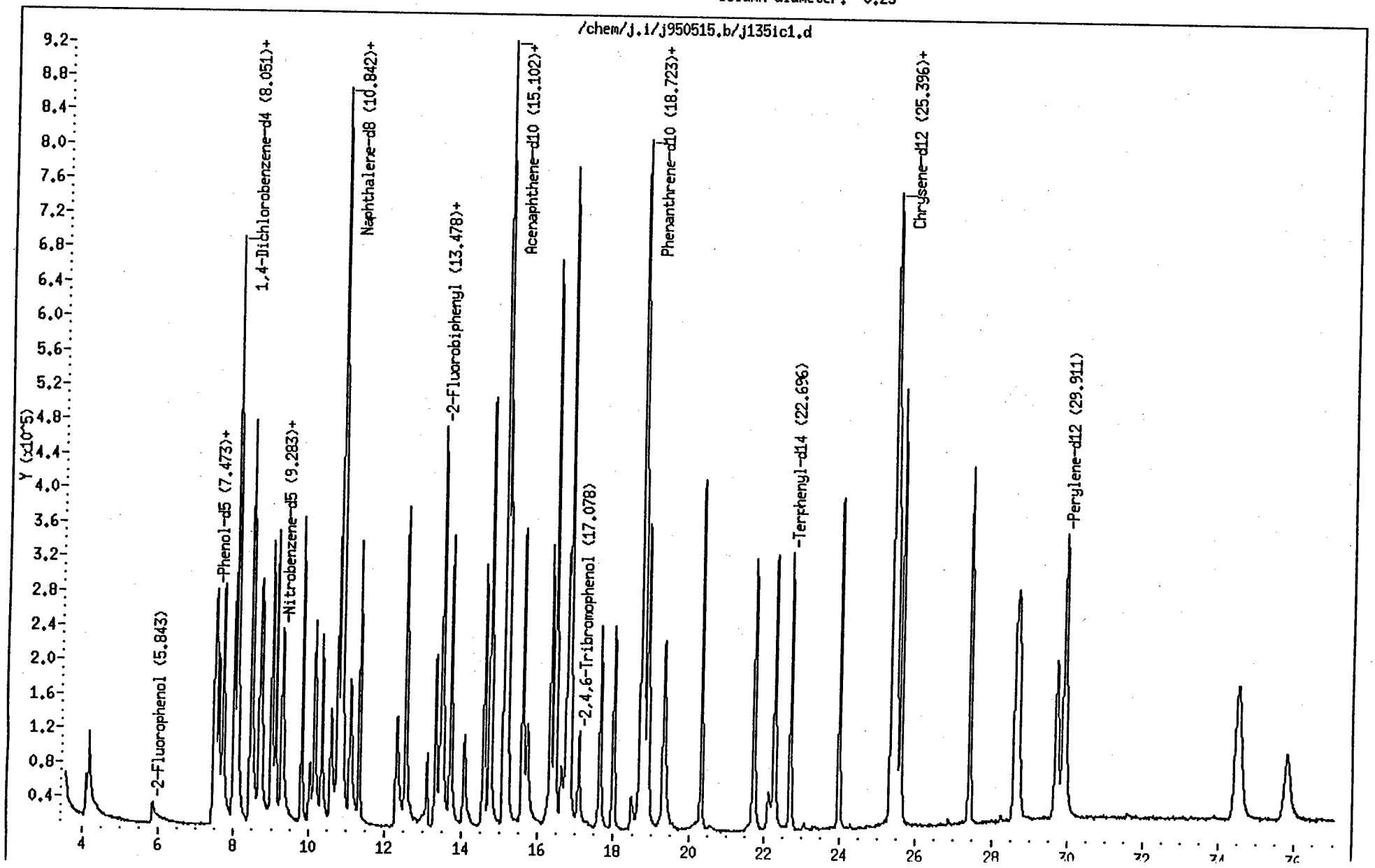
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.12
2 Naphthalene-d8	10.84	10.34	11.34	10.84	-0.03
48 Acenaphthene-d10	15.11	14.61	15.61	15.10	-0.07
65 Phenanthrene-d10	18.73	18.23	19.23	18.72	-0.05
6 Chrysene-d12	25.41	24.91	25.91	25.41	-0.02
3 Perylene-d12	29.92	29.42	30.42	29.90	-0.06

EA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j135ic1.d
Date : 15-MAY-1995 15:27
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



SPL Houston Labs

ata file : /chem/j.i/j950515.b/j135ic2.d
Lab Smp Id:
j Date : 15-MAY-1995 14:43
erator : PC
mp Info : STD-8270W/1X
sc Info : 950515 STD050
mment :
ethod : /chem/j.i/j950515.b/jclpw.m
th Date : 16-May-1995 13:16 patti
l Date : 15-MAY-1995 14:43
Is bottle: 1
il Factor: 1.000
tegrator: HP RTE
rget Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 2

Compound Sublist: Std.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2	Pyridine	79.00	4.104	4.104	(0.510)	491439	50	50
5	Phenol	94.00	7.452	7.452	(0.927)	641687	50	49
6	Aniline	93.00	7.474	7.474	(0.929)	686454	50	49
7	bis(2-Chloroethyl)ether	93.00	7.572	7.572	(0.942)	576988	50	52
9	2-Chlorophenol	128.00	7.703	7.703	(0.958)	479681	50	52
10	1,3-Dichlorobenzene	146.00	7.975	7.975	(0.992)	580469	50	52
12	1,4-Dichlorobenzene	146.00	8.074	8.074	(1.004)	651245	50	53
13	Benzyl alcohol	108.00	8.390	8.390	(1.043)	306430	50	49
15	1,2-Dichlorobenzene	146.00	8.456	8.456	(1.052)	590469	50	53
16	2-Methylphenol	108.00	8.663	8.663	(1.077)	526423	50	50
18	bis(2-chloroisopropyl)ether	45.00	8.696	8.696	(1.081)	685933	50	50
19	4-Methylphenol	108.00	8.979	8.979	(1.117)	505196	50	49
21	N-Nitroso-di-n-propylamine	70.00	9.001	9.001	(1.119)	413044	50	51
22	Hexachloroethane	117.00	9.110	9.110	(1.133)	269672	50	53
24	Nitrobenzene	77.00	9.296	9.296	(0.857)	509508	50	48
25	Isophorone	82.00	9.830	9.830	(0.906)	1336448	50	53
26	2-Nitrophenol	139.00	10.015	10.015	(0.923)	221484	50	42(a)
27	2,4-Dimethylphenol	107.00	10.146	10.146	(0.936)	565891	50	52
28	Benzoic acid	122.00	10.560	10.560	(0.974)	75311	50	21(aM)
29	bis(2-Chloroethoxy)methane	93.00	10.342	10.342	(0.954)	722590	50	52
30	2,4-Dichlorophenol	162.00	10.582	10.582	(0.976)	456888	50	51
31	1,2,4-Trichlorobenzene	180.00	10.757	10.757	(0.992)	501441	50	52
33	Naphthalene	128.00	10.889	10.889	(1.004)	1636127	50	52
34	4-Chloroaniline	127.00	11.074	11.074	(1.021)	684255	50	52
35	Hexachlorobutadiene	225.00	11.337	11.337	(1.045)	260096	50	52
36	4-Chloro-3-methylphenol	107.00	12.284	12.284	(1.133)	492700	50	52
37	2-Methylnaphthalene	142.00	12.524	12.524	(1.155)	1135186	50	52
38	Hexachlorocyclopentadiene	237.00	13.102	13.102	(0.867)	136536	50	42
39	2,4,6-Trichlorophenol	196.00	13.309	13.309	(0.881)	294778	50	48

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.419	13.419	(0.888)	334756	50	53
42 2-Chloronaphthalene	162.00	13.704	13.704	(0.907)	1014677	50	52
43 2-Nitroaniline	65.00	14.053	14.053	(0.930)	270894	50	47(a)
44 Dimethylphthalate	163.00	14.588	14.588	(0.965)	1281740	50	58
45 2,6-Dinitrotoluene	165.00	14.741	14.741	(0.975)	205515	50	47
46 Acenaphthylene	152.00	14.730	14.730	(0.975)	1750366	50	52
47 3-Nitroaniline	138.00	15.079	15.079	(0.998)	259787	50	49(a)
49 Acenaphthene	153.00	15.189	15.189	(1.005)	1025240	50	52
50 2,4-Dinitrophenol	184.00	15.364	15.364	(1.017)	35266	50	27(aM)
51 4-Nitrophenol	109.00	15.604	15.604	(1.033)	88228	50	43(a)
52 Dibenzofuran	168.00	15.582	15.582	(1.031)	1508365	50	52
53 2,4-Dinitrotoluene	165.00	15.714	15.714	(1.040)	281598	50	48
54 Diethylphthalate	149.00	16.336	16.336	(1.081)	1028369	50	51
55 4-Chlorophenyl-phenylether	204.00	16.446	16.446	(1.088)	570349	50	54
56 Fluorene	166.00	16.435	16.435	(1.087)	1204358	50	53
57 4-Nitroaniline	138.00	16.599	16.599	(1.098)	256207	50	53
58 4,6-Dinitro-2-methylphenol	198.00	16.730	16.730	(0.893)	65061	50	26(a)
59 n-Nitrosodiphenylamine	169.00	16.763	16.763	(0.895)	725731	50	54
60 1,2-Diphenylhydrazine	77.00	16.840	16.840	(0.899)	2933270	50	50
62 4-Bromophenyl-phenylether	248.00	17.638	17.638	(0.942)	299818	50	52
63 Hexachlorobenzene	283.70	17.999	17.999	(0.961)	331208	50	49
64 Pentachlorophenol	266.00	18.457	18.457	(0.985)	127165	50	44(a)
66 Phenanthrene	178.00	18.787	18.787	(1.003)	1815870	50	49
67 Anthracene	178.00	18.896	18.896	(1.009)	1558490	50	49
68 Carbazole	167.00	19.312	19.312	(1.031)	1478063	50	52
69 Di-n-butylphthalate	149.00	20.326	20.326	(1.085)	1862897	50	49
70 Fluoranthene	202.00	21.721	21.721	(1.160)	1435681	50	48
71 Pyrene	202.00	22.278	22.278	(0.877)	1459067	50	52
73 Butylbenzylphthalate	149.00	23.982	23.982	(0.944)	854533	50	53
74 3,3'-Dichlorobenzidine	252.00	25.336	25.336	(0.997)	424725	50	50
75 Benzo[a]anthracene	228.00	25.358	25.358	(0.998)	1269093	50	52
77 Chrysene	228.00	25.479	25.479	(1.003)	1192000	50	52
78 bis(2-Ethylhexyl)phthalate	149.00	25.600	25.600	(1.007)	1146928	50	53
79 Di-n-octylphthalate	149.00	27.423	27.423	(0.917)	1837617	50	50
80 Benzo[b]fluoranthene	252.00	28.669	28.669	(0.958)	1131095	50	48(M)
81 Benzo[k]fluoranthene	252.00	28.691	28.691	(0.959)	1094421	50	56(M)
82 Benzo[a]pyrene	252.00	29.708	29.708	(0.993)	925596	50	51
84 Indeno[1,2,3-cd]pyrene	276.00	34.493	34.493	(1.153)	865400	50	53
85 Dibenz[a,h]anthracene	278.00	34.559	34.559	(1.155)	744810	50	53
86 Benzo[g,h,i]perylene	276.00	35.805	35.805	(1.197)	670447	50	52
11 1,4-Dichlorobenzene-d4	152.00	8.041	8.041	(1.000)	310288	40	
32 Naphthalene-d8	136.00	10.845	10.845	(1.000)	1245807	40	
48 Acenaphthene-d10	164.00	15.112	15.112	(1.000)	707154	40	
65 Phenanthrene-d10	188.00	18.732	18.732	(1.000)	1039593	40	
76 Chrysene-d12	240.00	25.413	25.413	(1.000)	791981	40	
83 Perylene-d12	264.00	29.918	29.918	(1.000)	481272	40	
23 Nitrobenzene-d5	82.00	9.252	9.252	(0.853)	498320	50	47
41 2-Fluorobiphenyl	172.00	13.485	13.485	(0.892)	1152025	50	51
72 Terphenyl-d14	244.00	22.694	22.694	(0.893)	1004031	50	52

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.430	7.430	(0.924)	607117	50	50
2-Fluorophenol	112.00	5.821	5.821	(0.724)	236045	50	44
61 2,4,6-Tribromophenol	329.70	17.081	17.081	(0.912)	141097	50	50
ortho-Cresol	108.00	8.663	8.663	(1.077)	526423	50	50
meta,para-Cresol	108.00	8.979	8.979	(1.117)	505196	50	49
96 Benzidine	184.00	22.081	22.081	(0.869)	401793	50	54

Flag Legend

Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic2.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD050

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	310288	0.00
32 Naphthalene-d8	1245807	622904	2491614	1245807	0.00
48 Acenaphthene-d10	707154	353577	1414308	707154	0.00
65 Phenanthrene-d10	1039593	519796	2079186	1039593	0.00
76 Chrysene-d12	791981	395990	1583962	791981	0.00
83 Perylene-d12	481272	240636	962544	481272	0.00

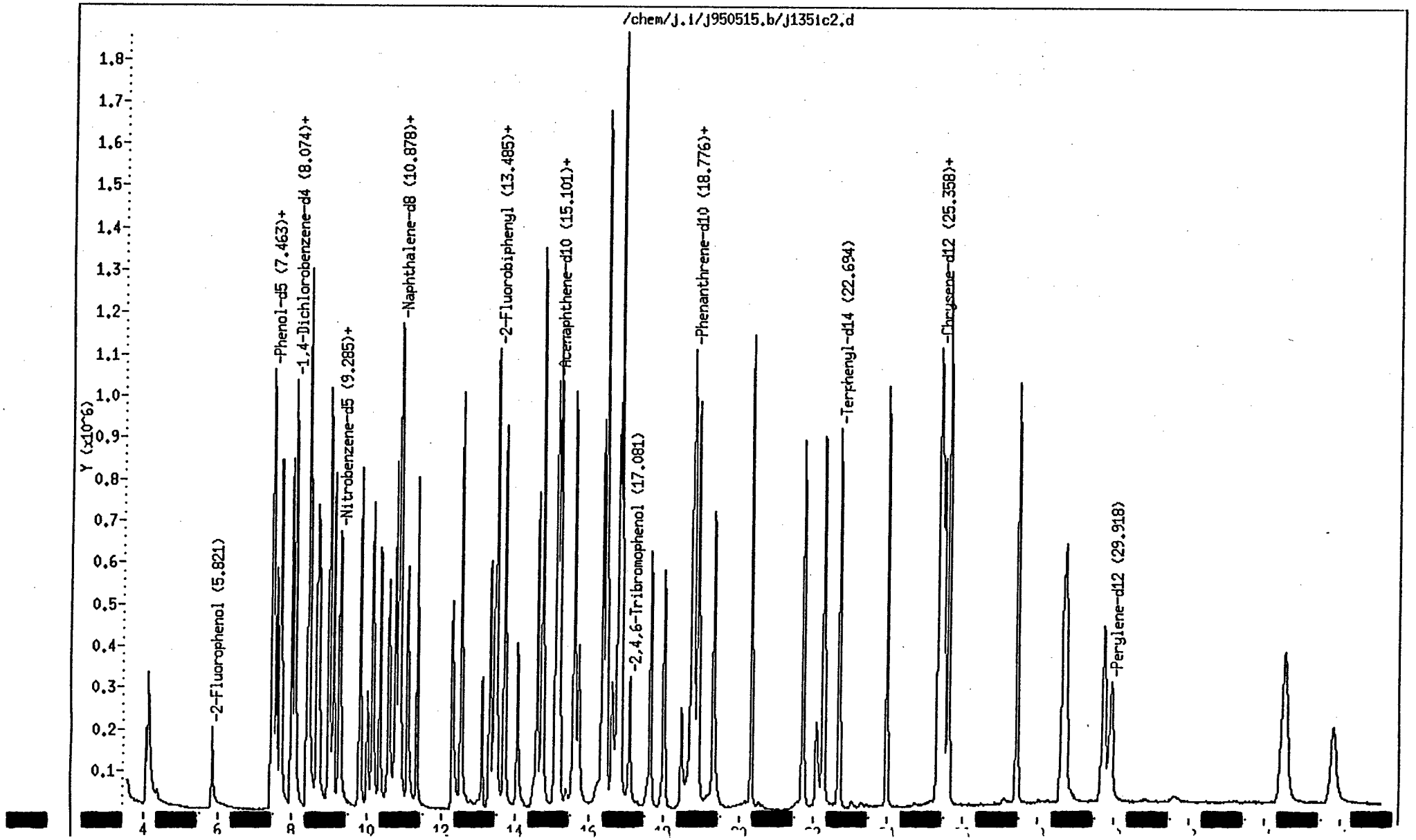
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.04	0.00
32 Naphthalene-d8	10.84	10.34	11.34	10.84	0.00
48 Acenaphthene-d10	15.11	14.61	15.61	15.11	0.00
65 Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
76 Chrysene-d12	25.41	24.91	25.91	25.41	0.00
83 Perylene-d12	29.92	29.42	30.42	29.92	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j1351c2.d
Date : 15-MAY-1995 14:43
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic3.d
Lab Smp Id:
Inj Date : 15-MAY-1995 16:12
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950515 STD080
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti
Cal Date : 15-MAY-1995 14:43
Vls bottle: 3
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j135ic2.d
Calibration Sample, Level: 3

Compound Sublist: Std.sub

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
2	Pyridine	79.00	4.115	4.115	(0.511)	778898	80	79
5	Phenol	94.00	7.474	7.474	(0.928)	998384	80	75
6	Aniline	93.00	7.485	7.485	(0.930)	1103083	80	78
7	bis(2-Chloroethyl)ether	93.00	7.594	7.594	(0.943)	918391	80	81
9	2-Chlorophenol	128.00	7.714	7.714	(0.958)	727783	80	78
10	1,3-Dichlorobenzene	146.00	7.976	7.976	(0.990)	872044	80	77
12	1,4-Dichlorobenzene	146.00	8.086	8.086	(1.004)	972442	80	78
13	Benzyl alcohol	108.00	8.391	8.391	(1.042)	518941	80	82
15	1,2-Dichlorobenzene	146.00	8.467	8.467	(1.051)	867404	80	76
16	2-Methylphenol	108.00	8.664	8.664	(1.076)	837649	80	79
18	bis(2-chloroisopropyl)ether	45.00	8.708	8.708	(1.081)	1078078	80	78
19	4-Methylphenol	108.00	8.991	8.991	(1.117)	899758	80	87
21	N-Nitroso-di-n-propylamine	70.00	9.013	9.013	(1.119)	673322	80	82
22	Hexachloroethane	117.00	9.122	9.122	(1.133)	393179	80	76
24	Nitrobenzene	77.00	9.308	9.308	(0.858)	863562	80	77
25	Isophorone	82.00	9.853	9.853	(0.908)	2083552	80	78
26	2-Nitrophenol	139.00	10.028	10.028	(0.924)	441803	80	79
27	2,4-Dimethylphenol	107.00	10.169	10.169	(0.938)	892755	80	76
28	Benzoic acid	122.00	10.617	10.617	(0.979)	314888	80	84(Q)
29	bis(2-Chloroethoxy)methane	93.00	10.355	10.355	(0.955)	1153023	80	78
30	2,4-Dichlorophenol	162.00	10.584	10.584	(0.976)	746680	80	79
31	1,2,4-Trichlorobenzene	180.00	10.770	10.770	(0.993)	770586	80	76
33	Naphthalene	128.00	10.891	10.891	(1.004)	2570079	80	77
34	4-Chloroaniline	127.00	11.087	11.087	(1.022)	1068177	80	77
35	Hexachlorobutadiene	225.00	11.339	11.339	(1.045)	407861	80	76
36	4-Chloro-3-methylphenol	107.00	12.298	12.298	(1.134)	803875	80	80
37	2-Methylnaphthalene	142.00	12.538	12.538	(1.156)	1822187	80	78
38	Hexachlorocyclopentadiene	237.00	13.106	13.106	(0.867)	274475	80	80
39	2,4,6-Trichlorophenol	196.00	13.313	13.313	(0.881)	487561	80	75

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2,4,5-Trichlorophenol	196.00	13.423	13.423	(0.888)	541543	80	82
42 2-Chloronaphthalene	162.00	13.708	13.708	(0.907)	1553843	80	76
43 2-Nitroaniline	65.00	14.058	14.058	(0.930)	489221	80	81
Dimethylphthalate	163.00	14.604	14.604	(0.966)	1751697	80	75
2,6-Dinitrotoluene	165.00	14.757	14.757	(0.976)	388379	80	84
46 Acenaphthylene	152.00	14.735	14.735	(0.975)	2703115	80	77
3-Nitroaniline	138.00	15.096	15.096	(0.999)	461845	80	82
Acenaphthene	153.00	15.195	15.195	(1.005)	1583625	80	77
50 2,4-Dinitrophenol	184.00	15.370	15.370	(1.017)	98550	80	72 (Q)
51 4-Nitrophenol	109.00	15.610	15.610	(1.033)	186577	80	86
Dibenzofuran	168.00	15.588	15.588	(1.031)	2348724	80	77
2,4-Dinitrotoluene	165.00	15.720	15.720	(1.040)	525768	80	84
54 Diethylphthalate	149.00	16.354	16.354	(1.082)	1607549	80	75
4-Chlorophenyl-phenylether	204.00	16.453	16.453	(1.088)	885765	80	80
Fluorene	166.00	16.442	16.442	(1.088)	1845516	80	77
57 4-Nitroaniline	138.00	16.628	16.628	(1.100)	384677	80	76
4,6-Dinitro-2-methylphenol	198.00	16.749	16.749	(0.894)	194912	80	74
n-Nitrosodiphenylamine	169.00	16.781	16.781	(0.896)	1084913	80	78
60 1,2-Diphenylhydrazine	77.00	16.847	16.847	(0.899)	4472162	80	74
62 4-Bromophenyl-phenylether	248.00	17.646	17.646	(0.942)	466721	80	79
Hexachlorobenzene	283.70	18.008	18.008	(0.961)	502771	80	72
Pentachlorophenol	266.00	18.467	18.467	(0.986)	226570	80	77
66 Phenanthrene	178.00	18.797	18.797	(1.004)	2760069	80	73
Anthracene	178.00	18.896	18.896	(1.009)	2339664	80	72
Carbazole	167.00	19.323	19.323	(1.032)	2078236	80	70
69 Di-n-butylphthalate	149.00	20.338	20.338	(1.086)	2882638	80	73
Fluoranthene	202.00	21.734	21.734	(1.160)	2142334	80	70
Pyrene	202.00	22.281	22.281	(0.876)	2218728	80	77
73 Butylbenzylphthalate	149.00	23.985	23.985	(0.943)	1251034	80	76
74 3,3'-Dichlorobenzidine	252.00	25.339	25.339	(0.997)	663554	80	76
Benzo[a]anthracene	228.00	25.372	25.372	(0.998)	1948018	80	77
Chrysene	228.00	25.493	25.493	(1.003)	1792140	80	76
78 bis(2-Ethylhexyl)phthalate	149.00	25.614	25.614	(1.007)	1711011	80	77
Di-n-octylphthalate	149.00	27.425	27.425	(0.916)	2783071	80	77
Benzo[b]fluoranthene	252.00	28.691	28.691	(0.959)	1867379	80	80 (M)
81 Benzo[k]fluoranthene	252.00	28.713	28.713	(0.959)	1434871	80	75 (M)
82 Benzo[a]pyrene	252.00	29.718	29.718	(0.993)	1386544	80	78
Indeno[1,2,3-cd]pyrene	276.00	34.509	34.509	(1.153)	1226900	80	76
Dibenz[a,h]anthracene	278.00	34.575	34.575	(1.155)	1048970	80	76
86 Benzo[g,h,i]perylene	276.00	35.820	35.820	(1.197)	957599	80	75
1,4-Dichlorobenzene-d4	152.00	8.053	8.053	(1.000)	315338	40	
Naphthalene-d8	136.00	10.847	10.847	(1.000)	1326560	40	
18 Acenaphthene-d10	164.00	15.118	15.118	(1.000)	746705	40	
Phenanthrene-d10	188.00	18.731	18.731	(1.000)	1069083	40	
Chrysene-d12	240.00	25.427	25.427	(1.000)	812510	40	
93 Perylene-d12	264.00	29.927	29.927	(1.000)	474994	40	
23 Nitrobenzene-d5	82.00	9.264	9.264	(0.854)	865579	80	77
2-Fluorobiphenyl	172.00	13.489	13.489	(0.892)	1814018	80	77
2 Terphenyl-d14	244.00	22.697	22.697	(0.893)	1536945	80	77

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
5 4 Phenol-d5	99.00	7.442	7.442	(0.924)	965380	80	78
3 3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	367968	80	68
61 2,4,6-Tribromophenol	329.70	17.088	17.088	(0.912)	234377	80	80
17 ortho-Cresol	108.00	8.664	8.664	(1.076)	837649	80	78
20 meta,para-Cresol	108.00	8.991	8.991	(1.117)	899758	80	85
96 Benzidine	184.00	22.083	22.083	(0.868)	541482	80	72

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

strument ID: j.i
o File ID: j135ic3.d
ab Smp Id:
nalysis Type: SV
ant Type: ISTD
erator: PC
ethod File: /chem/j.i/j950515.b/jclpw.m
sc Info: 950515 STD080

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	315338	1.63
2 Naphthalene-d8	1245807	622904	2491614	1326560	6.48
8 Acenaphthene-d10	707154	353577	1414308	746705	5.59
65 Phenanthrene-d10	1039593	519796	2079186	1069083	2.84
6 Chrysene-d12	791981	395990	1583962	812510	2.59
3 Perylene-d12	481272	240636	962544	474994	-1.30

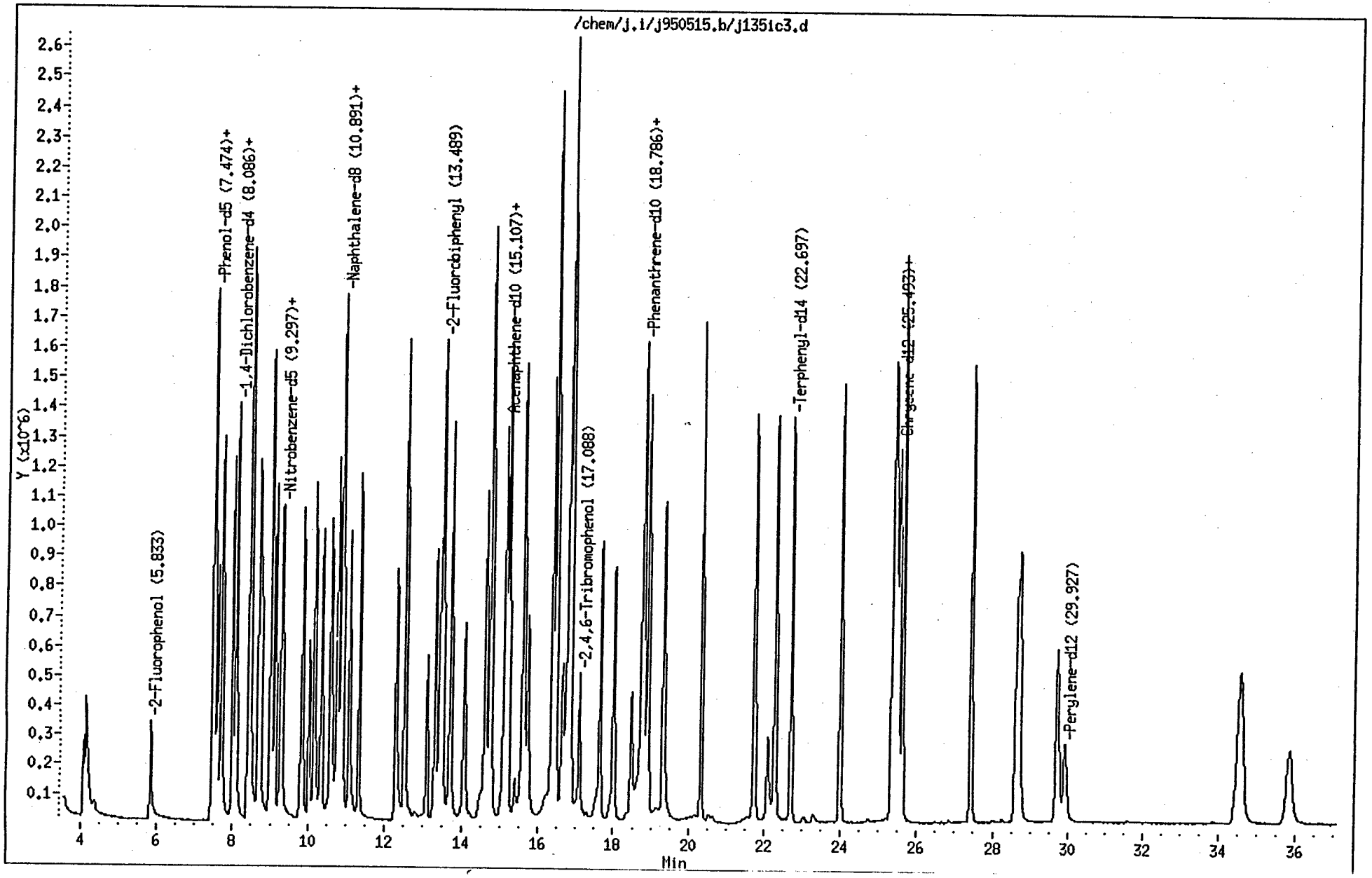
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.15
2 Naphthalene-d8	10.84	10.34	11.34	10.85	0.02
8 Acenaphthene-d10	15.11	14.61	15.61	15.12	0.04
65 Phenanthrene-d10	18.73	18.23	19.23	18.73	0.00
76 Chrysene-d12	25.41	24.91	25.91	25.43	0.05
3 Perylene-d12	29.92	29.42	30.42	29.93	0.03

A UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j135ic3.d
Date : 15-MAY-1995 16:12
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (µL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



Data File: /chem/j.i/j950515.b/j135ic4.d
Report Date: 16-May-1995 13:16

SPL Houston Labs

Data file : /chem/j.i/j950515.b/j135ic4.d
Lab Smp Id:
Run Date : 15-MAY-1995 16:57
Operator : PC Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950515 STD120
Comment :
Method : /chem/j.i/j950515.b/jclpw.m
Meth Date : 16-May-1995 13:16 patti Quant Type: ISTD
Run Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
Vial bottle: 4 Calibration Sample, Level: 4
Cal Factor: 1.000
Integrator: HP RTE Compound Sublist: Std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
[redacted]	Pyridine	79.00	4.115	4.115	(0.511)	1332117	120	130
5	Phenol	94.00	7.486	7.486	(0.930)	1730405	120	120
[redacted]	Aniline	93.00	7.497	7.497	(0.931)	1927971	120	130
[redacted]	bis(2-Chloroethyl)ether	93.00	7.606	7.606	(0.944)	1469936	120	120
9	2-Chlorophenol	128.00	7.726	7.726	(0.959)	1231916	120	120
10	1,3-Dichlorobenzene	146.00	7.988	7.988	(0.992)	1456576	120	120
[redacted]	1,4-Dichlorobenzene	146.00	8.087	8.087	(1.004)	1521385	120	120
[redacted]	Benzyl alcohol	108.00	8.414	8.414	(1.045)	892744	120	130
15	1,2-Dichlorobenzene	146.00	8.480	8.480	(1.053)	1390028	120	120
[redacted]	2-Methylphenol	108.00	8.676	8.676	(1.077)	1361526	120	120
[redacted]	bis(2-chloroisopropyl)ether	45.00	8.709	8.709	(1.081)	1714995	120	120
19	4-Methylphenol	108.00	9.015	9.015	(1.119)	1381999	120	120
[redacted]	N-Nitroso-di-n-propylamine	70.00	9.037	9.037	(1.122)	1078601	120	120
[redacted]	Hexachloroethane	117.00	9.124	9.124	(1.133)	625220	120	110
[redacted]	Nitrobenzene	77.00	9.321	9.321	(0.858)	1470233	120	130
25	Isophorone	82.00	9.877	9.877	(0.909)	3265075	120	120
[redacted]	2-Nitrophenol	139.00	10.030	10.030	(0.924)	767848	120	140
[redacted]	2,4-Dimethylphenol	107.00	10.183	10.183	(0.938)	1429335	120	120
28	Benzoic acid	122.00	10.696	10.696	(0.985)	724403	120	190(Q)
[redacted]	bis(2-Chloroethoxy)methane	93.00	10.368	10.368	(0.955)	1777529	120	120
[redacted]	2,4-Dichlorophenol	162.00	10.598	10.598	(0.976)	1180837	120	120
31	1,2,4-Trichlorobenzene	180.00	10.773	10.773	(0.992)	1222845	120	120
[redacted]	Naphthalene	128.00	10.904	10.904	(1.004)	4024385	120	120
[redacted]	4-Chloroaniline	127.00	11.090	11.090	(1.021)	1672934	120	120
[redacted]	Hexachlorobutadiene	225.00	11.353	11.353	(1.045)	631463	120	120
36	4-Chloro-3-methylphenol	107.00	12.302	12.302	(1.133)	1258654	120	120
[redacted]	2-Methylnaphthalene	142.00	12.542	12.542	(1.155)	2815406	120	120
[redacted]	Hexachlorocyclopentadiene	237.00	13.111	13.111	(0.867)	510469	120	150
39	2,4,6-Trichlorophenol	196.00	13.319	13.319	(0.881)	844908	120	130

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.429	13.429	(0.888)	832819	120	130
42 2-Chloronaphthalene	162.00	13.725	13.725	(0.907)	2413980	120	120
43 2-Nitroaniline	65.00	14.075	14.075	(0.931)	791923	120	130
44 Dimethylphthalate	163.00	14.622	14.622	(0.967)	2492560	120	110
45 2,6-Dinitrotoluene	165.00	14.764	14.764	(0.976)	595644	120	130
46 Acenaphthylene	152.00	14.742	14.742	(0.975)	4112145	120	120
47 3-Nitroaniline	138.00	15.103	15.103	(0.999)	696467	120	130
49 Acenaphthene	153.00	15.202	15.202	(1.005)	2391293	120	120
50 2,4-Dinitrophenol	184.00	15.377	15.377	(1.017)	241900	120	180 (Q)
51 4-Nitrophenol	109.00	15.618	15.618	(1.033)	273622	120	130 (Q)
52 Dibenzofuran	168.00	15.596	15.596	(1.031)	3634094	120	120
53 2,4-Dinitrotoluene	165.00	15.739	15.739	(1.041)	878421	120	140
54 Diethylphthalate	149.00	16.374	16.374	(1.083)	2396514	120	110
55 4-Chlorophenyl-phenylether	204.00	16.462	16.462	(1.088)	1363055	120	120
56 Fluorene	166.00	16.451	16.451	(1.088)	2821239	120	120
57 4-Nitroaniline	138.00	16.648	16.648	(1.101)	631717	120	130
58 4,6-Dinitro-2-methylphenol	198.00	16.769	16.769	(0.895)	402975	120	190
59 n-Nitrosodiphenylamine	169.00	16.802	16.802	(0.896)	1362669	120	120
60 1,2-Diphenylhydrazine	77.00	16.868	16.868	(0.900)	6669125	120	130
62 4-Bromophenyl-phenylether	248.00	17.646	17.646	(0.941)	599348	120	120
63 Hexachlorobenzene	283.70	18.019	18.019	(0.961)	770567	120	130
64 Pentachlorophenol	266.00	18.480	18.480	(0.986)	352855	120	150
66 Phenanthrene	178.00	18.799	18.799	(1.003)	4289132	120	140
67 Anthracene	178.00	18.920	18.920	(1.009)	3409067	120	130
68 Carbazole	167.00	19.337	19.337	(1.032)	3184518	120	130
69 Di-n-butylphthalate	149.00	20.343	20.343	(1.085)	4329667	120	130
70 Fluoranthene	202.00	21.741	21.741	(1.160)	3307570	120	130
71 Pyrene	202.00	22.289	22.289	(0.876)	3398182	120	120
73 Butylbenzylphthalate	149.00	23.996	23.996	(0.944)	1936372	120	120
74 3,3'-Dichlorobenzidine	252.00	25.353	25.353	(0.997)	1049418	120	120
75 Benzo[a]anthracene	228.00	25.386	25.386	(0.998)	2915731	120	120
77 Chrysene	228.00	25.508	25.508	(1.003)	2823339	120	120
78 bis(2-Ethylhexyl)phthalate	149.00	25.618	25.618	(1.007)	2596903	120	120
79 Di-n-octylphthalate	149.00	27.442	27.442	(0.917)	4244969	120	130
80 Benzo[b]fluoranthene	252.00	28.710	28.710	(0.959)	2696755	120	120 (M)
81 Benzo[k]fluoranthene	252.00	28.721	28.721	(0.960)	2113899	120	120 (M)
82 Benzo[a]pyrene	252.00	29.738	29.738	(0.994)	1989646	120	120
84 Indeno[1,2,3-cd]pyrene	276.00	34.554	34.554	(1.155)	1760313	120	120
85 Dibenz[a,h]anthracene	278.00	34.620	34.620	(1.157)	1501479	120	120
86 Benzo[g,h,i]perylene	276.00	35.855	35.855	(1.198)	1374414	120	120
11 1,4-Dichlorobenzene-d4	152.00	8.054	8.054	(1.000)	333463	40	
32 Naphthalene-d8	136.00	10.860	10.860	(1.000)	1335278	40	
48 Acenaphthene-d10	164.00	15.125	15.125	(1.000)	733982	40	
65 Phenanthrene-d10	188.00	18.744	18.744	(1.000)	879172	40	
76 Chrysene-d12	240.00	25.430	25.430	(1.000)	791311	40	
83 Perylene-d12	264.00	29.925	29.925	(1.000)	437954	40	
23 Nitrobenzene-d5	82.00	9.277	9.277	(0.854)	1483541	120	130
41 2-Fluorobiphenyl	172.00	13.506	13.506	(0.893)	2795685	120	120
72 Terphenyl-d14	244.00	22.706	22.706	(0.893)	2390544	120	120

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.464	7.464	(0.927)	1647832	120	130
3 2-Fluorophenol	112.00	5.833	5.833	(0.724)	789355	120	140
61 2,4,6-Tribromophenol	329.70	17.098	17.098	(0.912)	315605	120	130
ortho-Cresol	108.00	8.676	8.676	(1.077)	1432337	120	130 (QM)
meta,para-Cresol	108.00	9.015	9.015	(1.119)	1483413	120	130 (QM)
96 Benzidine	184.00	22.091	22.091	(0.869)	1031906	120	140 (M)

Flag Legend

Qualifier signal failed the ratio test.
Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j135ic4.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD120

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	333463	7.47
32 Naphthalene-d8	1245807	622904	2491614	1335278	7.18
48 Acenaphthene-d10	707154	353577	1414308	733982	3.79
65 Phenanthrene-d10	1039593	519796	2079186	879172	-15.43
76 Chrysene-d12	791981	395990	1583962	791311	-0.08
83 Perylene-d12	481272	240636	962544	437954	-9.00

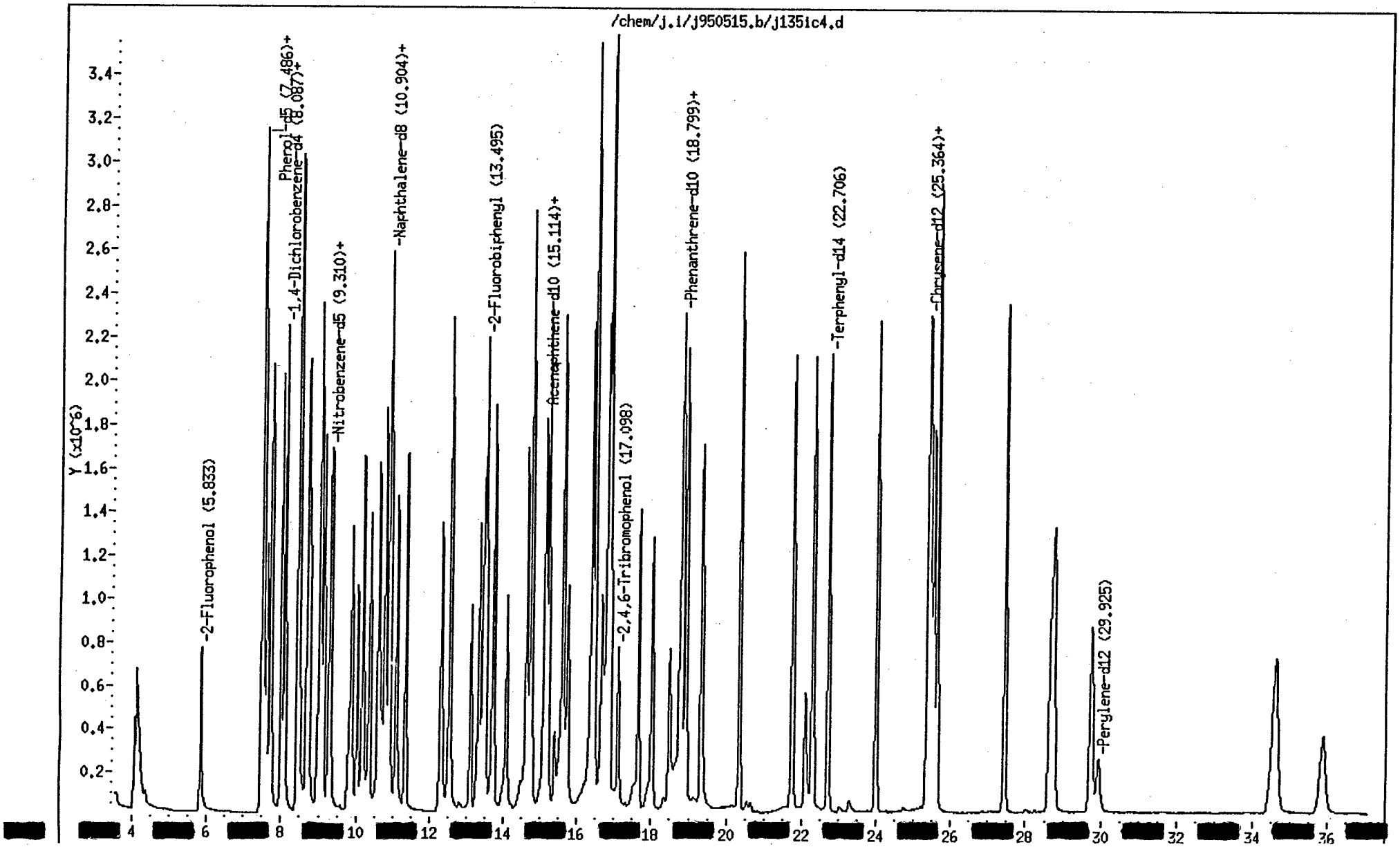
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.05	0.16
32 Naphthalene-d8	10.84	10.34	11.34	10.86	0.14
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.09
65 Phenanthrene-d10	18.73	18.23	19.23	18.74	0.07
76 Chrysene-d12	25.41	24.91	25.91	25.43	0.07
83 Perylene-d12	29.92	29.42	30.42	29.93	0.02

REA UPPER LIMIT = +100% of internal standard area.
REA LOWER LIMIT = - 50% of internal standard area.
T UPPER LIMIT = + 0.50 minutes of internal standard RT.
T LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950515.b/j135ic4.d
Date : 15-MAY-1995 16:57
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



SPL Houston Labs

ata file : /chem/j.i/j950515.b/j135ic5.d
ab Smp Id:
nj Date : 15-MAY-1995 17:42
perator : PC Inst ID: j.i
mp Info : STD-8270W/1X
isc Info : 950515 STD160
omment :
ethod : /chem/j.i/j950515.b/jclpw.m
eth Date : 16-May-1995 13:16 patti Quant Type: ISTD
al Date : 15-MAY-1995 14:43 Cal File: j135ic2.d
ls bottle: 5 Calibration Sample, Level: 5
il Factor: 1.000
ntegrator: HP RTE Compound Sublist: Std.sub
arget Version: 3.10

	pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2	Pyridine	79.00	4.115	4.115	(0.510)	1861341	160	190
5	Phenol	94.00	7.498	7.498	(0.930)	2503807	160	190
6	Aniline	93.00	7.509	7.509	(0.931)	2708787	160	190
7	bis(2-Chloroethyl)ether	93.00	7.618	7.618	(0.944)	1937134	160	170
9	2-Chlorophenol	128.00	7.727	7.727	(0.958)	1621967	160	170
10	1,3-Dichlorobenzene	146.00	7.989	7.989	(0.991)	1862276	160	170
12	1,4-Dichlorobenzene	146.00	8.099	8.099	(1.004)	1934944	160	160
13	Benzyl alcohol	108.00	8.426	8.426	(1.045)	1228109	160	200
15	1,2-Dichlorobenzene	146.00	8.481	8.481	(1.051)	1801304	160	160
16	2-Methylphenol	108.00	8.689	8.689	(1.077)	1859340	160	180(Q)
18	bis(2-chloroisopropyl)ether	45.00	8.721	8.721	(1.081)	2279436	160	170
19	4-Methylphenol	108.00	9.027	9.027	(1.119)	1769491	160	170
21	N-Nitroso-di-n-propylamine	70.00	9.082	9.082	(1.126)	1443812	160	180
22	Hexachloroethane	117.00	9.126	9.126	(1.131)	816079	160	160
24	Nitrobenzene	77.00	9.333	9.333	(0.859)	2003056	160	180
25	Isophorone	82.00	9.901	9.901	(0.911)	4359357	160	160
26	2-Nitrophenol	139.00	10.043	10.043	(0.924)	1095438	160	200
27	2,4-Dimethylphenol	107.00	10.196	10.196	(0.939)	1924364	160	160
28	Benzoic acid	122.00	10.742	10.742	(0.989)	827023	160	220(Q)
29	bis(2-Chloroethoxy)methane	93.00	10.381	10.381	(0.956)	2413515	160	160
30	2,4-Dichlorophenol	162.00	10.611	10.611	(0.977)	1591107	160	170
31	1,2,4-Trichlorobenzene	180.00	10.786	10.786	(0.993)	1641684	160	160
33	Naphthalene	128.00	10.918	10.918	(1.005)	5363841	160	160
34	4-Chloroaniline	127.00	11.104	11.104	(1.022)	2229774	160	160
35	Hexachlorobutadiene	225.00	11.355	11.355	(1.045)	854668	160	160
36	4-Chloro-3-methylphenol	107.00	12.305	12.305	(1.133)	1658292	160	160
37	2-Methylnaphthalene	142.00	12.557	12.557	(1.156)	3698963	160	160
38	Hexachlorocyclopentadiene	237.00	13.114	13.114	(0.867)	745519	160	230
39	2,4,6-Trichlorophenol	196.00	13.334	13.334	(0.881)	1162984	160	190

pounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2,4,5-Trichlorophenol	196.00	13.444	13.444	(0.888)	1052016	160	170
2-Chloronaphthalene	162.00	13.729	13.729	(0.907)	3184566	160	160
43 2-Nitroaniline	65.00	14.080	14.080	(0.931)	1014639	160	180
Dimethylphthalate	163.00	14.627	14.627	(0.967)	3177036	160	150
2,6-Dinitrotoluene	165.00	14.780	14.780	(0.977)	771380	160	180
46 Acenaphthylene	152.00	14.747	14.747	(0.975)	5304264	160	160
47 3-Nitroaniline	138.00	15.120	15.120	(0.999)	937937	160	180
Acenaphthene	153.00	15.219	15.219	(1.006)	3099434	160	160
2,4-Dinitrophenol	184.00	15.394	15.394	(1.017)	390783	160	300 (Q)
51 4-Nitrophenol	109.00	15.624	15.624	(1.033)	358205	160	180
Dibenzofuran	168.00	15.613	15.613	(1.032)	4653568	160	160
2,4-Dinitrotoluene	165.00	15.745	15.745	(1.041)	1063034	160	180
54 Diethylphthalate	149.00	16.381	16.381	(1.083)	3034728	160	150
4-Chlorophenyl-phenylether	204.00	16.468	16.468	(1.088)	1419658	160	140
Fluorene	166.00	16.457	16.457	(1.088)	3521880	160	160
4-Nitroaniline	138.00	16.666	16.666	(1.101)	867894	160	180
58 4,6-Dinitro-2-methylphenol	198.00	16.798	16.798	(0.896)	565273	160	270
n-Nitrosodiphenylamine	169.00	16.820	16.820	(0.897)	1710758	160	150
1,2-Diphenylhydrazine	77.00	16.875	16.875	(0.900)	8234780	160	170
62 4-Bromophenyl-phenylether	248.00	17.654	17.654	(0.941)	753280	160	160
Hexachlorobenzene	283.70	18.016	18.016	(0.961)	962032	160	170
Pentachlorophenol	266.00	18.478	18.478	(0.985)	484830	160	210
66 Phenanthrene	178.00	18.809	18.809	(1.003)	5369737	160	180
67 Anthracene	178.00	18.919	18.919	(1.009)	4316230	160	160
Carbazole	167.00	19.335	19.335	(1.031)	4030549	160	170
Di-n-butylphthalate	149.00	20.353	20.353	(1.085)	5580400	160	180
70 Fluoranthene	202.00	21.754	21.754	(1.160)	4284140	160	180
Pyrene	202.00	22.303	22.303	(0.876)	4453511	160	160
Butylbenzylphthalate	149.00	24.002	24.002	(0.943)	2526104	160	160
74 3,3'-Dichlorobenzidine	252.00	25.360	25.360	(0.997)	1392213	160	170
Benzo[a]anthracene	228.00	25.394	25.394	(0.998)	3864041	160	160
Chrysene	228.00	25.526	25.526	(1.003)	3524959	160	160
78 bis(2-Ethylhexyl)phthalate	149.00	25.625	25.625	(1.007)	3397374	160	160
79 Di-n-octylphthalate	149.00	27.452	27.452	(0.917)	5502119	160	180
Benzo[b]fluoranthene	252.00	28.732	28.732	(0.959)	3654722	160	180 (M)
Benzo[k]fluoranthene	252.00	28.743	28.743	(0.960)	2439435	160	150 (M)
82 Benzo[a]pyrene	252.00	29.761	29.761	(0.994)	2541355	160	160
Indeno[1,2,3-cd]pyrene	276.00	34.602	34.602	(1.155)	2325552	160	160 (M)
Dibenz[a,h]anthracene	278.00	34.657	34.657	(1.157)	2003540	160	170
36 Benzo[g,h,i]perylene	276.00	35.904	35.904	(1.199)	1848595	160	170
1,4-Dichlorobenzene-d4	152.00	8.066	8.066	(1.000)	312656	40	
Naphthalene-d8	136.00	10.863	10.863	(1.000)	1319300	40	
18 Acenaphthene-d10	164.00	15.131	15.131	(1.000)	698125	40	
65 Phenanthrene-d10	188.00	18.753	18.753	(1.000)	856416	40	
Chrysene-d12	240.00	25.449	25.449	(1.000)	762716	40	
Perylene-d12	264.00	29.948	29.948	(1.000)	410629	40	
23 Nitrobenzene-d5	82.00	9.290	9.290	(0.855)	2022236	160	180
2-Fluorobiphenyl	172.00	13.510	13.510	(0.893)	3693437	160	170
Terphenyl-d14	244.00	22.720	22.720	(0.893)	3100007	160	170

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.476	7.476	(0.927)	2274340	160	180
3 2-Fluorophenol	112.00	5.834	5.834	(0.723)	1122829	160	210
61 2,4,6-Tribromophenol	329.70	17.116	17.116	(0.913)	407049	160	170
17 ortho-Cresol	108.00	8.689	8.689	(1.077)	1859340	160	170 (Q)
20 meta,para-Cresol	108.00	9.027	9.027	(1.119)	1769491	160	170
96 Benzidine	184.00	22.093	22.093	(0.868)	1368013	160	190

QC Flag Legend

Q - Qualifier signal failed the ratio test.
M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Data File ID: j135ic5.d
Lab Smp Id:
Analysis Type: SV
Client Type: ISTD
Operator: PC
Method File: /chem/j.i/j950515.b/jclpw.m
Misc Info: 950515 STD160

Calibration Date: 05/15/95
Calibration Time: 1443

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	310288	155144	620576	312656	0.76
12 Naphthalene-d8	1245807	622904	2491614	1319300	5.90
48 Acenaphthene-d10	707154	353577	1414308	698125	-1.28
65 Phenanthrene-d10	1039593	519796	2079186	856416	-17.62
76 Chrysene-d12	791981	395990	1583962	762716	-3.70
83 Perylene-d12	481272	240636	962544	410629	-14.68

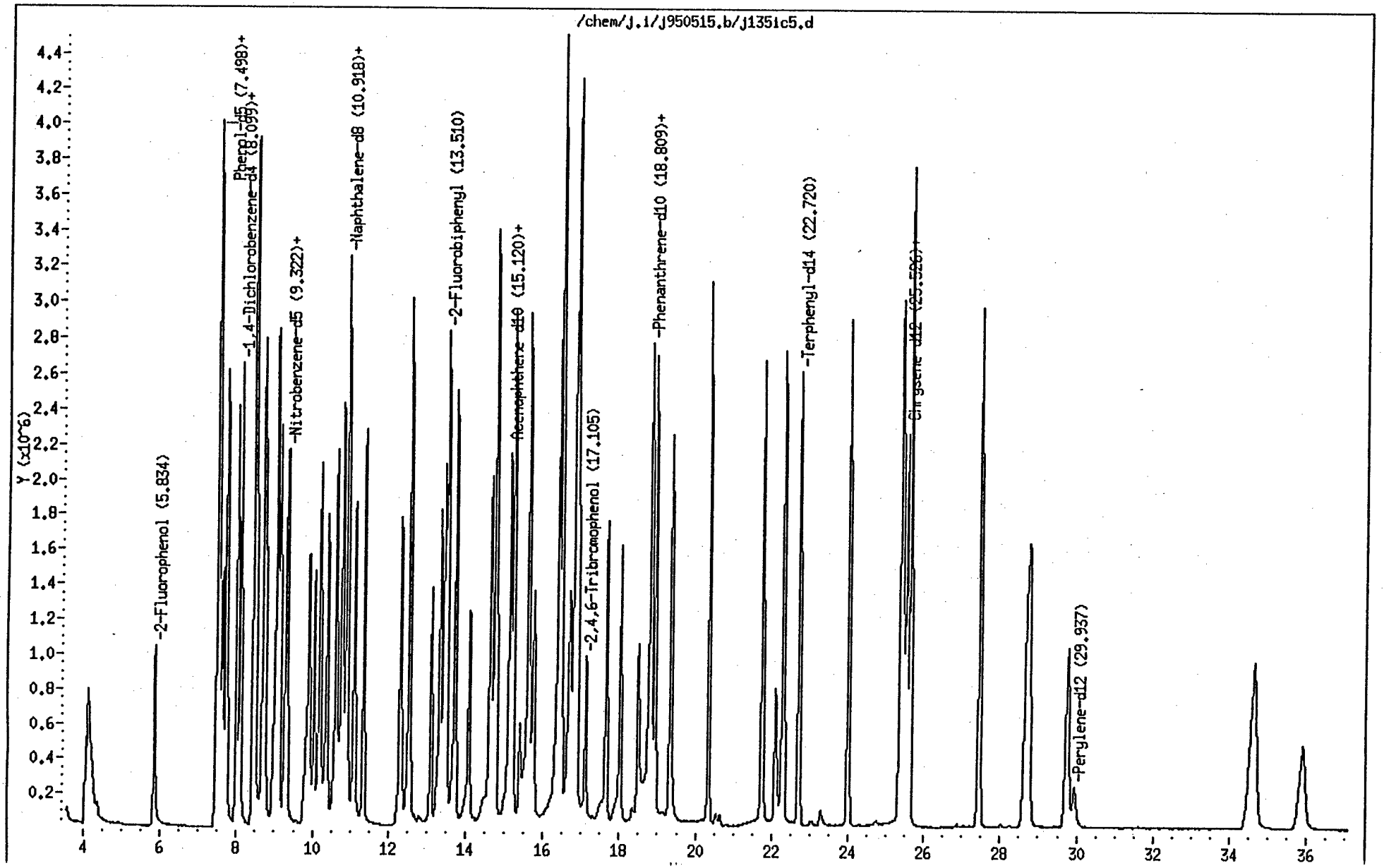
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.04	7.54	8.54	8.07	0.31
12 Naphthalene-d8	10.84	10.34	11.34	10.86	0.17
48 Acenaphthene-d10	15.11	14.61	15.61	15.13	0.12
65 Phenanthrene-d10	18.73	18.23	19.23	18.75	0.12
76 Chrysene-d12	25.41	24.91	25.91	25.45	0.14
83 Perylene-d12	29.92	29.42	30.42	29.95	0.10

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.1/j950515.b/j1351c5.d
Date : 15-MAY-1995 17:42
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.1

Operator: PC
Column diameter: 0.25



SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j138cc1.d
Analysis Type: SOIL
Lab Sample ID:
Quant Type: ISTD

Injection Date: 18-MAY-1995 09:08
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950518.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.334	0.423	0.200	26.6	25.0
	54 Diethylphthalate	1.142	1.218	0.010	6.7	40.0
	55 4-Chlorophenyl-phenylether	0.595	0.650	0.400	9.2	25.0
	56 Fluorene	1.284	1.360	0.900	5.9	25.0
	57 4-Nitroaniline	0.272	0.257	0.010	5.5	40.0
	58 4,6-Dinitro-2-methylphenol	0.098	0.080	0.010	18.6	40.0
	59 n-Nitrosodiphenylamine	0.520	0.564	0.010	8.6	40.0
	60 1,2-Diphenylhydrazine	2.274	2.296	0.010	1.0	40.0
	62 4-Bromophenyl-phenylether	0.222	0.239	0.100	7.8	25.0
	63 Hexachlorobenzene	0.260	0.266	0.100	2.2	25.0
	64 Pentachlorophenol	0.110	0.095	0.050	13.6	25.0
	66 Phenanthrene	1.420	1.333	0.700	6.1	25.0
	67 Anthracene	1.215	1.265	0.700	4.1	25.0
	68 Carbazole	1.103	0.945	0.010	14.3	40.0
	69 Di-n-butylphthalate	1.469	1.489	0.010	1.4	40.0
	70 Fluoranthene	1.137	1.134	0.600	0.3	25.0
	71 Pyrene	1.412	1.359	0.600	3.8	25.0
	73 Butylbenzylphthalate	0.809	0.778	0.010	3.9	40.0
	74 3,3'-Dichlorobenzidine	0.427	0.423	0.010	0.9	40.0
	75 Benzo[a]anthracene	1.240	1.196	0.800	3.6	25.0
	77 Chrysene	1.159	1.231	0.700	6.2	25.0
	78 bis(2-Ethylhexyl)phthalate	1.096	1.039	0.010	5.2	40.0
	79 Di-n-octylphthalate	3.026	2.948	0.010	2.6	40.0
	80 Benzo[b]fluoranthene	1.962	1.533	0.700	21.9	25.0
	81 Benzo[k]fluoranthene	1.618	2.016	0.700	24.6	25.0
	82 Benzo[a]pyrene	1.495	1.468	0.700	1.8	25.0
	84 Indeno[1,2,3-cd]pyrene	1.366	1.089	0.500	20.3	25.0
	85 Dibenz[a,h]anthracene	1.168	0.809	0.400	30.8	25.0
	86 Benzo[g,h,i]perylene	1.073	0.737	0.500	31.3	25.0
$	23 Nitrobenzene-d5	0.337	0.375	0.200	11.2	25.0
$	41 2-Fluorobiphenyl	1.267	1.302	0.700	2.7	25.0
$	72 Terphenyl-d14	0.978	0.949	0.500	2.9	25.0
$	4 Phenol-d5	1.567	1.421	0.800	9.3	25.0
$	3 2-Fluorophenol	0.683	0.815	0.600	19.3	25.0
$	61 2,4,6-Tribromophenol	0.110	0.122	0.010	11.6	40.0
	17 ortho-Cresol	1.360	1.215	0.700	10.7	25.0
	20 meta,para-Cresol	1.337	1.030	0.600	23.0	25.0
	96 Benzidine	0.372	0.303	0.010	18.4	40.0

Data File: /chem/j.i/j950518.b/j138cc1.d
Report Date: 30-May-1995 13:24

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j138cc1.d
Analysis Type: SOIL
Lab Sample ID:
Quant Type: ISTD

Injection Date: 18-MAY-1995 09:08
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950518.b/jclpw.m

COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2 Pyridine	1.255	1.304	0.010	3.9	40.0
5 Phenol	1.698	1.688	0.800	0.5	25.0
6 Aniline	1.795	1.571	0.010	12.5	40.0
7 bis(2-Chloroethyl)ether	1.443	1.646	0.700	14.1	25.0
9 2-Chlorophenol	1.189	1.239	0.800	4.1	25.0
10 1,3-Dichlorobenzene	1.435	1.416	0.600	1.3	25.0
12 1,4-Dichlorobenzene	1.578	1.679	0.500	6.4	25.0
13 Benzyl alcohol	0.804	0.536	0.010	33.3	40.0
15 1,2-Dichlorobenzene	1.446	1.406	0.400	2.7	25.0
16 2-Methylphenol	1.346	1.215	0.700	9.7	25.0
18 bis(2-chloroisopropyl)ether	1.757	1.726	0.010	1.7	40.0
19 4-Methylphenol	1.316	1.030	0.600	21.8	25.0
21 N-Nitroso-di-n-propylamine	1.048	0.932	0.500	11.0	25.0
22 Hexachloroethane	0.657	0.640	0.300	2.6	25.0
24 Nitrobenzene	0.337	0.378	0.200	12.0	25.0
25 Isophorone	0.811	0.842	0.400	3.9	25.0
26 2-Nitrophenol	0.168	0.205	0.100	21.9	25.0
27 2,4-Dimethylphenol	0.352	0.358	0.200	1.8	25.0
28 Benzoic acid	0.113	0.081	0.010	28.6	40.0
29 bis(2-Chloroethoxy)methane	0.444	0.436	0.300	2.0	25.0
30 2,4-Dichlorophenol	0.285	0.272	0.200	4.6	25.0
31 1,2,4-Trichlorobenzene	0.307	0.326	0.200	6.0	25.0
33 Naphthalene	1.011	1.034	0.700	2.3	25.0
34 4-Chloroaniline	0.418	0.424	0.010	1.6	40.0
35 Hexachlorobutadiene	0.162	0.176	0.010	9.0	40.0
36 4-Chloro-3-methylphenol	0.304	0.343	0.200	13.1	25.0
37 2-Methylnaphthalene	0.706	0.730	0.400	3.4	25.0
38 Hexachlorocyclopentadiene	0.184	0.044	0.010	76.3	100.0
39 2,4,6-Trichlorophenol	0.349	0.334	0.200	4.5	25.0
40 2,4,5-Trichlorophenol	0.355	0.355	0.200	0.1	25.0
42 2-Chloronaphthalene	1.100	1.144	0.800	4.0	25.0
43 2-Nitroaniline	0.323	0.374	0.010	15.5	40.0
44 Dimethylphthalate	1.246	1.456	0.010	16.9	40.0
45 2,6-Dinitrotoluene	0.247	0.329	0.200	33.2	25.0
46 Acenaphthylene	1.890	1.957	1.300	3.5	25.0
47 3-Nitroaniline	0.301	0.326	0.010	8.4	40.0
49 Acenaphthene	1.104	1.163	0.800	5.4	25.0
50 2,4-Dinitrophenol	0.074	0.041	0.010	44.1	100.0
51 4-Nitrophenol	0.116	0.108	0.010	6.7	40.0
52 Dibenzofuran	1.639	1.705	0.800	4.0	25.0

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Data file : /chem/j.i/j950518.b/j138cc1.d
Lab Smp Id:
Inj Date : 18-MAY-1995 09:08
Operator : PC Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950518 STD050
Comment :
Method : /chem/j.i/j950518.b/jclpw.m
Meth Date : 18-May-1995 10:35 patti Quant Type: ISTD
Data Date : 18-MAY-1995 09:08 Cal File: j138cc1.d
Vial bottle: 1 Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: Std.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Pyridine	79.00	4.115	4.115	(0.510)	471763	50	52
5 Phenol	94.00	7.485	7.485	(0.928)	610841	50	50
Aniline	93.00	7.496	7.496	(0.930)	568385	50	44
bis(2-Chloroethyl)ether	93.00	7.583	7.583	(0.940)	595568	50	57
9 2-Chlorophenol	128.00	7.714	7.714	(0.957)	448108	50	52
10 1,3-Dichlorobenzene	146.00	7.987	7.987	(0.991)	512226	50	49
1,4-Dichlorobenzene	146.00	8.096	8.096	(1.004)	607453	50	53
Benzyl alcohol	108.00	8.434	8.434	(1.046)	193995	50	33
15 1,2-Dichlorobenzene	146.00	8.467	8.467	(1.050)	508843	50	49
2-Methylphenol	108.00	8.686	8.686	(1.077)	439574	50	45
bis(2-chloroisopropyl)ether	45.00	8.708	8.708	(1.080)	624445	50	49
19 4-Methylphenol	108.00	9.024	9.024	(1.119)	372533	50	39
N-Nitroso-di-n-propylamine	70.00	9.002	9.002	(1.116)	337288	50	44
Hexachloroethane	117.00	9.122	9.122	(1.131)	231571	50	49
24 Nitrobenzene	77.00	9.319	9.319	(0.858)	514937	50	56
25 Isophorone	82.00	9.831	9.831	(0.906)	1149105	50	52
2-Nitrophenol	139.00	10.049	10.049	(0.926)	279223	50	61
2,4-Dimethylphenol	107.00	10.180	10.180	(0.938)	488393	50	51
28 Benzoic acid	122.00	10.682	10.682	(0.984)	109973	50	36(aM)
bis(2-Chloroethoxy)methane	93.00	10.366	10.366	(0.955)	594240	50	49
2,4-Dichlorophenol	162.00	10.627	10.627	(0.979)	370635	50	48
31 1,2,4-Trichlorobenzene	180.00	10.770	10.770	(0.992)	444180	50	53
Naphthalene	128.00	10.901	10.901	(1.004)	1409926	50	51
4-Chloroaniline	127.00	11.120	11.120	(1.024)	578863	50	51
Hexachlorobutadiene	225.00	11.349	11.349	(1.045)	240199	50	54
36 4-Chloro-3-methylphenol	107.00	12.341	12.341	(1.137)	468359	50	56
2-Methylnaphthalene	142.00	12.548	12.548	(1.156)	996065	50	52
Hexachlorocyclopentadiene	237.00	13.116	13.116	(0.867)	35370	50	12
39 2,4,6-Trichlorophenol	196.00	13.345	13.345	(0.882)	271198	50	48

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.487	13.487	(0.892)	288287	50	50
42 2-Chloronaphthalene	162.00	13.728	13.728	(0.908)	930517	50	52
43 2-Nitroaniline	65.00	14.100	14.100	(0.932)	303777	50	58
44 Dimethylphthalate	163.00	14.601	14.601	(0.965)	1183676	50	58
45 2,6-Dinitrotoluene	165.00	14.765	14.765	(0.976)	267877	50	66 (M)
46 Acenaphthylene	152.00	14.743	14.743	(0.975)	1591145	50	52
47 3-Nitroaniline	138.00	15.137	15.137	(1.001)	265104	50	54
49 Acenaphthene	153.00	15.203	15.203	(1.005)	945687	50	53
50 2,4-Dinitrophenol	184.00	15.738	15.738	(1.040)	33530	50	28 (aM)
51 4-Nitrophenol	109.00	15.825	15.825	(1.046)	87753	50	47 (aM)
52 Dibenzofuran	168.00	15.606	15.606	(1.032)	1386215	50	52
53 2,4-Dinitrotoluene	165.00	15.749	15.749	(1.041)	343960	50	63
54 Diethylphthalate	149.00	16.338	16.338	(1.080)	990547	50	53
55 4-Chlorophenyl-phenylether	204.00	16.459	16.459	(1.088)	528084	50	55
56 Fluorene	166.00	16.448	16.448	(1.087)	1105598	50	53
57 4-Nitroaniline	138.00	16.678	16.678	(1.103)	208924	50	47 (a)
58 4,6-Dinitro-2-methylphenol	198.00	16.787	16.787	(0.896)	93770	50	41 (aM)
59 n-Nitrosodiphenylamine	169.00	16.787	16.787	(0.896)	663445	50	54
60 1,2-Diphenylhydrazine	77.00	16.853	16.853	(0.899)	2700667	50	50
62 4-Bromophenyl-phenylether	248.00	17.651	17.651	(0.942)	281234	50	54
63 Hexachlorobenzene	283.70	18.022	18.022	(0.962)	312654	50	51
64 Pentachlorophenol	266.00	18.535	18.535	(0.989)	111664	50	43 (aM)
66 Phenanthrene	178.00	18.809	18.809	(1.004)	1568147	50	47
67 Anthracene	178.00	18.919	18.919	(1.009)	1488013	50	52
68 Carbazole	167.00	19.368	19.368	(1.033)	1111953	50	43
69 Di-n-butylphthalate	149.00	20.338	20.338	(1.085)	1750956	50	51
70 Fluoranthene	202.00	21.753	21.753	(1.161)	1333282	50	50
71 Pyrene	202.00	22.299	22.299	(0.877)	1391064	50	48
73 Butylbenzylphthalate	149.00	23.990	23.990	(0.943)	796847	50	48
74 3,3'-Dichlorobenzidine	252.00	25.385	25.385	(0.998)	433048	50	50 (M)
75 Benzo[a]anthracene	228.00	25.396	25.396	(0.998)	1224704	50	48
77 Chrysene	228.00	25.517	25.517	(1.003)	1260542	50	53
78 bis(2-Ethylhexyl)phthalate	149.00	25.617	25.617	(1.007)	1064176	50	47
79 Di-n-octylphthalate	149.00	27.426	27.426	(0.915)	1794564	50	49
80 Benzo[b]fluoranthene	252.00	28.691	28.691	(0.957)	933344	50	39
81 Benzo[k]fluoranthene	252.00	28.724	28.724	(0.958)	1226919	50	62 (M)
82 Benzo[a]pyrene	252.00	29.772	29.772	(0.993)	893479	50	49
84 Indeno[1,2,3-cd]pyrene	276.00	34.603	34.603	(1.154)	662776	50	40 (M)
85 Dibenz[a,h]anthracene	278.00	34.658	34.658	(1.156)	492238	50	35
86 Benzo[g,h,i]perylene	276.00	35.946	35.946	(1.199)	448606	50	34 (M)
11 1,4-Dichlorobenzene-d4	152.00	8.063	8.063	(1.000)	289441	40	
32 Naphthalene-d8	136.00	10.857	10.857	(1.000)	1091185	40	
48 Acenaphthene-d10	164.00	15.126	15.126	(1.000)	650439	40	
65 Phenanthrene-d10	188.00	18.743	18.743	(1.000)	940843	40	
76 Chrysene-d12	240.00	25.440	25.440	(1.000)	819112	40	
83 Perylene-d12	264.00	29.980	29.980	(1.000)	486922	40	(M)
23 Nitrobenzene-d5	82.00	9.275	9.275	(0.854)	511833	50	56
41 2-Fluorobiphenyl	172.00	13.498	13.498	(0.892)	1058264	50	51
72 Terphenyl-d14	244.00	22.714	22.714	(0.893)	972118	50	48

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
Phenol-d5	99.00	7.463	7.463	(0.926)	514217	50	45
2-Fluorophenol	112.00	5.854	5.854	(0.726)	294792	50	60 (M)
61 2,4,6-Tribromophenol	329.70	17.115	17.115	(0.913)	143862	50	56
ortho-Cresol	108.00	8.686	8.686	(1.077)	439574	50	45
meta,para-Cresol	108.00	9.024	9.024	(1.119)	372533	50	38
96 Benzidine	184.00	22.167	22.167	(0.871)	310501	50	41

Flag Legend

Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j138cc1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950518.b/jclpw.m
Misc Info: 950518 STD050

Calibration Date: 05/18/95
Calibration Time: 0908

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	289441	144720	578882	289441	0.00
32 Naphthalene-d8	1091185	545592	2182370	1091185	0.00
48 Acenaphthene-d10	650439	325220	1300878	650439	0.00
65 Phenanthrene-d10	940843	470422	1881686	940843	0.00
76 Chrysene-d12	819112	409556	1638224	819112	0.00
83 Perylene-d12	486922	243461	973844	486922	0.00

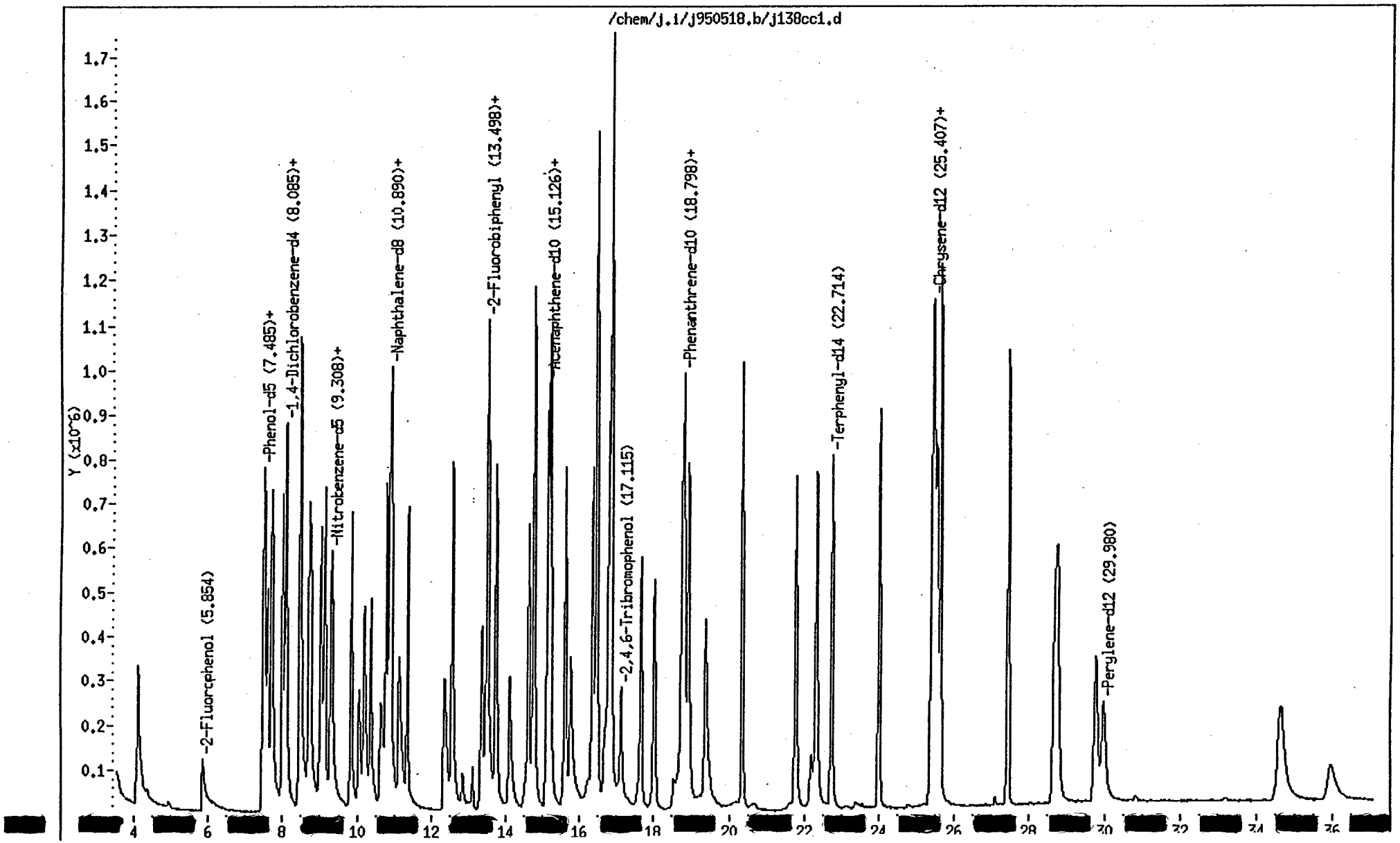
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	8.06	7.56	8.56	8.06	0.00
32 Naphthalene-d8	10.86	10.36	11.36	10.86	0.00
48 Acenaphthene-d10	15.13	14.63	15.63	15.13	0.00
65 Phenanthrene-d10	18.74	18.24	19.24	18.74	0.00
76 Chrysene-d12	25.44	24.94	25.94	25.44	0.00
83 Perylene-d12	29.98	29.48	30.48	29.98	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950518.b/j138cc1.d
Date : 18-MAY-1995 09:08
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



Data File: /chem/j.i/j950519.b/j139cc1.d
Report Date: 30-May-1995 13:26

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j139cc1.d
Analysis Type: SOIL
Lab Sample ID: SSTD050
Quant Type: ISTD

Injection Date: 19-MAY-1995 10:06
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950519.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	1.255	1.315	0.010	4.8	40.0
5	Phenol	1.698	1.745	0.800	2.8	25.0
6	Aniline	1.795	1.765	0.010	1.7	40.0
7	bis(2-Chloroethyl)ether	1.443	1.401	0.700	2.9	25.0
9	2-Chlorophenol	1.189	1.253	0.800	5.4	25.0
10	1,3-Dichlorobenzene	1.435	1.475	0.600	2.8	25.0
12	1,4-Dichlorobenzene	1.578	1.669	0.500	5.8	25.0
13	Benzyl alcohol	0.804	0.647	0.010	19.5	40.0
15	1,2-Dichlorobenzene	1.446	1.409	0.400	2.6	25.0
16	2-Methylphenol	1.346	1.256	0.700	6.6	25.0
18	bis(2-chloroisopropyl)ether	1.757	1.694	0.010	3.6	40.0
19	4-Methylphenol	1.316	1.143	0.600	13.1	25.0
21	N-Nitroso-di-n-propylamine	1.048	0.962	0.500	8.2	25.0
22	Hexachloroethane	0.657	0.671	0.300	2.1	25.0
24	Nitrobenzene	0.337	0.376	0.200	11.7	25.0
25	Isophorone	0.811	0.832	0.400	2.6	25.0
26	2-Nitrophenol	0.168	0.205	0.100	22.2	25.0
27	2,4-Dimethylphenol	0.352	0.370	0.200	5.1	25.0
28	Benzoic acid	0.113	0.109	0.010	3.2	40.0
29	bis(2-Chloroethoxy)methane	0.444	0.441	0.300	0.7	25.0
30	2,4-Dichlorophenol	0.285	0.286	0.200	0.3	25.0
31	1,2,4-Trichlorobenzene	0.307	0.327	0.200	6.4	25.0
33	Naphthalene	1.011	1.039	0.700	2.8	25.0
34	4-Chloroaniline	0.418	0.432	0.010	3.5	40.0
35	Hexachlorobutadiene	0.162	0.177	0.010	9.5	40.0
36	4-Chloro-3-methylphenol	0.304	0.320	0.200	5.5	25.0
37	2-Methylnaphthalene	0.706	0.729	0.400	3.2	25.0
38	Hexachlorocyclopentadiene	0.184	0.161	0.010	12.5	40.0
39	2,4,6-Trichlorophenol	0.349	0.346	0.200	0.8	25.0
40	2,4,5-Trichlorophenol	0.355	0.360	0.200	1.3	25.0
42	2-Chloronaphthalene	1.100	1.183	0.800	7.6	25.0
43	2-Nitroaniline	0.323	0.394	0.010	21.9	40.0
44	Dimethylphthalate	1.246	1.461	0.010	17.3	40.0
45	2,6-Dinitrotoluene	0.247	0.338	0.200	36.6	25.0
46	Acenaphthylene	1.890	1.962	1.300	3.8	25.0
47	3-Nitroaniline	0.301	0.352	0.010	16.8	40.0
49	Acenaphthene	1.104	1.154	0.800	4.6	25.0
50	2,4-Dinitrophenol	0.074	0.038	0.010	49.1	40.0
51	4-Nitrophenol	0.116	0.144	0.010	24.5	40.0
52	Dibenzofuran	1.639	1.695	0.800	3.4	25.0

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j139cc1.d
Analysis Type: SOIL
Lab Sample ID: SSTD050
Quant Type: ISTD

Injection Date: 19-MAY-1995 10:06
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950519.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.334	0.462	0.200	38.2	25.0
	54 Diethylphthalate	1.142	1.274	0.010	11.6	40.0
	55 4-Chlorophenyl-phenylether	0.595	0.650	0.400	9.4	25.0
	56 Fluorene	1.284	1.362	0.900	6.1	25.0
	57 4-Nitroaniline	0.272	0.289	0.010	6.2	40.0
	58 4,6-Dinitro-2-methylphenol	0.098	0.111	0.010	13.2	40.0
	59 n-Nitrosodiphenylamine	0.520	0.543	0.010	4.6	40.0
	60 1,2-Diphenylhydrazine	2.274	2.252	0.010	1.0	40.0
	62 4-Bromophenyl-phenylether	0.222	0.232	0.100	4.6	25.0
	63 Hexachlorobenzene	0.260	0.260	0.100	0.0	25.0
	64 Pentachlorophenol	0.110	0.116	0.050	5.9	25.0
	66 Phenanthrene	1.420	1.398	0.700	1.6	25.0
	67 Anthracene	1.215	1.187	0.700	2.4	25.0
	68 Carbazole	1.103	0.953	0.010	13.6	40.0
	69 Di-n-butylphthalate	1.469	1.430	0.010	2.6	40.0
	70 Fluoranthene	1.137	1.115	0.600	2.0	25.0
	71 Pyrene	1.412	1.427	0.600	1.0	25.0
	73 Butylbenzylphthalate	0.809	0.816	0.010	0.8	40.0
	74 3,3'-Dichlorobenzidine	0.427	0.439	0.010	2.9	40.0
	75 Benzo[a]anthracene	1.240	1.268	0.800	2.3	25.0
	77 Chrysene	1.159	1.198	0.700	3.4	25.0
	78 bis(2-Ethylhexyl)phthalate	1.096	1.126	0.010	2.7	40.0
	79 Di-n-octylphthalate	3.026	2.980	0.010	1.5	40.0
	80 Benzo[b]fluoranthene	1.962	1.830	0.700	6.7	25.0
	81 Benzo[k]fluoranthene	1.618	1.902	0.700	17.6	25.0
	82 Benzo[a]pyrene	1.495	1.578	0.700	5.5	25.0
	84 Indeno[1,2,3-cd]pyrene	1.366	1.407	0.500	3.0	25.0
	85 Dibenz[a,h]anthracene	1.168	1.194	0.400	2.2	25.0
	86 Benzo[g,h,i]perylene	1.073	1.091	0.500	1.6	25.0
$	23 Nitrobenzene-d5	0.337	0.384	0.200	13.8	25.0
$	41 2-Fluorobiphenyl	1.267	1.329	0.700	4.9	25.0
$	72 Terphenyl-d14	0.978	1.005	0.500	2.7	25.0
$	4 Phenol-d5	1.567	1.478	0.800	5.6	25.0
$	3 2-Fluorophenol	0.683	0.904	0.600	32.3	25.0
$	61 2,4,6-Tribromophenol	0.110	0.115	0.010	5.1	40.0
	17 ortho-Cresol	1.360	1.256	0.700	7.6	25.0
	20 meta,para-Cresol	1.337	1.143	0.600	14.5	25.0
	96 Benzidine	0.372	0.332	0.010	10.6	40.0
$	8 2-Chlorophenol-d4	1.114	1.275	0.800	14.4	25.0
$	14 1,2-Dichlorobenzene-d4	0.407	0.459	0.400	12.9	25.0

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Data file : /chem/j.i/j950519.b/j139cc1.d
Lab Smp Id:
Inj Date : 19-MAY-1995 10:06
Operator : PC
Smp Info : STD-8270W/1X
Misc Info : 950519 STD050
Comment :
Method : /chem/j.i/j950519.b/jclpw.m
Meth Date : 19-May-1995 14:54 patti
Cal Date : 19-MAY-1995 10:06
Als bottle: 1
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: j.i

Quant Type: ISTD
Cal File: j139cc1.d
Continuing Calibration Sample

Compound Sublist: Std.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2 Pyridine	79.00	4.017	4.017	(0.506)	537466	50	52
5 Phenol	94.00	7.367	7.367	(0.927)	713052	50	51
6 Aniline	93.00	7.389	7.389	(0.930)	721459	50	49
7 bis(2-Chloroethyl)ether	93.00	7.487	7.487	(0.942)	572630	50	48
9 2-Chlorophenol	128.00	7.607	7.607	(0.957)	511994	50	53
10 1,3-Dichlorobenzene	146.00	7.880	7.880	(0.992)	602883	50	51
12 1,4-Dichlorobenzene	146.00	7.978	7.978	(1.004)	682147	50	53
13 Benzyl alcohol	108.00	8.295	8.295	(1.044)	264397	50	40(H)
15 1,2-Dichlorobenzene	146.00	8.360	8.360	(1.052)	575752	50	49
16 2-Methylphenol	108.00	8.568	8.568	(1.078)	513450	50	47
18 bis(2-chloroisopropyl)ether	45.00	8.600	8.600	(1.082)	692090	50	48
19 4-Methylphenol	108.00	8.884	8.884	(1.118)	467047	50	43
21 N-Nitroso-di-n-propylamine	70.00	8.895	8.895	(1.119)	393200	50	46
22 Hexachloroethane	117.00	9.004	9.004	(1.133)	274234	50	51
24 Nitrobenzene	77.00	9.201	9.201	(0.857)	567457	50	56
25 Isophorone	82.00	9.724	9.724	(0.905)	1254405	50	51
26 2-Nitrophenol	139.00	9.920	9.920	(0.924)	309434	50	61
27 2,4-Dimethylphenol	107.00	10.051	10.051	(0.936)	557368	50	52
28 Benzoic acid	122.00	10.443	10.443	(0.973)	164806	50	48(a)
29 bis(2-Chloroethoxy)methane	93.00	10.247	10.247	(0.954)	665431	50	50
30 2,4-Dichlorophenol	162.00	10.487	10.487	(0.977)	430588	50	50
31 1,2,4-Trichlorobenzene	180.00	10.651	10.651	(0.992)	492985	50	53
33 Naphthalene	128.00	10.782	10.782	(1.004)	1565789	50	51
34 4-Chloroaniline	127.00	10.979	10.979	(1.022)	651967	50	52
35 Hexachlorobutadiene	225.00	11.230	11.230	(1.046)	266513	50	55
36 4-Chloro-3-methylphenol	107.00	12.188	12.188	(1.135)	482948	50	53
37 2-Methylnaphthalene	142.00	12.428	12.428	(1.157)	1098702	50	52
38 Hexachlorocyclopentadiene	237.00	12.984	12.984	(0.866)	133904	50	44
39 2,4,6-Trichlorophenol	196.00	13.202	13.202	(0.881)	288528	50	50

mpounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
2,4,5-Trichlorophenol	196.00	13.323	13.323	(0.889)	299471	50	51
2-Chloronaphthalene	162.00	13.597	13.597	(0.907)	985419	50	54
43 2-Nitroaniline	65.00	13.946	13.946	(0.930)	328427	50	61
Dimethylphthalate	163.00	14.480	14.480	(0.966)	1216786	50	59
2,6-Dinitrotoluene	165.00	14.633	14.633	(0.976)	281452	50	68
46 Acenaphthylene	152.00	14.622	14.622	(0.975)	1634270	50	52
3-Nitroaniline	138.00	14.983	14.983	(0.999)	292737	50	58
Acenaphthene	153.00	15.070	15.070	(1.005)	961343	50	52
50 2,4-Dinitrophenol	184.00	15.310	15.310	(1.021)	31238	50	25(a)
51 4-Nitrophenol	109.00	15.529	15.529	(1.036)	119982	50	62(M)
Dibenzofuran	168.00	15.474	15.474	(1.032)	1411721	50	52
2,4-Dinitrotoluene	165.00	15.606	15.606	(1.041)	384758	50	69(M)
54 Diethylphthalate	149.00	16.228	16.228	(1.082)	1061248	50	56
4-Chlorophenyl-phenylether	204.00	16.337	16.337	(1.090)	541671	50	55
Fluorene	166.00	16.315	16.315	(1.088)	1133905	50	53
57 4-Nitroaniline	138.00	16.501	16.501	(1.101)	240411	50	53
4,6-Dinitro-2-methylphenol	198.00	16.633	16.633	(0.894)	136444	50	56
n-Nitrosodiphenylamine	169.00	16.655	16.655	(0.895)	669033	50	52
1,2-Diphenylhydrazine	77.00	16.720	16.720	(0.898)	2772241	50	50
62 4-Bromophenyl-phenylether	248.00	17.529	17.529	(0.942)	285667	50	52
Hexachlorobenzene	283.70	17.889	17.889	(0.961)	320296	50	50
Pentachlorophenol	266.00	18.358	18.358	(0.986)	143351	50	53(M)
66 Phenanthrene	178.00	18.666	18.666	(1.003)	1721071	50	49
Anthracene	178.00	18.787	18.787	(1.009)	1461215	50	49
Carbazole	167.00	19.202	19.202	(1.032)	1173095	50	43
69 Di-n-butylphthalate	149.00	20.215	20.215	(1.086)	1760587	50	49
70 Fluoranthene	202.00	21.608	21.608	(1.161)	1372376	50	49
Pyrene	202.00	22.154	22.154	(0.876)	1404197	50	50
Butylbenzylphthalate	149.00	23.855	23.855	(0.943)	802846	50	50
74 3,3'-Dichlorobenzidine	252.00	25.196	25.196	(0.997)	432280	50	51(M)
Benzo[a]anthracene	228.00	25.229	25.229	(0.998)	1248148	50	51(H)
Chrysene	228.00	25.350	25.350	(1.003)	1179389	50	52
78 bis(2-Ethylhexyl)phthalate	149.00	25.471	25.471	(1.007)	1107755	50	51
Di-n-octylphthalate	149.00	27.269	27.269	(0.917)	1825338	50	49
Benzo[b]fluoranthene	252.00	28.512	28.512	(0.959)	1120925	50	47(M)
81 Benzo[k]fluoranthene	252.00	28.534	28.534	(0.959)	1165141	50	59(M)
82 Benzo[a]pyrene	252.00	29.548	29.548	(0.993)	966736	50	53
Indeno[1,2,3-cd]pyrene	276.00	34.261	34.261	(1.152)	861759	50	51(M)
Dibenz[a,h]anthracene	278.00	34.305	34.305	(1.153)	731323	50	51
86 Benzo[g,h,i]perylene	276.00	35.539	35.539	(1.195)	668065	50	51
1,4-Dichlorobenzene-d4	152.00	7.945	7.945	(1.000)	326931	40	
Naphthalene-d8	136.00	10.738	10.738	(1.000)	1205967	40	
48 Acenaphthene-d10	164.00	14.994	14.994	(1.000)	666246	40	
Phenanthrene-d10	188.00	18.611	18.611	(1.000)	984904	40	
Chrysene-d12	240.00	25.284	25.284	(1.000)	787352	40	
Perylene-d12	264.00	29.745	29.745	(1.000)	490059	40	
23 Nitrobenzene-d5	82.00	9.157	9.157	(0.853)	578949	50	57
2-Fluorobiphenyl	172.00	13.378	13.378	(0.892)	1106573	50	52
Terphenyl-d14	244.00	22.580	22.580	(0.893)	989061	50	51

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
4 Phenol-d5	99.00	7.345	7.345	(0.924)	604114	50	47
3 2-Fluorophenol	112.00	5.735	5.735	(0.722)	369237	50	66(M)
61 2,4,6-Tribromophenol	329.70	16.972	16.972	(0.912)	141867	50	52
17 ortho-Cresol	108.00	8.568	8.568	(1.078)	513450	50	46
20 meta,para-Cresol	108.00	8.884	8.884	(1.118)	467047	50	43
96 Benzidine	184.00	21.979	21.979	(0.869)	327097	50	45

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
M - Compound response manually integrated.
H - Operator selected an alternate compound hit.

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INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Calibration Date: 05/19/95
Lab File ID: j139cc1.d
Calibration Time: 1006
Lab Smp Id:
Analysis Type: SV
Level: LOW
Quant Type: ISTD
Sample Type: WATER
Operator: PC
Method File: /chem/j.i/j950519.b/jclpw.m
Misc Info: 950519 STD050

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	326931	163466	653862	326931	0.00
2 Naphthalene-d8	1205967	602984	2411934	1205967	0.00
48 Acenaphthene-d10	666246	333123	1332492	666246	0.00
5 Phenanthrene-d10	984904	492452	1969808	984904	0.00
6 Chrysene-d12	787352	393676	1574704	787352	0.00
83 Perylene-d12	490059	245030	980118	490059	0.00

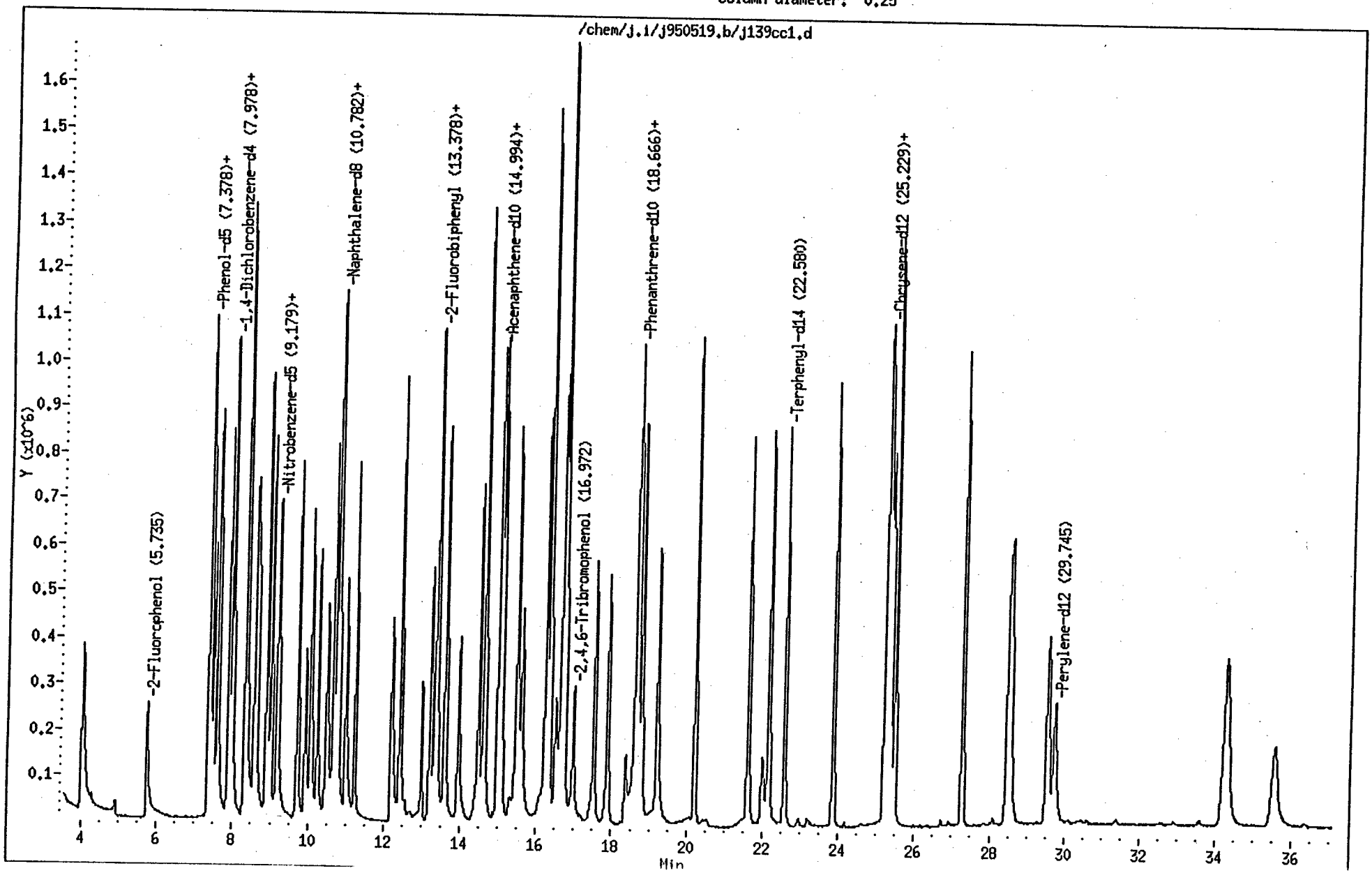
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
1 1,4-Dichlorobenzene-	7.95	7.45	8.45	7.95	0.00
2 Naphthalene-d8	10.74	10.24	11.24	10.74	0.00
48 Acenaphthene-d10	14.99	14.49	15.49	14.99	0.00
5 Phenanthrene-d10	18.61	18.11	19.11	18.61	0.00
6 Chrysene-d12	25.28	24.78	25.78	25.28	0.00
83 Perylene-d12	29.75	29.25	30.25	29.75	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950519.b/j139cc1.d
Date : 19-MAY-1995 10:06
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



Data File: /chem/j.i/j950522.b/j142cc1.d
Report Date: 22-May-1995 14:07

SPL Houston Labs

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j142cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 22-MAY-1995 10:47
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950522.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
2	Pyridine	1.255	1.025	0.010	18.3	40.0
5	Phenol	1.698	1.402	0.800	17.4	25.0
6	Aniline	1.795	1.631	0.010	9.1	40.0
7	bis(2-Chloroethyl)ether	1.443	1.419	0.700	1.7	25.0
9	2-Chlorophenol	1.189	1.283	0.800	7.9	25.0
10	1,3-Dichlorobenzene	1.435	1.481	0.600	3.3	25.0
12	1,4-Dichlorobenzene	1.578	1.669	0.500	5.7	25.0
13	Benzyl alcohol	0.804	0.636	0.010	20.9	40.0
15	1,2-Dichlorobenzene	1.446	1.459	0.400	0.9	25.0
16	2-Methylphenol	1.346	1.115	0.700	17.2	25.0
18	bis(2-chloroisopropyl)ether	1.757	1.798	0.010	2.3	40.0
19	4-Methylphenol	1.316	1.099	0.600	16.5	25.0
21	N-Nitroso-di-n-propylamine	1.048	0.962	0.500	8.2	25.0
22	Hexachloroethane	0.657	0.665	0.300	1.2	25.0
24	Nitrobenzene	0.337	0.365	0.200	8.2	25.0
25	Isophorone	0.811	0.792	0.400	2.4	25.0
26	2-Nitrophenol	0.168	0.202	0.100	20.2	25.0
27	2,4-Dimethylphenol	0.352	0.351	0.200	0.1	25.0
28	Benzoic acid	0.113	0.023	0.010	79.6	100.0
29	bis(2-Chloroethoxy)methane	0.444	0.438	0.300	1.5	25.0
30	2,4-Dichlorophenol	0.285	0.261	0.200	8.5	25.0
31	1,2,4-Trichlorobenzene	0.307	0.324	0.200	5.4	25.0
33	Naphthalene	1.011	1.040	0.700	3.0	25.0
34	4-Chloroaniline	0.418	0.409	0.010	2.2	40.0
35	Hexachlorobutadiene	0.162	0.171	0.010	6.2	40.0
36	4-Chloro-3-methylphenol	0.304	0.305	0.200	0.5	25.0
37	2-Methylnaphthalene	0.706	0.704	0.400	0.4	25.0
38	Hexachlorocyclopentadiene	0.184	0.150	0.010	18.4	100.0
39	2,4,6-Trichlorophenol	0.349	0.330	0.200	5.4	25.0
40	2,4,5-Trichlorophenol	0.355	0.399	0.200	12.4	25.0
42	2-Chloronaphthalene	1.100	1.175	0.800	6.9	25.0
43	2-Nitroaniline	0.323	0.366	0.010	13.2	40.0
44	Dimethylphthalate	1.246	1.429	0.010	14.7	40.0
45	2,6-Dinitrotoluene	0.247	0.329	0.200	33.0	25.0
46	Acenaphthylene	1.890	1.933	1.300	2.3	25.0
47	3-Nitroaniline	0.301	0.309	0.010	2.8	40.0
49	Acenaphthene	1.104	1.159	0.800	5.0	25.0
50	2,4-Dinitrophenol	0.074	0.074	0.010	0.4	100.0
51	4-Nitrophenol	0.116	0.124	0.010	7.1	40.0
52	Dibenzofuran	1.639	1.683	0.800	2.6	25.0

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CONTINUING CALIBRATION COMPOUNDS

Instrument ID: j.i
Lab File ID: j142cc1.d
Analysis Type: WATER
Lab Sample ID:
Quant Type: ISTD

Injection Date: 22-MAY-1995 10:47
Init. Calibration Date(s): 05/15/95 05/15/95
Init. Calibration Times: 15:27 17:42
Method File: /chem/j.i/j950522.b/jclpw.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	53 2,4-Dinitrotoluene	0.334	0.425	0.200	27.2	25.0
	54 Diethylphthalate	1.142	1.408	0.010	23.3	40.0
	55 4-Chlorophenyl-phenylether	0.595	0.640	0.400	7.6	25.0
	56 Fluorene	1.284	1.339	0.900	4.3	25.0
	57 4-Nitroaniline	0.272	0.227	0.010	16.7	40.0
	58 4,6-Dinitro-2-methylphenol	0.098	0.106	0.010	8.2	40.0
	59 n-Nitrosodiphenylamine	0.520	0.562	0.010	8.2	40.0
	60 1,2-Diphenylhydrazine	2.274	2.378	0.010	4.6	40.0
	62 4-Bromophenyl-phenylether	0.222	0.240	0.100	8.1	25.0
	63 Hexachlorobenzene	0.260	0.268	0.100	3.2	25.0
	64 Pentachlorophenol	0.110	0.113	0.050	3.2	25.0
	66 Phenanthrene	1.420	1.363	0.700	4.0	25.0
	67 Anthracene	1.215	1.233	0.700	1.5	25.0
	68 Carbazole	1.103	1.009	0.010	8.5	40.0
	69 Di-n-butylphthalate	1.469	1.450	0.010	1.3	40.0
	70 Fluoranthene	1.137	1.150	0.600	1.2	25.0
	71 Pyrene	1.412	1.390	0.600	1.6	25.0
	73 Butylbenzylphthalate	0.809	0.789	0.010	2.5	40.0
	74 3,3'-Dichlorobenzidine	0.427	0.389	0.010	8.9	40.0
	75 Benzo[a]anthracene	1.240	1.263	0.800	1.8	25.0
	77 Chrysene	1.159	1.190	0.700	2.7	25.0
	78 bis(2-Ethylhexyl)phthalate	1.096	1.000	0.010	8.8	40.0
	79 Di-n-octylphthalate	3.026	2.923	0.010	3.4	40.0
	80 Benzo[b]fluoranthene	1.962	1.801	0.700	8.2	25.0
	81 Benzo[k]fluoranthene	1.618	2.007	0.700	24.0	25.0
	82 Benzo[a]pyrene	1.495	1.611	0.700	7.8	25.0
	84 Indeno[1,2,3-cd]pyrene	1.366	1.311	0.500	4.0	25.0
	85 Dibenz[a,h]anthracene	1.168	1.078	0.400	7.7	25.0
	86 Benzo[g,h,i]perylene	1.073	0.953	0.500	11.2	25.0
$	23 Nitrobenzene-d5	0.337	0.380	0.200	12.7	25.0
$	41 2-Fluorobiphenyl	1.267	1.314	0.700	3.7	25.0
$	72 Terphenyl-d14	0.978	0.967	0.500	1.2	25.0
$	4 Phenol-d5	1.567	1.457	0.800	7.0	25.0
$	3 2-Fluorophenol	0.683	0.803	0.600	17.6	25.0
$	61 2,4,6-Tribromophenol	0.110	0.122	0.010	11.4	40.0
	17 ortho-Cresol	1.360	1.115	0.700	18.0	25.0
	20 meta,para-Cresol	1.337	1.099	0.600	17.8	25.0
	96 Benzidine	0.372	0.270	0.010	27.3	40.0

Data File: /chem/j.i/j950522.b/j142cc1.d
Report Date: 22-May-1995 14:07

SPL Houston Labs

Data file : /chem/j.i/j950522.b/j142cc1.d
Lab Smp Id:
Inj Date : 22-MAY-1995 10:47
Operator : PC
Inst ID: j.i
Smp Info : STD-8270W/1X
Misc Info : 950522 STD050
Comment :
Method : /chem/j.i/j950522.b/jclpw.m
Meth Date : 22-May-1995 14:07 patti
Quant Type: ISTD
Cal Date : 22-MAY-1995 10:47
Cal File: j142cc1.d
Dil bottle: 1
Continuing Calibration Sample
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: Std.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	Pyridine	79.00	4.017	4.017	(0.506)	431421	50	41
5	Phenol	94.00	7.357	7.357	(0.927)	590215	50	41
6	Aniline	93.00	7.379	7.379	(0.930)	686984	50	45
	bis(2-Chloroethyl)ether	93.00	7.466	7.466	(0.941)	597641	50	49
	2-Chlorophenol	128.00	7.587	7.587	(0.956)	540244	50	54
10	1,3-Dichlorobenzene	146.00	7.859	7.859	(0.990)	623824	50	52
	1,4-Dichlorobenzene	146.00	7.969	7.969	(1.004)	702579	50	53
	Benzyl alcohol	108.00	8.296	8.296	(1.045)	267679	50	40
15	1,2-Dichlorobenzene	146.00	8.351	8.351	(1.052)	614526	50	50
16	2-Methylphenol	108.00	8.558	8.558	(1.078)	469331	50	41
	bis(2-chloroisopropyl)ether	45.00	8.580	8.580	(1.081)	756964	50	51(M)
	4-Methylphenol	108.00	8.875	8.875	(1.118)	462904	50	42
21	N-Nitroso-di-n-propylamine	70.00	8.886	8.886	(1.120)	405170	50	46
	Hexachloroethane	117.00	8.995	8.995	(1.133)	280059	50	50
	Nitrobenzene	77.00	9.181	9.181	(0.857)	577786	50	54
25	Isophorone	82.00	9.704	9.704	(0.905)	1254677	50	49
	2-Nitrophenol	139.00	9.911	9.911	(0.925)	319932	50	60
	2,4-Dimethylphenol	107.00	10.042	10.042	(0.937)	556818	50	50
28	Benzoic acid	122.00	10.249	10.249	(0.956)	36464	50	10(aM)
29	bis(2-Chloroethoxy)methane	93.00	10.227	10.227	(0.954)	693582	50	49
	2,4-Dichlorophenol	162.00	10.478	10.478	(0.978)	413323	50	46
	1,2,4-Trichlorobenzene	180.00	10.642	10.642	(0.993)	513334	50	53
33	Naphthalene	128.00	10.762	10.762	(1.004)	1649126	50	51
	4-Chloroaniline	127.00	10.981	10.981	(1.024)	647643	50	49
	Hexachlorobutadiene	225.00	11.211	11.211	(1.046)	271753	50	53
36	4-Chloro-3-methylphenol	107.00	12.180	12.180	(1.136)	483541	50	50
	2-Methylnaphthalene	142.00	12.410	12.410	(1.158)	1115296	50	50
	Hexachlorocyclopentadiene	237.00	12.966	12.966	(0.866)	127298	50	41
39	2,4,6-Trichlorophenol	196.00	13.195	13.195	(0.881)	280559	50	47

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
40 2,4,5-Trichlorophenol	196.00	13.316	13.316	(0.889)	338777	50	56
42 2-Chloronaphthalene	162.00	13.579	13.579	(0.907)	998176	50	53
43 2-Nitroaniline	65.00	13.939	13.939	(0.931)	310921	50	56
44 Dimethylphthalate	163.00	14.463	14.463	(0.966)	1213632	50	57
45 2,6-Dinitrotoluene	165.00	14.616	14.616	(0.976)	279526	50	66
46 Acenaphthylene	152.00	14.594	14.594	(0.974)	1642082	50	51
47 3-Nitroaniline	138.00	14.976	14.976	(1.000)	262562	50	51
49 Acenaphthene	153.00	15.053	15.053	(1.005)	984624	50	52
50 2,4-Dinitrophenol	184.00	15.413	15.413	(1.029)	62875	50	50 (M)
51 4-Nitrophenol	109.00	15.566	15.566	(1.039)	105290	50	54 (M)
52 Dibenzofuran	168.00	15.446	15.446	(1.031)	1428985	50	51
53 2,4-Dinitrotoluene	165.00	15.599	15.599	(1.042)	361075	50	64
54 Diethylphthalate	149.00	16.199	16.199	(1.082)	1195785	50	62
55 4-Chlorophenyl-phenylether	204.00	16.320	16.320	(1.090)	543422	50	54
56 Fluorene	166.00	16.298	16.298	(1.088)	1137349	50	52
57 4-Nitroaniline	138.00	16.517	16.517	(1.103)	192373	50	42 (a)
58 4,6-Dinitro-2-methylphenol	198.00	16.626	16.626	(0.894)	125301	50	54
59 n-Nitrosodiphenylamine	169.00	16.637	16.637	(0.895)	665257	50	54
60 1,2-Diphenylhydrazine	77.00	16.703	16.703	(0.898)	2813034	50	52
62 4-Bromophenyl-phenylether	248.00	17.501	17.501	(0.941)	283653	50	54
63 Hexachlorobenzene	283.70	17.862	17.862	(0.961)	317460	50	52
64 Pentachlorophenol	266.00	18.374	18.374	(0.988)	134193	50	52 (M)
66 Phenanthrene	178.00	18.649	18.649	(1.003)	1611781	50	48
67 Anthracene	178.00	18.759	18.759	(1.009)	1458810	50	51
68 Carbazole	167.00	19.197	19.197	(1.032)	1193050	50	46
69 Di-n-butylphthalate	149.00	20.189	20.189	(1.086)	1714762	50	49
70 Fluoranthene	202.00	21.593	21.593	(1.161)	1360683	50	50
71 Pyrene	202.00	22.128	22.128	(0.876)	1413596	50	49
73 Butylbenzylphthalate	149.00	23.841	23.841	(0.944)	802475	50	49
74 3,3'-Dichlorobenzidine	252.00	25.203	25.203	(0.998)	395528	50	46 (M)
75 Benzo[a]anthracene	228.00	25.203	25.203	(0.998)	1284209	50	51
77 Chrysene	228.00	25.324	25.324	(1.003)	1210786	50	51
78 bis(2-Ethylhexyl)phthalate	149.00	25.446	25.446	(1.008)	1017414	50	46
79 Di-n-octylphthalate	149.00	27.243	27.243	(0.917)	1750252	50	48
80 Benzo[b]fluoranthene	252.00	28.475	28.475	(0.959)	1078283	50	46 (M)
81 Benzo[k]fluoranthene	252.00	28.508	28.508	(0.960)	1201371	50	62 (M)
82 Benzo[a]pyrene	252.00	29.511	29.511	(0.994)	964745	50	54
84 Indeno[1,2,3-cd]pyrene	276.00	34.177	34.177	(1.151)	784971	50	48
85 Dibenz[a,h]anthracene	278.00	34.242	34.242	(1.153)	645611	50	46
86 Benzo[g,h,i]perylene	276.00	35.475	35.475	(1.195)	570684	50	44
11 1,4-Dichlorobenzene-d4	152.00	7.936	7.936	(1.000)	336862	40	
32 Naphthalene-d8	136.00	10.719	10.719	(1.000)	1268035	40	
48 Acenaphthene-d10	164.00	14.976	14.976	(1.000)	679432	40	
65 Phenanthrene-d10	188.00	18.594	18.594	(1.000)	946155	40	
76 Chrysene-d12	240.00	25.247	25.247	(1.000)	813677	40	
83 Perylene-d12	264.00	29.698	29.698	(1.000)	478967	40	
23 Nitrobenzene-d5	82.00	9.148	9.148	(0.953)	602820	50	56
41 2-Fluorobiphenyl	172.00	13.360	13.360	(0.892)	1116048	50	52
72 Terphenyl-d14	244.00	22.555	22.555	(0.893)	983471	50	49

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
[redacted] Phenol-d5	99.00	7.335	7.335	(0.924)	613623	50	46
3 2-Fluorophenol	112.00	5.736	5.736	(0.723)	338301	50	59
[redacted]61 2,4,6-Tribromophenol	329.70	16.955	16.955	(0.912)	144459	50	56
[redacted]7 ortho-Cresol	108.00	8.558	8.558	(1.078)	469331	50	41
[redacted]20 meta,para-Cresol	108.00	8.875	8.875	(1.118)	462904	50	41
96 Benzidine	184.00	22.029	22.029	(0.873)	274854	50	36

C Flag Legend

- Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
- Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: j.i
Lab File ID: j142cc1.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: PC
Method File: /chem/j.i/j950522.b/jclpw.m
Misc Info: 950522 STD050

Calibration Date: 05/22/95
Calibration Time: 1047

Level: LOW
Sample Type: WATER

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	336862	168431	673724	336862	0.00
32 Naphthalene-d8	1268035	634018	2536070	1268035	0.00
48 Acenaphthene-d10	679432	339716	1358864	679432	0.00
65 Phenanthrene-d10	946155	473078	1892310	946155	0.00
76 Chrysene-d12	813677	406838	1627354	813677	0.00
83 Perylene-d12	478967	239484	957934	478967	0.00

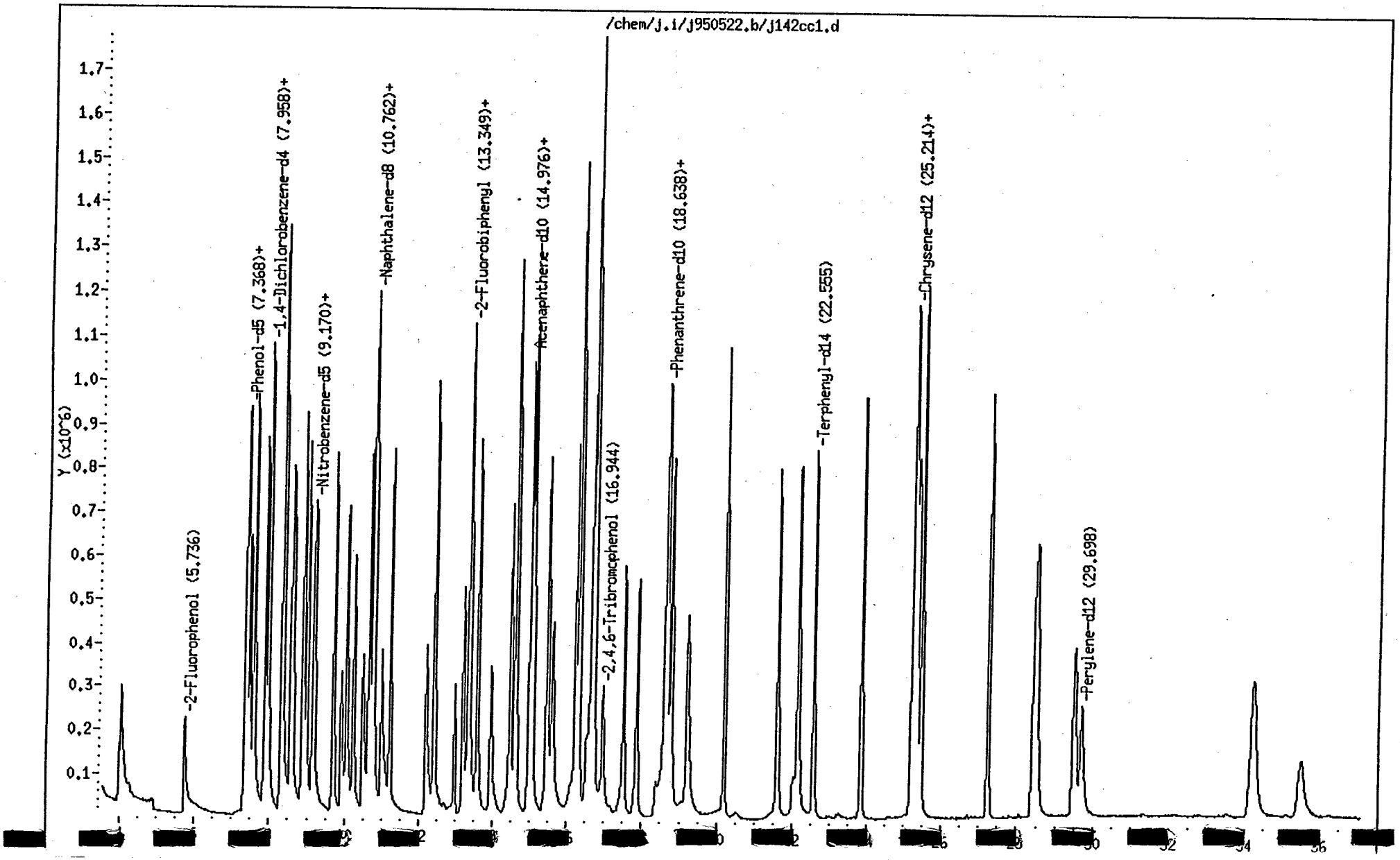
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	7.94	7.44	8.44	7.94	0.00
32 Naphthalene-d8	10.72	10.22	11.22	10.72	0.00
48 Acenaphthene-d10	14.98	14.48	15.48	14.98	0.00
65 Phenanthrene-d10	18.59	18.09	19.09	18.59	0.00
76 Chrysene-d12	25.25	24.75	25.75	25.25	0.00
83 Perylene-d12	29.70	29.20	30.20	29.70	0.00

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/j.i/j950522.b/j142cc1.d
Date : 22-MAY-1995 10:47
Client ID:
Sample Info: STD-8270W/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: j.i

Operator: PC
Column diameter: 0.25



ICP Spectroscopy Method 6010 Quality Control Report

Matrix: Soil Units: mg/Kg Analyst: DQ

Date:052495 Time:0908 File Name:052495DQ Checked J. Monroe 5/25/95

Laboratory Control Sample Lot #224

ement	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
er	ND	65.4	66	101	29.4	95.5
minum						
enic						
um	ND	238	219	92	138	311
yllium						
cium						
mium	ND	90	88	98	51.3	130
alt						
omium	ND	167	156	94	90.3	236
per						
assium						
nesium						
nganese						
ium						
kel	ND	135	115	85	74.3	197
d	ND	162	153	94	85.8	230
mony						
enium						
llium						
adium						

Work Orders in Batch

Work Order	Fractions
95-05-722	01A, 02A
95-05-724	01A-03A
95-05-512	02C-13C

trix Spike - Spike Duplicate Results **Work Order Spiked: 95-05-512 11C**

lement	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	Q.C. Limits % Recovery		Spike RPD %	QC Limits %
er	ND	100	88.26	88	86.88	87	80	120	1.6	20.0
minum										
enic										
ium	45.89	200	239	97	235.7	95	80	120	1.7	20.0
yllium										
cium										
dmium	ND	100	89.47	89	88.7	89	80	120	0.9	20.0
balt										
omium	16.6	100	117.5	101	113.8	97	80	120	3.7	20.0
pper										
assium										
gnesium										
nganese										
dium										
kel	17.93	100	113.5	96	112.1	94	80	120	1.5	20.0
d	8.63	100	100.7	92	98.87	90	80	120	2.0	20.0
imony										
enium										
allium										
nadium										
c										

J. Monroe 5/25/95

Idefis Williams, QC Officer

Matrix: Water Units: mg/L Analyst: DQ

Date:051895 Time:1028 File Name:051895DQ Checked: J. Murray 5/19/95

Laboratory Control Sample

Element	Mth. Blank	True Value	Result	% Recovery	Lower Limit	Upper Limit
Silver	ND	2.00	1.933	97	1.60	2.40
Aluminum						
Arsenic	ND	4.00	4.049	101	3.20	4.80
Barium	ND	4.00	4.045	101	3.20	4.80
Beryllium	ND	2.00	2.101	105	1.60	2.40
Calcium						
Cadmium	ND	2.00	1.951	98	1.60	2.40
Cobalt	ND	2.00	1.958	98	1.60	2.40
Chromium	ND	2.00	1.979	99	1.60	2.40
Copper						
Iron						
Potassium						
Magnesium						
Manganese						
Sodium						
Nickel	ND	2.00	1.995	100	1.60	2.40
Lead	ND	2.00	2.022	101	1.60	2.40
Antimony	ND	2.00	2.022	101	1.60	2.40
Selenium	ND	4.00	3.862	97	3.20	4.80
Thallium						
Vanadium	ND	2.00	1.879	94	1.60	2.40
Zinc	ND	2.00	1.911	96	1.60	2.40

Work Orders in Batch

Work Order	Fractions
95-04-702	26D
95-05-486	01A
95-05-472	01A
95-04-425	31D
95-04-699	31D
95-04-701	30D
95-05-512	01C

Matrix Spike - Spike Duplicate Results **Work Order Spiked: 95-04-702 26D**

Element	Sample Result	Spike Added	Matrix Spike Result	Matrix Spike Recovery	Matrix Spike Duplicate Result	Matrix Spike Duplicate Recovery	QC Limits % Recovery		Spike RPD %	QC Limits %
Silver	ND	1.0	0.9485	95	0.9582	96	80	120	1.0	20.0
Aluminum										
Arsenic	ND	2.0	1.977	99	2.019	101	80	120	2.1	20.0
Barium	ND	2.0	1.991	100	1.995	100	80	120	0.2	20.0
Beryllium	ND	1.0	1.02	102	1.028	103	80	120	0.8	20.0
Calcium										
Cadmium	ND	1.0	0.9659	97	0.9809	98	80	120	1.5	20.0
Cobalt	ND	1.0	0.96	96	0.9758	98	80	120	1.6	20.0
Chromium	ND	1.0	0.9694	97	0.983	98	80	120	1.4	20.0
Copper										
Iron										
Potassium										
Magnesium										
Manganese										
Sodium										
Nickel	ND	1.0	0.9848	98	0.9948	99	80	120	1.0	20.0
Lead	ND	1.0	0.9949	99	1.028	103	80	120	3.3	20.0
Antimony	ND	1.0	0.994	99	1.007	101	80	120	1.3	20.0
Selenium	ND	2.0	1.915	96	1.948	97	80	120	1.7	20.0
Thallium										
Vanadium	ND	1.0	0.9155	92	0.9252	93	80	120	1.1	20.0
Zinc	0.0363	1.0	0.965	93	0.9639	93	80	120	0.1	20.0

Idelis Williams 5/19/95

Idelis Williams, QC Officer

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: CR

Test Code: CRSG

Method: P3050G

Instrument: A

Date: 5/27/95

Time: 09:03

File #: 0527A

Analyst WCC

Matrix: Soil ☒ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units mg/Kg

Sample #'s in Batch

05512-2c				
05612-3c - 6c				
05673-2c - 4c				
05581-1D - 5D				
05599-6D - 9D				

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05704-3A MD	167.0	92.8%	17.0	20.0	40.9	39.7	119.5%	113.5%	5	
LCS 5/20 MD	167.0	95.2%	MA	20.0						

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☒ Soil LCS % Rec. Range 54.1% - 141.3%

☒ Sample used for QA/QC only

Analyst Wallace Edwards Date 5/27/95

Approved By [signature] Date 5/30/95

[signature] Date 5/30/95

Title: QC Officer

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: PB

Test Code: PBSG

Method: P3050G

Instrument: B

Date: 5/24/95

Time: 08:13

File #: 0524A

Analyst: WFC

Units: mg/kg

Matrix: Soil ☑ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05512-2C	13C			
04362-19D,	20D, 21D, 25D, 27D			

Blank and Check Standard				Sample Conc.	Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery		Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05512-11C	MB	162.0	84.0%	38.1	50.0	77.6	77.9	79.0%	79.6%	1
*04362-19D	MB	162.0	83.0%	43.9	50.0	74.6	76.4	61.4%*	65.0%*	6

Analyst: Wallace Ward Date: 5/24/95

Approved By: [signature] Date: 5/24/95

[signature] Date: 5/24/95

Lab Quality Control Officer

• FLAGS •

☑ • = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☑ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range 53.0%--142.0%

☐ [redacted]

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: PB

Test Code: PBQG

Method: P3020

Instrument: B

Date: 5/17/95

Time: 08:39

File #: 0517A

Analyst WFC

Matrix: Soil ☐ Water ☑

Units ug/L

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Sample #'s in Batch

05491-1c				
05512-1c				
05458-1c-7c				
05430-1B-3B, 5B-12B				
05430-15B, 16B, 19B				

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05491-1c	ND	50.0	81.2%	ND	50.0	40.4	40.4	80.8%	80.8%	0
*05430-16B	ND	50.0	81.2%	ND	50.0	28.5	30.9	57.0%*	61.8%*	8

• FLAGS •

• = Values Outside QC Range

☑ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range _____

☐ / Sample used for QA/QC only

Analyst Wallace F. Ewell Date 5/17/95

Approved By [signature] Date 5-17-95

[signature] Date 5-18-95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: Hg
Test Code: HgWC
Method: 7470
Instrument: 303CB

Date: 5/17/95
Time: 13:40
File #: C517A

Analyst F.B.
Matrix: Soil ☐ Water ☑
Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units mg/L

Sample #'s in Batch

95C5319-1D	95C5539-1C-3C	95C4425-31D	95C4702-26D	95C514Z-3A
95C4699-31D	95C4701-30D	95C5512-1C	95C497Z-31D	95C4973-30D

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
04425-31D	#1 ND	2.00	#1 101.5	ND	2.00	1.92	1.79	96.0	89.5	7

• FLAGS •

• = Values Outside QC Range
☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)
☐ RPD out of QA/QC Limits (20 %)
☐ Soil LCS % Rec. Range _____
☐ Sample used for QA/QC only
☐ See Case Narrative

Analyst Dott Bacigalupo Date 5/17/95
Approved By Joanne Navarro Date 5/17/95
Ida Williams QC Officer Date 5/18/95

SPL QUALITY CONTROL SUMMARY

Rev. 4/94

Atomic Absorption Analysis

Element: Hg
Test Code: HGSC
Method: 7471
Instrument: 3030B

Date: 5/24/95
Time: 11:01
File #: 0524A

Analyst T. B.

Matrix: Soil ☑ Water ☐

Leachate: ☐ Water ☐ Soil ☐ Oil ☐ Other

Units ug/L

Sample #'s in Batch

9504702-16D, 18D	9505759-1B	9505512-2C-13C	9505556-2C-5C	9505676-1C, 4C, 7C
9505612-3C-6C	9505774-4B			

Blank and Check Standard					Matrix Spike and Spike Duplicate Data					
Sample ID	Method Blank	LCS Conc. Theoretical	LCS % Recovery	Sample Conc.	Spike Added	Spike Conc.	Spike Dup. Conc.	Spike % Rec.	Spike Dup. % Rec	% RPD
05512-11C	#1 ND	1.92	#1 96.0	ND	2.00	2.26	2.12	113.0	106.0	6
05676-4C	#2 ND	↓	#2 99.8	↓	↓	1.99	2.21	99.5	110.5	10

• FLAGS •

• = Values Outside QC Range

☐ MS or MSD out of QA/QC Limits (% Rec. 75-125)

☐ RPD out of QA/QC Limits (20 %)

☐ Soil LCS % Rec. Range _____

☐ Sample used for QA/QC only

☐ See Case Narrative

Analyst T. B. Williams Date 5/24/95

Approved By [signature] Date 5/24/95

[signature] Date 5/24/95

Idelis Williams, QC Officer

SPL®

WETDUPCA.RC Rev. 4/94

Wet Chemistry QA/QC Validation Report

Test Name: Moisture

AM Test Code: MOISED Date: 5/10/95 Analyst: CA

Method CLP Time: 9:15 AM Matrix ☐ Liquid ☑ Soil ☐ Other

of Samples in Batch: ~~32~~ 33 Reporting Units: % weight

Sample #'s in Batch:

9505394 - 1I	9505489 - 1B → 4B, 5A - 10A	
9505396 - 4A	9505512 - 2B → 13B	
9505497 - 1B, 2B, 3A	9505438 - 1A	
9505498 - 1B → 5B		

Standards	Actual Concentration	Theoretical Concentration	Percent Recovery	QC Limits (**) (Mandatory) Upper Limit	Lower Limit
Blank					
Check Standard 1					
Check Standard 2					
Check Standard 3					
(Outside Source)					

LICATES

QC Duplicate SPL Sample ID	Sample Result <1>	Sample Result <2>	Relative Percent Difference	QC LIMITS (**) (Advisory) Relative Percent Difference Max.
9505489 - 1B	8	8	Ø	23.0
9505489 - 6A	4	4	Ø	↓
9505512 - 4B	10	12	18.18	
9505438 - 1A	25	25	Ø	↓

tive Percent Difference (RPD) Calculation:

$$RPD = \frac{|<1> - <2>|}{(<1> + <2>) \times 0.5} \times 100$$

(**) = Source: SPL Houston Historical Data

* = Indicates Value Outside QA/QC Range

iewed By: Jennifer Wyatt Date: 5-17-95

Approved By: [signature] Date: 5/17/95

[signature] Date: 5/17/95

Idelis Williams, QC Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 0.5-1.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:40:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/10/95	6	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/12/95	05/12/95		
Cadmium, Total METHOD 6010 *** Analyzed by: JM Date: 05/17/95	ND	8	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/18/95	6	1	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 0.5-1.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:40:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	3.2	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 0.5-1.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:40:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech

SAMPLE ID: 026.003BH 0.5-1.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	94	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	98	59	113

ANALYZED BY: HLW
DATE/TIME: 05/09/95 16:30:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit
ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 0.5-1.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:40:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	660	ug/Kg
Acenaphthylene	ND	660	ug/Kg
Aniline	ND	660	ug/Kg
Anthracene	ND	660	ug/Kg
Benzo(a)Anthracene	ND	660	ug/Kg
Benzo(b)Fluoranthene	ND	660	ug/Kg
Benzo(k)Fluoranthene	ND	660	ug/Kg
Benzo(a)Pyrene	ND	660	ug/Kg
Benzoic Acid	ND	3200	ug/Kg
Benzo(g,h,i)Perylene	ND	660	ug/Kg
Benzyl alcohol	ND	660	ug/Kg
4-Bromophenylphenyl ether	ND	660	ug/Kg
Butylbenzylphthalate	ND	660	ug/Kg
di-n-Butyl phthalate	ND	660	ug/Kg
Carbazole	ND	660	ug/Kg
4-Chloroaniline	ND	660	ug/Kg
bis(2-Chloroethoxy)Methane	ND	660	ug/Kg
bis(2-Chloroethyl)Ether	ND	660	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	660	ug/Kg
4-Chloro-3-Methylphenol	ND	660	ug/Kg
2-Chloronaphthalene	ND	660	ug/Kg
2-Chlorophenol	ND	660	ug/Kg
4-Chlorophenylphenyl ether	ND	660	ug/Kg
Chrysene	ND	660	ug/Kg
Dibenz(a,h)Anthracene	ND	660	ug/Kg
Dibenzofuran	ND	660	ug/Kg
1,2-Dichlorobenzene	ND	660	ug/Kg
1,3-Dichlorobenzene	ND	660	ug/Kg
1,4-Dichlorobenzene	ND	660	ug/Kg
3,3'-Dichlorobenzidine	ND	660	ug/Kg
2,4-Dichlorophenol	ND	660	ug/Kg
Diethylphthalate	ND	660	ug/Kg
2,4-Dimethylphenol	ND	660	ug/Kg
Dimethyl Phthalate	ND	660	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	1600	ug/Kg
2,4-Dinitrophenol	ND	1600	ug/Kg
2,4-Dinitrotoluene	ND	660	ug/Kg
2,6-Dinitrotoluene	ND	660	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
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Certificate of Analysis No. H9-9505209-01

Operational Tech

SAMPLE ID: 026.003BH 0.5-1.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	660	ug/Kg
bis(2-Ethylhexyl) Phthalate	ND	660	ug/Kg
Fluoranthene	ND	660	ug/Kg
Fluorene	ND	660	ug/Kg
Hexachlorobenzene	ND	660	ug/Kg
Hexachlorobutadiene	ND	660	ug/Kg
Hexachloroethane	ND	660	ug/Kg
Hexachlorocyclopentadiene	ND	660	ug/Kg
Indeno(1,2,3-cd) Pyrene	ND	660	ug/Kg
Isophorone	ND	660	ug/Kg
2-Methylnaphthalene	ND	660	ug/Kg
2-Methylphenol	ND	660	ug/Kg
4-Methylphenol	ND	660	ug/Kg
Naphthalene	ND	660	ug/Kg
2-Nitroaniline	ND	660	ug/Kg
3-Nitroaniline	ND	1600	ug/Kg
4-Nitroaniline	ND	1600	ug/Kg
Nitrobenzene	ND	1600	ug/Kg
2-Nitrophenol	ND	660	ug/Kg
4-Nitrophenol	ND	660	ug/Kg
N-Nitrosodiphenylamine (1)	ND	1600	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	660	ug/Kg
Di-n-Octyl Phthalate	ND	660	ug/Kg
Pentachlorophenol	ND	660	ug/Kg
Phenanthrene	ND	1600	ug/Kg
Phenol	ND	660	ug/Kg
Pyrene	ND	660	ug/Kg
Pyridine	ND	660	ug/Kg
1,2,4-Trichlorobenzene	ND	660	ug/Kg
2,4,5-Trichlorophenol	ND	660	ug/Kg
2,4,6-Trichlorophenol	ND	1600	ug/Kg
	ND	660	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-01

Operational Tech

SAMPLE ID: 026.003BH 0.5-1.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	98	23	120
2-Fluorobiphenyl	1600 ug/Kg	103	30	115
Terphenyl-d14	1600 ug/Kg	114	18	137
Phenol-d5	2500 ug/Kg	77	24	113
2-Fluorophenol	2500 ug/Kg	62	25	121
2,4,6-Tribromophenol	2500 ug/Kg	107	19	122

ANALYZED BY: LH DATE/TIME: 05/16/95 19:33:00
EXTRACTED BY: JK DATE/TIME: 05/12/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950509.b/k129s09.d
Lab Smp Id: 9505209-01A-8240S/1X
Inj Date : 09-MAY-1995 16:30
Operator : HLW Inst ID: k.i
Smp Info : 9505209-01A-8240S/1X
Misc Info : K129S1/K129B02/K129CS2
Comment :
Method : /chem/k.i/k950509.b/kvoclps.m
Meth Date : 12-May-1995 10:45 hillery Quant Type: ISTD
Cal Date : 09-MAY-1995 11:08 Cal File: k129cs2.d
Als bottle: 22
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.119	2.123	(1.000)	88380	250	
* 31 1,4-Difluorobenzene	114.00	2.801	2.789	(1.000)	518051	250	
* 51 Chlorobenzene-d5	117.00	6.771	6.759	(1.000)	355781	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.377	2.365	(1.122)	36391	230	47
$ 40 Toluene-d8	98.00	4.543	4.532	(0.671)	549677	250	50
$ 61 Bromofluorobenzene	95.00	8.877	8.865	(1.311)	190101	240	49

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k129s09.d
Lab Smp Id: 9505209-01A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950509.b/kvoclps.m
Misc Info: K129S1/K129B02/K129CS2

Calibration Date: 05/09/95
Calibration Time: 1108

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	86471	43236	172942	88380	2.21
31 1,4-Difluorobenzene	552052	276026	1104104	518051	-6.16
51 Chlorobenzene-d5	389031	194516	778062	355781	-8.55

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	-0.17
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.80	0.41
51 Chlorobenzene-d5	6.76	6.26	7.26	6.77	0.17

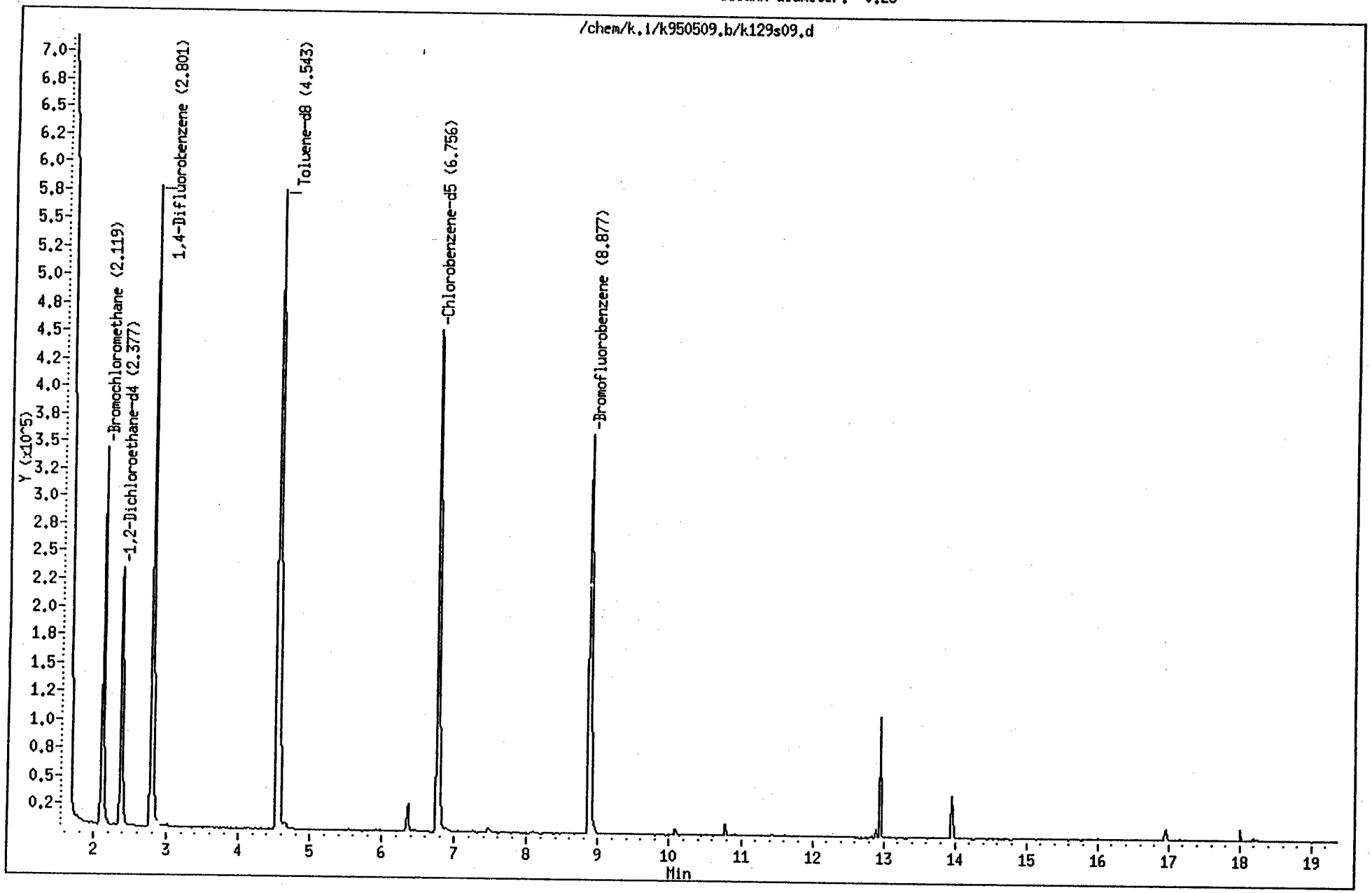
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950509.b/k129s09.d
Date : 09-MAY-1995 16:30
Client ID:
Sample Info: 9505209-01A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/h.i/h950516.b/h136s12.d
Report Date: 17-May-1995 11:50

SPL Houston Labs

Data file : /chem/h.i/h950516.b/h136s12.d
Lab Smp Id:
Inj Date : 16-MAY-1995 19:33
Operator : LH
Inst ID: h.i
Smp Info : 9505209-01B-8270S/1X
Misc Info : E132S1/H132B02/H136IC1
Comment :
Method : /chem/h.i/h950516.b/hclps.m
Meth Date : 16-May-1995 16:57 liping
Quant Type: ISTD
Cal Date : 16-MAY-1995 11:52
Cal File: h136ic1.d
Als bottle: 16
Dil Factor: 2.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
*	11 1,4-Dichlorobenzene-d4	152.00	4.441	4.454	(1.000)	136140	40	
*	32 Naphthalene-d8	136.00	5.638	5.651	(1.000)	478183	40	
*	48 Acenaphthene-d10	164.00	7.404	7.417	(1.000)	230923	40	
*	65 Phenanthrene-d10	188.00	8.897	8.922	(1.000)	289649	40	
*	76 Chrysene-d12	240.00	11.753	11.777	(1.000)	136187	40	
*	83 Perylene-d12	264.00	13.969	13.993	(1.000)	75002	40	
$	23 Nitrobenzene-d5	82.00	4.951	4.964	(0.878)	183776	47	1600
$	41 2-Fluorobiphenyl	172.00	6.717	6.729	(0.907)	376447	50	1600
$	72 Terphenyl-d14	244.00	10.532	10.545	(0.896)	207097	55	1800
$	4 Phenol-d5	99.00	4.145	4.158	(0.933)	284958	58	1900
$	3 2-Fluorophenol	112.00	3.446	3.423	(0.776)	215191	47	1600
$	61 2,4,6-Tribromophenol	329.70	8.222	8.234	(0.924)	93716	80	2700

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h136s12.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950516.b/hclps.m
Misc Info: E132S1/H132B02/H136IC1

Calibration Date: 05/16/95
Calibration Time: 1152

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	103183	51592	206366	136140	31.94
32 Naphthalene-d8	348029	174014	696058	478183	37.40
48 Acenaphthene-d10	171424	85712	342848	230923	34.71
65 Phenanthrene-d10	222794	111397	445588	289649	30.01
76 Chrysene-d12	137788	68894	275576	136187	-1.16
83 Perylene-d12	83290	41645	166580	75002	-9.95

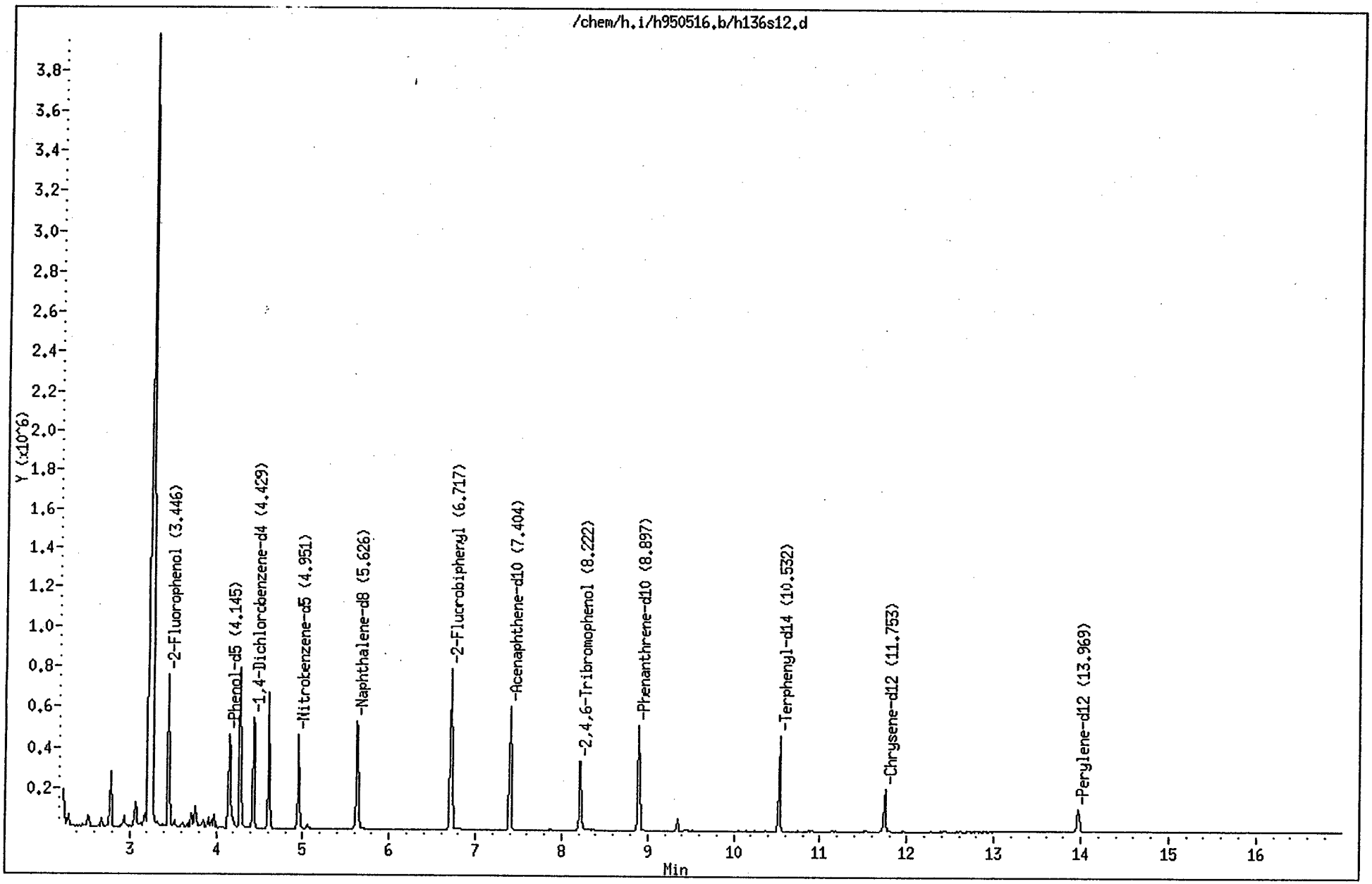
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.45	3.95	4.95	4.44	-0.28
32 Naphthalene-d8	5.65	5.15	6.15	5.64	-0.22
48 Acenaphthene-d10	7.42	6.92	7.92	7.40	-0.17
65 Phenanthrene-d10	8.92	8.42	9.42	8.90	-0.27
76 Chrysene-d12	11.78	11.28	12.28	11.75	-0.21
83 Perylene-d12	13.99	13.49	14.49	13.97	-0.18

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950516.b/h136s12.d
Date : 16-MAY-1995 19:33
Client ID:
Sample Info: 9505209-01B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 1.5-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:35:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/10/95	6	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/12/95	05/12/95		
Cadmium, Total METHOD 6010 *** Analyzed by: JM Date: 05/17/95	ND	8	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/18/95	18	2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 1.5-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:35:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	5.9	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 1.5-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:35:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech

SAMPLE ID: 026.003BH 1.5-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	98	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	94	59	113

ANALYZED BY: HLW DATE/TIME: 05/09/95 18:44:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 1.5-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 14:35:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech

SAMPLE ID: 026.003BH 1.5-2.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	330	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	800	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	330	ug/Kg
N-Nitrosodiphenylamine (1)	ND	800	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	330	ug/Kg
Phenanthrene	ND	800	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	330	ug/Kg
2,4,6-Trichlorophenol	ND	800	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-02

Operational Tech

SAMPLE ID: 026.003BH 1.5-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	89	23	120
2-Fluorobiphenyl	1600 ug/Kg	87	30	115
Terphenyl-d14	1600 ug/Kg	94	18	137
Phenol-d5	2500 ug/Kg	60	24	113
2-Fluorophenol	2500 ug/Kg	53	25	121
2,4,6-Tribromophenol	2500 ug/Kg	104	19	122

ANALYZED BY: LH DATE/TIME: 05/16/95 18:44:00
EXTRACTED BY: JK DATE/TIME: 05/12/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950509.b/k129s14.d
Lab Smp Id: 9505209-02A-8240S/1X
Inj Date : 09-MAY-1995 18:44
Operator : HLW Inst ID: k.i
Smp Info : 9505209-02A-8240S/1X
Misc Info : K129S1/K129B02/K129CS2
Comment :
Method : /chem/k.i/k950509.b/kvoclps.m
Meth Date : 12-May-1995 10:45 hillery Quant Type: ISTD
Cal Date : 09-MAY-1995 11:08 Cal File: k129cs2.d
Als bottle: 25
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
*	20 Bromochloromethane	128.00	2.119	2.123	(1.000)	82241	250	
*	31 1,4-Difluorobenzene	114.00	2.801	2.789	(1.000)	505502	250	
*	51 Chlorobenzene-d5	117.00	6.771	6.759	(1.000)	369242	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.365	(1.122)	35474	240	49
$	40 Toluene-d8	98.00	4.544	4.532	(0.671)	569702	250	50
$	61 Bromofluorobenzene	95.00	8.877	8.865	(1.311)	188095	230	47

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k129s14.d
Lab Smp Id: 9505209-02A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950509.b/kvoclps.m
Misc Info: K129S1/K129B02/K129CS2

Calibration Date: 05/09/95
Calibration Time: 1108

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	86471	43236	172942	82241	-4.89
31 1,4-Difluorobenzene	552052	276026	1104104	505502	-8.43
51 Chlorobenzene-d5	389031	194516	778062	369242	-5.09

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	-0.16
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.80	0.43
51 Chlorobenzene-d5	6.76	6.26	7.26	6.77	0.18

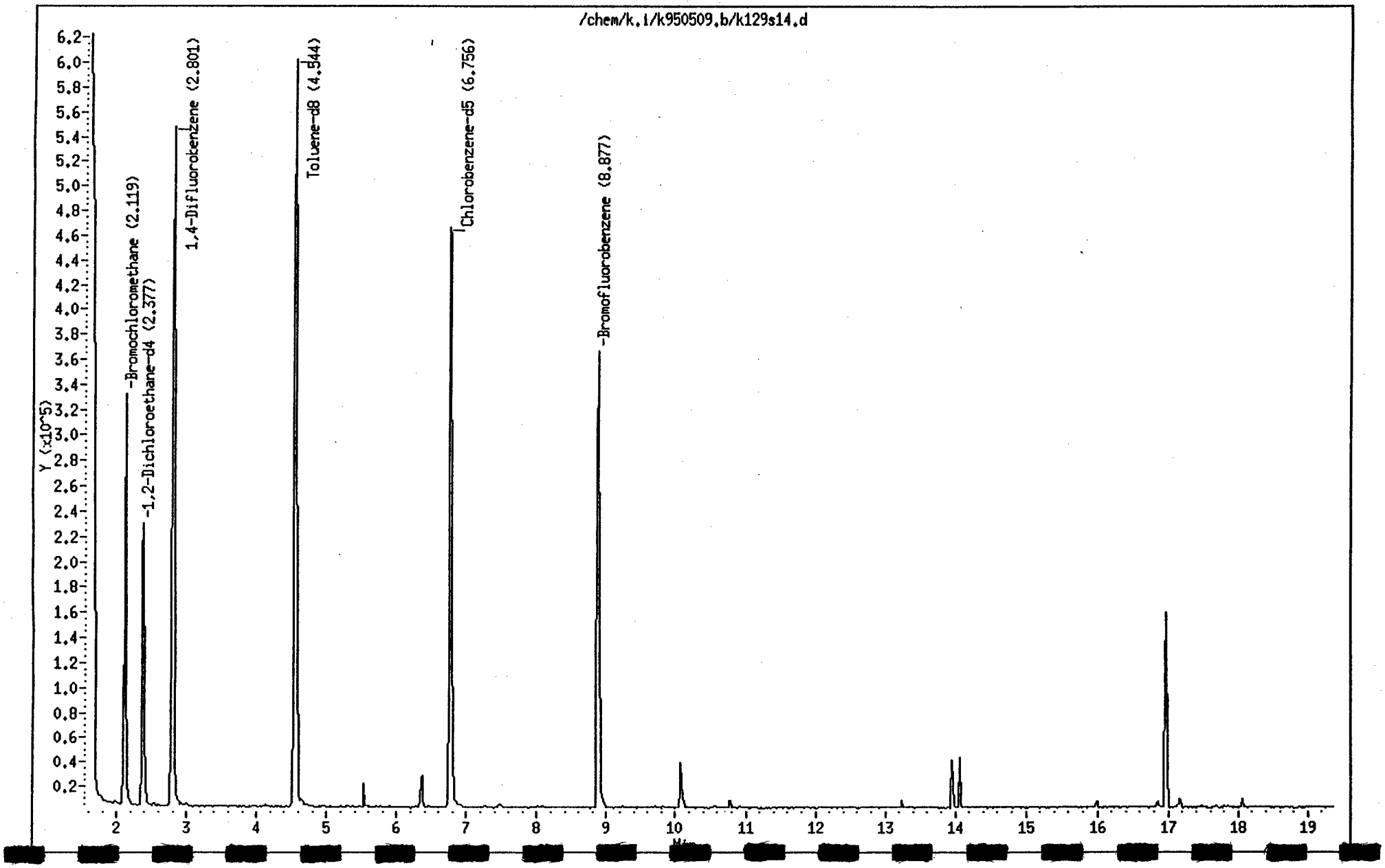
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950509.b/k129s14.d
Date : 09-MAY-1995 18:44
Client ID:
Sample Info: 9505209-02A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Houston Labs

Data file : /chem/h.i/h950516.b/h136s10.d
Lab Smp Id:
Inj Date : 16-MAY-95 18:44
Operator : LH
Inst ID: h.i
Smp Info : 9505209-02B-8270S/1X
Misc Info : E132S1/H132B02/H136IC1
Comment :
Method : /chem/h.i/h950516.b/hclps.m
Meth Date : 16-May-1995 16:57 liping
Quant Type: ISTD
Cal Date : 16-MAY-1995 11:52
Cal File: h136ic1.d
Als bottle: 14
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: 8270.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 11 1,4-Dichlorobenzene-d4	152.00	4.442	4.454	(1.000)	142468	40	
* 32 Naphthalene-d8	136.00	5.627	5.651	(1.000)	505189	40	
* 48 Acenaphthene-d10	164.00	7.405	7.417	(1.000)	259552	40	
* 65 Phenanthrene-d10	188.00	8.898	8.922	(1.000)	371230	40	
* 76 Chrysene-d12	240.00	11.754	11.777	(1.000)	237557	40	
* 83 Perylene-d12	264.00	13.970	13.993	(1.000)	127584	40	
$ 23 Nitrobenzene-d5	82.00	4.952	4.964	(0.880)	353694	86	1400
$ 41 2-Fluorobiphenyl	172.00	6.718	6.729	(0.907)	710378	83	1400
$ 72 Terphenyl-d14	244.00	10.533	10.545	(0.896)	596085	90	1500
$ 4 Phenol-d5	99.00	4.158	4.158	(0.936)	463210	89	1500(Q)
$ 3 2-Fluorophenol	112.00	3.459	3.423	(0.779)	382678	79	1300
$ 61 2,4,6-Tribromophenol	329.70	8.223	8.234	(0.924)	234351	160	2600

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h136s10.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950516.b/hclps.m
Misc Info: E132S1/H132B02/H136IC1

Calibration Date: 05/16/95
Calibration Time: 1152

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	103183	51592	206366	142468	38.07
32 Naphthalene-d8	348029	174014	696058	505189	45.16
48 Acenaphthene-d10	171424	85712	342848	259552	51.41
65 Phenanthrene-d10	222794	111397	445588	371230	66.62
76 Chrysene-d12	137788	68894	275576	237557	72.41
83 Perylene-d12	83290	41645	166580	127584	53.18

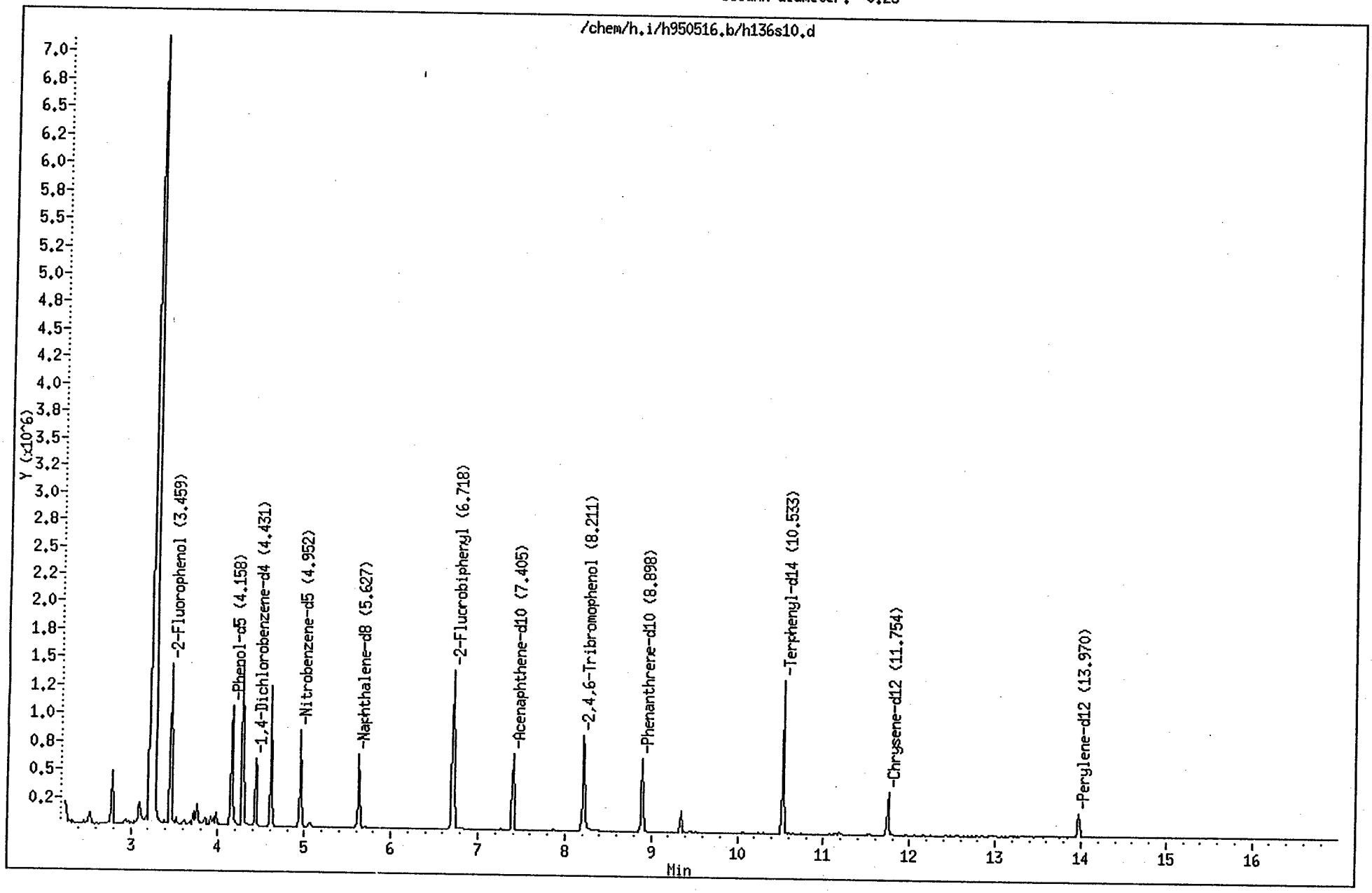
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.45	3.95	4.95	4.44	-0.26
32 Naphthalene-d8	5.65	5.15	6.15	5.63	-0.41
48 Acenaphthene-d10	7.42	6.92	7.92	7.40	-0.16
65 Phenanthrene-d10	8.92	8.42	9.42	8.90	-0.26
76 Chrysene-d12	11.78	11.28	12.28	11.75	-0.20
83 Perylene-d12	13.99	13.49	14.49	13.97	-0.17

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950516.b/h136s10.d
Date : 16-MAY-95 18:44
Client ID:
Sample Info: 9505209-02B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 11:25:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/10/95	9	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/12/95	05/12/95		
Cadmium, Total METHOD 6010 *** Analyzed by: JM Date: 05/17/95	ND	8	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/18/95	3.2	0.2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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8880 INTERCHANGE DRIVE
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Certificate of Analysis No. H9-9505209-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 11:25:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	4.6	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 11:25:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-03

Operational Tech

SAMPLE ID: 026.003BH 6.5-7

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	92	70	121
Toluene-d8	50 ug/Kg	100	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/09/95 17:24:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505209-03

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.003BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 11:25:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-03

Operational Tech

SAMPLE ID: 026.003BH 6.5-7

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl) Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd) Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-03

Operational Tech

SAMPLE ID: 026.003BH 6.5-7

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	88	23	120
2-Fluorobiphenyl	1600 ug/Kg	85	30	115
Terphenyl-d14	1600 ug/Kg	93	18	137
Phenol-d5	2500 ug/Kg	59	24	113
2-Fluorophenol	2500 ug/Kg	52	25	121
2,4,6-Tribromophenol	2500 ug/Kg	97	19	122

ANALYZED BY: LH DATE/TIME: 05/16/95 18:19:00
EXTRACTED BY: JK DATE/TIME: 05/12/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950509.b/k129s11.d
Lab Smp Id: 9505209-03A-8240S/1X
Inj Date : 09-MAY-1995 17:24
Operator : HLW Inst ID: k.i
Smp Info : 9505209-03A-8240S/1X
Misc Info : K129S1/K129B02/K129CS2
Comment :
Method : /chem/k.i/k950509.b/kvoclps.m
Meth Date : 12-May-1995 10:45 hillery Quant Type: ISTD
Cal Date : 09-MAY-1995 11:08 Cal File: k129cs2.d
Als bottle: 24
Dil Factor: 1.000
Integrator: HP RTE Compound Sublist: normal.sub
Target Version: 3.10

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
* 20 Bromochloromethane	128.00	2.119	2.123	(1.000)	75719	250	
* 31 1,4-Difluorcbenzene	114.00	2.801	2.789	(1.000)	467913	250	
* 51 Chlorobenzene-d5	117.00	6.771	6.759	(1.000)	332466	250	
$ 23 1,2-Dichloroethane-d4	102.00	2.377	2.365	(1.122)	30811	230	46
$ 40 Toluene-d8	98.00	4.543	4.532	(0.671)	512989	250	50
$ 61 Bromofluorobenzene	95.00	8.877	8.865	(1.311)	173322	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k129s11.d
Lab Smp Id: 9505209-03A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950509.b/kvoclps.m
Misc Info: K129S1/K129B02/K129CS2

Calibration Date: 05/09/95
Calibration Time: 1108

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	86471	43236	172942	75719	-12.43
31 1,4-Difluorobenzene	552052	276026	1104104	467913	-15.24
51 Chlorobenzene-d5	389031	194516	778062	332466	-14.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	-0.18
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.80	0.41
51 Chlorobenzene-d5	6.76	6.26	7.26	6.77	0.17

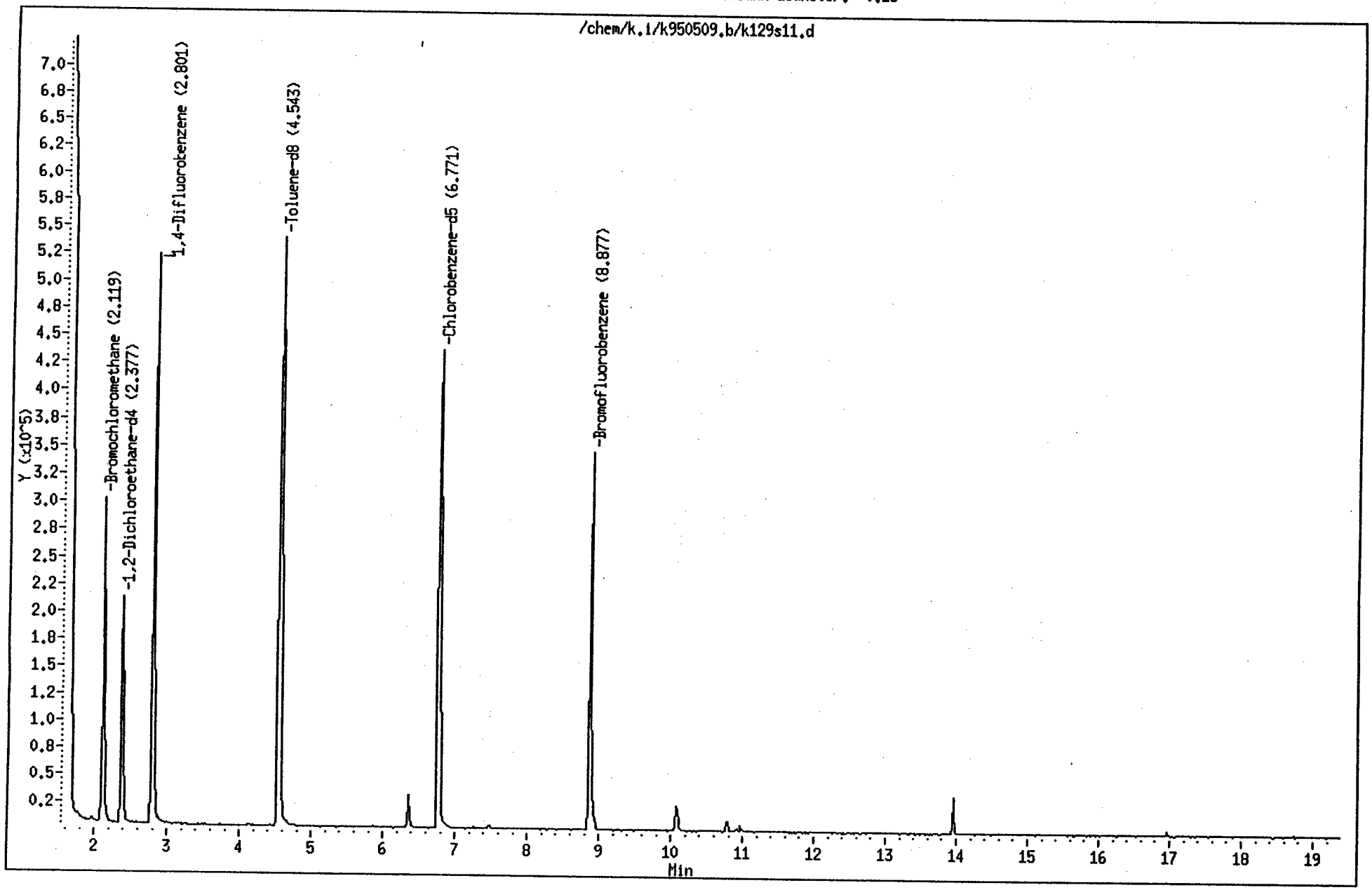
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950509.b/k129s11.d
Date : 09-MAY-1995 17:24
Client ID:
Sample Info: 9505209-03A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



Data File: /chem/h.i/h950516.b/h136s09.d
Report Date: 17-May-1995 11:50

SPL Houston Labs

Data file : /chem/h.i/h950516.b/h136s09.d
Lab Smp Id:
Inj Date : 16-MAY-95 18:19
Operator : LH
Smp Info : 9505209-03B-8270S/1X
Misc Info : E132S1/H132B02/H136IC1
Comment :
Method : /chem/h.i/h950516.b/hclps.m
Meth Date : 16-May-1995 16:57 liping
Cal Date : 16-MAY-1995 11:52
Als bottle: 13
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: h.i

Quant Type: ISTD
Cal File: h136ic1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/Kg)
* 11 1,4-Dichlorobenzene-d4	152.00	4.431	4.454	(1.000)	133378	40	
* 32 Naphthalene-d8	136.00	5.628	5.651	(1.000)	476743	40	
* 48 Acenaphthene-d10	164.00	7.406	7.417	(1.000)	245556	40	
* 65 Phenanthrene-d10	188.00	8.899	8.922	(1.000)	339260	40	
* 76 Chrysene-d12	240.00	11.743	11.777	(1.000)	201820	40	
* 83 Perylene-d12	264.00	13.971	13.993	(1.000)	119905	40	
$ 23 Nitrobenzene-d5	82.00	4.953	4.964	(0.880)	328707	84	1400
$ 41 2-Fluorobiphenyl	172.00	6.718	6.729	(0.907)	656745	81	1400
$ 72 Terphenyl-d14	244.00	10.534	10.545	(0.897)	499382	89	1500
$ 4 Phenol-d5	99.00	4.147	4.158	(0.936)	432551	89	1500 (Q)
$ 3 2-Fluorophenol	112.00	3.460	3.423	(0.781)	350781	78	1300
$ 61 2,4,6-Tribromophenol	329.70	8.223	8.234	(0.924)	199057	140	2400

QC Flag Legend

Q - Qualifier signal failed the ratio test.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h136s09.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950516.b/hclps.m
Misc Info: E132S1/H132B02/H136IC1

Calibration Date: 05/16/95
Calibration Time: 1152

Level: LOW
Sample Type: SOIL

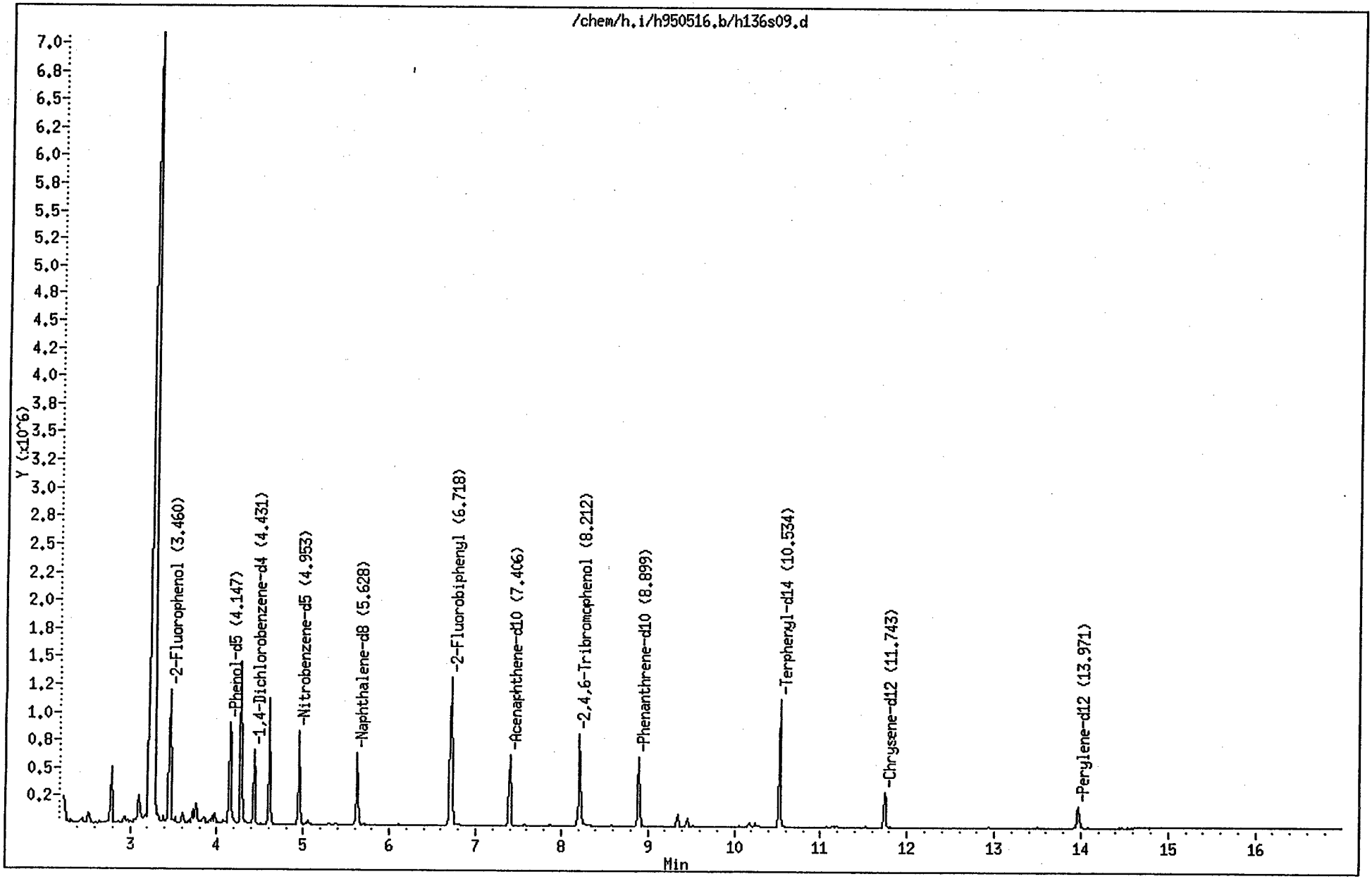
COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	103183	51592	206366	133378	29.26
32 Naphthalene-d8	348029	174014	696058	476743	36.98
48 Acenaphthene-d10	171424	85712	342848	245556	43.24
65 Phenanthrene-d10	222794	111397	445588	339260	52.28
76 Chrysene-d12	137788	68894	275576	201820	46.47
83 Perylene-d12	83290	41645	166580	119905	43.96

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.45	3.95	4.95	4.43	-0.51
32 Naphthalene-d8	5.65	5.15	6.15	5.63	-0.40
48 Acenaphthene-d10	7.42	6.92	7.92	7.41	-0.15
65 Phenanthrene-d10	8.92	8.42	9.42	8.90	-0.25
76 Chrysene-d12	11.78	11.28	12.28	11.74	-0.29
83 Perylene-d12	13.99	13.49	14.49	13.97	-0.16

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950516.b/h136s09.d
Date : 16-MAY-95 18:19
Client ID:
Sample Info: 9505209-03B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i
Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 10:07:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/10/95	10	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/12/95	05/12/95		
Cadmium, Total METHOD 6010 *** Analyzed by: JM Date: 05/17/95	ND	8	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/18/95	3.1	0.2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 10:07:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	3.2	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 10:07:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech

SAMPLE ID: 026.002BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
1,2-Dichloroethane-d4	50 ug/Kg	96	70	121
Toluene-d8	50 ug/Kg	98	84	138
4-Bromofluorobenzene	50 ug/Kg	96	59	113

ANALYZED BY: HLW DATE/TIME: 05/09/95 17:51:00
METHOD: 8240, Volatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 2-2.5

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 10:07:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acenaphthene	ND	330	ug/Kg
Acenaphthylene	ND	330	ug/Kg
Aniline	ND	330	ug/Kg
Anthracene	ND	330	ug/Kg
Benzo(a)Anthracene	ND	330	ug/Kg
Benzo(b)Fluoranthene	ND	330	ug/Kg
Benzo(k)Fluoranthene	ND	330	ug/Kg
Benzo(a)Pyrene	ND	330	ug/Kg
Benzoic Acid	ND	1600	ug/Kg
Benzo(g,h,i)Perylene	ND	330	ug/Kg
Benzyl alcohol	ND	330	ug/Kg
4-Bromophenylphenyl ether	ND	330	ug/Kg
Butylbenzylphthalate	ND	330	ug/Kg
di-n-Butyl phthalate	ND	330	ug/Kg
Carbazole	ND	330	ug/Kg
4-Chloroaniline	ND	330	ug/Kg
bis(2-Chloroethoxy)Methane	ND	330	ug/Kg
bis(2-Chloroethyl)Ether	ND	330	ug/Kg
bis(2-Chloroisopropyl)Ether	ND	330	ug/Kg
4-Chloro-3-Methylphenol	ND	330	ug/Kg
2-Chloronaphthalene	ND	330	ug/Kg
2-Chlorophenol	ND	330	ug/Kg
4-Chlorophenylphenyl ether	ND	330	ug/Kg
Chrysene	ND	330	ug/Kg
Dibenz(a,h)Anthracene	ND	330	ug/Kg
Dibenzofuran	ND	330	ug/Kg
1,2-Dichlorobenzene	ND	330	ug/Kg
1,3-Dichlorobenzene	ND	330	ug/Kg
1,4-Dichlorobenzene	ND	330	ug/Kg
3,3'-Dichlorobenzidine	ND	330	ug/Kg
2,4-Dichlorophenol	ND	330	ug/Kg
Diethylphthalate	ND	330	ug/Kg
2,4-Dimethylphenol	ND	330	ug/Kg
Dimethyl Phthalate	ND	330	ug/Kg
4,6-Dinitro-2-Methylphenol	ND	800	ug/Kg
2,4-Dinitrophenol	ND	800	ug/Kg
2,4-Dinitrotoluene	ND	330	ug/Kg
2,6-Dinitrotoluene	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech

SAMPLE ID: 026.002BH 2-2.5

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	330	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	800	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	330	ug/Kg
N-Nitrosodiphenylamine (1)	ND	800	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	330	ug/Kg
Phenanthrene	ND	800	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	330	ug/Kg
2,4,6-Trichlorophenol	ND	800	ug/Kg
	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-04

Operational Tech

SAMPLE ID: 026.002BH 2-2.5

SURROGATES	AMOUNT SPIKED	% RECOVERY	LOWER LIMIT	UPPER LIMIT
Nitrobenzene-d5	1600 ug/Kg	81	23	120
2-Fluorobiphenyl	1600 ug/Kg	86	30	115
Terphenyl-d14	1600 ug/Kg	90	18	137
Phenol-d5	2500 ug/Kg	56	24	113
2-Fluorophenol	2500 ug/Kg	46	25	121
2,4,6-Tribromophenol	2500 ug/Kg	104	19	122

ANALYZED BY: LH DATE/TIME: 05/16/95 19:08:00
EXTRACTED BY: JK DATE/TIME: 05/12/95
METHOD: 8270, Semivolatile Organics - Soil
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

SPL Labs

Volatiles by 8240

Data file : /chem/k.i/k950509.b/k129s12.d
Lab Smp Id: 9505209-04A-8240S/1X
Inj Date : 09-MAY-1995 17:51
Operator : HLW
Inst ID: k.i
Smp Info : 9505209-04A-8240S/1X
Misc Info : K129S1/K129B02/K129CS2
Comment :
Method : /chem/k.i/k950509.b/kvoclps.m
Meth Date : 12-May-1995 10:45 hillery
Quant Type: ISTD
Cal Date : 09-MAY-1995 11:08
Cal File: k129cs2.d
Als bottle: 25
Dil Factor: 1.000
Integrator: HP RTE
Compound Sublist: normal.sub
Target Version: 3.10

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)
*	20 Bromochloromethane	128.00	2.119	2.123	(1.000)	89806	250	
	31 1,4-Difluorobenzene	114.00	2.801	2.789	(1.000)	528777	250	
	51 Chlorobenzene-d5	117.00	6.771	6.759	(1.000)	391150	250	
$	23 1,2-Dichloroethane-d4	102.00	2.377	2.365	(1.122)	38165	240	48
$	40 Toluene-d8	98.00	4.544	4.532	(0.671)	592981	250	49
	61 Bromofluorobenzene	95.00	8.877	8.865	(1.311)	204414	240	48

SPL Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: k.i
Lab File ID: k129s12.d
Lab Smp Id: 9505209-04A-8240S/1X
Analysis Type: VOA
Quant Type: ISTD
Operator: HLW
Method File: /chem/k.i/k950509.b/kvoclps.m
Misc Info: K129S1/K129B02/K129CS2

Calibration Date: 05/09/95
Calibration Time: 1108

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	86471	43236	172942	89806	3.86
31 1,4-Difluorobenzene	552052	276026	1104104	528777	-4.22
51 Chlorobenzene-d5	389031	194516	778062	391150	0.54

COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
20 Bromochloromethane	2.12	1.62	2.62	2.12	-0.16
31 1,4-Difluorobenzene	2.79	2.29	3.29	2.80	0.42
51 Chlorobenzene-d5	6.76	6.26	7.26	6.77	0.17

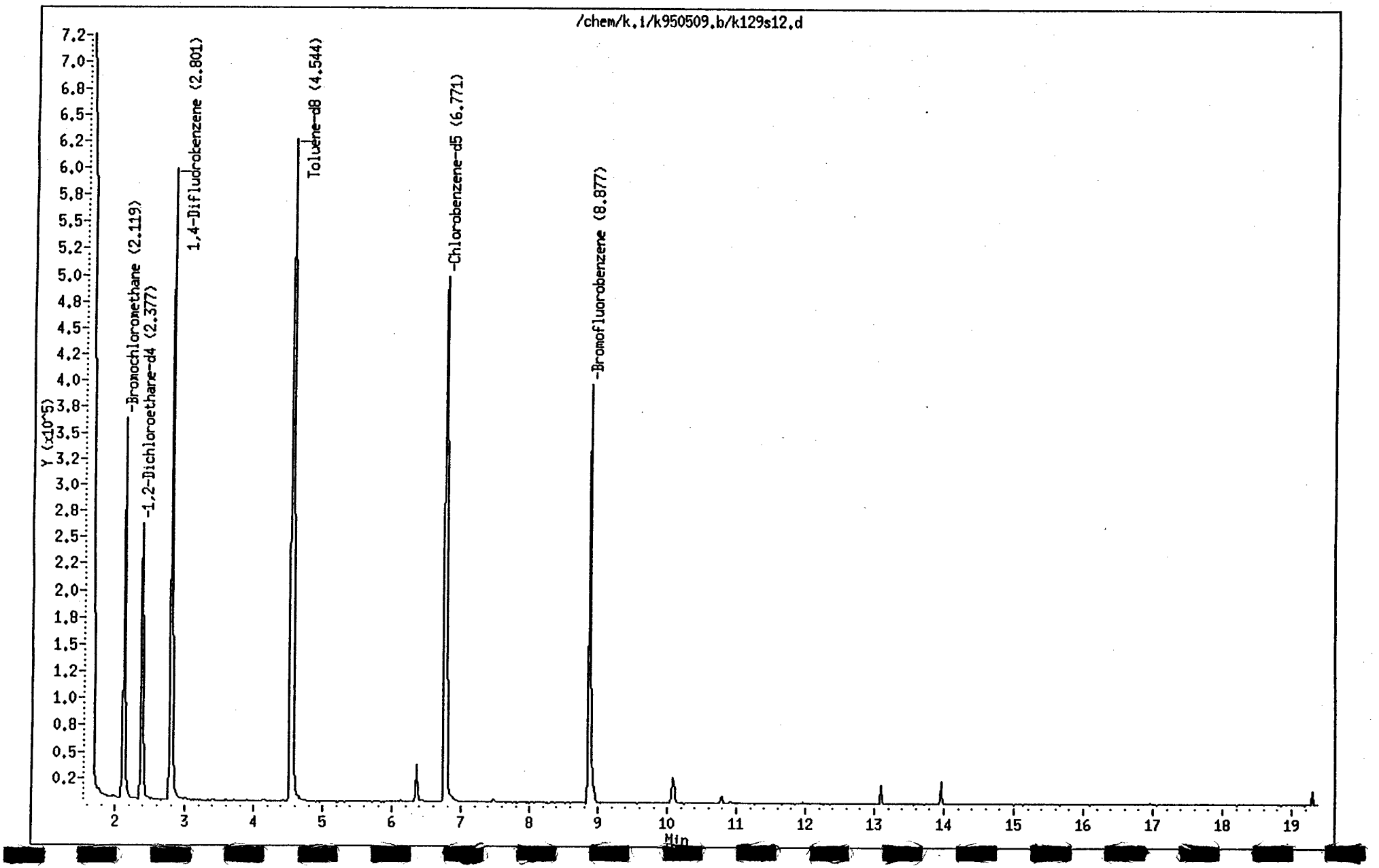
AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/k.i/k950509.b/k129s12.d
Date : 09-MAY-1995 17:51
Client ID:
Sample Info: 9505209-04A-8240S/1X

Instrument: k.i

Operator: HLW
Column diameter: 0.25

Column phase: 30m,hp5ms,0.25u df



SPL Houston Labs

Data file : /chem/h.i/h950516.b/h136s11.d
Lab Smp Id:
Inj Date : 16-MAY-1995 19:08
Operator : LH
Smp Info : 9505209-04B-8270S/1X
Misc Info : E132S1/H132B02/H136IC1
Comment :
Method : /chem/h.i/h950516.b/hclps.m
Meth Date : 16-May-1995 16:57 liping
Cal Date : 16-MAY-1995 11:52
Als bottle: 15
Dil Factor: 1.000
Integrator: HP RTE
Target Version: 3.10

Inst ID: h.i

Quant Type: ISTD
Cal File: h136ic1.d

Compound Sublist: 8270.sub

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/Kg)	
* 11 1,4-Dichlorobenzene-d4	152.00	4.441	4.454	(1.000)	114662	40		
* 32 Naphthalene-d8	136.00	5.626	5.651	(1.000)	391746	40		
* 48 Acenaphthene-d10	164.00	7.404	7.417	(1.000)	191490	40		
* 65 Phenanthrene-d10	188.00	8.897	8.922	(1.000)	257554	40		
* 76 Chrysene-d12	240.00	11.753	11.777	(1.000)	155996	40		(M)
* 83 Perylene-d12	264.00	13.969	13.993	(1.000)	81767	40		
$ 23 Nitrobenzene-d5	82.00	4.951	4.964	(0.880)	248180	77	1300	
$ 41 2-Fluorobiphenyl	172.00	6.716	6.729	(0.907)	517633	82	1400	
$ 72 Terphenyl-d14	244.00	10.532	10.545	(0.896)	375485	87	1400	
$ 4 Phenol-d5	99.00	4.145	4.158	(0.933)	352128	84	1400	
$ 3 2-Fluorophenol	112.00	3.446	3.423	(0.776)	267029	69	1100	
$ 61 2,4,6-Tribromophenol	329.70	8.221	8.234	(0.919)	161522	160	2600	

QC Flag Legend

M - Compound response manually integrated.

SPL Houston Labs

INTERNAL STANDARD COMPOUNDS
AREA AND RT SUMMARY

Instrument ID: h.i
Lab File ID: h136s11.d
Lab Smp Id:
Analysis Type: SV
Quant Type: ISTD
Operator: LH
Method File: /chem/h.i/h950516.b/hclps.m
Misc Info: E132S1/H132B02/H136IC1

Calibration Date: 05/16/95
Calibration Time: 1152

Level: LOW
Sample Type: SOIL

COMPOUND	STANDARD	AREA LIMIT LOWER	AREA LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	103183	51592	206366	114662	11.12
32 Naphthalene-d8	348029	174014	696058	391746	12.56
48 Acenaphthene-d10	171424	85712	342848	191490	11.71
65 Phenanthrene-d10	222794	111397	445588	257554	15.60
76 Chrysene-d12	137788	68894	275576	155996	13.21
83 Perylene-d12	83290	41645	166580	81767	-1.83

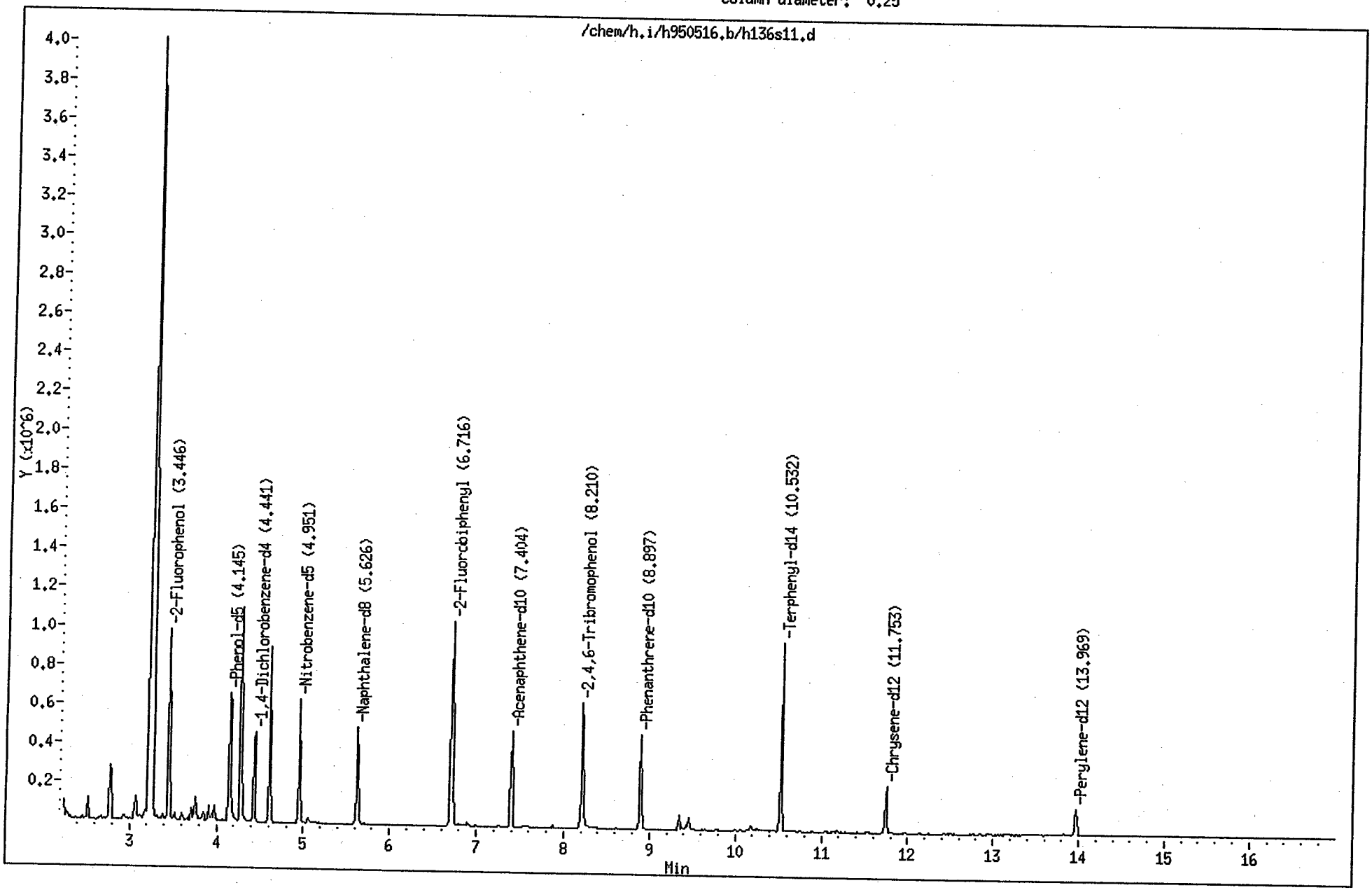
COMPOUND	STANDARD	RT LIMIT LOWER	RT LIMIT UPPER	SAMPLE	% DIFF
11 1,4-Dichlorobenzene-	4.45	3.95	4.95	4.44	-0.29
32 Naphthalene-d8	5.65	5.15	6.15	5.63	-0.44
48 Acenaphthene-d10	7.42	6.92	7.92	7.40	-0.17
65 Phenanthrene-d10	8.92	8.42	9.42	8.90	-0.28
76 Chrysene-d12	11.78	11.28	12.28	11.75	-0.21
83 Perylene-d12	13.99	13.49	14.49	13.97	-0.18

AREA UPPER LIMIT = +100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = + 0.50 minutes of internal standard RT.
RT LOWER LIMIT = - 0.50 minutes of internal standard RT.

Data File: /chem/h.i/h950516.b/h136s11.d
Date : 16-MAY-1995 19:08
Client ID:
Sample Info: 9505209-04B-8270S/1X
Volume Injected (uL): 2.0
Column phase:

Instrument: h.i

Operator: LH
Column diameter: 0.25



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 09:45:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Moisture, E.P.A. METHOD CLP SOW Analyzed by: CA Date: 05/10/95	8	1	wt. %
Sonication extraction METHOD 3550 Analyzed by: JK Date: 05/12/95	05/12/95		
Cadmium, Total METHOD 6010 *** Analyzed by: JM Date: 05/17/95	ND	8	mg/Kg
Chromium, Total METHOD 7191 *** Analyzed by: WFL Date: 05/18/95	3.8	0.2	mg/Kg
Acid Digestion - Solids, GFAA METHOD 3050 *** Analyzed by: AM Date: 05/15/95	05/15/95		

ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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HOUSTON, TEXAS 77054
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Certificate of Analysis No. H9-9505209-05

Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

DATE: 05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 09:45:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Acid Digestion - Solids, ICP METHOD 3050 Analyzed by: MM Date: 05/15/95	05/15/95		
Lead, Total METHOD 7421 *** Analyzed by: WFL Date: 05/17/95	1.5	0.4	mg/Kg

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 17th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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Operational Tech
4100 N.W. Loop 410 Ste. 230
San Antonio, TX 78229
ATTN: Kathryn Pritchett

05/22/95

PROJECT: Duluth
SITE: IRP Site 26
SAMPLED BY: Operational Technology
SAMPLE ID: 026.002BH 6.5-7

PROJECT NO: 1315-197
MATRIX: SOIL
DATE SAMPLED: 05/04/95 09:45:00
DATE RECEIVED: 05/05/95

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Acetone	ND	100	ug/Kg
Benzene	ND	5	ug/Kg
Bromodichloromethane	ND	5	ug/Kg
Bromoform	ND	5	ug/Kg
Bromomethane	ND	10	ug/Kg
2-Butanone	ND	20	ug/Kg
Carbon Disulfide	ND	5	ug/Kg
Carbon Tetrachloride	ND	5	ug/Kg
Chlorobenzene	ND	5	ug/Kg
Chloroethane	ND	10	ug/Kg
2-Chloroethylvinylether	ND	10	ug/Kg
Chloroform	ND	5	ug/Kg
Chloromethane	ND	10	ug/Kg
Dibromochloromethane	ND	5	ug/Kg
1,1-Dichloroethane	ND	5	ug/Kg
1,1-Dichloroethene	ND	5	ug/Kg
1,2-Dichloroethane	ND	5	ug/Kg
total-1,2-Dichloroethene	ND	5	ug/Kg
1,2-Dichloropropane	ND	5	ug/Kg
cis-1,3-Dichloropropene	ND	5	ug/Kg
trans-1,3-Dichloropropene	ND	5	ug/Kg
Ethylbenzene	ND	5	ug/Kg
2-Hexanone	ND	10	ug/Kg
Methylene Chloride	ND	5	ug/Kg
4-Methyl-2-Pentanone	ND	10	ug/Kg
Styrene	ND	5	ug/Kg
1,1,2,2-Tetrachloroethane	ND	5	ug/Kg
Tetrachloroethene	ND	5	ug/Kg
Toluene	ND	5	ug/Kg
1,1,1-Trichloroethane	ND	5	ug/Kg
1,1,2-Trichloroethane	ND	5	ug/Kg
Trichloroethene	ND	5	ug/Kg
Trichlorofluoromethane	ND	5	ug/Kg
Vinyl Acetate	ND	10	ug/Kg
Vinyl Chloride	ND	10	ug/Kg
Xylenes (total)	ND	5	ug/Kg

METHOD: 8240, Volatile Organics - Soil

(continued on next page)

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8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9505209-05

Operational Tech

SAMPLE ID: 026.002BH 6.5-7

ANALYTICAL DATA (continued)

PARAMETER	RESULTS	PQL*	UNITS
1,2-Diphenylhydrazine	ND	330	ug/Kg
bis(2-Ethylhexyl)Phthalate	ND	330	ug/Kg
Fluoranthene	ND	330	ug/Kg
Fluorene	ND	330	ug/Kg
Hexachlorobenzene	ND	330	ug/Kg
Hexachlorobutadiene	ND	330	ug/Kg
Hexachloroethane	ND	330	ug/Kg
Hexachlorocyclopentadiene	ND	330	ug/Kg
Indeno(1,2,3-cd)Pyrene	ND	330	ug/Kg
Isophorone	ND	330	ug/Kg
2-Methylnaphthalene	ND	330	ug/Kg
2-Methylphenol	ND	330	ug/Kg
4-Methylphenol	ND	330	ug/Kg
Naphthalene	ND	330	ug/Kg
2-Nitroaniline	ND	800	ug/Kg
3-Nitroaniline	ND	800	ug/Kg
4-Nitroaniline	ND	800	ug/Kg
Nitrobenzene	ND	330	ug/Kg
2-Nitrophenol	ND	330	ug/Kg
4-Nitrophenol	ND	800	ug/Kg
N-Nitrosodiphenylamine (1)	ND	330	ug/Kg
N-Nitroso-Di-n-Propylamine	ND	330	ug/Kg
Di-n-Octyl Phthalate	ND	330	ug/Kg
Pentachlorophenol	ND	800	ug/Kg
Phenanthrene	ND	330	ug/Kg
Phenol	ND	330	ug/Kg
Pyrene	ND	330	ug/Kg
Pyridine	ND	330	ug/Kg
1,2,4-Trichlorobenzene	ND	330	ug/Kg
2,4,5-Trichlorophenol	ND	800	ug/Kg
2,4,6-Trichlorophenol	ND	330	ug/Kg

METHOD: 8270, Semivolatile Organics - Soil

(continued on next page)