START

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Analytical and Supporting Laboratory

Quality Control Data For

DOE – Hanford North Slope

LEVEL IV Deliverable

VOLUME 1 OF 2

Prepared by: Environmental Science & Engineering, Inc.
August 1994

Analytical and Supporting Laboratory

Quality Control Data For

DOE – Hanford North Slope

LEVEL IV Deliverable

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CASE NARRATIVE

The Analytical and Supporting Quality Control Data for sample

CDM ID	ESE LAB ID	HCS #
WC1-01	CDMHNSS3*43	[illegible]

collected from Hanford, WA Landfill North Slope and scheduled for level IV deliverable documentation are contained in this document.

This document consists of this Case Narrative, a Sample Date, Cross-Reference & Methodologies Report, the Analytical Results & Supporting Data and the Chain-of-Custody forms.

There are more than the requested number of samples in the metals analytical section due to the way ESE laboratory batched the samples for extraction and analysis. Only WC1-01All is reported with the section as level IV data. Pesticides, volatiles and semivolatiles were analyzed by CLP OLM01.8 methodology. The metals were analyzed by SW 486 methods.

The qualifier codes utilized on the Form I pages in this document are U – a compound that was analyzed for but not detected, D – all compounds identified in an analysis at a secondary dilution, J – analyte detected at below the reporting limit and N – a non-target analyte.

EPA holding times were met. In general, project specific and laboratory quality control (QC) requirements were met and sample matrix outliers are due to matrix effects such as oil. The oil can be seen in the chromatography.

Sample Date, Cross Reference &

Methodologies Report

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

SAMPLE DATE AND CROSS REFERENCE REPORT FOR CDM - HANFORD NORTH SLOPE LABORATORY ANALYSES

CDM SAMPLE ID	LABORATORY SAMPLE ID	DATE COLLECT	DATE RECEIVED	ANALYSIS DESCRIPTION	DATE EXTRACTED	DATE ANALYZED	DAYS, ACTUAL/HOLD TIME DAYS TO EXTRACTION	DAYS TO ANALYSIS	ESE BATCH
WC1-01	CDMHNSS3*43	07/15/94	07/16/94	SCREEN, ALPHA	NA	07/25/94	NA	10/180	G51434
				PERCENT MOISTURE - ASTM D2216	NA	07/18/94	NA	3/180	G51059
				ARSENIC - EPA 7060	NA	07/18/94	NA	3/180	G51098
				SELENIUM - EPA 7740	NA	07/19/94	NA	4/180	G51102
				MERCURY - EPA 7471 (MOD)	NA	07/18/94	NA	3/28	G51092
				ICAP METALS, EPA 6010	NA	07/18/94	NA	3/180	G51090
				VOCS - EPA 8240	NA	07/18/94	NA	3/14	G51168
				VOAS - CLP SOW OLM01.8	NA	07/28/94	NA	13/14	G51586
				SVOCS CLP SOW OLM01.8	07/27/94	07/28/94	12/14	1/40	G51539
				OCPS/PCBS - CLP SOW OLM01.8	07/18/94	07/22/94	3/14	4/40	G51446

FOOTNOTES. * = EXCEEDS CRITERIA ACT = ACTUAL HT = HOLDING TIME

000003

Analytical Data

Soils – All Data

Environmental Science & Engineering DATE 08/18/94 STATUS : PAGE 1
PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H. MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01
PARAMETERS	STORET	CDMHNSS3
UNITS	METHOD	43
DATE		07/15/94
TIME		09:00
FIELD I.D.	29	
#	0	
SITE #	96274	
	0	
CHAIN OF CUSTODY	96793	
#	0	
SCREEN,GR. ALPHA,	96636	0.0
(ESTIMATE)NCI/KG-WET	R	
SCREEN,GR. BETA,	96637	24.7
(ESTIMATE)NCI/KG-WET	R	
MOISTURE	70320	2.8
%WET WT	I	
ARSENIC	1003	1.88
MG/KG-DRY	7060-G	
SELENIUM	1148	<0.254
MG/KG-DRY	7740-G	
MERCURY	71921	<0.101
MG/KG-DRY	7471M-G	
BARIUM	1008	219
MG/KG-DRY	6010-G	
CADMIUM	1028	<0.509
MG/KG-DRY	6010-G	
CHROMIUM	1029	9.72
MG/KG-DRY	6010-G	
LEAD	1052	11.8
MG/KG-DRY	6010-G	
SIL	1078	<0.509
MG/KG-DRY	6010-G	
1,1,1-TRICHL'ETHANE	34509	<10.0
UG/KG-DRY	CLP90-G	
1,1,2,2-TETRACHLORO	34519	<10.0
ETHANE UG/KG-DRY	CLP90-G	
1,1,2-TRICHL'ETHANE	34514	<10.0
UG/KG-DRY	CLP90-G	
1,1-DICHLOROETHANE	34499	<10.0
UG/KG-DRY	CLP90-G	
1,1-DICHLOROETHYLENE	34504	<10.0
UG/KG-DRY	CLP90-G	
1,2-DICHLOROETHANE	34534	<10.0
UG/KG-DRY	CLP90-G	
1,2-DICHLOROETHENE(T	96464	<10.0
OTAL) UG/KG-DRY	CLP90-G	
1,2-DICHLOROPROPANE	34544	<10.0
UG/KG-DRY	CLP90-G	
2-HEXANONE	75166	<10.0
UG/KG-DRY	CLP90-G	
ACETONE	75059	<10.0
UG/KG-DRY	CLP90-G	
BENZENE	34237	<10.0
UG/KG-DRY	CLP90-G	
BROMODICHLOROMETHANE	34330	<10.0
UG/KG-DRY	CLP90-G	
BROMOFORM	34290	<10.0
UG/KG-DRY	CLP90-G	
BROMOMETHANE	34416	<10.0
UG/KG-DRY	CLP90-G	
CARBON DISULFIDE	78544	<10.0
UG/KG-DRY	CLP90-G	
CARBON TETRACHLORIDE	34299	<10.0
UG/KG-DRY	CLP90-G	
CH NZENE	34304	<10.0
UG/KG-DRY	CLP90-G	
CHLOR ANE	34314	<10.0
UG/KG-DRY	CLP90-G	

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01
PARAMETERS	STORET	CDMHNSS3
UNITS	METHOD	43
DATE		07/15/94
TIME		09:00
CHLOROFORM	34318	<10.0
UG/KG-DRY	CLP90-G	
CHLOROMETHANE	34421	<10.0
UG/KG-DRY	CLP90-G	
CIS-1,3-DICHLOROPROP	34702	<10.0
ENE UG/KG-DRY	CLP90-G	
DIBROMOCHLOROMETHANE	34309	<10.0
UG/KG-DRY	CLP90-G	
ETHYLBENZENE	34374	<10.0
UG/KG-DRY	CLP90-G	
METHYLENE CHLORIDE	34426	<10.0
UG/KG-DRY	CLP90-G	
2-BUTANONE (MEK)	75078	<10.0
UG/KG-DRY	CLP90-G	
4-METHYL-2-PENTANONE	75169	<10.0
(MIBK) UG/KG-DRY	CLP90-G	
STYRENE	75192	<10.0
UG/KG-DRY	CLP90-G	
TETRACHLOROETHENE	34478	<10.0
UG/KG-DRY	CLP90-G	
TOLUENE	34483	<10.0
UG/KG-DRY	CLP90-G	
TRANS-1,3-DICHLOROPR	34697	<10.0
OPENE UG/KG-DRY	CLP90-G	
TRICHLOROETHENE	34487	<10.0
UG/KG-DRY	CLP90-G	
VINYL CHLORIDE	34495	<10.0
UG/KG-DRY	CLP90-G	
XYLENES, TOTAL	97353	<10.0
UG/KG-DRY	CLP90-G	
1,2,4-TRICH'BENZENE	34554	<21000
UG/KG-DRY	CLP90/SON-G	
1,2-DICHLOROBENZENE	34539	<21000
UG/KG-DRY	CLP90/SON-G	
1,3-DICHLOROBENZENE	34569	<21000
UG/KG-DRY	CLP90/SON-G	
1,4-DICHLOROBENZENE	34574	<21000
UG/KG-DRY	CLP90/SON-G	
2,2'-OXYBIS(1-CHLORO	34286	<21000
PROPANE) UG/KG-DRY	CLP90/SON-G	
2,4,5-TRICH'PHENOL	98587	<51000
UG/KG-DRY	CLP90/SON-G	
2,4,6-TRICH'PHENOL	34624	<21000
UG/KG-DRY	CLP90/SON-G	
2,4-DICHLOROPHENOL	34604	<21000
UG/KG-DRY	CLP90/SON-G	
2,4-DIMETHYLPHENOL	34609	<21000
UG/KG-DRY	CLP90/SON-G	
2,4-DINITROPHENOL	34619	<51000
UG/KG-DRY	CLP90/SON-G	
2,4-DINITROTOLUENE	34614	<21000
UG/KG-DRY	CLP90/SON-G	
2,6-DINITROTOLUENE	34629	<21000
UG/KG-DRY	CLP90/SON-G	
2-CHLORONAPHTHALENE	34584	<21000
UG/KG-DRY	CLP90/SON-G	
2-CHLOROPHENOL	34589	<21000
UG/KG-DRY	CLP90/SON-G	
2-METHYL-4,6-DINITRO	34660	<51000
PHENOL UG/KG-DRY	CLP90/SON-G	
2-METHYLNAPHTHALENE	78868	<21000
UG/KG-DRY	CLP90/SON-G	
2-METHYLPHENOL	78872	<21000
UG/KG-DRY	CLP90/SON-G	

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H. MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01
PARAMETERS	STORET	CDMHNSS3
UNITS	METHOD	43
DATE		07/15/94
TIME		09:00
2-NITROANILINE	98588	<51000
UG/KG-DRY	CLP90/SON-G	
2-NITROPHENOL	34594	<21000
UG/KG-DRY	CLP90/SON-G	
3,3-DICHL'BENZIDINE	34634	<21000
UG/KG-DRY	CLP90/SON-G	
3-NITROANILINE	78869	<51000
UG/KG-DRY	CLP90/SON-G	
4-BROMOPHENYL PHENYL	34639	<21000
ETHER UG/KG-DRY	CLP90/SON-G	
4-CHLORO-3-METHYLPHE	34455	<21000
NOL UG/KG-DRY	CLP90/SON-G	
4-CHLOROANILINE	78867	<21000
UG/KG-DRY	CLP90/SON-G	
4-CHLOROPHENYLPHENYL	34644	<21000
ETHER UG/KG-DRY	CLP90/SON-G	
4-METHYLPHENOL	78803	<21000
UG/KG-DRY	CLP90/SON-G	
4-NITROANILINE	78870	<51000
UG/KG-DRY	CLP90/SON-G	
4-NITROPHENOL	34649	<51000
UG/KG-DRY	CLP90/SON-G	
ACENAPHTHENE	34208	<21000
UG/KG-DRY	CLP90/SON-G	
ACENAPHTHYLENE	34203	<21000
UG/KG-DRY	CLP90/SON-G	
AN. E	34223	<21000
UG/KG-DRY	CLP90/SON-G	
BENZO(A)ANTHRACENE	34529	<21000
UG/KG-DRY	CLP90/SON-G	
BENZO(A)PYRENE	34250	<21000
UG/KG-DRY	CLP90/SON-G	
BENZO(B)FLUORANTHENE	34233	<21000
UG/KG-DRY	CLP90/SON-G	
BENZO(GHI)PERYLENE	34524	<21000
UG/KG-DRY	CLP90/SON-G	
BENZO(K)FLUORANTHENE	34245	<21000
UG/KG-DRY	CLP90/SON-G	
BIS(2-CHLOROETHOXY)M	34281	<21000
ETHANE UG/KG-DRY	CLP90/SON-G	
BIS(2-CHLOROETHYL)ET	34276	<21000
HER UG/KG-DRY	CLP90/SON-G	
BIS(2-ETHYLHEXYL)PHT	39102	<21000
HALATE UG/KG-DRY	CLP90/SON-G	
BUTYLBENZYLPHTHALATE	34295	<21000
UG/KG-DRY	CLP90/SON-G	
CARBAZOLE	96242	<21000
UG/KG-DRY	CLP90/SON-G	
CHRYSENE	34323	<21000
UG/KG-DRY	CLP90/SON-G	
DI-N-BUTYL PHTHALATE	39112	<21000
UG/KG-DRY	CLP90/SON-G	
DI-N-OCTYL PHTHALATE	34599	<21000
UG/KG-DRY	CLP90/SON-G	
DIBEN(A,H)ANTHRACENE	34559	<21000
UG/KG-DRY	CLP90/SON-G	
DIBENZOFURAN	75647	<21000
UG/KG-DRY	CLP90/SON-G	
DIETHYL PHTHALATE	34339	<21000
UG/KG-DRY	CLP90/SON-G	
DI' ' PHTHALATE	34344	<21000
UG/KG-DRY	CLP90/SON-G	
FLUOR. HENE	34379	<21000
UG/KG-DRY	CLP90/SON-G	

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H. MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S			WC1-01
PARAMETERS		STORET	CDMHNSS3
	UNITS	METHOD	43
DATE			07/15/94
TIME			09:00
FLUORENE		34384	<21000
	UG/KG-DRY	CLP90/SON-G	
HEXACHLOROBENZENE		39701	<21000
	UG/KG-DRY	CLP90/SON-G	
HEXACHLOROBUTADIENE		39705	<21000
	UG/KG-DRY	CLP90/SON-G	
HEXACHLOROCYCLOPENTA		34389	<21000
TENE	UG/KG-DRY	CLP90/SON-G	
HEXACHLOROETHANE		34399	<21000
	UG/KG-DRY	CLP90/SON-G	
INDENO(1,2,3-CD)PYRE		34406	<21000
NE	UG/KG-DRY	CLP90/SON-G	
ISOPHORONE		34411	<21000
	UG/KG-DRY	CLP90/SON-G	
N-NITROSODI-N-PROPYL		34431	<21000
AMINE	UG/KG-DRY	CLP90/SON-G	
N-NITROSODIPHE'AMINE		34436	<21000
	UG/KG-DRY	CLP90/SON-G	
NAPHTHALENE		34445	<21000
	UG/KG-DRY	CLP90/SON-G	
NITROBENZENE		34450	<21000
	UG/KG-DRY	CLP90/SON-G	
PENTACHLPHENOL		39061	<51000
	UG/KG-DRY	CLP90/SON-G	
PHENANTHRENE		34464	<21000
	UG/KG-DRY	CLP90/SON-G	
PHENOL		34695	<21000
	UG/KG-DRY	CLP90/SON-G	
PYRENE		34472	<21000
	UG/KG-DRY	CLP90/SON-G	
Aldrin		39333	6.35
	UG/KG-DRY	CLP90	
alpha-BHC		39076	2.52
	UG/KG-DRY	CLP90	
beta-BHC		34257	<1.71
	UG/KG-DRY	CLP90	
delta-BHC		34262	<1.71
	UG/KG-DRY	CLP90	
gamma-BHC (Lindane)		39783	<1.71
	UG/KG-DRY	CLP90	
gamma-Chlordane		39811	<1.71
	UG/KG-DRY	CLP90	
alpha-Chlordane		97501	<1.71
	UG/KG-DRY	CLP90	
4,4'-DDD		39311	<3.43
	UG/KG-DRY	CLP90	
4,4'-DDE		39321	21.3
	UG/KG-DRY	CLP90	
4,4'-DDT		39301	6.37
	UG/KG-DRY	CLP90	
Dieldrin		39383	<3.43
	UG/KG-DRY	CLP90	
Endosulfan I		34364	<1.71
	UG/KG-DRY	CLP90	
Endosulfan II		34359	<3.43
	UG/KG-DRY	CLP90	
Endosulfan sulfate		34354	<34.3
	UG/KG-DRY	CLP90	
Endrin		39393	194
	UG/KG-DRY	CLP90	
Endrin ketone		98591	39.6
	UG/KG-DRY	CLP90	
Endrin aldehyde		34369	<34.3
	UG/KG-DRY	CLP90	

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H. MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01
PARAMETERS	STORET	CDMHNSS3
UNITS	METHOD	43
DATE		07/15/94
TIME		09:00
Heptachlor	39413	26.0
UG/KG-DRY	CLP90	
Heptachlor epoxide	39423	<1.71
UG/KG-DRY	CLP90	
Methoxychlor	39481	<171
UG/KG-DRY	CLP90	
Toxaphene	39403	<171
UG/KG-DRY	CLP90	
Aroclor-1016	39514	<34.3
UG/KG-DRY	CLP90	
Aroclor-1221	39491	<68.6
UG/KG-DRY	CLP90	
Aroclor-1232	39495	<34.3
UG/KG-DRY	CLP90	
Aroclor-1242	39499	<34.3
UG/KG-DRY	CLP90	
Aroclor-1248	39503	<34.3
UG/KG-DRY	CLP90	
Aroclor-1254	39507	<34.3
UG/KG-DRY	CLP90	
Aroclor-1260	39511	<34.3
UG/KG-DRY	CLP90	
ACETONE	75059	17
UG/KG-DRY	8240-G	
BEN[illegible]E	34237	<5.1
UG/KG-DRY	8240-G	
BR[illegible]HLOROMETHANE	34330	<5.1
UG/KG-DRY	8240-G	
BROMOFORM	34290	<5.1
UG/KG-DRY	8240-G	
BROMOMETHANE	34416	<10.0
UG/KG-DRY	8240-G	
CARBON DISULFIDE	78544	<5.1
UG/KG-DRY	8240-G	
CARBON TETRACHLORIDE	34299	<5.1
UG/KG-DRY	8240-G	
CHLOROBENZENE	34304	<5.1
UG/KG-DRY	8240-G	
CHLOROETHANE	34314	<10.0
UG/KG-DRY	8240-G	
2-CHLOROETHYLVINYL-	34579	<5.1
ETHER UG/KG-DRY	8240-G	
CHLOROFORM	34318	<5.1
UG/KG-DRY	8240-G	
CHLOROMETHANE	34421	<10.0
UG/KG-DRY	8240-G	
DIBROMOCHLOROMETHANE	34309	<5.1
UG/KG-DRY	8240-G	
1,1-DICHLOROETHANE	34499	<5.1
UG/KG-DRY	8240-G	
1,2-DICHLOROETHANE	34534	<5.1
UG/KG-DRY	8240-G	
1,1-DICHLOROETHYLENE	34504	<5.1
UG/KG-DRY	8240-G	
1,2-DICHLOROETHENE(T	96464	<5.1
OTAL) UG/KG-DRY	8240-G	
1,2-DICHLOROPROPANE	34544	<5.1
UG/KG-DRY	8240-G	
CIS-1,3-DICHLORO-	34702	<5.1
PR[illegible]NE UG/KG-DRY	8240-G	
TR[illegible]3-DICHLORO-	34697	<5.1
P[illegible] UG/KG-DRY	8240-G	
ETHYLBENZENE	34374	<5.1
UG/KG-DRY	8240-G	

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01
PARAMETERS	STORET	CDMHNSS3
UNITS	METHOD	43
DATE		07/15/94
TIME		09:00
2-HEXANONE	75166	<10.0
UG/KG-DRY	8240-G	
METHYLENE CHLORIDE	34426	<5.1
UG/KG-DRY	8240-G	
METHYL ETHYL KETONE	75078	<10.0
UG/KG-DRY	8240-G	
METHYLISOBUTYLKETONE	75169	<10.0
UG/KG-DRY	8240-G	
STYRENE	75192	<5.1
UG/KG-DRY	8240-G	
1,1,2,2-TETRACHLORO-	34519	<5.1
ETHANE UG/KG-DRY	8240-G	
TETRACHLOROETHENE	34478	<5.1
UG/KG-DRY	8240-G	
TOLUENE	34483	<5.1
UG/KG-DRY	8240-G	
1,1,1-TRICHL'ETHANE	34509	<5.1
UG/KG-DRY	8240-G	
1,1,2-TRICHL'ETHANE	34514	<5.1
UG/KG-DRY	8240-G	
TRICHLOROETHENE	34487	<5.1
UG/KG-DRY	8240-G	
VINYL CHLORIDE	34495	<10.0
UG/KG-DRY	8240-G	
VINYL ACETATE	98583	<10.0
UG/KG-DRY	8240-G	
XYLENE,TOTAL	45510	<5.1
UG/KG-DRY	8240-G	

Soils – Hits Only

PROJECT NUMBER 1944022G 0203 PROJECT NAME CDM - HANFORD N. SLOPE
FIELD GROUP CDMHNSS3 PROJECT MANAGER E.H. MANSFIELD
43 ALL LAB COORDINATOR EDWARD MANSFIELD

SAMPLE ID'S		WC1-01	
PARAMETERS		STORET	CDMHNSS3
	UNITS	METHOD	43
DATE			07/15/94
TIME			09:00
FIELD I.D.		29	
	#	0	
SITE #		96274	
		0	
CHAIN OF CUSTODY		96793	
	#	0	
SCREEN,GR. ALPHA,		96636	0.0
(ESTIMATE)	NCI/KG-WET	R	
SCREEN,GR. BETA,		96637	24.7
(ESTIMATE)	NCI/KG-WET	R	
MOISTURE		70320	2.8
	%WET WT	I	
ARSENIC		1003	1.88
	MG/KG-DRY	7060-G	
BARIUM		1008	219
	MG/KG-DRY	6010-G	
CHROMIUM		1029	9.72
	MG/KG-DRY	6010-G	
LEAD		1052	11.8
	MG/KG-DRY	6010-G	
Aldrin		39333	6.35
	UG/KG-DRY	CLP90	
alpha-BHC		39076	2.52
	UG/KG-DRY	CLP90	
4,4'-DDE		39321	21.3
	UG/KG-DRY	CLP90	
4,4'-DDT		39301	6.37
	UG/KG-DRY	CLP90	
Endrin		39393	194
	UG/KG-DRY	CLP90	
Endrin ketone		98591	39.6
	UG/KG-DRY	CLP90	
Heptachlor		39413	26.0
	UG/KG-DRY	CLP90	
ACETONE		75059	17
	UG/KG-DRY	8240-G	

Volatile Organic Compounds

Quality Control Summary Reports

2B

SOIL VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

L Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Level:(low/med) LOW

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	VBLKS1	102	96	100		0
02	WC1-01	112	83	101		0
03	WC1-01MS	110	85	101		0
04	WC1-01MSD	118	78	101		0
05						
06						
07						
08						
09						
10						
11						
12						
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26						
27						
28						
29						
30						

		QC LIMITS
SMC1 (TOL)	= Toluene-d8	(84-138)
SMC2 (BFB)	= Bromofluorobenzene	(59-113)
SMC3 (DCE)	= 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix Spike - EPA Sample No.: WC1-01 Level:(low/med) LOW

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
1,1-Dichloroethene	52.	0.	52.	100	59-172
Trichloroethene	52.	0.	46.	88	62-137
Benzene	52.	0.	54.	104	66-142
Toluene	52.	0.	58.	111	59-139
Chlorobenzene	52.	0.	55.	106	60-133

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	52.	56.	108	8	22	59-172
Trichloroethene	52.	44.	85	3	24	62-137
Benzene	52.	53.	102	2	21	66-142
Toluene	52.	60.	115	3	21	59-139
Chlorobenzene	52.	54.	104	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

COMMENTS:

4A

VOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

VBLKS1

Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Lab File ID:00297 Lab Sample ID:MB*NONE*0728

Date Analyzed: 7/28/94 Time Analyzed:1149

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

Instrument ID:A

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	WC1-01	CDMHNSS3*43	00298	1223
02	WC1-01MS	SPM1*CDMHNSS	00299	1255
03	WC1-01MSD	SPM2*CDMHNSS	00300	1326
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
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28				
29				
30				

COMMENTS:

5A

VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Lab File ID:99679 BFB Injection Date: 5/27/94

Instrument ID:A BFB Injection Time:1039

GC Column:DB624 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	22.9
75	30.0 - 66.0% of mass 95	51.5
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0(0.0)1
174	50.0 - 120.0% of mass 95	79.7
175	4.0 - 9.0% of mass 174	6.6(8.3)1
176	93.0 - 101.0% of mass 174	79.9(100.2)1
177	5.0 - 9.0% of mass 176	5.2(6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010		99681	5/27/94	1149
02	VSTD020		99682	5/27/94	1223
03	VSTD050		99683	5/27/94	1340
04	VSTD100		99684	5/27/94	1414
05	VSTD200		99686	5/27/94	1522
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

5A
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Lab File ID:00294 BFB Injection Date: 7/28/94

Instrument ID:A BFB Injection Time:0933

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	8.0 - 40.0% of mass 95	24.2
75	30.0 - 66.0% of mass 95	53.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0(0.0)1
174	50.0 - 120.0% of mass 95	80.6
175	4.0 - 9.0% of mass 174	6.0(7.4)1
176	93.0 - 101.0% of mass 174	79.0(98.0)1
177	5.0 - 9.0% of mass 176	5.1(6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, AND MSD, BLANKS AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050		00295	7/28/94	1002
02	VBLKS1	MB*NONE*0728	00297	7/28/94	1149
03	WC1-01	CDMHNSS3*43	00298	7/28/94	1223
04	WC1-01MS	SPM1*CDMHNSS	00299	7/28/94	1255
05	WC1-01MSD	SPM2*CDMHNSS	00300	7/28/94	1326
06					
07					
08					
09					
10					
11					
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14					
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21					
22					

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Lab File ID (Standard):00295 Date Analyzed: 7/28/94

Instrument ID:A Time Analyzed:1002

GC Column:DB-624 ID: 0.53 (mm) Heated Purge: (Y/N) Y

		IS1(BCM) AREA #	RT #	IS2(DFB) AREA #	RT #	IS3(CBZ) AREA #	RT #
	12 HOUR STD	131064	9.62	582242	11.16	487761	15.42
	UPPER LIMIT	262128	10.12	1164484	11.66	975522	15.92
	LOWER LIMIT	65532	9.12	291121	10.66	243880	14.92
	EPA SAMPLE NO.						
01	VBLKS1	128418	9.60	545634	11.16	449587	15.45
02	WC1-01	86638	9.61	280879*	11.15	158813*	15.41
03	WC1-01MS	91125	9.58	304190	11.11	186406*	15.43
04	WC1-01MSD	91507	9.60	296440	11.14	161547*	15.41
05							
06							
07							
08							
09							
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20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

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

Column used to flag values outside of QC limits with an asterisk.
* Values outside of QC limits.

Sample Data

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:CDMHNSS3*43

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00298

Level: (low/med) LOW Date Received: 7/15/94

% Moisture: not dec. 3 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	6.	J
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1B

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WC1-01

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:CDMHNSS3*43

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00298

Level: (low/med) LOW Date Received: 7/15/94

% Moisture: not dec. 3 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 75-69-4	Trichlorofluoromethane	4.82	6.	JN
2. 0	1,1,2,3-TETRAMETHYLCYCLOHEXA	17.52	11.	JN
3. 0	Unknown	17.78	70.	J
4. 0	Unknown	17.87	24.	J
5. 591-48-0	Cyclohexene, 3-methyl-	18.08	14.	JN
6. 17302-28-2	Nonane, 2,6-dimethyl-	18.42	13.	JN
7.	Unknown	18.79	11.	J
. 0	1-ETHYL-2,2,6-TRIMETHYLCYCLO	19.39	22.	JN
9. 91-17-8	Naphthalene, decahydro-	19.75	22.	JN
10. 0	Unknown	20.10	13.	J
11. 95-73-8	Benzene, 2,4-dichloro-1-meth	21.66	11.	JN
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
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24.				
25.				
26.				
27.				
28.				
29.				
30.				

QUANT REPORT

Operator ID: USER86
Output File: ^00298::P1
Data File: >00298::GL
Name: CDMHNSS3*43
Misc: 07/28/94

Quant Rev: 5
Quant Time: 940728 12:53
Injected at: 940728 12:23
Dilution Factor: 1.00000

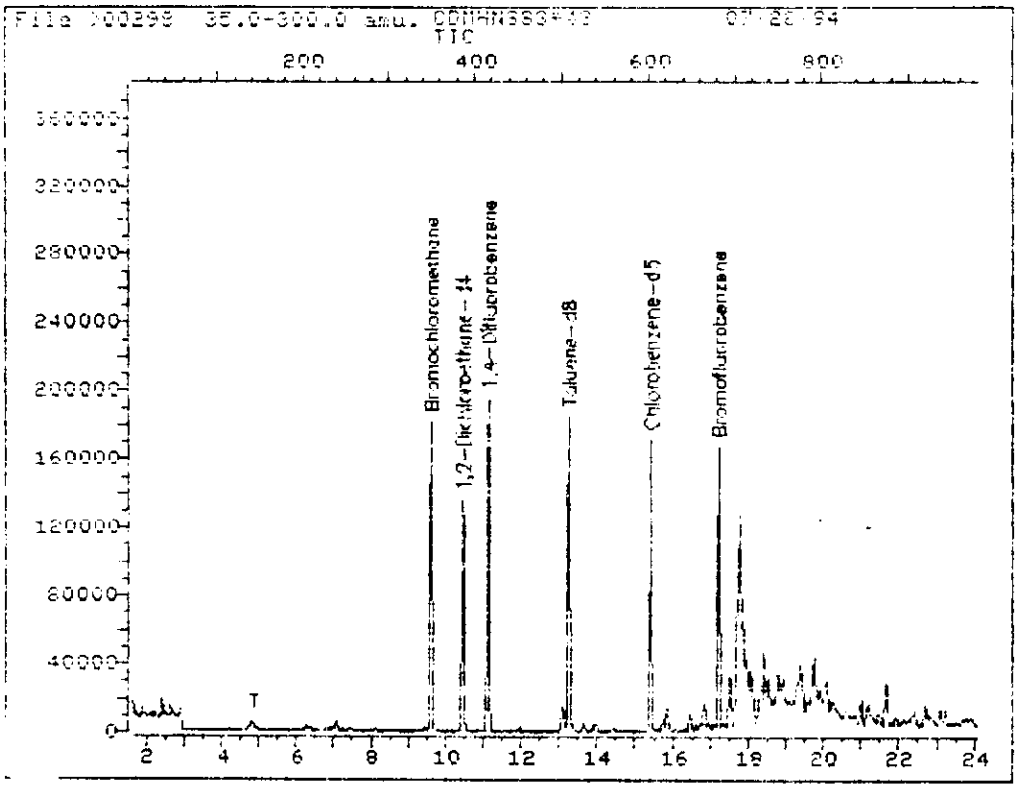
ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	Q
1)	*Bromochloromethane	9.61	128.0	86638	50.00	ug/Kg	98
13)	Trichlorofluoromethane	4.82	101.0	21223	5.58	ug/Kg	100
21)	1,2-Dichloroethane-d4	10.46	65.0	221514	50.64	ug/Kg	80
23)	*1,4-Difluorobenzene	11.15	114.0	780879	50.00	ug/Kg	100
41)	*Chlorobenzene-d5	15.41	117.0	158813	50.00	ug/Kg	100
44)	4-Methyl-2-Pentanone	13.07	43.0	18029	5.98	ug/Kg >DL	72
49)	Toluene-d8	13.26	98.0	215726	56.83	ug/Kg	100
53)	Bromofluorobenzene	17.23	95.0	101245	41.55	ug/Kg	100

* Compound is ISTD

GM 7/28/94

TOTAL ION CHROMATOGRAM



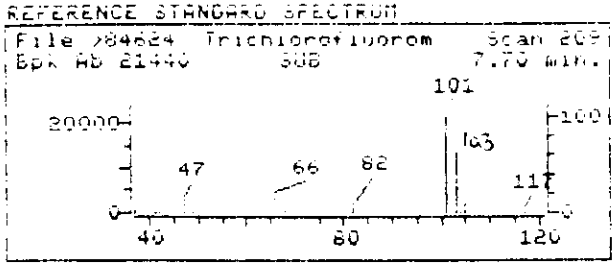
Data File: >00298::GL
Name: CDMHN8S3*43
Misc: 07/28/94

Quant Output File: ^00298::P1

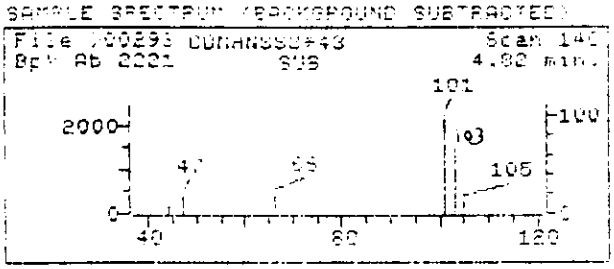
Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:42

Operator ID: USER96
Quant Time: 940728 12:53
Injected at: 940728 12:23

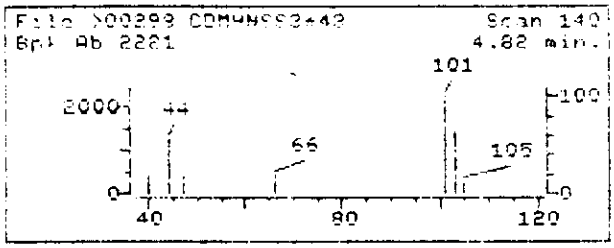
REFERENCE STANDARD SPECTRUM

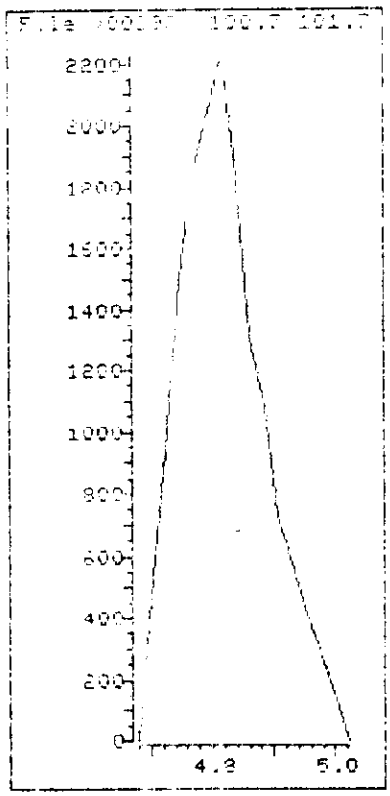


SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)





Data File: >00298::GL
Name: COMHNSS3*43
Misc: 07/28/94
Quant Time: 940728 12:53
Injected at: 940728 12:53

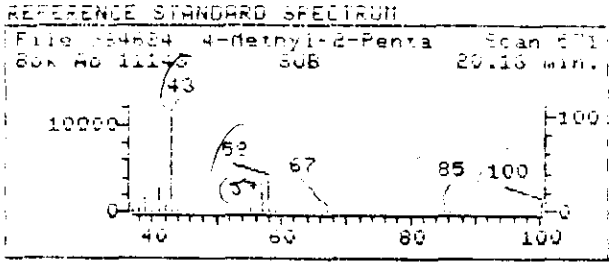
Quant Output File: ^00298::P1

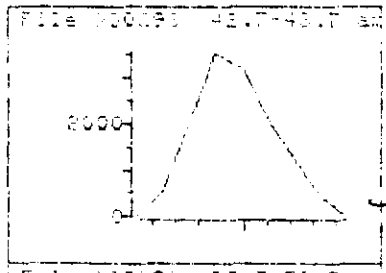
Quant ID File: IDARMS::E2
Last Calibration: 940728 10:47

Compound No: 13
Compound Name: Trichlorofluoromethane
Scan Number: 140
Retention Time: 4.82 min
Quant Ion: 101.0
Area: 21223
Concentration: 5.58 ug/Kg
q-value: 100

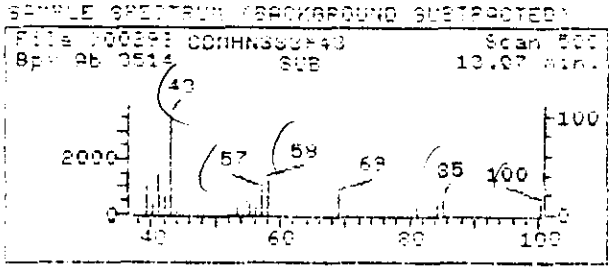
JSH 7/28/94

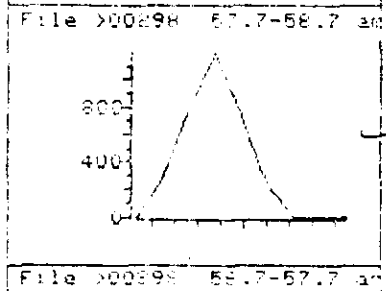
REFERENCE STANDARD SPECTRUM



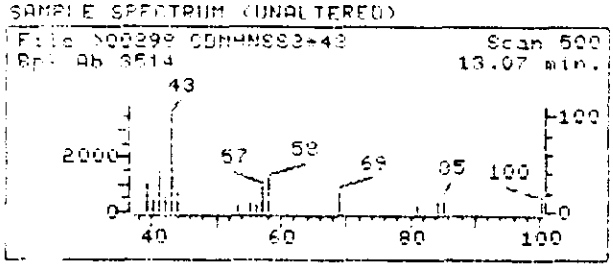


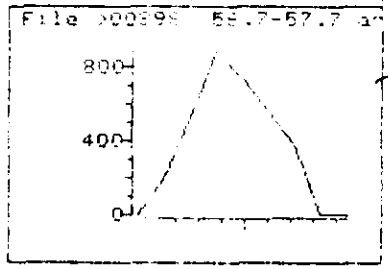
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)





SAMPLE SPECTRUM (UNALTERED)





Data File: >00298::GL
Name: COMHNSS3*43
Misc: 07/28/94
Quant Time: 940728 12:53
Injected at: 940728 12:23

Quant Output File: ^00298::P1

Quant ID File: IDARMS::E2
Last Calibration: 940728 10:42

Compound No: 44
Compound Name: 4-Methyl-2-pentanone
Scan Number: 500
Retention Time: 13.07 min.
Quant Ion: 43.0
Area: 18029
Concentration: 5.98 ug/Kg < D.L 10.00
q-value: .92

gsh 7/28/94

MS data file header from : >00298

Sample: CDMHNSS3*43 Operator: USER56 MS 7/28/94 12:23
Misc : 07/28/94
Sus. #: 1 MS model: 96 SW/HW rev.: IA ALS # : 0
Method file: MF96S Tuning file MT9201 No. of extra records: 0
Source temp.: 200 Analyzer temp. 200 Transfer line temp. : 230

Chromatographic temperatures : 10. 171. 0. 0. 0.
Chromatographic times, min. : 3.0 5.0 0.0 0.0 0.0
Chromatographic rate deg/min: 10.0 0.0 0.0 0.0 0.0

>00298 CDMHNSS3*43 07/28/94
35.01 300.0 CLP ADC TIC
Upslope: .20 Area Reject: 57410. Max Peaks: 10 Bunching: 1
Dnslope: 0.00 Results File I00298 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	17.52	690	694	698	28549	172166	129461	16.02	5.364
2	17.78	698	705	707	123099	865391	808076	100.00	33.481
3	17.87	707	709	711	63358	318277	274846	34.01	11.388
4	18.08	716	718	724	29264	231908	157385	19.48	6.521
5	18.42	731	733	736	35067	229892	144107	17.83	5.971
6	18.79	746	749	753	19279	270639	121718	15.06	5.043
7	19.39	768	775	782	27056	499936	250235	30.97	10.368
8	19.75	786	791	798	34872	405375	254481	31.49	10.544
9	20.10	801	806	809	21646	251851	144524	17.88	5.988
10	21.66	870	874	879	25323	179855	128705	15.93	5.333

Sum of corrected areas: 2413538.

Summary of Unknowns PBM Library Search and Quantitation

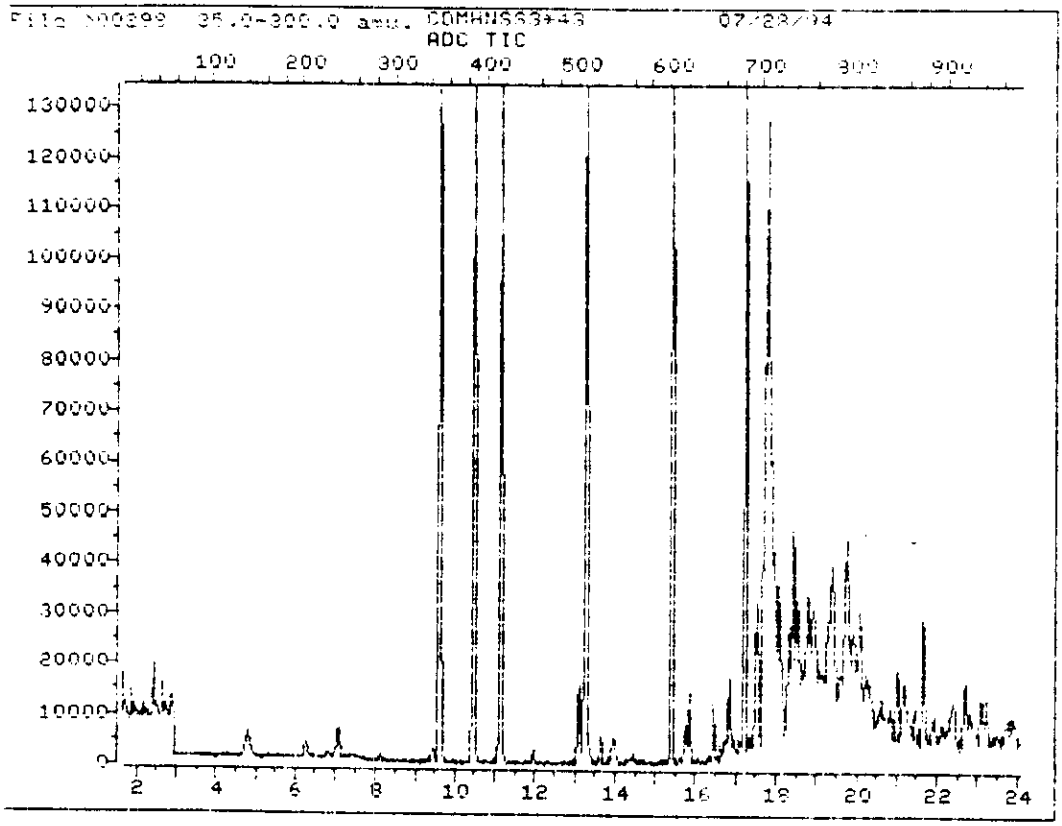
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	655928.	9.61	1.63 - 10.38
2	50.0	739379.	11.15	10.38 - 13.28
3	50.0	574104.	15.41	13.28 - 24.07

Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 0.00
Amount Method (AM) = 1000.00 Amount Used (AU) = 1000.00

Correction Factor = ******** = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

3:53 PM THU , 28 JULY, 1994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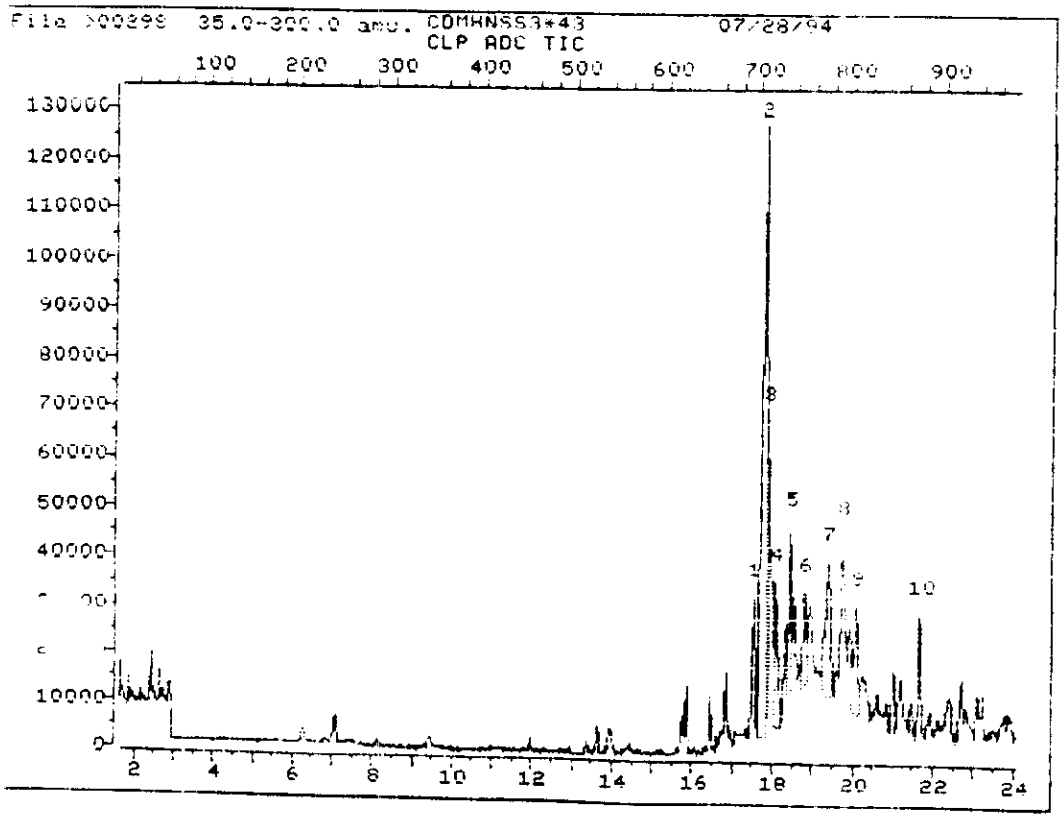
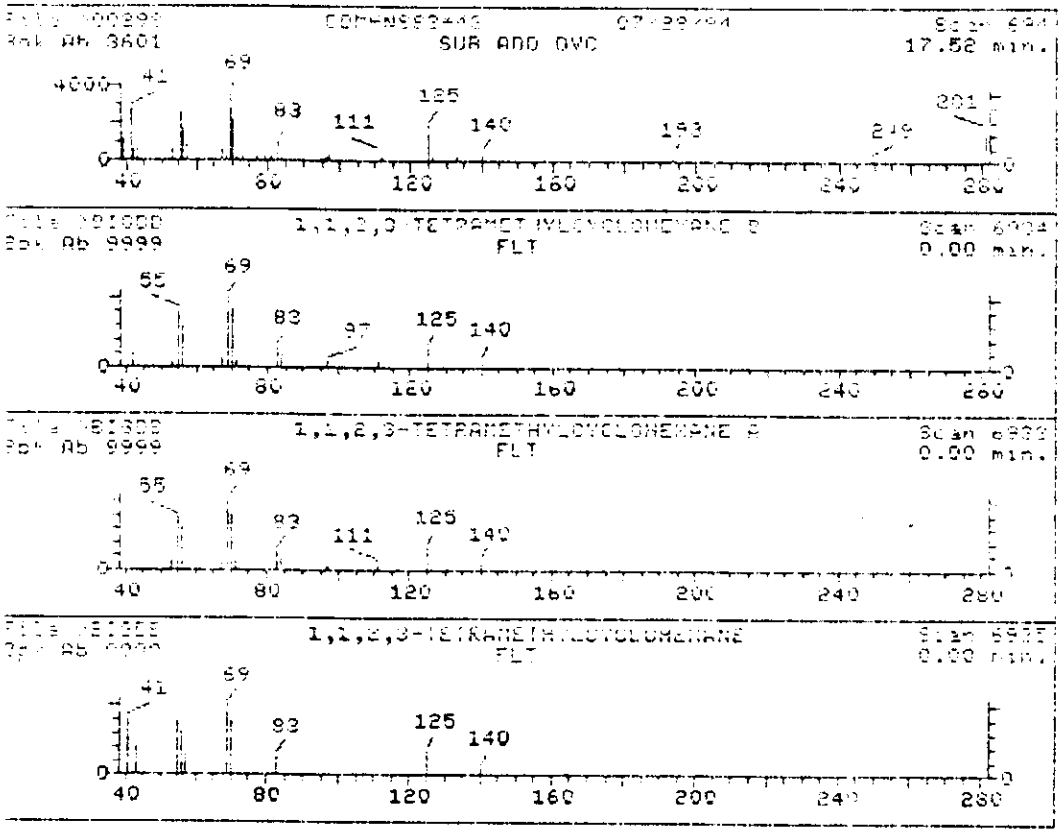
ADC TIC
100 200 300 400 500 600 700 800 900
130000 120000 110000 100000 90000 80000 70000 60000 50000 40000 30000 20000 10000 0
2 4 6 8 10 12 14 16 18 20 22 24


File 000299 35.0-300.0 amu. COMHNSS3*43 07/28/94
CLP ADC TIC
100 200 300 400 500 600 700 800 900
130000 120000 110000 100000 90000 80000 70000 60000 50000 40000 10000 0
2 4 6 8 10 12 14 16 18 20 22 24
2
8
5
3
7
6
10



Unknown # 1

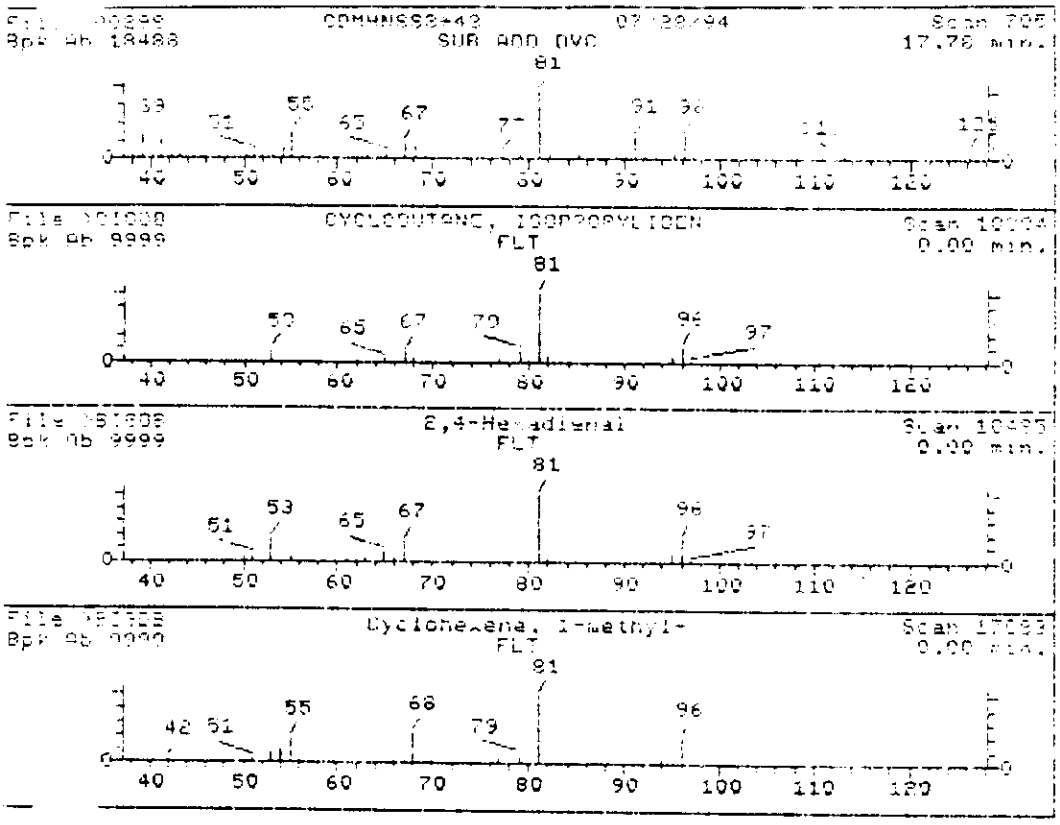
Area = [illegible] Tentative Concentration is [illegible]

1.	1,1,2,3-TETRAMETHYLCYCLOHEXANE B	140	C10H20
2.	1,1,2,3-TETRAMETHYLCYCLOHEXANE A	140	C10H20
3.	1,1,2,3-TETRAMETHYLCYCLOHEXANE	140	C10H20
4.	4-Octene, 2,6-dimethyl-, (S-(Z))-	140	C10H20
5.	CYCLOHEXANE, 1,1,4,4-TETRAMETHYL-	140	C10H20
6.	1H-1,2,4-Triazole, 1-butyl-	125	C6H11N3
7.	3-DECENE, CIS=TRANS	140	C10H20

Sample file: [illegible] Spectrum #: [illegible]
Search speed: 1 Tilting option: N No. of ion ranges searched: 42

	Prob.	CAS #	CON #	ROOT	K	TK	*FLG	TILT	%	CON	C_I	R_ID
1.	91*	0	6934	"BIGDB	77	38	0	0	71	30	57	93
2.	88*	0	6933	"BIGDB	70	43	0	0	74	29	43	88
3.	62*	0	6935	"BIGDB	54	28	1	0	72	30	25	49
4.	30	4096[illegible]774	6932	"BIGDB	57	42	2	0	126	40	10	16
5.	26*	0	28369	"BIGDB	31	76	2	0	81	42	8	14
6.	20*	6[illegible]8272	28311	"BIGDB	40	28	3	0	73	52	5	13
7.	15*	0	6938	"BIGDB	35	74	3	0	66	60	3	13

gah 7/29/94



Unknown # 2
Area = 808126.0 Tentative Concentration = 20 ug

1. CYCLOBUTANE, ISOPROPYLIDEN- 96 C7H12
2. 2,4-Hexadienal 96 C6H8O
3. Cyclohexene, 1-methyl- 96 C7H12
4. Cyclohexene, 4-methyl- 96 C7H12
5. 2,4-Hexadienal 96 C6H8O
6. Bicyclo[4.1.0]heptane 96 C7H12
7. 2,4-Hexadienal, (E,E)- 96 C6H8O

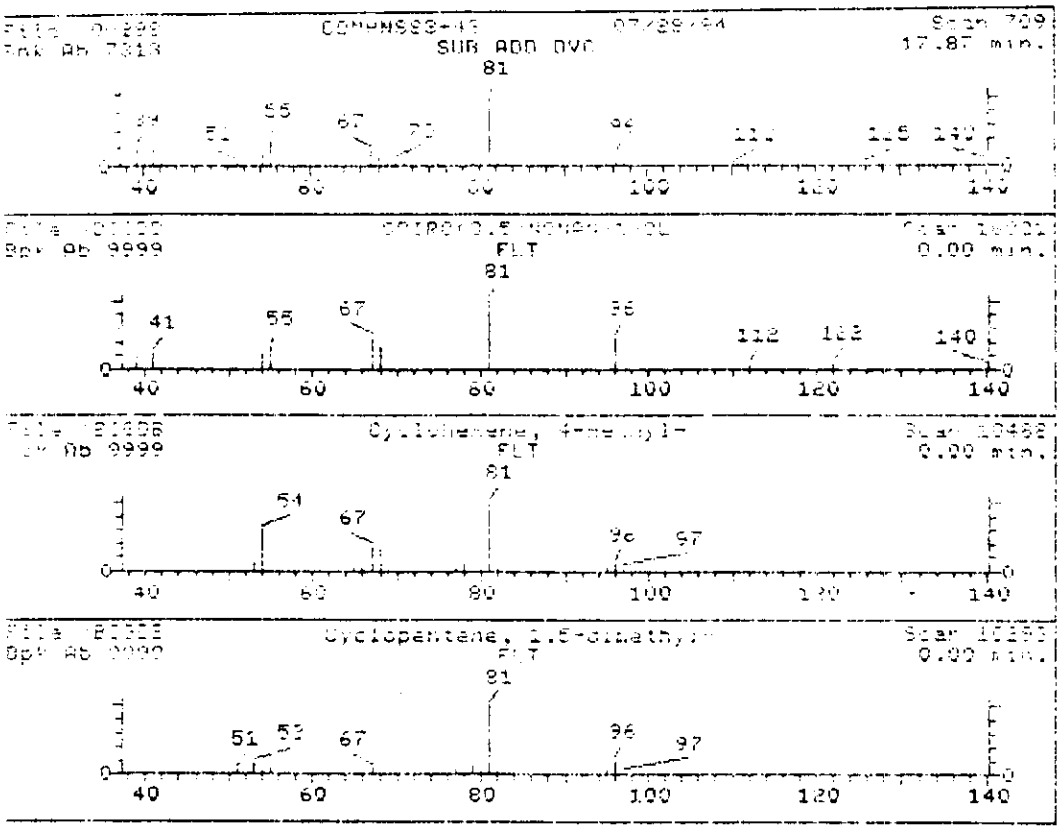
Sample file: 100298 Spectrum #: 705
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	C	MK	#FLG	TILT	%	CON	C_I	E_IN
1.	59*	0	10304	"BIGDB	48	44	0	0	67	37	21	57
2.	48*	142836	10485	"BIGDB	51	42	2	0	95	32	22	22
3.	45*	591491	17083	"BIGDB	48	45	2	0	79	34	16	28
4.	42*	591479	10489	"BIGDB	41	54	2	0	68	27	14	19
5.	36*	142836	10484	"BIGDB	32	72	3	0	100	22	14	13
6.	36*	2868883	10483	"BIGDB	32	79	3	0	117	22	14	13
7.	35*	4488486	10290	"BIGDB	30	51	0	0	65	37	14	22

unknown

ysH 7/29/94

000032



Unknown # 3
Area = 274846.0 Tentative Concentration is 94.00

1.	SPIRO(3.5)NONAN-1-OL	140	C9H16O
2.	Cyclohexene, 4-methyl-	96	C7H12
3.	Cyclopentene, 1,5-dimethyl-	96	C7H12
4.	1-Octyne	110	C8H14
5.	Cyclopentane, 1-methyl-2-methylene-	96	C7H12
6.	1,4-Pentadiene, 3,3-dimethyl-	96	C7H12
7.	2-CYCLOPENTENCARBONIC ACID, 1-METHYL-	126	C7H10O2

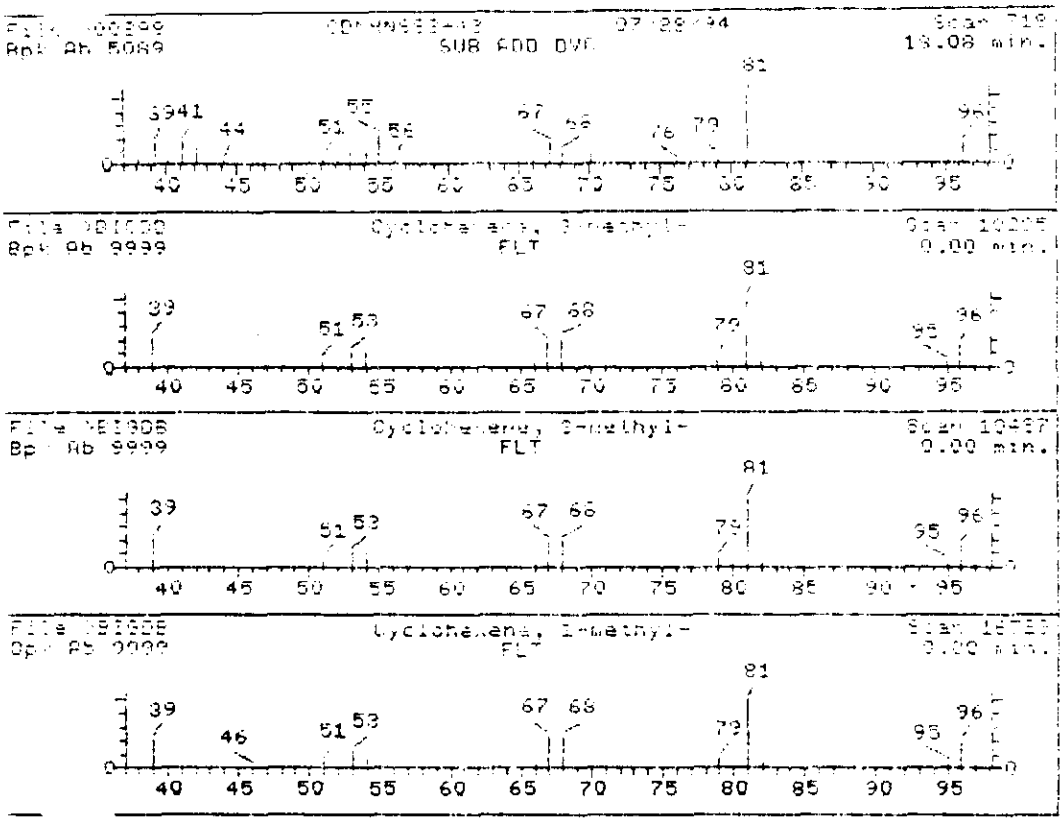
Sample file: >00298 Spectrum #: 709
Search speed: 1 Tilting option N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	M	RK	#FLG	TILT	%	CON	L_I	R_I
1.	52*	0	16821	"BIGDB	23	62	3	0	100	19	20	10
2.	42*	591429	10488	"BIGDB	36	62	3	0	100	24	[illegible]	[illegible]
3.	41*	16491159	10293	"BIGDB	45	44	2	0	69	31	16	24
4.	30*	629050	10496	"BIGDB	43	55	2	0	33	42	8	14
5.	30*	41158412	10303	"BIGDB	38	59	1	0	61	46	10	21
6.	30*	1112352	10200	"BIGDB	35	63	3	0	100	33	12	[illegible]
7.	28	0	10341	"BIGDB	40	39	2	0	67	40	10	14

Unknown

yzw 7/29/94

000033

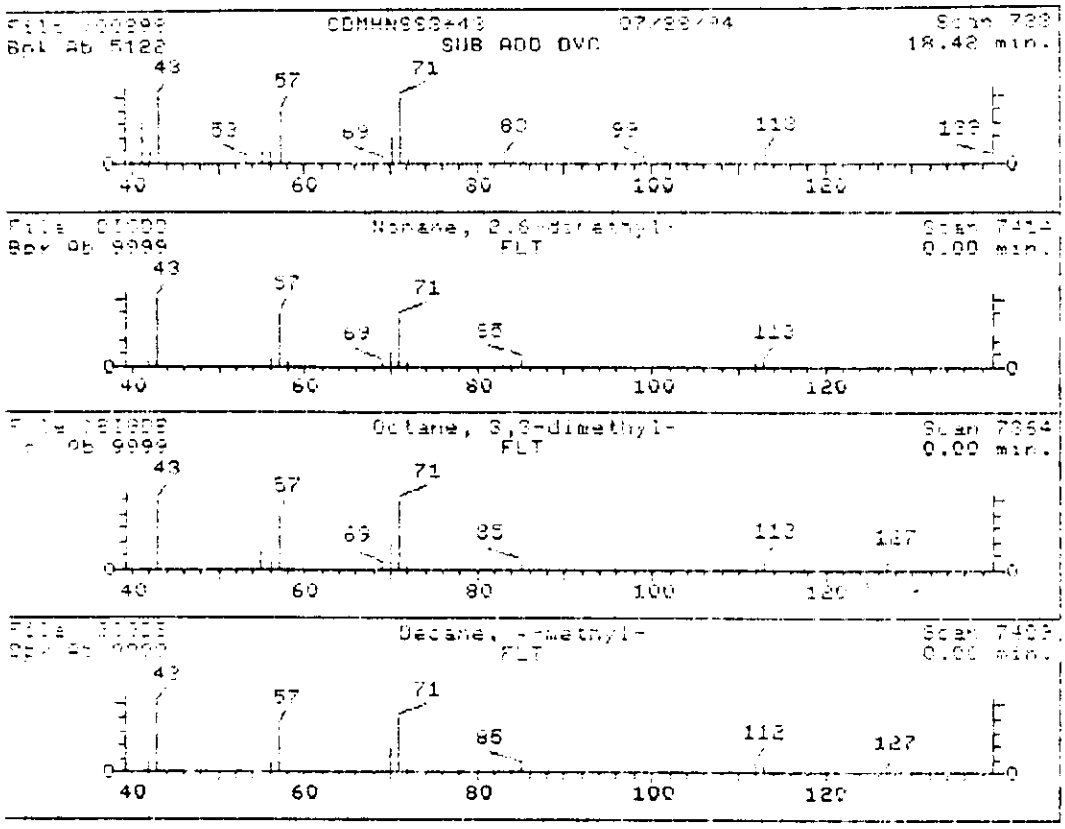


Unknown #.4
Area = 157385.0 Tentative Concentration is 14.00

1. Cyclohexene, 3-methyl- 96 C7H12
2. Cyclohexene, 3-methyl- 96 C7H12
3. Cyclohexene, 1-methyl- 96 C7H12
4. Cyclohexene, 4-methyl- 96 C7H12
5. Cyclopentane, 1-methyl-2-methylene- 96 C7H12
6. Cyclohexene, 1-methyl- 96 C7H12
7. 2,4-Hexadiene, 2-methyl- 96 C7H12

Sample file: >00298 Spectrum #: 718
Search speed: 1 Tilting option N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	OK	#FLG	TILT	%	CON	C_I	F_IO
1.	86*	591480	10295	"BIGDB	83	23	1	0	70	20	50	80
2.	86*	591480	10487	"BIGDB	83	73	1	0	70	70	50	80
3.	64*	591491	16729	"BIGDB	67	42	2	0	68	21	28	46
4.	55*	591479	10490	"BIGDB	47	27	2	0	58	24	22	27
5.	54*	41158412	10303	"BIGDB	44	53	1	0	78	21	22	26
6.	54*	591491	17083	"BIGDB	52	41	2	0	78	28	24	34
7.	51*	28923418	17082	"BIGDB	54	51	2	0	66	28	24	3[illegible]



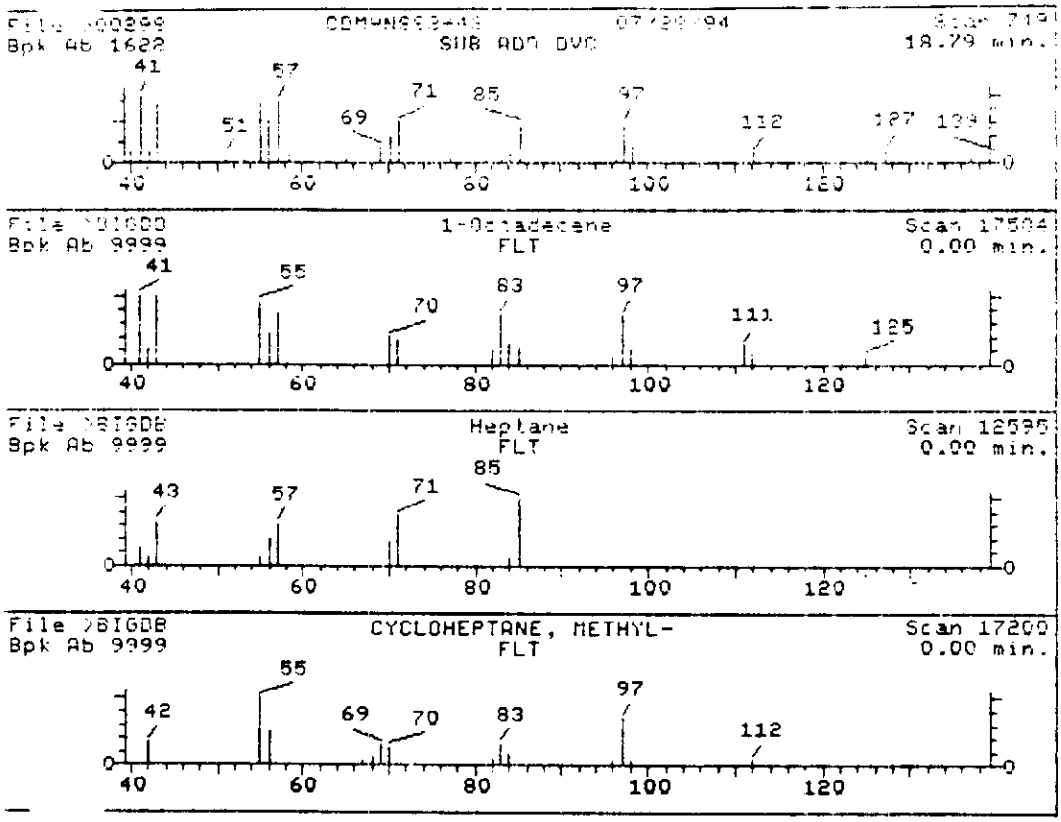
Unknown # 5

1.	Nonane, 2,6-dimethyl-	156	C11H24
2.	Octane, 3,3-dimethyl-	142	C10H22
3.	Decane, 4-methyl-	156	C11H24
4.	Decane, 4-methyl-	156	C11H24
5.	Heptane, 3,3,5-trimethyl-	142	C10H22
6.	Heptane, 3,3,5-trimethyl-	142	C10H22
7.	Heptane, 3,3,5-trimethyl-	142	C10H22

Sample file: [illegible] Spectrum #: [illegible]
Search speed: 1 Tilting option: N No. of ion ranges searched: 48

	Prob.	CAS #	CON #	BOOK	<	OK	#FLG	VOLT	%	CON	[illegible]	[illegible]
1.	76	17302282	7414	"BIGDB	68	23	2	0	97	7	45	24
2.	76	4110445	7364	"BIGDB	53	30	2	0	98	[illegible]	[illegible]	[illegible]
3.	76	2847725	7409	"BIGDB	69	32	2	0	97	7	45	24
4.	76	2847725	7703	"BIGDB	66	29	2	0	100	8	[illegible]	[illegible]
5.	70	7154805	7676	"BIGDB	42	48	2	0	97	7	42	12
6.	70	7154805	7359	"BIGDB	49	35	2	0	92	7	42	12
7.	70	7154805	7675	"BIGDB	52	40	2	0	97	7	42	12

JSH 7/29/94



Unknown #,6
Area = 121718.0 Tentative Concentration is 11.00

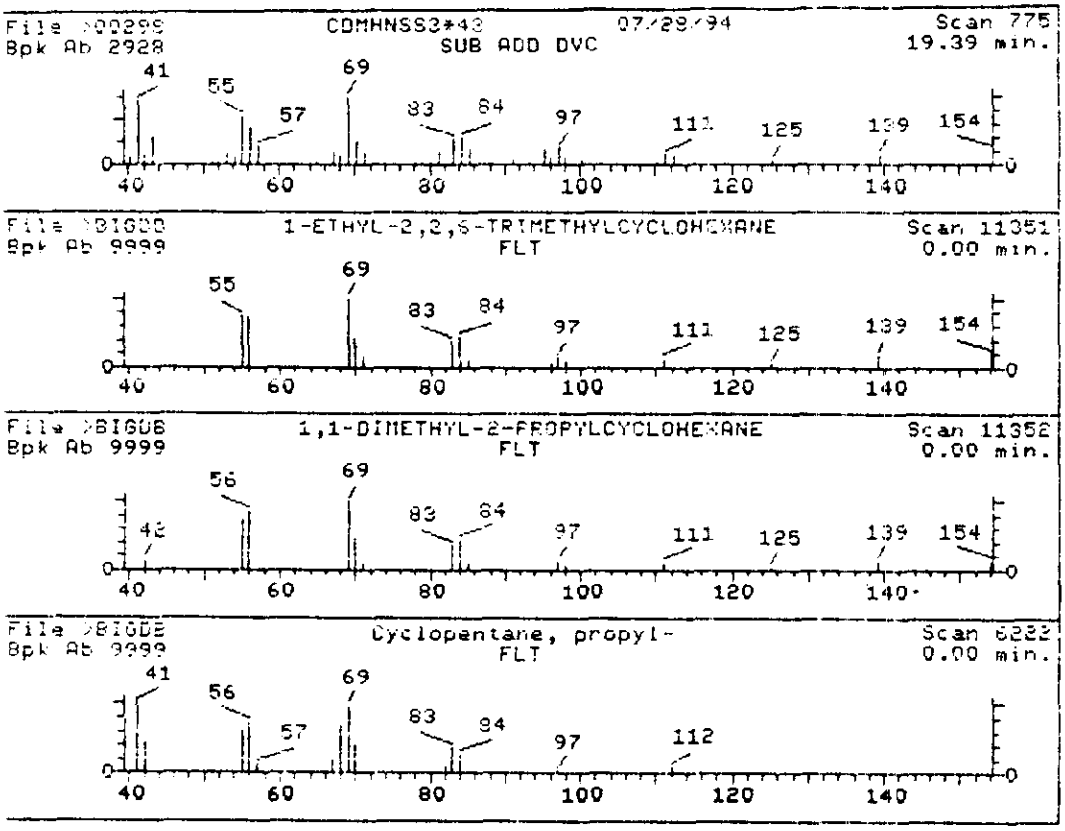
1.	1-Octadecene	252	C18H36
2.	Heptane	100	C7H16
3.	CYCLOHEPTANE, METHYL-	112	C8H16
4.	1-Octene	112	C8H16
5.	1-Hexene, 5,5-dimethyl-	112	C8H16
6.	1-Hexene, 5,5-dimethyl-	112	C8H16

Sample file: >00298 Spectrum #: 749
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	25	112889	17584	"BIGDB	70	92	3	0	79	46	7	12
2.	20	142825	12595	"BIGDB	25	69	0	0	57	52	5	12
3.	15*	0	17200	"BIGDB	29	77	3	0	80	57	3	13
4.	11*	111660	17773	"BIGDB	38	49	2	0	129	63	2	19
5.	11*	7116861	17199	"BIGDB	28	58	3	0	235	64	2	13
6.	11*	7116861	17774	"BIGDB	33	20	3	0	161	65	2	14

Unknown

YGH 7/29/94



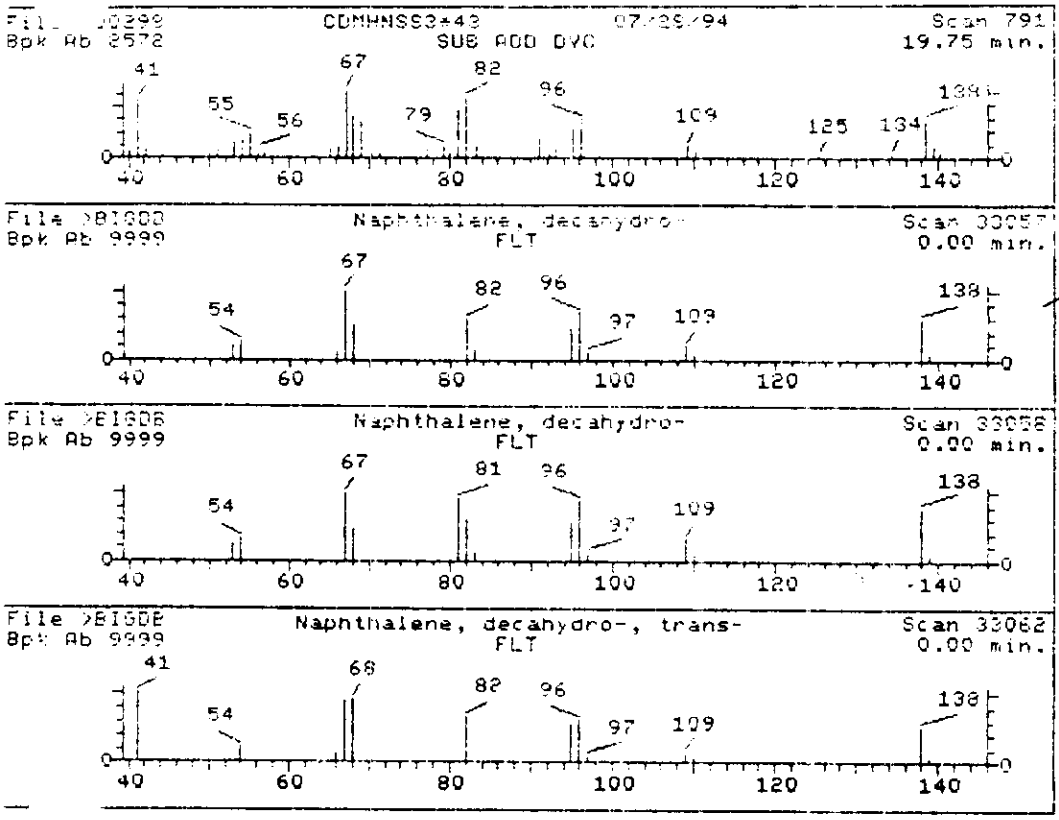
Unknown #,7
Area = 250235.0 Tentative Concentration is 22.00

1.	1-ETHYL-2,2,6-TRIMETHYLCYCLOHEXANE	154	C11H22
2.	1,1-DIMETHYL-2-PROPYLCYCLOHEXANE	154	C11H22
3.	Cyclopentane, propyl-	112	C8H16
4.	Decane, 4-methylene-	154	C11H22
5.	2-Decene, 4-methyl-, (Z)-	154	C11H22
6.	2-Pentene, 2-methyl-	84	C6H12
7.	Cyclohexane, 2-butyl-1,1,3-trimethyl-	182	C13H26

Sample file: >00298 Spectrum #: 775
Search speed: 1 Tilting option: N No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	93*	0	11351	"BIGDB	76	43	0	0	76	14	64	93
2.	77*	0	11352	"BIGDB	82	36	1	0	77	33	32	78
3.	45*	2040962	6222	"BIGDB	61	54	3	0	78	34	16	28
4.	42*	24949415	2311	"BIGDB	45	43	3	0	239	27	14	19
5.	41*	74630301	6349	"BIGDB	31	68	0	0	100	33	16	24
6.	35*	625274	6628	"BIGDB	35	50	0	0	94	50	11	36
7.	35	54676390	6730	"BIGDB	71	60	3	0	73	28	14	12

7/29/94

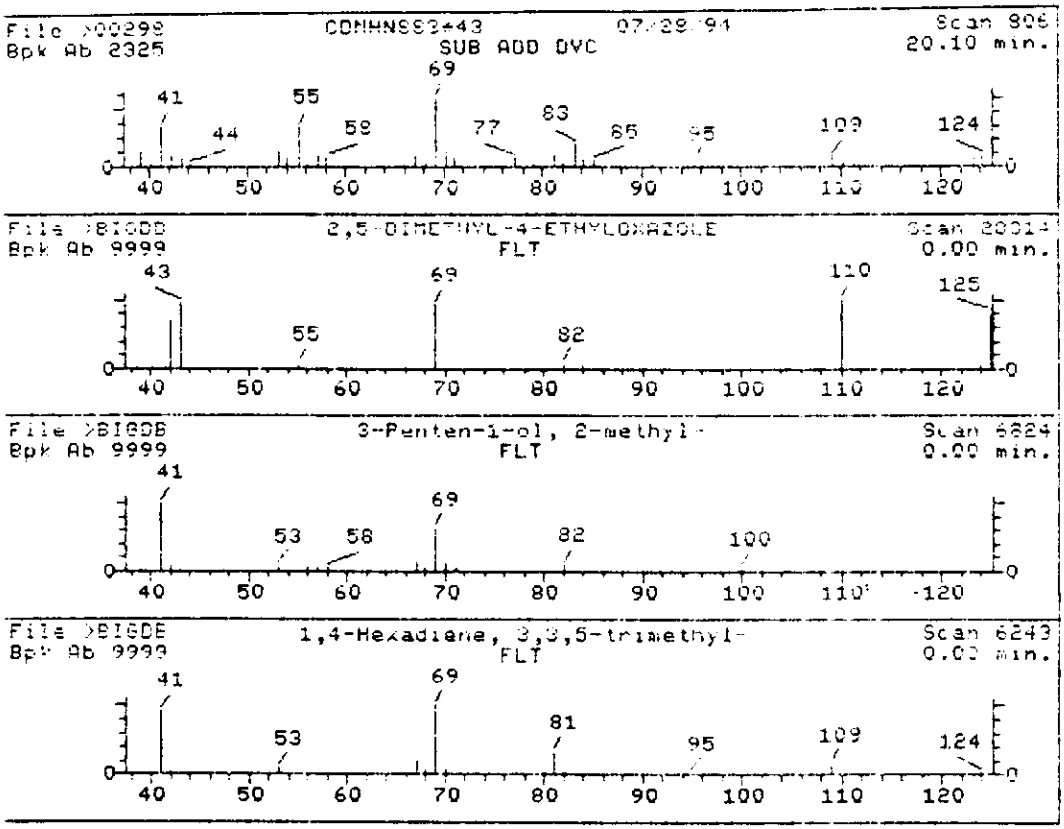


Unknown # 8
Area = 254481.0 Tentative Concentration is 22.00

1.	Naphthalene, decahydro-	138	C10H18
2.	Naphthalene, decahydro-	138	C10H18
3.	Naphthalene, decahydro-, trans-	138	C10H18
4.	1,1'-Bicyclopentyl	138	C10H18
5.	Naphthalene, decahydro-, cis-	138	C10H18
6.	Naphthalene, decahydro-, cis-	138	C10H18
7.	Cyclododecene, (Z)-	166	C12H22

Sample file: >00298 Spectrum #: 791
Search speed: 1 Tilting option: N No. of ion ranges searched: 43

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IO
1.	92*	91178	33057	"BIGDB	92	32	1	0	85	14	64	92
2.	68*	91178	33058	"BIGDB	77	50	2	0	66	22	30	59
3.	64*	493027	33062	"BIGDB	66	56	2	0	86	25	28	45
4.	59*	1636391	17106	"BIGDB	70	46	2	0	106	39	21	50
5.	57*	493016	33060	"BIGDB	55	63	1	0	86	31	22	42
6.	54*	493016	32836	"BIGDB	61	58	2	0	65	33	20	38
7.	52	1129891	16879	"BIGDB	71	58	3	0	90	16	20	12



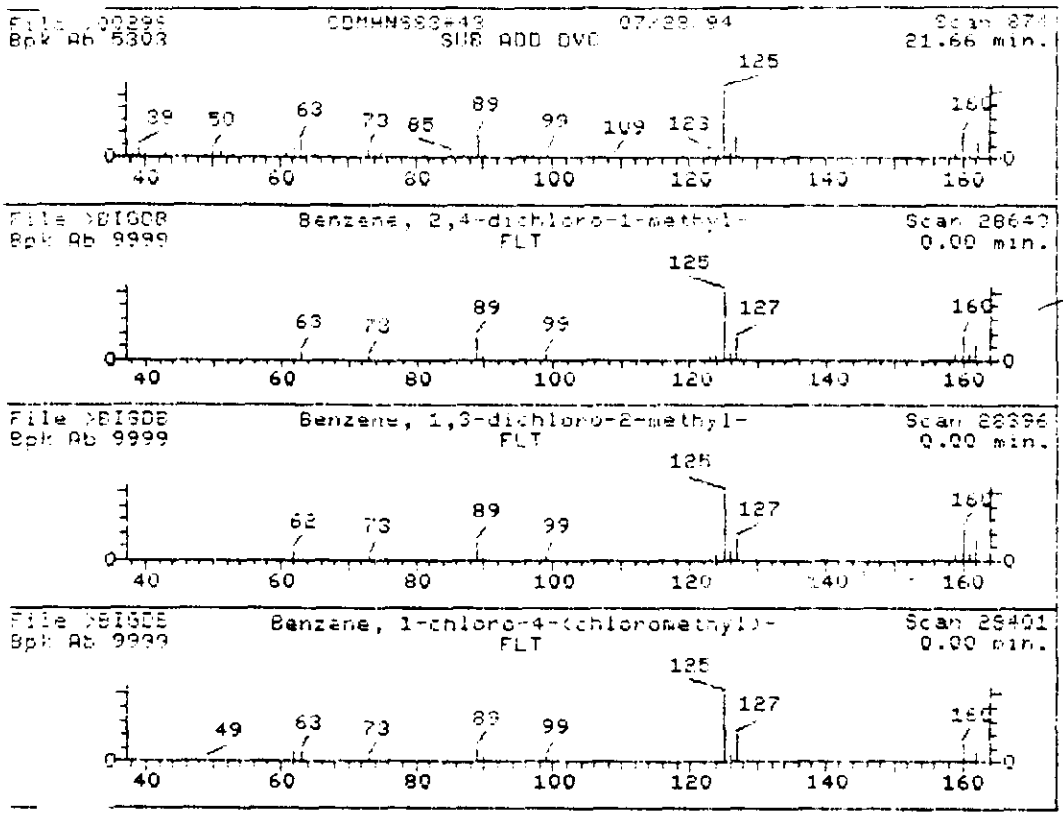
Unknown # 9
Area = 144524.0 Tentative Concentration is 13.00

1.	2,5-DIMETHYL-4-ETHYLOXAZOLE	125 C7H11NO
2.	3-Penten-1-ol, 2-methyl-	100 C6H12O
3.	1,4-Hexadiene, 3,3,5-trimethyl-	124 C9H16
4.	1H-1,2,4-Triazole, 1-butyl-	125 C6H11N3
5.	2,6-Octadiene, 4-methyl-	124 C9H16
6.	Methanone, dicyclopropyl-	110 C7H10O

Sample file: >00298 Spectrum # 806
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	26*	0	28314	"BIGDB	23	77	3	0	78	39	10	12
2.	25	62238373	6824	"BIGDB	41	43	2	0	148	47	7	14
3.	25*	74753007	6243	"BIGDB	32	56	3	0	100	50	7	13
4.	25*	6086222	28311	"BIGDB	34	84	3	0	96	44	8	13
5.	20*	74498945	6242	"BIGDB	26	52	1	0	75	53	5	14
6.	20*	1121375	6676	"BIGDB	24	57	1	0	85	55	5	14

Unknown [illegible] 7/29/94



Unknown # 10
Area = 128705.0 Tentative Concentration is 11.00

1.	Benzene, 2,4-dichloro-1-methyl-	160	C7H6Cl2
2.	Benzene, 1,3-dichloro-2-methyl-	160	C7H6Cl2
3.	Benzene, 1-chloro-4-(chloromethyl)-	160	C7H6Cl2
4.	2,3-DICHLOROTOLUENE	160	C7H6Cl2
5.	Benzene, 1-chloro-4-(chloromethyl)-	160	C7H6Cl2
6.	Benzene, 1-chloro-3-(chloromethyl)-	160	C7H6Cl2
7.	Benzene, (dichloromethyl)-	160	C7H6Cl2

Sample file: 00298 Spectrum #: 874
Search speed: 1 Tilting option: N No. of ion ranges searched: 41

	Prob.	CAS #	CON #	ROOT	%	DK	*FLG	TILT	%	CON	C_I	R_IO
1.	95*	95738	28643	"BIGDB	88	20	0	0	76	13	64	96
2.	92*	118694	28396	"BIGDB	73	28	0	0	74	15	64	92
3.	79*	104836	28401	"BIGDB	52	57	0	0	81	15	43	63
4.	79*	0	28405	"BIGDB	35	23	2	0	71	11	43	66
5.	64*	104836	28644	"BIGDB	40	57	0	0	93	22	28	41
6.	64*	620202	28399	"BIGDB	40	52	0	0	95	25	28	41
7.	63*	98873	28394	"BIGDB	35	62	0	0	97	20	30	32

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MS

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:SPM1*CDMHNSS

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00299

Level: (low/med) LOW Date Received: 7/15/94

% Moisture: not dec. 3 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	52.	
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	46.	
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	54.	
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	12.	
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	58.	
108-90-7	Chlorobenzene	55.	
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

QUANT REPORT

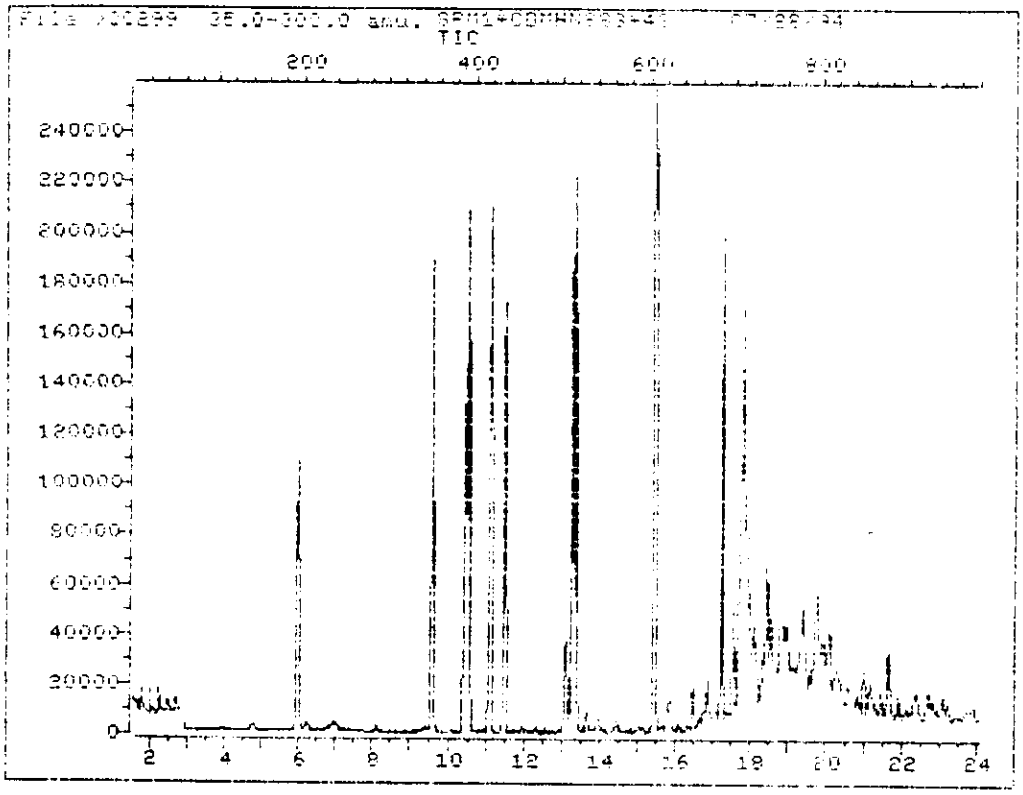
[illegible] Quant [illegible] Quant Time: 940728 [illegible]
Output File: [illegible]P1 Injected at: 940728 12:55
Data File: [illegible] Dilution Factor: 1.0000
Name: SPM1*CDMHNS83*43
Date: 07/28/94

ID File: IDARMS::E2
Method: CONNECT CHECKED BY PROGRAM TO FILE
Last Calibration: 940728 10:47

	Compound	R.T	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.58	128.0	91125	50.00	ug/Kg	95
14)	1,1-Dichloroethene	5.37	96.0	93878	50.38	ug/Kg	83
21)	1,2-Dichloroethane-d4	10.45	65.0	230831	50.17	ug/Kg	78
23)	*1,4-Difluorobenzene	11.11	114.0	304190	50.00	ug/Kg	100
32)	Trichloroethene	11.51	130.0	108979	44.21	ug/Kg	100
34)	Benzene	10.54	78.0	377806	52.81	ug/Kg	100
41)	*Chlorobenzene-d5	15.43	117.0	186406	50.00	ug/Kg	100
44)	4-Methyl-2-Pentanone	13.09	43.0	40267	11.38	ug/Kg	83
49)	Toluene-d8	13.27	98.0	242931	55.65	ug/Kg	100
50)	Toluene	13.38	92.0	161740	56.02	ug/Kg	79
51)	Chlorobenzene	15.45	112.0	193186	53.07	ug/Kg	98
53)	Bromofluorobenzene	17.74	95.0	127997	42.69	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >00299::GL
Name: SPH1+COMMN+83+43
Misc: 07/28/94

Quant Output File: ^00299::P.

A File: IDR+MS::E:
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

Operator ID: USER96
Quant Time: 940728 14:24
Injected at: 940728 12:55

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MSD

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:SPM2*CDMHNSS

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00300

Level: (low/med) LOW Date Received: 7/15/94

% Moisture: not dec. 3 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	10.	U
67-64-1	Acetone	58.	B
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	56.	
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	44.	
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	53.	
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	15.	
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	60.	
108-90-7	Chlorobenzene	54.	
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

QUANT REPORT

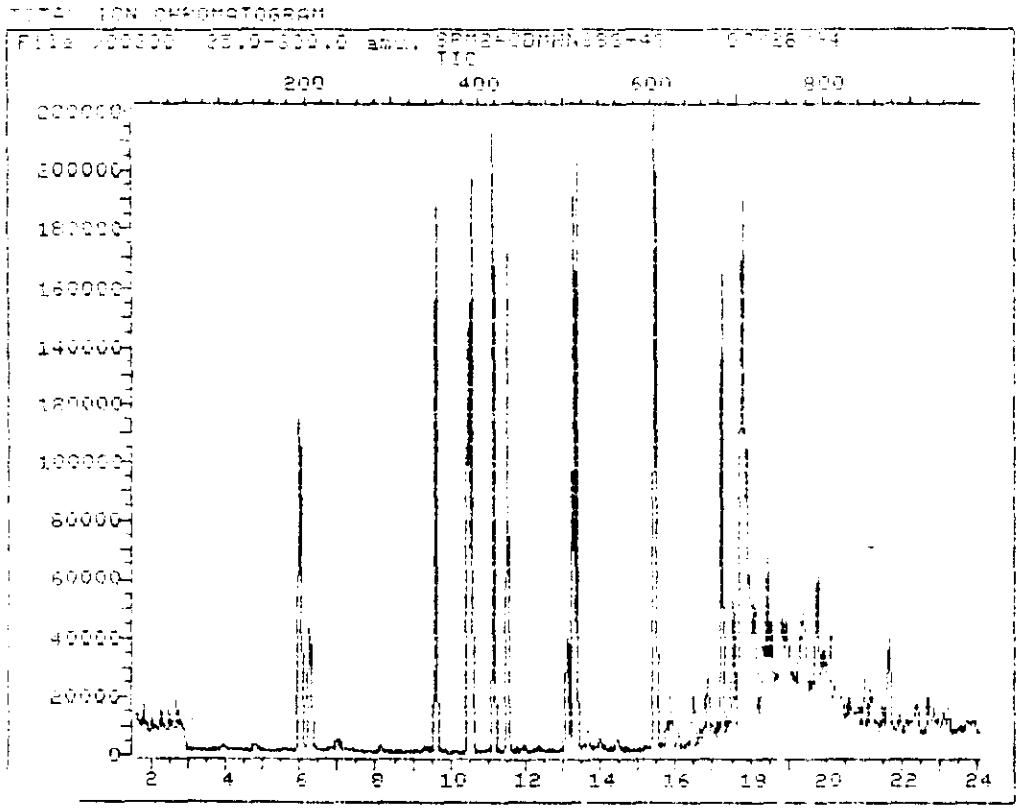
Operator ID: [illegible]
Output File: ^00300::P1
Data Dir: [illegible]
Name: SPM2*CDMHMSS3*43
Date: [illegible]

Quant Method: [illegible]
Quant Time: 940728 [illegible]
Injected at: 940728 13:2[illegible]
Dilution Factor: [illegible]

ID File: IDARMS::E2
Title: [illegible]
Last Calibration: 940728 10:42

	Compound	R.T.	% ion	Area	Conc	Units	Q
1)	*Bromochloromethane	9.50	128.0	91507	50.00	ug/Kg	92
5)	Acetone	[illegible]	[illegible]	[illegible]	[illegible]	ug/Kg	[illegible]
14)	1,1-Dichloroethene	6.00	96.0	97648	54.06	ug/Kg	65
21)	1,2-Dichloroethane-d4	[illegible]	[illegible]	[illegible]	50.09	ug/Kg	[illegible]
23)	*1,4-Difluorobenzene	11.14	114.0	296440	50.00	ug/Kg	100
32)	Trichloroethene	[illegible]	[illegible]	[illegible]	42.54	ug/Kg	[illegible]
34)	Benzene	10.54	78.0	310626	51.35	ug/Kg	100
41)	*Chlorobenzene-d5	[illegible]	[illegible]	[illegible]	50.00	ug/Kg	[illegible]
44)	4-Methyl-2-Pentanone	13.09	43.0	44269	14.44	ug/Kg	82
49)	Toluene-d8	[illegible]	[illegible]	[illegible]	58.42	ug/Kg	[illegible]
50)	Toluene	13.37	92.0	144611	57.83	ug/Kg	84
51)	Chlorobenzene	[illegible]	[illegible]	[illegible]	52.09	ug/Kg	[illegible]
53)	Bromofluorobenzene	17.24	95.0	96024	38.74	ug/Kg	100

* Compound is ISTD



Data File: >00300::GL
Name: SPM2+COMHN883+4X
Misc: 07/28/94

Quant Output File: ^00300::PI

I2 File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

Operator ID: USER96
Quant Time: 940728 13:56
Injected at: 940728 13:26

Standards Data

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Instrument ID:A Calibration Date(s): 5/27/94 5/27/94

Heated Purge: (Y/N) Y Calibration Times: 1149 1522

GC Column:DB-624 ID: 0.53 (mm)

LAB FILE ID: RRF10 =99681 RRF20 =99682
RRF50 =99683 RRF100=99684 RRF200=99686

COMPOUND		RRF10	RRF20	RRF50	RRF100	RRF200	$\overline{RRF}$	% RSD	
Chloromethane		1.153	1.075	0.908	0.920	1.517	1.115	22.2	
Bromomethane	*	1.594	1.572	1.285	1.369	1.248	1.414	11.4	*
Vinyl Chloride	*	1.813	1.724	1.469	1.715	1.577	1.660	8.2	*
Chloroethane		1.006	0.894	0.727	0.717	0.719	0.813	16.2	
Methylene Chloride		2.633	2.135	2.122	2.176	2.085	2.230	10.2	
Acetone		1.830	1.281	0.869	0.975	0.567	1.104	43.4	
Carbon Disulfide		2.442	2.477	2.462	2.117	1.820	2.264	12.8	
1,1-Dichloroethene	*	1.233	1.210	1.219	0.965	0.662	1.058	23.4	*
1,1-Dichloroethane	*	3.051	2.937	2.715	2.741	2.768	2.842	5.1	*
1,2-Dichloroethene (total)		1.554	1.493	1.369	1.355	1.324	1.419	7.0	
Chloroform	*	3.576	3.478	3.164	3.184	3.002	3.281	7.2	*
1,2-Dichloroethane	*	3.412	3.394	2.971	2.967	2.560	3.061	11.6	*
2-Butanone		0.404	0.300	0.205	0.301	0.236	0.289	26.4	
1,1,1-Trichloroethane	*	0.827	0.761	0.733	0.712	0.635	0.734	9.6	*
Carbon Tetrachloride	*	0.849	0.775	0.752	0.734	0.631	0.748	10.5	*
Bromodichloromethane	*	0.754	0.742	0.715	0.699	0.654	0.713	5.5	*
1,2-Dichloropropane		0.372	0.345	0.340	0.333	0.347	0.347	4.2	
cis-1,3-Dichloropropene	*	0.750	0.703	0.680	0.666	0.661	0.692	5.2	*
Trichloroethene	*	0.443	0.398	0.388	0.375	0.357	0.392	8.2	*
Dibromochloromethane	*	0.686	0.670	0.650	0.628	0.581	0.643	6.4	*
1,1,2-Trichloroethane	*	0.380	0.342	0.320	0.319	0.306	0.333	8.7	*
Benzene	*	1.114	1.024	1.031	1.003	0.952	1.025	5.7	*
trans-1,3-Dichloropropene	*	0.615	0.587	0.575	0.556	0.531	0.573	5.5	*
Bromoform	*	0.644	0.594	0.572	0.565	0.513	0.578	8.2	*
4-Methyl-2-Pentanone		1.141	0.925	0.675	0.919	0.968	0.926	18.0	
2-Hexanone		0.924	0.729	0.490	0.734	0.698	0.715	21.6	
Tetrachloroethene	*	0.533	0.467	0.459	0.439	0.427	0.465	8.8	*
1,1,2,2-Tetrachloroethane	*	0.831	0.751	0.668	0.666	0.661	0.715	10.4	*
Toluene	*	0.833	0.768	0.751	0.744	0.788	0.777	4.6	*
Chlorobenzene	*	1.059	0.972	0.943	0.927	0.920	0.964	5.9	*
Ethylbenzene	*	0.505	0.466	0.465	0.451	0.441	0.466	5.2	*
Styrene	*	1.073	0.976	0.980	0.934	0.921	0.977	6.1	*
Xylene (total)	*	0.620	0.569	0.570	0.546	0.551	0.571	5.1	*
Toluene-d8		1.316	1.190	1.182	1.158	1.186	1.206	5.2	
Bromofluorobenzene	*	0.867	0.783	0.774	0.718	0.686	0.766	9.0	*
1,2-Dichloroethane-d4		2.805	2.692	2.512	2.460	2.302	2.554	7.7	

* pounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

Initial Calibration Data
HSL Compounds

Case No:

Instrument ID 5996/A

Contractor: ESE

Calibration Date: 06/18/94

Contract No:

Minimum RF for SPCC is 0.100 Maximum % RSD for CCC is 20.5%

Laboratory ID:	>99681 RF 10.00	>99682 RF 20.00	>99683 RF 50.00	>99684 RF 100.00	>99686 RF 200.00	RF	% RSD	CCC	SPCC	
Chloromethane	1.15290	1.07543	.90784	.92035	1.51740	1.11479	22.234		**	
Bromomethane	1.59456	1.57253	1.28494	1.36874	1.24841	1.41384	11.397	*	**	
Vinyl Chloride	1.81309	1.72444	1.46938	1.71497	1.57704	1.65979	8.185	*	**	
Chloroethane	1.00581	.89385	.72735	.71696	.71932	.81266	16.167		**	
Methylene Chloride	2.63296	2.13526	2.12232	2.17585	2.08521	2.23032	10.196		**	
Acetone	1.83005	1.28123	.86908	.97502	.56666	1.10441	43.403		**	
Carbon Disulfide	2.44216	2.47699	2.46256	2.11660	1.82030	2.26372	12.787		**	
1,1-Dichloroethene	1.23332	1.20973	1.21864	.96509	.66204	1.05776	23.396	*	**	
1,1-Dichloroethane	3.05116	2.93683	2.71461	2.74093	2.76846	2.84240	5.116	*	**	
1,2-Dichloroethene (total)	1.55365	1.49297	1.36888	1.35519	1.32388	1.41892	6.980		**	
Chloroform	3.57617	3.47798	3.16407	3.18422	3.00227	3.28094	7.255	*	**	
1,2-Dichloroethane	3.41191	3.39434	2.97079	2.96744	2.55983	3.06086	11.578	*	**	
1,2-Dichloroethane-d4	2.80507	2.69223	2.51217	2.46020	2.30182	2.55430	7.739		**	
2-Butanone	.40430	.30001	.20510	.30129	.23595	.28933	26.446		**	
1,1,1-Trichloroethane	.82713	.76075	.73266	.71162	.63533	.73350	9.549	*	**	
Carbon Tetrachloride	.84880	.77483	.75183	.73398	.63076	.74804	10.534	*	**	
Bromodichloromethane	.75434	.74223	.71527	.69937	.65397	.71304	5.539	*	**	
1,2-Dichloropropane	.37255	.34546	.34007	.33267	.34719	.34759	4.332	*	**	
cis-1,3-Dichloropropene	.69892	.66240	.64200	.63037	.62566	.65187	4.584	*	**	(Conc=9.5,18.9,47.3,94.5,189.0)
Trichloroethene	.44320	.39820	.38818	.37496	.35663	.39223	8.277	*	**	
Dibromochloromethane	.68630	.67040	.65005	.62807	.58086	.64314	6.391	*	**	
Benzene	1.11357	1.02369	1.03121	1.00269	.95254	1.02474	5.697	*	**	
1,1,2-Trichloroethane	.38015	.34184	.32044	.31863	.30630	.33347	8.714	*	**	
trans-1,3-Dichloropropene	.64128	.61234	.60134	.58145	.55596	.59847	5.369	*	**	(Conc=10.5,21.1,52.8,105.5,211.0)
Bromoform	.64381	.59435	.57175	.56548	.51282	.57764	8.231	*	**	
2-Hexanone	.92426	.72940	.49026	.73455	.69829	.71535	21.562		**	
4-Methyl-2-Pentanone	1.14143	.92500	.67502	.91860	.96766	.92554	18.014		**	
Tetrachloroethene	.53289	.46746	.45884	.43871	.42700	.46498	8.860	*	**	
1,1,2,2-Tetrachloroethane	.83078	.75089	.66805	.66588	.66119	.71536	10.415	*	**	
Toluene-d8	1.31560	1.18966	1.18183	1.15844	1.18589	1.20628	5.165		**	
Toluene	.83316	.76832	.75088	.74407	.78782	.77685	4.602	*	**	
Chlorobenzene	1.05864	.97254	.94333	.92731	.91961	.96428	5.860	*	**	

RF - Response Factor (Subscript is amount in ug/kg)

RF - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: _____ Instrument ID: 5996.A

Contractor: ESE Calibration Date: 06/18/94

Contract No: _____

Minimum $\overline{RF}$ for SPCC is 0.100 Maximum % RSD for CCC is 20.5%

Laboratory ID:	>99681	>99682	>99683	>99684	>99686					
Compound	RF 10.00	RF 20.00	RF 50.00	RF 100.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC	
Ethylbenzene	.50484	.46597	.46469	.45143	.44127	.46564	5.187	*	**	
Bromofluorobenzene	.86671	.78347	.77426	.71782	.68558	.76557	9.074	*	**	
Xylene (total)	.61982	.56933	.57021	.54573	.55135	.57129	5.111	*	**	(Conc=5.0,10.0,25.0,50.0,100.0)
Styrene	1.07298	.97584	.97956	.93413	.92114	.97673	6.095	*	**	

RF - Response Factor (Subscript is amount in ug/kg)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

QUANT REPORT

Operator ID: USER96
Output File: ^99681::ZA
Data File: >99681::MD
Name: VSTD10
Misc: 05/27/94

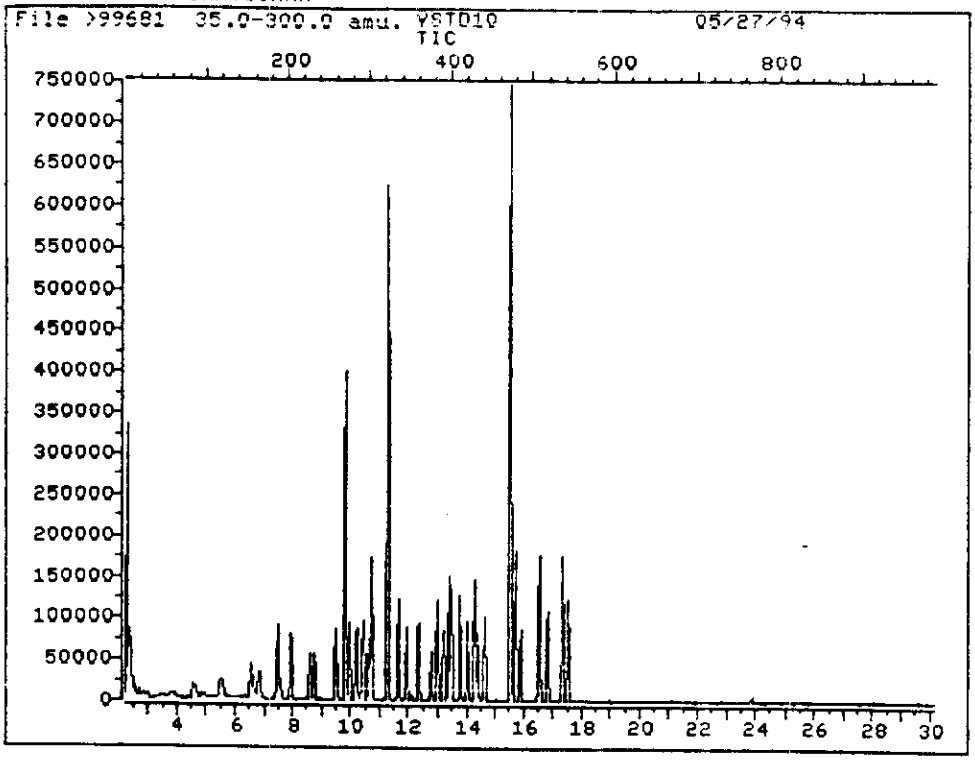
Quant Rev: 6
Quant Time: 940527 15:03
Injected at: 940527 11:49
Dilution Factor: 1.00000

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.83	128.0	191642	50.00	ug/Kg	97
2)	Chloromethane	3.51	50.0	44189	12.70	ug/Kg	100
3)	Bromomethane	4.58	94.0	61117	12.41	ug/Kg	95
5)	Vinyl Chloride	3.82	62.0	69493	12.34	ug/Kg	100
6)	Chloroethane	4.89	64.0	38551	13.83	ug/Kg	97
8)	Methylene Chloride	7.49	84.0	100917	12.41	ug/Kg	85
9)	Acetone	6.81	43.0	70143	21.06	ug/Kg	100
11)	Carbon Disulfide	6.87	76.0	93604	9.92	ug/Kg	100
13)	Trichlorofluoromethane	5.51	101.0	99764	9.83	ug/Kg	100
14)	1,1-Dichloroethene	6.55	96.0	47271	10.12	ug/Kg	65
15)	1,1-Dichloroethane	8.62	63.0	116946	11.24	ug/Kg	96
16)	1,2-Dichloroethene (total)	7.94	96.0	59549	11.35	ug/Kg	73
18)	Chloroform	9.97	83.0	137069	11.30	ug/Kg	97
20)	1,2-Dichloroethane	10.76	62.0	130773	11.48	ug/Kg	99
21)	1,2-Dichloroethane-d4	10.65	65.0	107514	11.17	ug/Kg	80
22)	2-Butanone	9.55	72.0	15496	19.71	ug/Kg	84
23)	*1,4-Difluorobenzene	11.30	114.0	800428	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.23	97.0	132411	11.29	ug/Kg	98
27)	Carbon Tetrachloride	10.45	117.0	135881	11.29	ug/Kg	99
28)	Vinyl Acetate	8.76	43.0	165666	11.84	ug/Kg	93
29)	Bromodichloromethane	12.37	83.0	120759	10.55	ug/Kg	98
30)	1,2-Dichloropropane	11.95	63.0	59640	10.96	ug/Kg	98
31)	cis-1,3-Dichloropropene	12.99	75.0	105733	9.25	ug/Kg	100
32)	Trichloroethene	11.67	130.0	70950	11.42	ug/Kg	100
33)	Dibromochloromethane	14.63	129.0	109866	10.56	ug/Kg	100
34)	Benzene	10.73	78.0	178266	10.80	ug/Kg	100
35)	1,1,2-Trichloroethane	14.04	97.0	60857	11.86	ug/Kg	88
36)	chloro-ethyl-vinyl-ether	12.77	106.0	13736	12.44	ug/Kg	75
38)	trans-1,3-Dichloropropene	13.78	75.0	108306	11.78	ug/Kg	100
39)	Bromoform	16.81	173.0	103065	11.26	ug/Kg	98
41)	*Chlorobenzene-d5	15.53	117.0	650968	50.00	ug/Kg	100
43)	2-Hexanone	14.41	43.0	120333	18.85	ug/Kg	91
44)	4-Methyl-2-Pentanone	13.22	43.0	148607	16.91	ug/Kg	84
45)	Tetrachloroethene	14.29	163.7	69379	11.61	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.54	83.0	108162	12.44	ug/Kg	99
49)	Toluene-d8	13.39	98.0	171283	11.13	ug/Kg	100
50)	Toluene	13.47	92.0	108472	11.10	ug/Kg	80
51)	Chlorobenzene	15.56	112.0	137828	11.22	ug/Kg	96
52)	Ethylbenzene	15.73	106.0	65727	10.86	ug/Kg	94
53)	Bromofluorobenzene	17.34	95.0	112840	11.19	ug/Kg	100
56)	Xylene (total)	15.93	106.0	40348	5.44	ug/Kg	85
57)	Styrene	16.55	104.0	139695	10.95	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >99681::MD
Name: VSTD10
Misc: 05/27/94

Quant Output File: ^99681::ZA

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

Operator ID: USER96
Quant Time: 940527 15:03
Injected at: 940527 11:49

QUANT REPORT

Operator ID: USER96
Output File: ^99682::ZA
Data File: >99682::MD
Name: VSTD20
Misc: 05/27/94

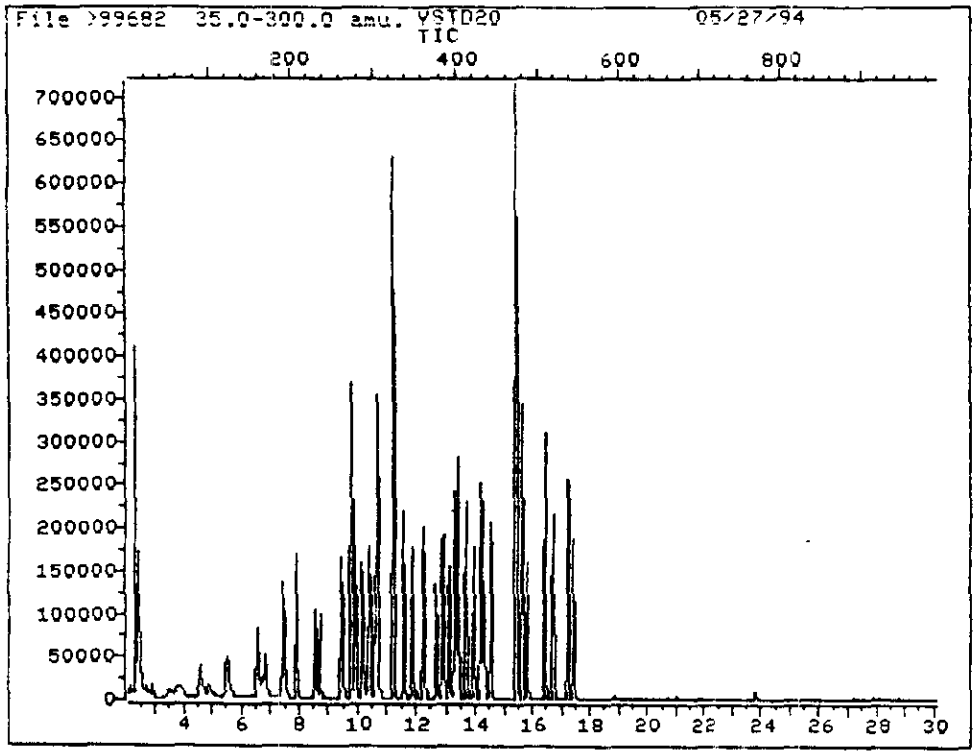
Quant Rev: 6
Quant Time: 940527 15:09
Injected at: 940527 12:23
Dilution Factor: 1.00000

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.78	128.0	179526	50.00	ug/Kg	97
2)	Chloromethane	3.57	50.0	77227M	23.69	ug/Kg	100
3)	Bromomethane	4.61	94.0	112924	24.48	ug/Kg	97
5)	Vinyl Chloride	3.82	62.0	123833M	23.47	ug/Kg	100
6)	Chloroethane	4.90	64.0	64188	24.58	ug/Kg	99
8)	Methylene Chloride	7.47	84.0	153334	20.12	ug/Kg	92
9)	Acetone	6.76	43.0	92006	29.48	ug/Kg	100
11)	Carbon Disulfide	6.87	76.0	177874	20.12	ug/Kg	100
13)	Trichlorofluoromethane	5.55	101.0	193013	20.31	ug/Kg	100
14)	1,1-Dichloroethene	6.56	96.0	86871	19.85	ug/Kg	66
15)	1,1-Dichloroethane	8.60	63.0	210895	21.64	ug/Kg	98
16)	1,2-Dichloroethene (total)	7.95	96.0	107211	21.81	ug/Kg	65
18)	Chloroform	9.95	83.0	249755	21.98	ug/Kg	99
20)	1,2-Dichloroethane	10.71	62.0	243749	22.85	ug/Kg	98
21)	1,2-Dichloroethane-d4	10.60	65.0	193330	21.43	ug/Kg	82
22)	2-Butanone	9.50	72.0	21544	29.26	ug/Kg	89
23)	*1,4-Difluorobenzene	11.25	114.0	790919	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.18	97.0	240676	20.77	ug/Kg	98
27)	Carbon Tetrachloride	10.43	117.0	245132	20.61	ug/Kg	99
28)	Vinyl Acetate	8.74	43.0	291792	21.11	ug/Kg	92
29)	Bromodichloromethane	12.30	83.0	234819	20.75	ug/Kg	96
30)	1,2-Dichloropropane	11.90	63.0	109293	20.32	ug/Kg	98
31)	cis-1,3-Dichloropropene	12.92	75.0	198035	18.48	ug/Kg	100
32)	Trichloroethene	11.62	130.0	125979	20.52	ug/Kg	100
33)	Dibromochloromethane	14.56	129.0	212093	20.63	ug/Kg	100
34)	Benzene	10.71	78.0	323861	19.85	ug/Kg	100
35)	1,1,2-Trichloroethane	13.96	97.0	108147	21.34	ug/Kg	90
36)	chloro-ethyl-vinyl-ether	12.72	106.0	24342	22.30	ug/Kg	87
38)	trans-1,3-Dichloropropene	13.71	75.0	204378	22.50	ug/Kg	100
39)	Bromoform	16.73	173.0	188033	20.79	ug/Kg	99
41)	*Chlorobenzene-d5	15.43	117.0	644366	50.00	ug/Kg	100
43)	2-Hexanone	14.33	43.0	188001	29.76	ug/Kg	89
44)	4-Methyl-2-Pentanone	13.14	43.0	238416	27.41	ug/Kg	79
45)	Tetrachloroethene	14.22	163.7	120487	20.38	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.47	83.0	193540	22.48	ug/Kg	99
49)	Toluene-d8	13.31	98.0	306631	20.13	ug/Kg	100
50)	Toluene	13.43	92.0	198031	20.46	ug/Kg	84
51)	Chlorobenzene	15.49	112.0	250668	20.62	ug/Kg	99
52)	Ethylbenzene	15.66	106.0	120103	20.06	ug/Kg	92
53)	Bromofluorobenzene	17.27	95.0	201937	20.24	ug/Kg	100
56)	Xylene (total)	15.83	106.0	73372	9.98	ug/Kg	82
57)	Styrene	16.45	104.0	251518	19.92	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >99682::MD
Name: VSTD20
Misc: 05/27/94

Quant Output File: ^99682::ZA

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

Operator ID: USER96
Quant Time: 940527 15:09
Injected at: 940527 12:23

QUANT REPORT

Operator ID: USER96
Output File: ^99683::ZA
Data File: >99683::MD
Name: VSTD50
Misc: 05/27/94

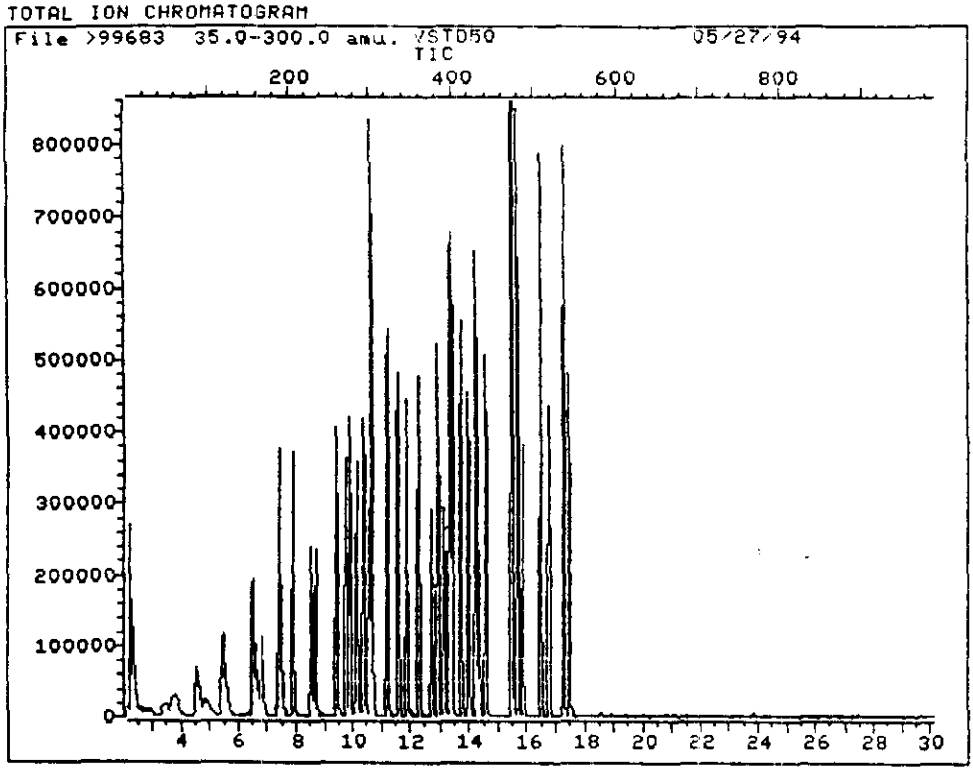
Quant Rev: 6
Quant Time: 940527 15:11
Injected at: 940527 13:40
Dilution Factor: 1.00000

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.77	128.0	188506	50.00	ug/Kg	99
2)	Chloromethane	3.44	50.0	171134	50.00	ug/Kg	100
3)	Bromomethane	4.57	94.0	242219	50.00	ug/Kg	98
5)	Vinyl Chloride	3.81	62.0	276987	50.00	ug/Kg	100
6)	Chloroethane	4.86	64.0	137110	50.00	ug/Kg	97
8)	Methylene Chloride	7.45	84.0	400070	50.00	ug/Kg	83
9)	Acetone	6.69	43.0	163827	50.00	ug/Kg	100
11)	Carbon Disulfide	6.83	76.0	464208	50.00	ug/Kg	100
13)	Trichlorofluoromethane	5.51	101.0	499005	50.00	ug/Kg	100
14)	1,1-Dichloroethene	6.55	96.0	229721	50.00	ug/Kg	64
15)	1,1-Dichloroethane	8.58	63.0	511720	50.00	ug/Kg	98
16)	1,2-Dichloroethene (total)	7.94	96.0	258042	50.00	ug/Kg	65
18)	Chloroform	9.94	83.0	596446	50.00	ug/Kg	99
20)	1,2-Dichloroethane	10.73	62.0	560012	50.00	ug/Kg	99
21)	1,2-Dichloroethane-d4	10.62	65.0	473560	50.00	ug/Kg	78
22)	2-Butanone	9.49	72.0	38662	50.00	ug/Kg	83
23)	*1,4-Difluorobenzene	11.27	114.0	778231	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.17	97.0	570178	50.00	ug/Kg	99
27)	Carbon Tetrachloride	10.42	117.0	585100	50.00	ug/Kg	99
28)	Vinyl Acetate	8.73	43.0	680063	50.00	ug/Kg	90
29)	Bromodichloromethane	12.31	83.0	556646	50.00	ug/Kg	97
30)	1,2-Dichloropropane	11.92	63.0	264655	50.00	ug/Kg	94
31)	cis-1,3-Dichloropropene	12.96	75.0	472142	44.77	ug/Kg	100
32)	Trichloroethene	11.64	130.0	302095	50.00	ug/Kg	100
33)	Dibromochloromethane	14.60	129.0	505889	50.00	ug/Kg	100
34)	Benzene	10.70	78.0	802519	50.00	ug/Kg	100
35)	1,1,2-Trichloroethane	14.01	97.0	249375	50.00	ug/Kg	92
36)	chloro-ethyl-vinyl-ether	12.74	106.0	53694	50.00	ug/Kg	89
38)	trans-1,3-Dichloropropene	13.75	75.0	493724	55.23	ug/Kg	100
39)	Bromoform	16.78	173.0	444951	50.00	ug/Kg	98
41)	*Chlorobenzene-d5	15.48	117.0	653117	50.00	ug/Kg	100
43)	2-Hexanone	14.38	43.0	320194	50.00	ug/Kg	90
44)	4-Methyl-2-Pentanone	13.16	43.0	440865	50.00	ug/Kg	77
45)	Tetrachloroethene	14.26	163.7	299674	50.00	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.51	83.0	436314	50.00	ug/Kg	99
49)	Toluene-d8	13.36	98.0	771871	50.00	ug/Kg	100
50)	Toluene	13.44	92.0	490412	50.00	ug/Kg	83
51)	Chlorobenzene	15.53	112.0	616105	50.00	ug/Kg	99
52)	Ethylbenzene	15.70	106.0	303498	50.00	ug/Kg	94
53)	Bromofluorobenzene	17.31	95.0	505681	50.00	ug/Kg	100
56)	Xylene (total)	15.87	106.0	186206	25.00	ug/Kg	75
57)	Styrene	16.52	104.0	639768	50.00	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >99683::MD
Name: VSTD50
Misc: 05/27/94

Quant Output File: ^99683::ZA

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

Operator ID: USER96
Quant Time: 940527 15:11
Injected at: 940527 13:40

QUANT REPORT

Operator ID: USER96
Output File: ^99684::ZA
Data File: >99684::MD
Name: VSTD100
Misc: 05/27/94

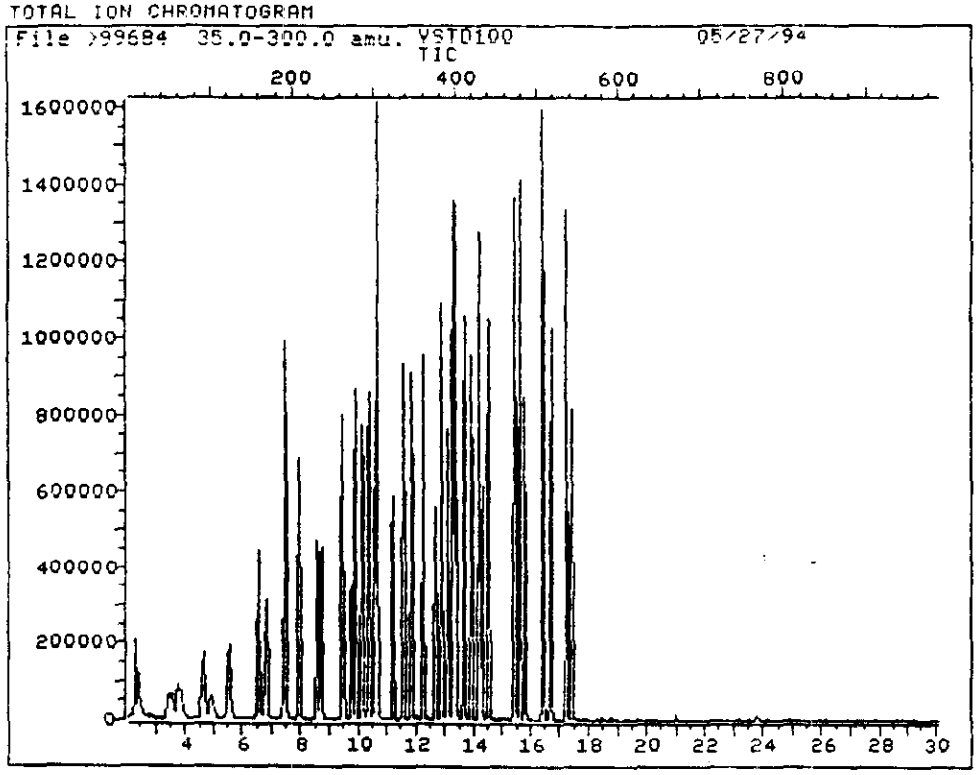
Quant Rev 5
Quant Time: 940527 15:24
Injected at: 940527 14:14
Dilution Factor: 1.00000

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

	Compound	R.T	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.78	128.0	185744	50.00	ug/Kg	99
2)	Chloromethane	3.48	50.0	341899	101.38	ug/Kg	100
3)	Bromomethane	4.64	94.0	508472	106.52	ug/Kg	99
5)	Vinyl Chloride	3.77	62.0	637092M	116.71	ug/Kg	100
6)	Chloroethane	4.92	64.0	266342	98.57	ug/Kg	99
8)	Methylene Chloride	7.49	84.0	808302	102.52	ug/Kg	86
9)	Acetone	6.82	43.0	362209	112.19	ug/Kg	100
11)	Carbon Disulfide	6.84	76.0	786290	85.95	ug/Kg	100
13)	Trichlorofluoromethane	5.55	101.0	641283	65.21	ug/Kg	100
14)	1,1-Dichloroethene	6.59	96.0	358520	79.19	ug/Kg	60
15)	1,1-Dichloroethane	8.60	63.0	1018223	100.97	ug/Kg	96
16)	1,2-Dichloroethene (total)	7.95	96.0	503438	99.00	ug/Kg	75
18)	Chloroform	9.95	83.0	1182899	100.64	ug/Kg	99
20)	1,2-Dichloroethane	10.71	62.0	1102367	99.89	ug/Kg	96
21)	1,2-Dichloroethane-d4	10.60	65.0	913933	97.93	ug/Kg	81
22)	2-Butanone	9.50	72.0	111926	146.90	ug/Kg	88
23)	*1,4-Difluorobenzene	11.25	114.0	807507	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.18	97.0	1149281	97.13	ug/Kg	98
27)	Carbon Tetrachloride	10.43	117.0	1185394	97.63	ug/Kg	97
28)	Vinyl Acetate	8.77	43.0	1512393	107.16	ug/Kg	88
29)	Bromodichloromethane	12.30	83.0	1129497	97.78	ug/Kg	95
30)	1,2-Dichloropropane	11.90	63.0	537267	97.82	ug/Kg	95
31)	cis-1,3-Dichloropropene	12.92	75.0	962057	87.92	ug/Kg	100
32)	Trichloroethene	11.62	130.0	605558	96.59	ug/Kg	100
33)	Dibromochloromethane	14.56	129.0	1014344	96.62	ug/Kg	100
34)	Benzene	10.69	78.0	1619365	97.23	ug/Kg	100
35)	1,1,2-Trichloroethane	13.96	97.0	514591	99.44	ug/Kg	94
36)	chloro-ethyl-vinyl-ether	12.69	106.0	117837	105.75	ug/Kg	81
38)	trans-1,3-Dichloropropene	13.71	75.0	990697	106.81	ug/Kg	100
39)	Bromoform	16.73	173.0	913263	98.90	ug/Kg	98
41)	*Chlorobenzene-d5	15.43	117.0	660471	50.00	ug/Kg	100
43)	2-Hexanone	14.33	43.0	970302	149.83	ug/Kg	87
44)	4-Methyl-2-Pentanone	13.12	43.0	1213420	136.09	ug/Kg	79
45)	Tetrachloroethene	14.22	163.7	579508	95.61	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.44	83.0	879593	99.68	ug/Kg	97
49)	Toluene-d8	13.31	98.0	1530229	98.02	ug/Kg	100
50)	Toluene	13.40	92.0	982867	99.09	ug/Kg	80
51)	Chlorobenzene	15.49	112.0	1224918	98.30	ug/Kg	99
52)	Ethylbenzene	15.63	106.0	596308	97.15	ug/Kg	97
53)	Bromofluorobenzene	17.24	95.0	948200	92.71	ug/Kg	100
56)	Xylene (total)	15.83	106.0	360441	47.85	ug/Kg	82
57)	Styrene	16.45	104.0	1233936	95.36	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >99684::MD
Name: VSTD100
Misc: 05/27/94

Quant Output File: ^99684::ZA

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

Operator ID: USER96
Quant Time: 940527 15:24
Injected at: 940527 14:14

QUANT REPORT

Operator ID: USER96
Output File: ^99686::ZA
Data File: >99686::MD
Name: VSTD200
Misc: 05/27/94

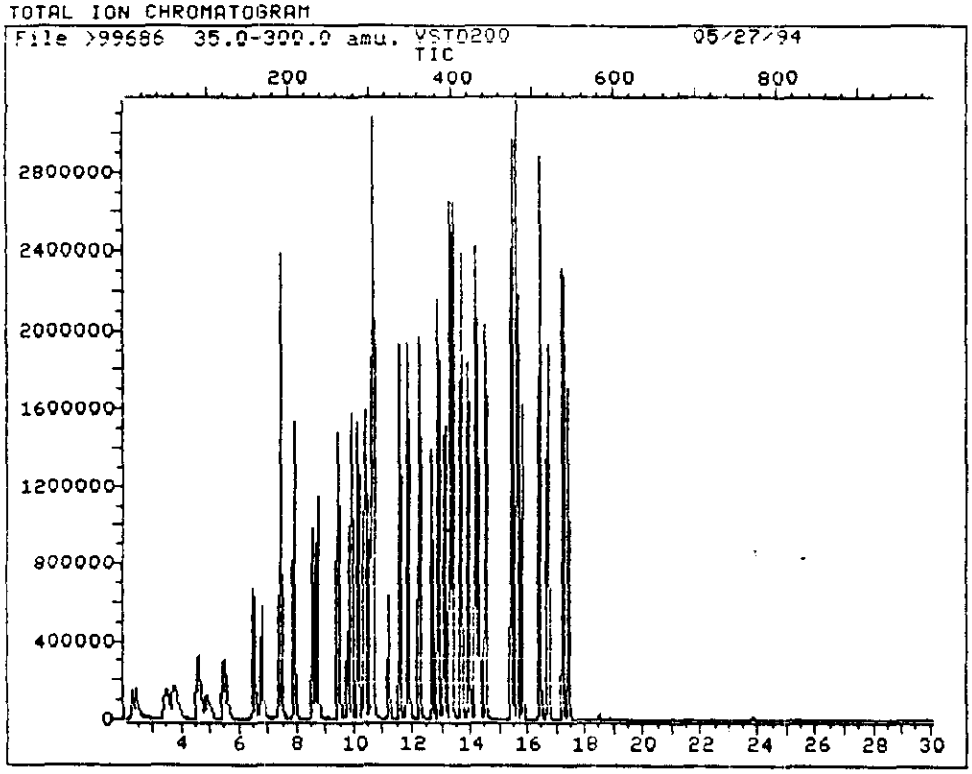
Quant Rev. 6
Quant Time: 940527 15:53
Injected at: 940527 15:22
Dilution Factor: 1.00000

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

	Compound	R.T	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.78	128.0	207478	50.00	ug/Kg	99
2)	Chloromethane	3.48	50.0	1259309	334.29	ug/Kg	100
3)	Bromomethane	4.61	94.0	1036068	194.31	ug/Kg	99
5)	Vinyl Chloride	3.76	62.0	1308808M	214.65	ug/Kg	100
6)	Chloroethane	4.89	64.0	596969	197.79	ug/Kg	98
8)	Methylene Chloride	7.46	84.0	1730540	196.50	ug/Kg	99
9)	Acetone	6.79	43.0	470282	130.41	ug/Kg	100
11)	Carbon Disulfide	6.81	76.0	1510687	147.84	ug/Kg	100
13)	Trichlorofluoromethane	5.51	101.0	1140878	103.86	ug/Kg	100
14)	1,1-Dichloroethene	6.53	96.0	549439	108.65	ug/Kg	64
15)	1,1-Dichloroethane	8.59	63.0	2297574	203.97	ug/Kg	94
16)	1,2-Dichloroethene (total)	7.91	96.0	1098707	193.43	ug/Kg	76
18)	Chloroform	9.92	83.0	2491619	189.77	ug/Kg	99
20)	1,2-Dichloroethane	10.71	62.0	2124430	172.33	ug/Kg	96
21)	1,2-Dichloroethane-d4	10.60	65.0	1910309	183.25	ug/Kg	80
22)	2-Butanone	9.50	72.0	195814	230.08	ug/Kg	84
23)	*1,4-Difluorobenzene	11.25	114.0	897092	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.17	97.0	2279802	173.43	ug/Kg	98
27)	Carbon Tetrachloride	10.40	117.0	2263402	167.79	ug/Kg	98
28)	Vinyl Acetate	8.73	43.0	3502294	223.38	ug/Kg	88
29)	Bromodichloromethane	12.29	83.0	2346698	182.86	ug/Kg	97
30)	1,2-Dichloropropane	11.90	63.0	1245840	204.18	ug/Kg	92
31)	cis-1,3-Dichloropropene	12.91	75.0	2121626	174.52	ug/Kg	100
32)	Trichloroethene	11.61	130.0	1279707	183.74	ug/Kg	100
33)	Dibromochloromethane	14.55	129.0	2084351	178.21	ug/Kg	100
34)	Benzene	10.68	78.0	3418063	184.74	ug/Kg	100
35)	1,1,2-Trichloroethane	13.96	97.0	1099110	191.17	ug/Kg	95
36)	chloro-ethyl-vinyl-ether	12.72	106.0	249587	201.62	ug/Kg	94
38)	trans-1,3-Dichloropropene	13.71	75.0	2104718	204.25	ug/Kg	100
39)	Bromoform	16.73	173.0	1840171	179.39	ug/Kg	98
41)	*Chlorobenzene-d5	15.43	117.0	693506	50.00	ug/Kg	100
43)	2-Hexanone	14.33	43.0	1937087	284.87	ug/Kg	86
44)	4-Methyl-2-Pentanone	13.14	43.0	2684325	286.71	ug/Kg	86
45)	Tetrachloroethene	14.21	163.7	1184495	186.12	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.46	83.0	1834159	197.95	ug/Kg	97
49)	Toluene-d8	13.31	98.0	3289681	200.69	ug/Kg	100
50)	Toluene	13.42	92.0	2185420	209.84	ug/Kg	82
51)	Chlorobenzene	15.49	112.0	2551007	194.97	ug/Kg	98
52)	Ethylbenzene	15.66	106.0	1224081	189.92	ug/Kg	91
53)	Bromofluorobenzene	17.27	95.0	1901817	177.09	ug/Kg	100
56)	Xylene (total)	15.83	106.0	764733	96.69	ug/Kg	79
57)	Styrene	16.45	104.0	2555263	188.07	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >99686::MD
Name: VSTD200
Misc: 05/27/94

Quant Output File: ^99686::ZA

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940527 15:02

Operator ID: USER96
Quant Time: 940527 15:53
Injected at: 940527 15:22

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Instrument ID:A Calibration Date: 7/28/94 Time:1002

Lab File ID:00295 Init. Calib. Date(s): 5/27/94 5/27/94

Heated Purge: (Y/N) Y Init. Calib. Times: 1149 1522

GC Column:DB-624 ID: 0.53 (mm)

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Chloromethane	1.115	1.752		57.1	
Bromomethane	1.414	1.485	0.100	5.0	25.0
Vinyl Chloride	1.660	1.918	0.100	15.5	25.0
Chloroethane	0.813	0.969		19.2	
Methylene Chloride	2.230	1.417		36.4	
Acetone	1.104	1.615		46.3	
Carbon Disulfide	2.264	2.189		3.3	
1,1-Dichloroethene	1.058	0.987	0.100	6.7	25.0
1,1-Dichloroethane	2.842	2.920	0.200	2.7	25.0
1,2-Dichloroethene (total)	1.419	1.036		27.0	
Chloroform	3.281	3.269	0.200	0.4	25.0
1,2-Dichloroethane	3.061	3.063	0.100	0.1	25.0
2-Butanone	0.289	0.423		46.4	
1,1,1-Trichloroethane	0.734	0.707	0.100	3.7	25.0
Carbon Tetrachloride	0.748	0.701	0.100	6.3	25.0
Bromodichloromethane	0.713	0.701	0.200	1.7	25.0
1,2-Dichloropropane	0.347	0.350		0.9	
cis-1,3-Dichloropropene	0.692	0.676	0.200	2.3	25.0
Trichloroethene	0.392	0.405	0.300	3.3	25.0
Dibromochloromethane	0.643	0.635	0.100	1.2	25.0
1,1,2-Trichloroethane	0.333	0.328	0.100	1.5	25.0
Benzene	1.025	1.020	0.500	0.5	25.0
trans-1,3-Dichloropropene	0.573	0.570	0.100	0.5	25.0
Bromoform	0.578	0.628	0.100	8.6	25.0
4-Methyl-2-Pentanone	0.926	0.949		2.5	
2-Hexanone	0.715	0.855		19.6	
Tetrachloroethene	0.465	0.463	0.200	0.4	25.0
1,1,2,2-Tetrachloroethane	0.715	0.806	0.500	12.7	25.0
Toluene	0.777	0.774	0.400	0.4	25.0
Chlorobenzene	0.964	0.976	0.500	1.2	25.0
Ethylbenzene	0.466	0.485	0.100	4.1	25.0
Styrene	0.977	1.040	0.300	6.4	25.0
Xylene (total)	0.571	0.601	0.300	5.2	25.0
Toluene-d8	1.206	1.195		0.9	
Bromofluorobenzene	0.766	0.767	0.200	0.1	25.0
1,2-Dichloroethane-d4	2.554	2.524		1.2	

All other compounds must meet a minimum RRF of 0.010

Continuing Calibration Check
HSL Compounds

Case No:

Calibration Date: 07/28/94

Contractor: ESE

Time: 10:02

Contract No:

Laboratory ID: >00295

Instrument ID: 5996/A

Initial Calibration Date: 06/30/94

Minimum $\overline{RF}$ for SPCC is 0.100 Maximum % Diff for CCC is ~~25.0%~~ 20.5%. yaw 7/28/94

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	1.11479	1.75159	57.12		**	
Bromomethane	1.41384	1.48516	5.04	*	**	
Vinyl Chloride	1.65979	1.91802	15.56	*	**	
Chloroethane	.81266	.96888	19.22		**	
Methylene Chloride	2.23032	1.41726	36.45		**	
Acetone	1.10441	1.61528	46.26		**	
Carbon Disulfide	2.26372	2.18914	3.29		**	
1,1-Dichloroethene	1.05776	.98702	6.69	*	**	
1,1-Dichloroethane	2.84240	2.91971	2.72	*	**	
1,2-Dichloroethene (total)	1.41892	1.83570	22.41		**	
Chloroform	3.28094	3.26886	.37	*	**	
1,2-Dichloroethane	3.06086	3.06295	.07	*	**	
1,2-Dichloroethane-d4	2.55430	2.52442	1.17		**	
2-Butanone	.28933	.42294	46.18		**	
1,1,1-Trichloroethane	.73350	.70739	3.56	*	**	
Carbon Tetrachloride	.74804	.70123	6.26	*	**	
Bromodichloromethane	.71304	.70072	1.73	*	**	
1,2-Dichloropropane	.34759	.34963	.59	*	**	
cis-1,3-Dichloropropene	.68811	.67647	1.69	*	**	(Conc=44.77)
Trichloroethene	.39223	.40522	3.31	*	**	
Dibromochloromethane	.64314	.63533	1.21	*	**	
Benzene	1.02474	1.02879	.43	*	**	
1,1,2-Trichloroethane	.33347	.32799	1.64	*	**	
trans-1,3-Dichloropropene	.57151	.57044	.19	*	**	(Conc=55.23)
Bromoform	.57764	.62817	8.75	*	**	
2-Hexanone	.71535	.85528	19.56		**	
4-Methyl-2-Pentanone	.92554	.94893	2.53		**	
Tetrachloroethene	.46498	.46327	.37	*	**	
1,1,2,2-Tetrachloroethane	.71536	.80655	12.75	*	**	
Toluene-d8	1.20628	1.19503	.93		**	
Toluene	.77685	.77393	.38	*	**	
Chlorobenzene	.96498	.97649	1.27	*	**	

RF - Response Factor from daily standard file at 50.00 ug/kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No:

Contractor: ESE

Contract No:

Instrument ID: 5996/A

Calibration Date: 07/28/94

Time: 10:02

Laboratory ID: >80295

Initial Calibration Date: 06/30/94

Minimum $\overline{RF}$ for SPCC is 0.100 Maximum % Diff for CCC is 25.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Ethylbenzene	.46564	.48465	4.08	*	**	
Bromofluorobenzene	.26557	.26715	.71	*	**	
Xylene (total)	.57129	.60086	5.18	*	**	(Conc=25.00)
Styrene	.97673	1.03963	6.44	*	**	

RF - Response Factor from daily standard file at 50.00 ug/kg

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

QUANT REPORT

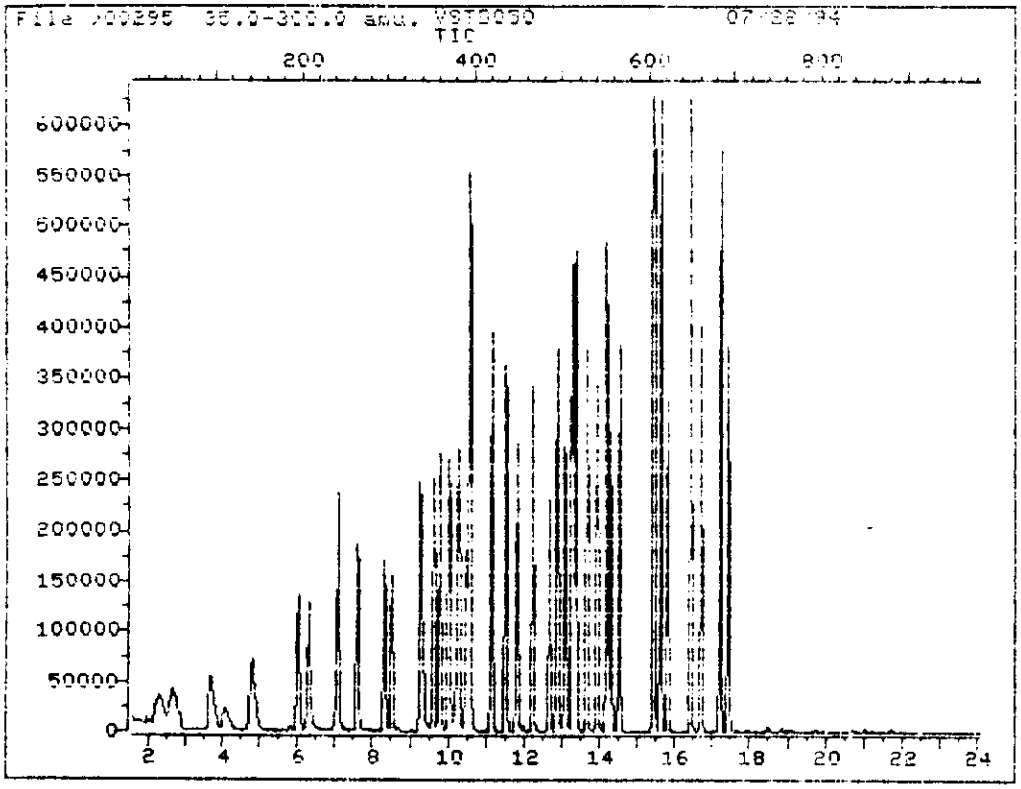
Operator ID: USRR96 Quant Rec: 6 Quant Time: 940728 10:48
Output File: ^00295::P1 Injected at: 940728 10:02
Data File: >00295::GL Dilution Factor: 1.00000
Name: VSTD050
Date: 07/28/94

ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID - IE
Last Calibration: 940728 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.62	128.0	131064	50.00	ug/Kg	98
2)	Chloromethane	2.30	50.0	229570	50.00	ug/Kg	100
3)	Bromomethane	3.68	94.0	194651	50.00	ug/Kg	97
5)	Vinyl Chloride	2.64	62.0	251384M	50.00	ug/Kg	100
6)	Chloroethane	4.09	64.0	126985	50.00	ug/Kg	98
8)	Methylene Chloride	5.09	84.0	185252	50.00	ug/Kg	93
9)	Acetone	6.29	43.0	211705	50.00	ug/Kg	100
10)	Carbon Disulfide	6.31	76.0	786918	50.00	ug/Kg	100
13)	Trichlorofluoromethane	4.80	101.0	287677	50.00	ug/Kg	100
14)	1,1-Dichloroethene	6.02	96.0	129383	50.00	ug/Kg	65
15)	1,1-Dichloroethane	8.33	63.0	382669	50.00	ug/Kg	99
16)	1,2-Dichloroethene (total)	7.60	96.0	135243	50.00	ug/Kg	65
18)	Chloroform	9.80	83.0	428430	50.00	ug/Kg	98
20)	1,2-Dichloroethane	10.60	62.0	401442	50.00	ug/Kg	97
21)	1,2-Dichloroethane-d4	10.49	65.0	330861	50.00	ug/Kg	80
22)	2-Butanone	9.34	72.0	59432	50.00	ug/Kg	90
23)	*1,4-Difluorobenzene	11.16	114.0	582242	50.00	ug/Kg	100
26)	1,1,1-Trichloroethane	10.03	97.0	411871	50.00	ug/Kg	96
27)	Carbon Tetrachloride	10.28	117.0	408283	50.00	ug/Kg	94
28)	Vinyl Acetate	8.52	43.0	507557	50.00	ug/Kg	94
29)	Bromodichloromethane	12.23	83.0	407990	50.00	ug/Kg	98
30)	1,2-Dichloropropane	11.82	63.0	203571	50.00	ug/Kg	98
31)	cis-1,3-Dichloropropene	12.88	75.0	352668	50.00	ug/Kg	100
32)	Trichloroethene	11.52	95.0	235937	50.00	ug/Kg	100
33)	Dibromochloromethane	14.53	129.0	369918	50.00	ug/Kg	100
34)	Benzene	10.58	78.0	594053	50.00	ug/Kg	100
35)	1,1,2-Trichloroethane	13.93	97.0	190970	50.00	ug/Kg	97
36)	2-Chloroethyl-vinyl-ether	12.67	63.0	42995	50.00	ug/Kg	91
38)	trans-1,3-Dichloropropene	13.68	75.0	366874	50.00	ug/Kg	100
39)	Bromoform	16.71	173.0	365747	50.00	ug/Kg	99
41)	*Chlorobenzene-d5	15.42	117.0	487761	50.00	ug/Kg	100
43)	2-Hexanone	14.30	43.0	412123	50.00	ug/Kg	93
44)	4-Methyl-2-Pentanone	13.08	43.0	462852	50.00	ug/Kg	74
45)	Tetrachloroethene	14.18	164.0	225966	50.00	ug/Kg	100
47)	1,1,2,2-Tetrachloroethane	17.44	83.0	393405	50.00	ug/Kg	99
49)	Toluene-d8	13.27	98.0	582891	50.00	ug/Kg	100
50)	Toluene	13.36	92.0	377493	50.00	ug/Kg	85
51)	Chlorobenzene	15.47	112.0	426995	50.00	ug/Kg	97
52)	Ethylbenzene	15.63	106.0	236395	50.00	ug/Kg	94
53)	Bromofluorobenzene	17.24	95.0	374185	50.00	ug/Kg	100
56)	Xylene (total)	15.81	106.0	146537	25.00	ug/Kg	77
57)	Styrene	16.43	104.0	507089	50.00	ug/Kg	100

* Compound is ISTD

TOTAL ION CHROMATOGRAM

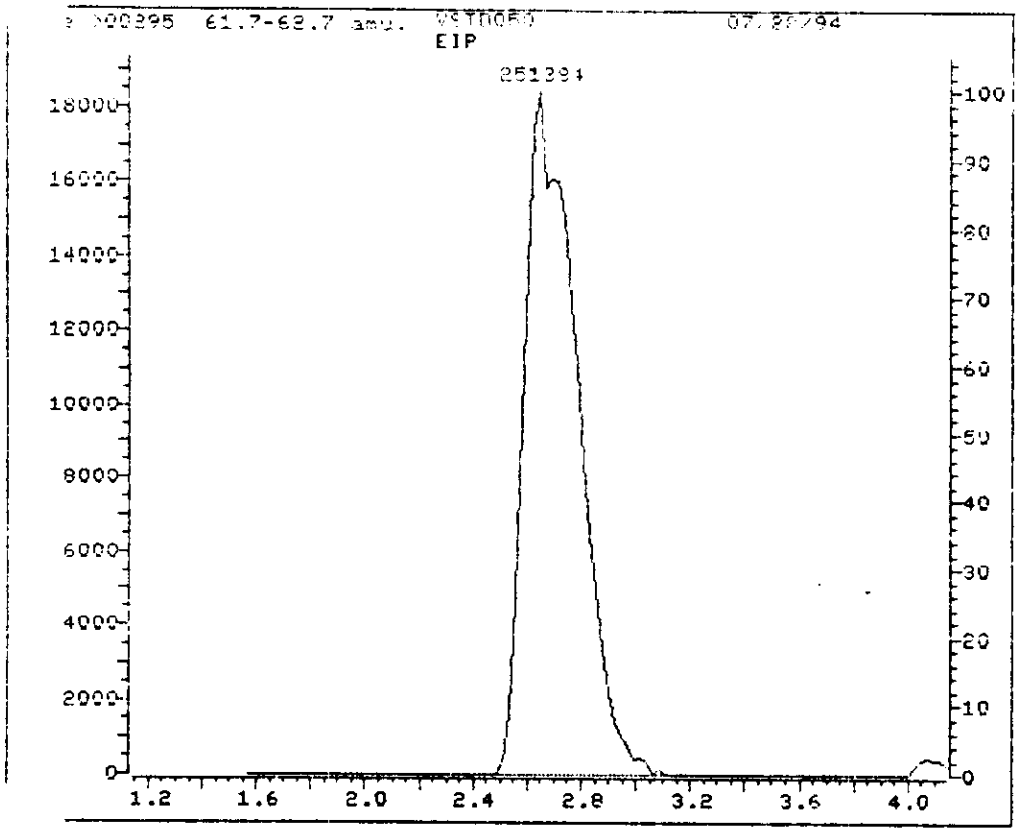


Data File: >00295::GL
Name: VSTD050
Misc: 07/28/94

Quant Output File: ^00295::P1

Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

Operator ID: USER96
Quant Time: 940728 10:48
Injected at: 940728 10:02



Data File: >00295::GL
Name: OSTD050
Misc: 07/28/94
Quant Time: 940728 10:48
Injected at: 940728 10:02

Quant Output File: ^00295::P1

Quant ID File: IDARMS::E2
Last Calibration: 940728 10:47

Compound No: 5
Compound Name: Vinyl Chloride
Scan Number: 48
Retention Time: 2.64 min.
Quant Ion: 62.0
Area: 251384M
Concentration: 50.00 ug/Kg
q-value: 100

ysH 7/28/94

This report was produced by QAREA on: 940728 10:57

Quant ID File: IDARMS::E2

Title: CONTRACT LABORATORY PROGRAM ID FILE

Last EDIT Date: 940721 15:51 Last Calib Date: 940728 10:47

RT Window (+/- min): 1.00
Max Hits/Compound: 5
Minimum Area: 2000
Peak/Base Peak Ratio: 55.00 *
Slope Sensitivity: .300
Subtraction Method: 3
Ignore max check: NO
Auto Qdel Method: 1
Units of Conc: ug/Kg

Number of Compounds: 58

Comp No.	Compound Name	(Type)	Retention Time Min.	(Rel)	R.F.	Conc.	
1)	*Bromochloromethane	(I)	9.62	(1.000)	1.00000	50.00	
2)	Chloromethane	(T)	2.30	(.239)	1.75159	50.00	
3)	Bromomethane	(T)	3.68	(.382)	1.48516	50.00	
4)	Dichlorodifluoromethane	(T)	3.51	(.365)	0.00000	200.00	
5)	Vinyl Chloride	(T)	2.64	(.275)	1.91802	50.00	**
6)	Chloroethane	(T)	4.09	(.425)	.96888	50.00	
7)	Iodomethane	(T)	6.01	(.625)	0.00000	50.00	
8)	Methylene Chloride	(T)	7.09	(.738)	1.41726	50.00	
9)	Acetone	(T)	6.29	(.654)	1.61528	50.00	
10)	Acrolein	(T)	5.87	(.611)	0.00000	200.00	
11)	Carbon Disulfide	(T)	6.31	(.657)	2.18914	50.00	
12)	Acrylonitrile	(T)	7.57	(.787)	0.00000	200.00	
13)	Trichlorofluoromethane	(T)	4.80	(.499)	2.19494	50.00	
14)	1,1-Dichloroethene	(M)	6.02	(.626)	.98702	50.00	
15)	1,1-Dichloroethane	(T)	8.33	(.866)	2.91971	50.00	
16)	1,2-Dichloroethene (total)	(T)	7.60	(.790)	1.03570	50.00	**
17)	Diethyl ether	(T)	10.86	(1.129)	0.00000	50.00	
18)	Chloroform	(T)	9.80	(1.019)	3.26886	50.00	
19)	112-Tricl-122-trifl-ethane		6.20	(.644)	0.00000	54.00	
20)	1,2-Dichloroethane	(T)	10.60	(1.103)	3.06295	50.00	
21)	1,2-Dichloroethane-d4	(S)	10.49	(1.091)	2.52442	50.00	
22)	2-Butanone	(T)	9.34	(.971)	.42294	50.00	
23)	*1,4-Difluorobenzene	(I)	11.16	(1.000)	1.00000	50.00	
24)	Dibromomethane	(T)	12.01	(1.076)	0.00000	50.00	
25)	Methyl t-Butyl Ether	(T)	7.60	(.681)	0.00000	50.00	
26)	1,1,1-Trichloroethane	(T)	10.03	(.899)	.70739	50.00	
27)	Carbon Tetrachloride	(T)	10.28	(.922)	.70123	50.00	
28)	Vinyl Acetate	(T)	8.52	(.763)	.86331	50.00	
29)	Bromodichloromethane	(T)	12.23	(1.097)	.70072	50.00	
30)	1,2-Dichloropropane	(T)	11.82	(1.060)	.34963	50.00	
31)	cis-1,3-Dichloropropene	(T)	12.88	(1.154)	.60571	50.00	**
32)	Trichloroethene	(M)	11.52	(1.033)	.40522	50.00	
33)	Dibromochloromethane	(T)	14.53	(1.302)	.63533	50.00	
34)	Benzene	(M)	10.58	(.949)	1.02029	50.00	
35)	1,1,2-Trichloroethane	(T)	13.93	(1.249)	.32799	50.00	
36)	chloro-ethyl-vinyl-ether	(T)	12.67	(1.136)	.07367	50.00	
37)	Ethylene Dibromide	(T)	10.45	(.937)	0.00000	50.00	
38)	trans-1,3-Dichloropropene	(T)	13.68	(1.226)	.63011	50.00	**
39)	Bromoform	(T)	16.71	(1.498)	.62817	50.00	
40)	1,1,1,2 Tetrachloroethane	(T)	12.38	(1.110)	0.00000	50.00	
41)	*Chlorobenzene-d5	(I)	15.42	(1.000)	1.00000	50.00	
42)	1,2,3 Trichloropropane	(T)	15.48	(1.004)	0.00000	50.00	
43)	2-Hexanone	(T)	14.30	(.927)	.85528	50.00	
44)	4-Methyl-2-Pentanone	(T)	13.08	(.848)	.94893	50.00	
45)	Tetrachloroethene	(T)	14.18	(.920)	.46327	50.00	
46)	1,4 Dichlorobutane	(T)	13.79	(.894)	0.00000	50.00	
47)	1,1,2,2-Tetrachloroethane	(T)	17.44	(1.131)	.80655	50.00	
48)	Ethyl Methacrylate	(T)	14.68	(.952)	0.00000	50.00	
49)	Toluene-d8	(S)	13.27	(.860)	1.19503	50.00	
50)	Toluene	(M)	13.36	(.866)	.72393	50.00	
51)	Chlorobenzene	(M)	15.47	(1.003)	.97649	50.00	
52)	Ethylbenzene	(T)	15.63	(1.013)	.48465	50.00	
53)	Bromofluorobenzene	(S)	17.24	(1.118)	.76715	50.00	
54)	ortho - Xylene	(T)	15.70	(1.018)	0.00000	25.00	**
55)	Ortho and Meta Xylene	(T)	15.70	(1.018)	0.00000	25.00	**
56)	Xylene (total)	(T)	15.81	(1.025)	.60086	25.00	**

290000

)	Dichlorobenzene	(T)	19.78(1.282)	0.00000	50.00

* Compound is ISTD
** Compound uses different Quant parameters

Raw QC Data

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

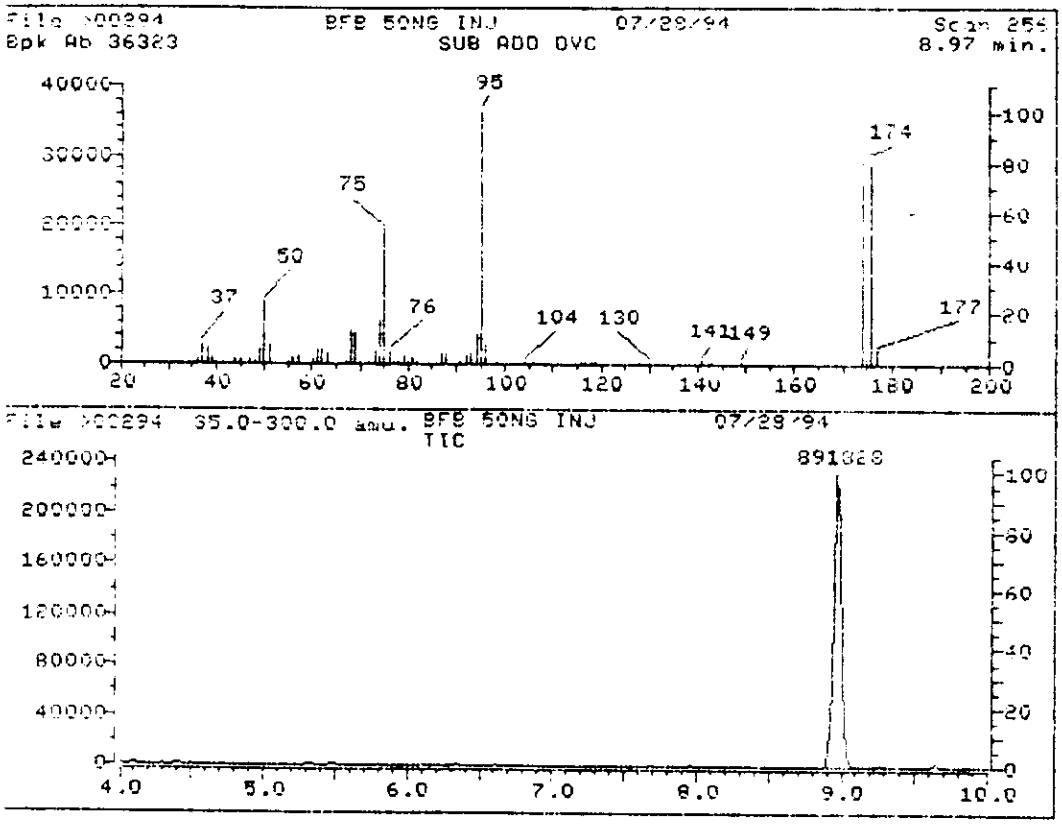
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	8-40% of mass 95	24.21	24.21	Ok
75	30-66% of mass 95	53.22	53.22	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.78	6.78	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	50-120% of mass 95	80.60	80.60	Ok
175	4-9% of mass 174	5.96	7.39	Ok
176	93-101% of mass 174	78.80	98.01	Ok
177	5-9% of mass 176	5.11	6.47	Ok

Injection Date: 12/28/94
Injection Time: 09:33
Data File: VT0294
Scan: 258

MS data file header from : >00294

Sample: BFB 50NG INJ Operator: [illegible] MS 7/28/94 [illegible]:33
Misc : 07/28/94
Sys #: 1 MS model: 96 SW/HW rev.: 1A HDS # : 0
Method file: MF96B Tuning file: MT9201 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 200 Transfer line temp. : 230

Chromatographic temperatures	80.	160.	0.	0.	0.
Chromatographic times, min.	.5	.5	0.0	0.0	0.0
Chromatographic rate, deg/min	8.0	1.0	0.0	0.0	0.0



>00294 BFB 50NG INJ 07/28/94
256 SUB ADD DVC

File: >00294 Scan #: 256 Retr. time: 8.97

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	372.3	55.10	174.0	73.10	1295.0	88.05	1254.3	117.95	68.0
37.10	2628.7	56.10	704.0	74.10	6200.7	91.05	66.3	118.95	73.0
38.20	2163.3	57.10	1067.3	75.10	19332.7	92.15	981.3	128.00	73.3
39.10	824.3	60.10	392.0	76.10	1623.3	93.15	1421.0	130.00	130.3
40.10	118.0	61.10	1983.0	77.15	185.3	94.15	3973.7	141.00	345.3
44.10	456.3	62.10	1888.0	78.05	54.0	95.15	36322.8	143.10	315.7
45.20	449.0	63.10	1257.7	79.05	1150.7	96.15	2462.3	149.10	60.0
47.10	371.0	67.10	66.0	80.05	263.7	104.05	70.7	174.00	29277.4
48.10	230.3	68.10	4557.0	81.05	1124.0	105.95	69.0	175.10	2165.0
49.10	1997.0	69.10	4325.0	82.05	89.7	115.95	42.7	176.00	28693.4
50.10	8793.7	70.10	286.3	87.05	1246.7	116.95	112.7	177.00	1857.0
51.10	2501.3	72.00	253.0						

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	8-40% of mass 95	22.92	22.92	Ok
75	30-66% of mass 95	51.50	51.50	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.20	6.20	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	50-120% of mass 95	79.69	79.69	Ok
175	4-9% of mass 174	6.58	8.26	Ok
176	93-101% of mass 174	79.93	100.30	Ok
177	5-9% of mass 176	5.19	6.50	Ok

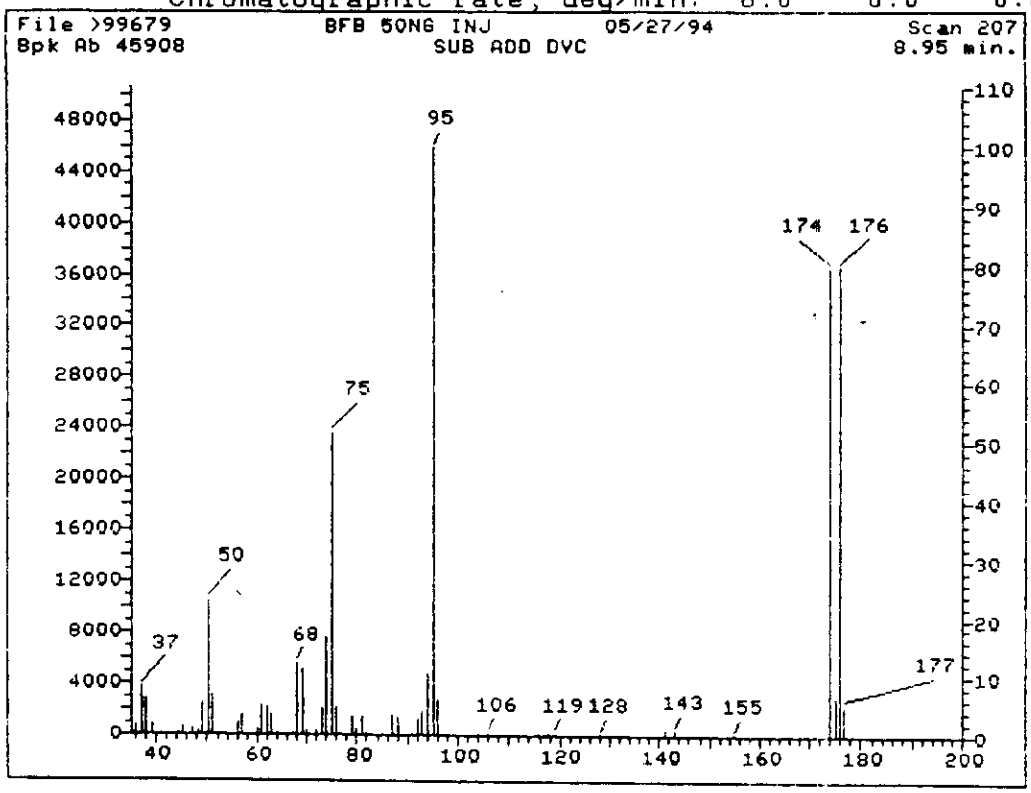
Injection Date: 05/27/94
Injection Time: 10:39
Data File: >99679
Scan: 207

yah 5/27/94

MS data file header from : >99679

Sample: BFB 50NG INJ Operator JSER96 MS 5/27/94 10:39
Misc : 05/27/94
Sys. #: 1 MS model: 96 SW/HW rev : IA ALS # : 0
Method file: MF96B Tuning file: MT9201 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 200 Transfer line temp. : 230

Chromatographic temperatures :	80.	160.	0.	0.	0.
Chromatographic times, min :	.5	.5	0.0	0.0	0.0
Chromatographic rate, deg/min:	8.0	0.0	0.0	0.0	0.0



>99679 BFB 50NG INJ 05/27/94
207 SUB ADD NRM DVC

File: >99679 Scan #: 207 Retn. time: 8.95

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
36.10	1.559	52.00	.096	73.00	4.476	91.05	.322	117.95	.335
37.10	8.023	55.00	.190	74.00	16.585	91.35	.077	118.85	.419
38.10	5.976	56.00	1.925	75.00	51.495	92.05	2.741	127.90	.297
39.10	1.865	57.00	3.256	76.00	4.801	93.05	4.066	128.80	.091
40.00	.105	60.10	1.136	76.85	.497	94.05	10.362	129.90	.181
41.20	.137	61.00	5.231	78.05	.029	95.05	100.000	140.90	.981
43.30	.125	62.00	4.749	78.95	3.145	96.05	6.199	142.90	1.035
44.10	.470	63.00	3.410	79.95	.921	97.05	.143	147.90	.149
45.10	1.402	63.90	.207	80.95	3.145	103.85	.439	154.80	.288
47.00	1.120	67.10	.375	81.95	.275	104.95	.082	173.90	79.690
48.10	.803	68.00	12.216	85.95	.091	105.85	.452	174.90	6.583
49.10	5.446	69.00	11.152	87.05	3.494	115.95	.418	175.90	79.928
50.10	22.923	70.00	.654	87.95	2.952	116.85	.282	176.80	5.194
51.10	6.905	72.00	.571	90.75	.141				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLKS1

Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:MB*NONE*0728

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00297

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	1.	J
67-64-1	Acetone	4.	J
75-15-0	Carbon Disulfide	10.	U
75-35-4	1,1-Dichloroethene	10.	U
75-34-3	1,1-Dichloroethane	10.	U
540-59-0	1,2-Dichloroethene (total)	10.	U
67-66-3	Chloroform	10.	U
107-06-2	1,2-Dichloroethane	10.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	10.	U
56-23-5	Carbon Tetrachloride	10.	U
75-27-4	Bromodichloromethane	10.	U
78-87-5	1,2-Dichloropropane	10.	U
10061-01-5	cis-1,3-Dichloropropene	10.	U
79-01-6	Trichloroethene	10.	U
124-48-1	Dibromochloromethane	10.	U
79-00-5	1,1,2-Trichloroethane	10.	U
71-43-2	Benzene	10.	U
10061-02-6	trans-1,3-Dichloropropene	10.	U
75-25-2	Bromoform	10.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	10.	U
79-34-5	1,1,2,2-Tetrachloroethane	10.	U
108-88-3	Toluene	10.	U
108-90-7	Chlorobenzene	10.	U
100-41-4	Ethylbenzene	10.	U
100-42-5	Styrene	10.	U
1330-20-7	Xylene (total)	10.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKS1

Lab Name:ESE Contract:CDM-HANFORD

Lab Code:ESE Case No.:51586 SAS No.: SDG No.:51586

Matrix: (soil/water) SOIL Lab Sample ID:MB*NONE*0728

Sample wt/vol: 5.00 (g/ml) G Lab File ID: 00297

Level: (low/med) LOW Date Received: / /

% Moisture: not dec. 0 Date Analyzed: 7/28/94

GC Column:DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume:0 (uL) Soil Aliquot Volume:0 (uL)

Number TICs Found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

QUANT REPORT

Operator ID: USER96 Quant Rev 6 Quant Time: 940728 12:21
Output File: ^00297::P1 Injected at: 940728 11:49
Data File: >00297::GL Dilution Factor: 1.000000
Name: MB*NONE*0728
Misc: 07/28/94

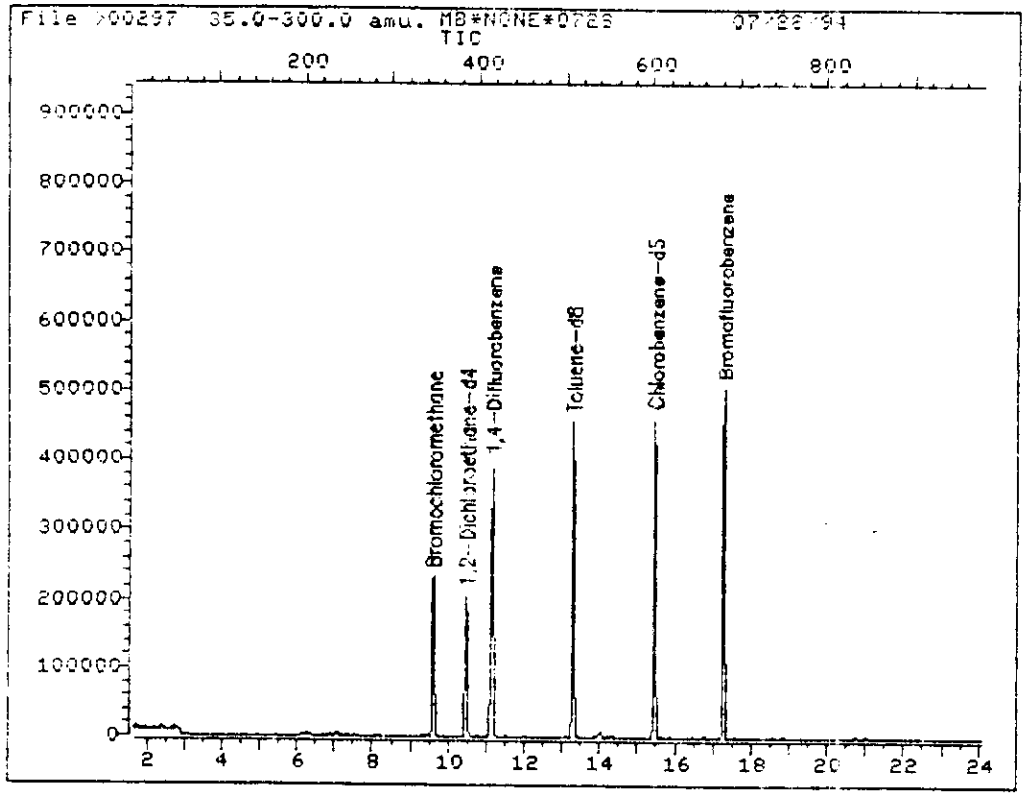
ID File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	9.60	128.0	128418	50.00	ug/Kg	96
8)	Methylene Chloride	7.05	84.0	4751	1.31	ug/Kg <DL	94
9)	Acetone	6.25	43.0	15181	3.66	ug/Kg <DL	100
21)	1,2-Dichloroethane-d4	10.47	65.0	323010	49.82	ug/Kg	80
23)	*1,4-Difluorobenzene	11.16	114.0	545634	50.00	ug/Kg	100
41)	*Chlorobenzene-d5	15.45	117.0	449587	50.00	ug/Kg	100
49)	Toluene-d8	13.29	98.0	547960	50.99	ug/Kg	100
53)	Bromofluorobenzene	17.28	95.0	332659	48.23	ug/Kg	100

* Compound is ISTD

yah 7/28/94

TOTAL ION CHROMATOGRAM



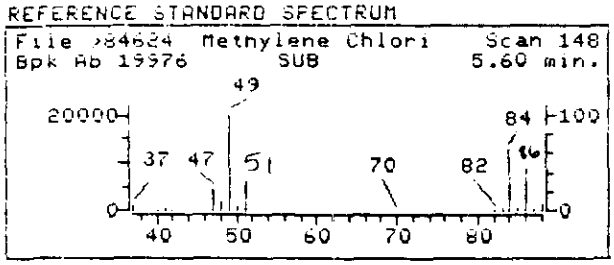
Data File: >00297::GL
Name: MB*NONE*0728
Misc: 07/28/94

Quant Output File: ^00297::P1

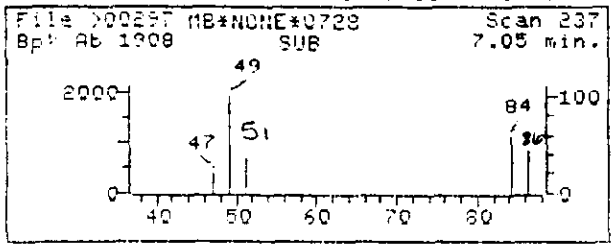
Id File: IDARMS::E2
Title: CONTRACT LABORATORY PROGRAM ID FILE
Last Calibration: 940728 10:47

Operator ID: USER96
Quant Time: 940728 12:21
Injected at: 940728 11:49

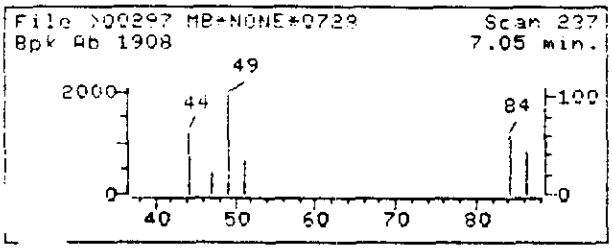
REFERENCE STANDARD SPECTRUM

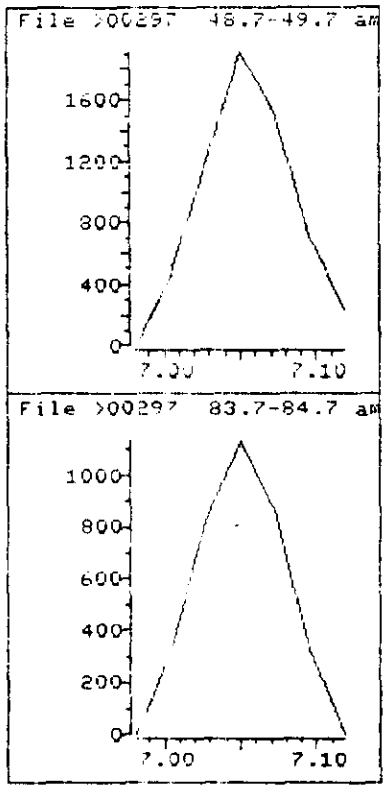


SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)





Data File: >00297::GL
Name: MB*NONE*0728
Misc: 07/28/94
Quant Time: 940728 12:21
Injected at: 940728 11:49

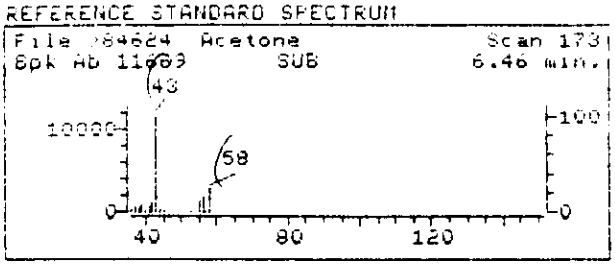
Quant Output File: ^00297::P1

Quant ID File: IDARMS::E2
Last Calibration: 940728 10:47

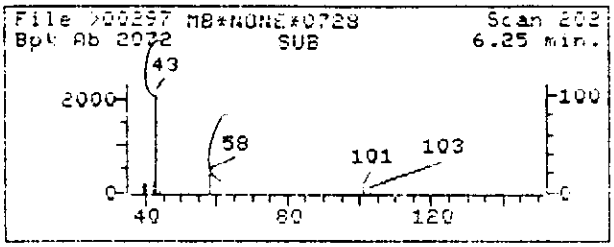
Compound No: 8
Compound Name: Methylene Chloride
Scan Number: 237
Retention Time: 7.05 min.
Quant Ion: 84.0
Area: 4751
Concentration: 1.31 ug/Kg <DL
q-value: 94

JAH 7/28/94

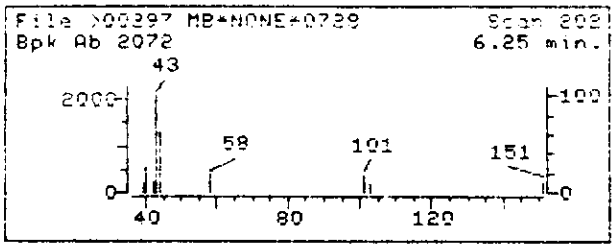
REFERENCE STANDARD SPECTRUM

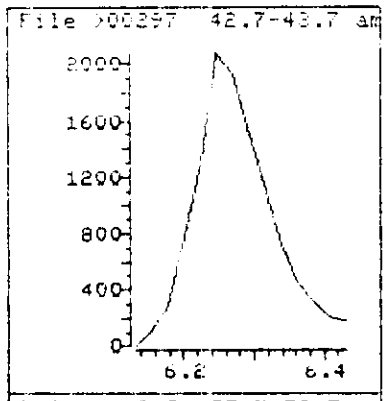


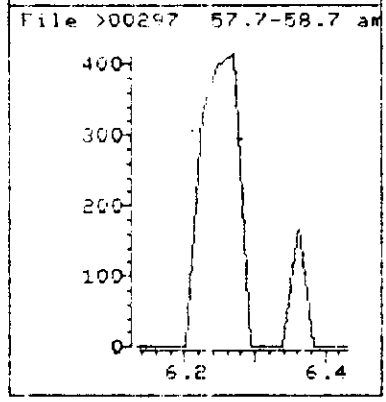
SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)







Data File: >00297::GL
Name: MB*NONE*0728
Misc: 07/28/94
Quant Time: 940728 12:21
Injected at: 940728 11:49

Quant Output File: ^00297::P1

Quant ID File: IDARMS::E2
Last Calibration: 940728 10:47

Compound No: 9
Compound Name: Acetone
Scan Number: 202
Retention Time: 6.25 min.
Quant Ion: 43.0
Area: 15181
Concentration: 3.66 ug/Kg < D.L
q-value: 100

you 7/28/94

MS data file header from : >00297

Sample: MB+NONE*0728 Operator: USER95 MS 7/28/94 11:48
Misc : 07/28/94
Sys. #: 1 MS model: 96 SW/HW rev.: IA ALS # : 0
Method file: MP96B Tuning file: MT921 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 200 Transfer line temp. : 230

Chromatographic temperatures :	10.	120.	0.	0.	0.
Chromatographic times, min. :	3.0	5.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	10.0	0.0	0.0	0.0	0.0

No peaks found.

Summary of Unknowns PBM Library Search and Quantitation

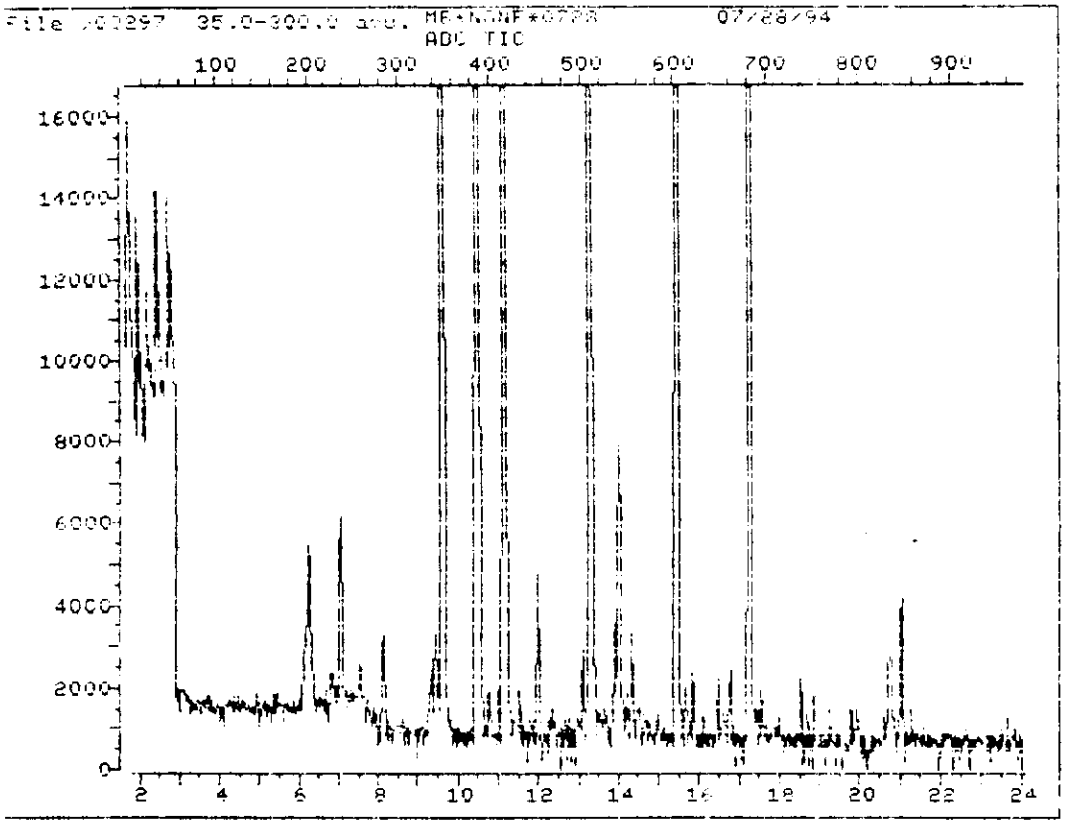
Standard	Concentration	Area	Retention Time	Unknown Window
1	50.0	955992.	9.59	1.64 - 10.38
2	50.0	1452544.	11.16	10.38 - 13.30
3	50.0	1610391.	15.45	13.30 - 24.07

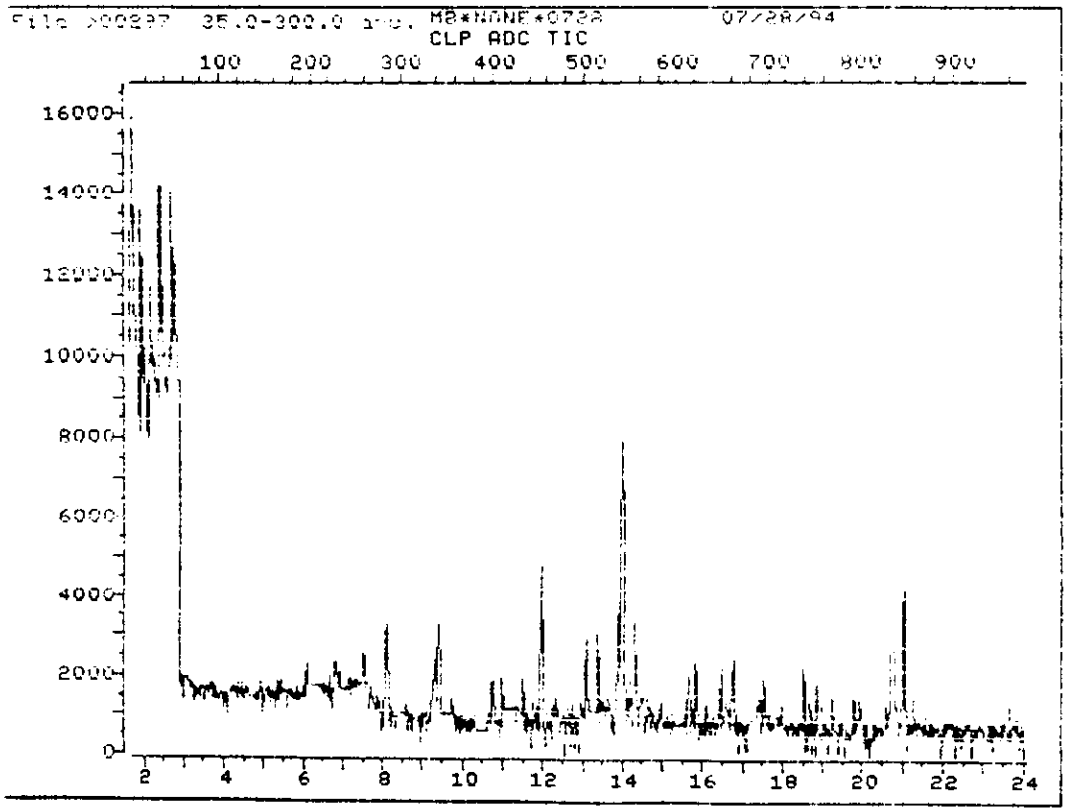
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 0.00
Amount Method (AM) = 1000.00 Amount Used (AU) = 1000.00

Correction Factor = ******** = (AM / AU) / (DF * FS)

$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

3:45 PM TUE., 28 JULY, 1994


File X00297 35.0-300.0 amu. MB*NONE*0728 07/28/94
ADC TIC
100 200 300 400 500 600 700 800 900
16000
14000
12000
10000
8000
6000
4000
2000
0
2 4 6 8 10 12 14 16 18 20 22 24


File X00297 35.0-300.0 amu. MB*NONE*0728 07/28/94
CLP ADC TIC
100 200 300 400 500 600 700 800 900
16000
14000
12000
10000
8000
6000
4000
2000
0
2 4 6 8 10 12 14 16 18 20 22 24

```
working...
   There were no UNKNOWNS
   Creating the .RR file
.QN:  00297
                    960107289411 49R    35   300 1 375   9                                  0014E05
                                                                                             0020F50
                    Bromochloromethane                                                       0036B07
                      1 128  348   9.5954  1   108418 ug/Kg    50.0000                       0045911
                    Methylene Chloride                                                       0054FAC
                      2  84  237   7.0496  1     4751 ug/Kg     1.3052                       0063BF5
                    Acetone                                                                  0075F45
                      3  43  202   6.2470  1    15181 ug/Kg     3.6593                       0083CF0
                    1,2-Dichloroethane-d4                                                    0090AC6
                      4  65  386  10.4674  1   373010 ug/Kg    49.8193                       0107108
                    1,4-Difluorobenzene                                                      0113699
                      5 114  416  11.1559  5   545634 ug/Kg    50.0000                       0126B14
                    Chlorobenzene-d5                                                         0130555
                      6 117  603  15.4457  6   448587 ug/Kg    50.0000                       0147310
                    Toluene-d8                                                               0153377
                      7  98  509  13.2395  6   547960 ug/Kg    50.9947                       0167066
                    Bromofluorobenzene                                                       0177E06
                      8  95  683  17.2308  6   432659 ug/Kg    48.2254                       0187326
 PBM results file is for MS data file >00159 not >00297
ENDFILE                                                                                      0197B50

 Reduced results file: R00297 summary
      QUANT data from: ^00297
```

Other Relevant Documents

Environmental Science & Engineering, Inc.

GC/MS INSTRUMENT LOGSHEET

INSTRUMENT ID A (5996)

DATE 7/28/94 PROJECT NAME CDM Hanford / LK-Fluor Daniel

OPERATOR YSH

MASS RANGE 35-300

THRESHOLD 100

SCAN DELAY 1.5

TAPE DATE

COLUMN DB-624 75m

GC PROGRAM 10°C t=3min to 170°C @ 10°C/min

A/D 2^3

E. M. 1748 V

SURR CLPSS73*D

INT STD CLPIS53*B

STANDARD CLPVS60*C

CAL FILE CBS390/CLSPR

ID FILE 1DARM5

ID FILE UNITS ug/kg

DATE UPLOADED 7/28/94

UPLOAD NAME OMAYH2/LKY

DATE SIGN

FRN	SAMPLE ID	PURGE VOL	ALS POS	DIL FACT	COMMENTS	SAMPLE CHECK
>00294	BFB 50NGINJ	—	—	—	9:33 256	✓
>00295	VSTD050	5g/5ml	06	1.0		✓
>00296	VSTD050	|	07	|		✓
>00297	MB*NONE*0728	|	08	|		✓
>00298	CDMHNSS3*43	|	09	|	IS Low Matrix Effect	✓
>00299	SPM1*CDMHNSS3*43	|	10	|	IS Low Matrix Effect	✓
>00300	SPM2*CDMHNSS3*43	↓	11	↓	IS Low Matrix Effect	✓
>00301	SP1*NONE*0728	5g/5ml	12	1.0		✓
>00302	MB*THAMA*0728	5g/5ml	14	1.0		✓
>00303	LK FLDS1*18	5g/5ml	15			✓
>00304	BFB 50NG INJ	—	—	—	16:31 256	✓
>00305	LKFLDS*7	5g	16	1.0		✓
>00306	SPM1*LKFLDS*7	5g	1	1.0		✓
>00307	SPM2*LKFLDS*7	5g	2	1.0		✓
>00308	LKFLDS*8	5g	3	1.0		
>00309	LKFLDS*9	5g	4	1.0		✓
>00310	LKFLDS*19	5g	5	1.0		✓
>00311	LKFLDS*20	5g	6	1.0		✓
>00312	LKFLDS*21	5g	7	1.0		✓
>00313	LKFLDS*22	5g	8	1.0		✓
>00314	LKFLDS*23	5g	9	1.0		✓
>00315	LKFLDS*23	1g	10	1.0		✓
>00316	STD 250ng PURGE	5g	11	1.0		✓
	07/29/94					

Read and Understood by

SIGNED 7/28/94 DATE SIGNED 07/29/94 DATE PAGE 1 OF 1

BOOK NO:

000013

000084

Environmental Science & Engineering, Inc.

GC/MS INSTRUMENT LOGSHEET

INSTRUMENT ID (A) 5996

DATE 5/27/94 PROJECT NAME Soil Calibration CARMY5/CB5390

OPERATOR YSH/GGL

MASS RANGE 35-300 A/D 2^3 CAL FILE CARMY5/CB5390

THRESHOLD 100 E. M. 1748V ID FILE IDARM5

SCAN DELAY 2.1 min SURR CLP5572xA ID FILE UNITS US/Kg

TAPE DATE INT STD CLP1552xA DATE UPLOADED

COLUMN DB 624 75m STANDARD CLP1559xA UPLOAD NAME

GC PROGRAM 10° t=3min 10°/min to 180° DATE SIGN

FRN	SAMPLE ID	PURGE VOL	ALS POS	DIL FACT	COMMENTS	SAMPLE CHECK
>99679	BFB 50ng inj	—	—	—	10:39 207	✓
>99680	VSTD 50	5g	9	1.0	NOT USED	
>99681	VSTD 10	5g	10	1.0		✓
>99682	VSTD 20	5g	11	1.0		✓
>99683	VSTD 50	5g	12	1.0		✓
>99684	VSTD 100	5g	13	1.0		✓
>99685	VSTD 150	5g	14	1.0		✓
>99686	VSTD 200	5g	15	1.0		✓

05/27/94

Read and Understood by

SIGNED 5/27/94 DATE SIGNED 05/27/94 DATE PAGE 1 OF 1

000085

PROJECT CLPVS60 * Standards Solution

Notebook No. 820

Continued From Page

① 1.0ml of Protocol CLP blend-D @ 1000 ug/ml was added to a 5.0ml volumetric flask with Baxter/B+J brand methanol, lot #BG833, to yield a 200 ug/ml solution (Para-Xylene = 100ug/ml)

② 200ul of each solution; CLP blend-D, Purgeables A, B, and C were combined in a autosampler vial to yield a 50 ug/ml solution.

These were denoted as CLPVS60 * A →

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA

FPA Purgeable A
1 x 1ml
200ug/ml each in methanol

Cat no 4-8851
Storage-
Lot no-L
Mfg Date
Exp date

SUPELCO

Cat no 4-8852
Storage-REFRIGERATE
Exp date SEP-94
Lot no- LA39108

FOR RESEARCH USE ONLY

Purgeable B
1 x 1ml
200ug/ml each methanol

Mfg Date SEP-93

SUPELCO

Cat no 4-8853
Storage-FREEZE
Exp date JUL-94
Lot no- LA37650

FOR RESEARCH USE ONLY

Purgeable C
1ml methanol

Mfg Date JUL-93

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER PA. R-T-K: bromomethane, chloroethane, chloromethane, vinyl chloride.

SAVE THIS DATA SHEET!
It Contains Important Information About This Product.

Purgeable A Mixture
Catalog Number 4-8851

This mixture contains 200µg/ml of each of the following components in methanol:

1. Methylene chloride
2. Trichlorofluoromethane
3. 1,1-Dichloroethylene
8. Trichloroethylene
9. 1,1,2-Trichloroethane
and Dichlorodifluoromethane

Certificate of Analysis

geable B

52

9108

MFG DATE: SEP-93

EXPIRATION DATE: SEP-94

Read and Understood By

David C. Lucas — Signed — 07-07-94 — Date

Douglas H. Pahl — Signed — 7-07-94 — Date

Notebook No. 820

PROJECT CLPSS73 SURROGATE STANDARD

Continued From Page

① 200 uL OF PURGEABLES SURROGATE MIX-CLP WAS ADDED TO 800 uL OF BAXTER B&J BRAND METHANOL, LOT BH233 IN A WHEATON AUTO SAMPLER VIAL AND SEALED, FRACTIONS A - F WERE PREPARED

$$\left(\frac{200\ uL}{1}\right)\left(\frac{250\ ng}{uL}\right)\left(\frac{1}{1000\ uL}\right) = 50\ \frac{ng}{uL}$$

EXPIRES 12-17-94
820-84-1

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

Volatile Organic Compound Surrogate Spike Mix
1 x 1ml
250ug/ml each in methanol

Cat no 4-8876
Storage-REFRIGERATE
Lot no-LA40036
Mfg Date NOV-93
Exp Date NOV-94

FOR LABORATORY USE ONLY. NOT FOR DRUG, HOUSEHOLD OR OTHER USES.

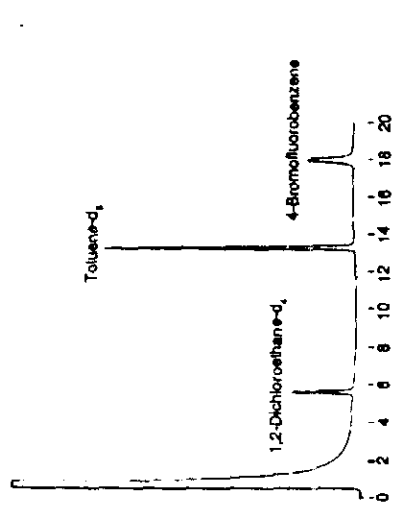
DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER PA[illegible]: 4-bromo[illegible]robenzene, 1,2-dichloroethane-d4. t[illegible]

23-0048 USA • Phone (814) 359-3441

SAVE THIS DATA SHEET!
It Contains Important Information About This Product.

Purgeables Surrogate Standard Mix
Catalog No. 4-8876

This mixture contains 250µg/ml of each of the following components in methanol:



60/80 Carbopack™ B/1% SP™-1000, 8' x 1/8" SS, Col. Temp.: 100°C for 4 min., then to 220°C at 10°C/min., Inj. Temp.: 230°C, Det. Temp.: 250°C, Flow Rate: 30ml/min., N_2, Det.: FID (64 x 10^{-11} AFS), Sample: 2µl Cat. No. 4-8876.

712-0157

SUPELCO
Bellefonte, PA

0317858
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Continued on Page

Read and Understood By

Douglas H. [illegible] — Signed — 06-17-94 — Date

Daniel C. Lucas — Signed — 06-17-94 — Date

① 500 uL OF PURGEABLES INTERNAL STANDARD MIX WAS ADDED TO A 10.0 mL VOLUMETRIC FLASK AND BROUGHT TO VOLUME WITH BAXTER B&J BRAND METHANOL LOT BH233. FRACTIONS A THRU F WERE PREPARED.

$$\left(\frac{500\ uL}{1}\right)\left(\frac{1}{10{,}000\ uL}\right)\left(\frac{1000\ ng}{uL}\right) = 50\ ng/uL$$

820-85-1
~~EXPIRED~~ EXPIRES 12-17-94
DHD WI 6-17-94

SUPELCO

Cat no 4-8835
Storage-REFRIGERATE
Exp date AUG-94
Lot no- LA38238

FOR RESEARCH USE ONLY

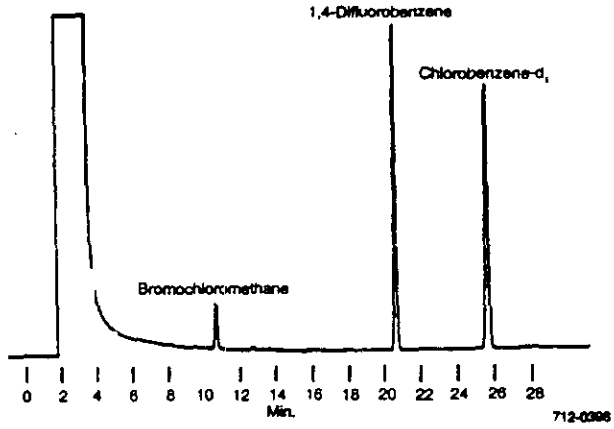
Volatile Organic Compounds Internal Standards Mix
1 x 1ml
1000ug/ml each in methanol
Mfg Date AUG-93

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER PA. R-T-K: bromochloromethane, chlorobenzene-d5, 1,4-difluorobenzene, methanol.

SAVE THIS DATA SHEET!
It Contains Important Information About This Product.

VOA Internal Standard Mix
Catalog No. 4-8835

This mix contains 1000µg/ml of each of the following internal standards in methanol:



60/80 Carbopack™ B/1% SP™-1000, 8' x 1/8" OD stainless steel, Col. Temp.: hold 3 min. at 45°C, then to 220°C at 8°C/min. and hold 15 min., Inj. Temp.: 200°C, Det. Temp.: 220°C, Flow Rate: 40ml/min., N_2, Det.: FID, Sens.: 64 x 10^{-11} AFS, Sample: 1µl of Cat. No. 4-8835.

DS11484D
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SUPELCO
Bellefonte, PA

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

Continued on Page —

Read and Understood By

Signed — Date 06-17-94
Signed — Date 06-17-94

PROJECT CLPVS59 * Standards Solution

Continued From Page

① 1.0ml of Protocol CLP Blend-D @ 1000 ug/ml was added to a 5.0ml volumetric flask with Baxter/B&J brand methanol, lot # BG833, to yield a 200 ug/ml solution (Para-Xylene conc. = 100 ug/ml).

② 200 ul of each solution; CLP-Blend-D, Purgeables A, B, and C were combined in a autosampler vial to yield a 50 ug/ml solution.

These were denoted as CLPVS59 * A → F

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EPA Purgeable A
1 x 1ml
200ug/ml each in methanol

Cat no 4-8851
Storage-FREEZE
Lot no-LA39580
Mfg Date OCT-93
Exp date OCT-94

FOR LABORATORY USE ONLY. NOT FOR DRUG, HOUSEHOLD OR OTHER USES.

FLAMMABLE (USA DEFINITION)
HIGHLY FLAMMABLE (EUROPEAN DEFINITION)

820-79-1
Expires 11-09-94

SUPELCO

Cat no 4-8852
Storage-REFRIGERATE
Exp date SEP-94
Lot no- LA39105

FOR RESEARCH USE ONLY

Purgeable B
1 x 1ml
200ug/ml each methanol

Mfg Date SEP-93

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause [illegible]

SUPELCO

Cat no 4-8853
Storage-FREEZE
Exp date JUL-94
Lot no- LA37650

FOR RESEARCH USE ONLY

Purgeable C
1ml methanol

Mfg Date JUL-93

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER PA. R-T-K: bromomethane, chloroethane, chloromethane, vinyl chloride.

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SAVE THIS DATA SHEET!
It Contains Important Information About This Product.

Purgeable A Mixture
Catalog Number 4-8851

This mixture contains 200µg/ml of each of the following components in methanol:

1. Methylene chloride
2. Trichlorofluoromethane
3. 1,1-Dichloroethylene
4. 1,1-Dichloroethane
5. Chloroform
6. Carbon tetrachloride
7. 1,2-Dichloropropane
8. Trichloroethylene
9. 1,1,2-Trichloroethane and Dibromochloromethane
10. 2-Chloroethyl vinyl ether *
11. Tetrachloroethylene
12. Chlorobenzene

Continued on Page

Read and Understood By

Signed	Date	Signed	Date
Paul C. Tucon	05-09-94	[illegible]	05-09-94

5 DCA 05-31-94

Notebook No. 820

PROJECT CLP IS 12 * Internal Standard

Continued From Page

@ 500ul of Purgeables Internal Standard Mix was added to a 10ml volumetric flask and brought to volume with Burdick/B&J brand methanol, lot # BH233.

Fractions A thru F were prepared.

$500ul \times \frac{1}{10,000ul} \times 1000 \frac{ug}{ml} = 50 ug/ml$

DCA 05-24-94

820-82-1

Expires 11-24-94

SUPELCO

Cat no 4-8835
Storage-REFRIGERATE
Exp date AUG-94
Lot no- LA38238

FOR RESEARCH USE ONLY

Volatile Organic Compounds Internal Standards Mix
1000ug/ml each in methanol
1 x 1ml
Mfg Date AUG-93

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER FA. R-T-K: bromochloromethane, chlorobenzene-d5, 1,4-difluorobenzene, methanol.

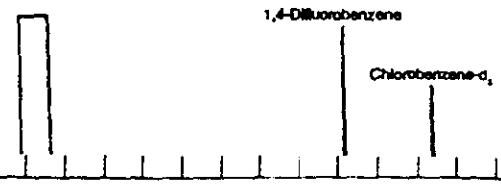
SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

SAVE THIS DATA SHEET!
It Contains Important Information About This Product.

VOA Internal Standard Mix

Catalog No. 4-8835

This mix contains 1000µg/ml of each of the following internal standards in methanol:



Continued on Page

Read and Understood By

Signed	Date	Signed	Date
David C. Lucas	05-24-94	[illegible]	5-24-94

① 200ul of Purgeables Surrogate Standard Mix-CLP was added to 800ul of Baker/B+J brand methanol, lot BH233, in a Wheaton auto-sampler vial and sealed. Fractions A thru E were prepared.

$$\frac{200ul}{1} \times 250ng/ul \times \frac{1}{1000ul} = 50ng/ul$$

Expires 11-23-94

820-81-1

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

Volatile Organic Compound Surrogate Spike Mix
1 x 1ml
250ug/ml each in methanol

Cat no 4-8876
Storage-REFRIGERATE
Lot no-LA40036
Mfg Date NOV-93
Exp date NOV-94

FOR LABORATORY USE ONLY. NOT FOR DRUG, HOUSEHOLD OR OTHER USES.

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED
DANGER-EXTREMELY FLAMMABLE
May be fatal if swallowed. May cause headache, nausea, blindness.
INGREDIENTS PER PACKAGE: 4-bromofluorobenzene, 1,2-dichloroethane-d4, toluene-d8.

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

SAVE THIS DATA SHEET!
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Purgeables Surrogate Standard Mix

Catalog No. 4-8876

This mixture contains 250µg/ml of each of the following components in methanol:

Toluene-d,

Continued on Page

Read and Understood By

David C. Lucas — Signed — 05-23-94 Date

Douglas H. [illegible] — Signed — 05-23-94 Date

Semivolatile Organic Compounds

Quality Control Data

2D
SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Level: (low/med) MED

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	S7 (2CP) #	S8 (DCB) #	TOT OUT
01	SBLKS1	87	82	87	81	69	65	81	88	0
02	WC1-01	94D	91D	92D	79D	66D	75D	77D	83D	0
03	WC1-01MS	99D	99D	99D	89D	70D	86D	87D	94D	0
04	WC1-01MSD	92D	91D	103D	83D	61D	84D	82D	87D	0
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		QC LIMITS	
S1 (NBZ)	= Nitrobenzene-d5	(23-120)	
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)	
S3 (TPH)	= Terphenyl-d14	(18-137)	
S4 (PHL)	= Phenol-d5	(24-113)	
S5 (2FP)	= 2-Fluorophenol	(25-121)	
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)	
S7 (2CP)	= 2-Chlorophenol-d4	(20-130)	(advisory)
S8 (DCB)	= 1,2-Dichlorobenzene-d4	(20-130)	(advisory)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogate diluted out

3D
SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix Spike - EPA Sample No.: WC1-01 Level(low/med) MED

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC. LIMITS REC.
Phenol	75000	0	85000	113*	26- 90
2-Chlorophenol	75000	0	75000	100	25-102
1,4-Dichlorobenzene	50000	0	51000	102	28-104
N-Nitroso-di-n-prop.(1)	50000	0	49000	98	41-126
1,2,4-Trichlorobenzene	50000	0	48000	96	38-107
4-Chloro-3-methylphenol	75000	0	74000	99	26-103
Acenaphthene	50000	0	33000	66	31-137
4-Nitrophenol	75000	0	72000	96	11-114
2,4-Dinitrotoluene	50000	0	43000	86	28- 89
Pentachlorophenol	75000	0	91000	121*	17-109
Pyrene	50000	0	43000	86	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	75000	77000	103*	9	35	26- 90
2-Chlorophenol	75000	69000	92	8	50	25-102
1,4-Dichlorobenzene	50000	47000	94	8	27	28-104
N-Nitroso-di-n-prop.(1)	50000	48000	96	2	38	41-126
1,2,4-Trichlorobenzene	50000	45000	90	6	23	38-107
4-Chloro-3-methylphenol	75000	71000	95	4	33	26-103
Acenaphthene	50000	29000	58	13	19	31-137
4-Nitrophenol	75000	68000	91	5	50	11-114
2,4-Dinitrotoluene	50000	40000	80	7	47	28- 89
Pentachlorophenol	75000	95000	127*	5	47	17-109
Pyrene	50000	44000	88	2	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: 4 out of 22 outside limits

COMMENTS: _____

4B
SEMIVOLATILE METHOD BLANK SUMMARY

EPA SAMPLE NO.

SBLKS1

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Lab File ID: NVO502275.D Lab Sample ID: SBLKS1

Instrument ID: NVO5 Date Extracted: 07/27/94

Matrix: (soil/water) SOIL Date Analyzed: 07/28/94

Level: (low/med) MED Time Analyzed: 1137

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	WC1-01	CDMHNSS3*43	NVO502276.D	07/28/94
02	WC1-01MS	CDMHNSS3*43MS	NVO502277.D	07/28/94
03	WC1-01MSD	CDMHNSS3*43MSD	NVO502278.D	07/28/94
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COMMENTS:

5B
SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Lab File ID: NVO502267.D DFTPP Injection Date: 07/27/94

Instrument ID: NVO5 DFTPP Injection Time: 1329

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	42.5
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	55.5
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	46.4
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	6.9
275	10.0 - 30.0% of mass 198	19.1
365	Greater than 0.75% of mass 198	2.06
441	Present, but less than mass 443	8.6
442	40.0 - 110.0% of mass 198	55.4
443	15.0 - 24.0% of mass 442	10.6 (19.2)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD50	SSTD50	NVO502268.D	07/27/94	1352
02	SSTD20	SSTD20	NVO502269.D	07/27/94	1428
03	SSTD80	SSTD80	NVO502270.D	07/27/94	1506
04	SSTD120	SSTD120	NVO502271.D	07/27/94	1542
05	SSTD160	SSTD160	NVO502272.D	07/27/94	1619
06					
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5B

SEMIVOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Lab File ID: NVO502273.D DFTPP Injection Date: 07/28/94

Instrument ID: NVO5 DFTPP Injection Time: 0829

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	30.0 - 80.0% of mass 198	43.2
68	Less than 2.0% of mass 69	0.0 (0.0)1
69	Mass 69 relative abundance	56.6
70	Less than 2.0% of mass 69	0.0 (0.0)1
127	25.0 - 75.0% of mass 198	45.7
197	Less than 1.0% of mass 198	0.0
198	Base peak, 100% relative abundance	100.0
199	5.0 to 9.0% of mass 198	7.0
275	10.0 - 30.0% of mass 198	20.6
365	Greater than 0.75% of mass 198	2.26
441	Present, but less than mass 443	9.6
442	40.0 - 110.0% of mass 198	62.3
443	15.0 - 24.0% of mass 442	12.2 (19.6)2

1-Value is % mass 69 2-Value is % mass 442

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	SSTD50	SSTD50	NVO502274.D	07/28/94	0934
02	SBLKS1	SBLKS1	NVO502275.D	07/28/94	1137
03	WC1-O1	CDMHNSS3*43	NVO502276.D	07/28/94	1210
04	WC1-O1MS	CDMHNSS3*43MS	NVO502277.D	07/28/94	1250
05	WC1-O1MSD	CDMHNSS3*43MSD	NVO502278.D	07/28/94	1326
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8B
SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ESE Contract NA

Lab Code: ESE Case No.: NA SAS No. NA SDG No.: 51539

Lab File ID (Standard): NVO502274.D Date Analyzed: 07/28/94

Instrument ID: NVO5 Time Analyzed: 0934

		IS1(DCB) AREA #	RT #	IS2(NPT) AREA #	RT #	IS3(ANT) AREA #	RT #
	12 HOUR STD	269907	5.58	837676	7.70	347807	11.19
	UPPER LIMIT	539814	6.08	1675352	8.20	695614	11.69
	LOWER LIMIT	134954	5.08	418838	7.20	173904	10.69
	EPA SAMPLE No.						
01	SBLKS1	285642	5.58	988262	7.69	414023	11.19
02	WC1-01	370011	5.58	1140549	7.69	453772	11.19
03	WC1-01MS	347640	5.58	1169451	7.69	479836	11.19
04	WC1-01MSD	328668	5.58	1142434	7.70	509342	11.19
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d10

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8C

SEMIVOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Lab File ID (Standard): NVO502274.D Date Analyzed: 07/28/94

Instrument ID: NVO5 Time Analyzed: 0934

		IS4 (PHN) AREA #	RT #	IS5 (CRY) AREA #	RT #	IS6 (PRY) AREA #	RT #
	12 HOUR STD	514714	14.57	472840	20.85	446797	23.98
	UPPER LIMIT	1029428	15.07	945680	21.35	893594	24.48
	LOWER LIMIT	257357	14.07	236420	20.35	223398	23.48
	EPA SAMPLE No.						
01	SBLKS1	578741	14.56	401837	20.84	400374	23.98
02	WC1-01	640953	14.57	497459	20.86	552351	24.01
03	WC1-01MS	688087	14.57	498145	20.86	672079	24.02
04	WC1-01MSD	724958	14.57	519606	20.87	523507	24.01
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

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

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Sample Data

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502276.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	20000	U
111-44-4	Bis(2-Chloroethyl)ether	20000	U
95-57-8	2-Chlorophenol	20000	U
541-73-1	1,3-Dichlorobenzene	20000	U
106-46-7	1,4-Dichlorobenzene	20000	U
95-50-1	1,2-Dichlorobenzene	20000	U
95-48-7	2-Methylphenol	20000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	20000	U
106-44-5	4-Methylphenol	20000	U
621-64-7	N-Nitroso-di-n-propylamine	20000	U
67-72-1	Hexachloroethane	20000	U
98-95-3	Nitrobenzene	20000	U
78-59-1	Isophorone	20000	U
88-75-5	2-Nitrophenol	20000	U
105-67-9	2,4-Dimethyphenol	20000	U
111-91-1	Bis(2-Chloroethoxy)methane	20000	U
120-83-2	2,4-Dichlorophenol	20000	U
120-82-1	1,2,4-Trichlorobenzene	20000	U
91-20-3	Naphthalene	20000	U
106-47-8	4-Chloroaniline	20000	U
87-68-3	Hexachlorobutadiene	20000	U
59-50-7	4-Chloro-3-methylphenol	20000	U
91-57-6	2-Methylnaphthalene	20000	U
77-47-4	Hexachlorocyclopentadiene	20000	U
88-06-2	2,4,6-Trichlorophenol	20000	U
95-95-4	2,4,5-Trichlorophenol	50000	U
91-58-7	2-Chloronaphthalene	20000	U
88-74-4	2-Nitroaniline	50000	U
131-11-3	Dimethyl phthalate	20000	U
208-96-8	Acenaphthylene	20000	U
606-20-2	2,6-Dinitrotoluene	20000	U
99-09-2	3-Nitroaniline	50000	U
83-32-9	Acenaphthene	20000	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502276.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	50000	U
100-02-7	4-Nitrophenol	50000	U
132-64-9	Dibenzofuran	20000	U
121-14-2	2,4-Dinitrotoluene	20000	U
84-66-2	Diethyl phthalate	20000	U
7005-72-3	4-Chlorophenyl-phenylether	20000	U
86-73-7	Fluorene	20000	U
100-01-6	4-Nitroaniline	50000	U
534-52-1	4,6-Dinitro-2-methylphenol	50000	U
86-30-6	N-Nitrosodiphenylamine (1)	20000	U
101-55-3	4-Bromophenyl-phenylether	20000	U
118-74-1	Hexachlorobenzene	20000	U
87-86-5	Pentachlorophenol	50000	U
85-01-8	Phenanthrene	20000	U
120-12-7	Anthracene	20000	U
86-74-8	Carbazole	20000	U
84-74-2	Di-n-butylphthalate	20000	U
206-44-0	Fluoranthene	20000	U
129-00-0	Pyrene	20000	U
85-68-7	Butylbenzylphthalate	20000	U
91-94-1	3,3'-Dichlorobenzidine	20000	U
56-55-3	Benzo(a)anthracene	20000	U
218-01-9	Chrysene	20000	U
117-81-7	bis(2-Ethylhexyl)phthalate	20000	U
117-84-0	Di-n-octylphthalate	20000	U
205-99-2	Benzo(b)fluoranthene	20000	U
207-08-9	Benzo(k)fluoranthene	20000	U
50-32-8	Benzo(a)pyrene	20000	U
193-39-5	Indeno(1,2,3-cd)pyrene	20000	U
53-70-3	Dibenzo(a,h)anthracene	20000	U
191-24-2	Benzo(g,h,i)perylene	20000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

WC1-01

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502276.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	Unknown Alkane	13.511	4800	J
2. 544-63-8	Tetradecanoic acid	14.114	9200	NJ
3.	Unknown Alkane	14.611	6600	J
4. 538-74-9	Benzene, 1,1'-[thiobis(methy	14.943	8700	NJ
5. 112-39-0	Hexadecanoic acid, methyl es	15.815	10000	NJ
6. 57-10-3	Hexadecanoic acid	16.217	110000	NJ
7.	Unknown Alkane	16.566	6800	J
8.	Unknown Alkane	17.247	21000	J
9.	Unknown	17.386	110000	J
10.	Unknown Alkane	17.509	10000	J
11.	Unknown	17.561	16000	J
12. 57-11-4	Octadecanoic acid	18.102	11000	NJ
13.	Unknown	19.079	29000	J
14.	Unknown	19.254	22000	J
15.	Unknown	25.128	12000	J
16.	Unknown	25.669	12000	J
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d
Report Date: 29-Jul-1994 08:32

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

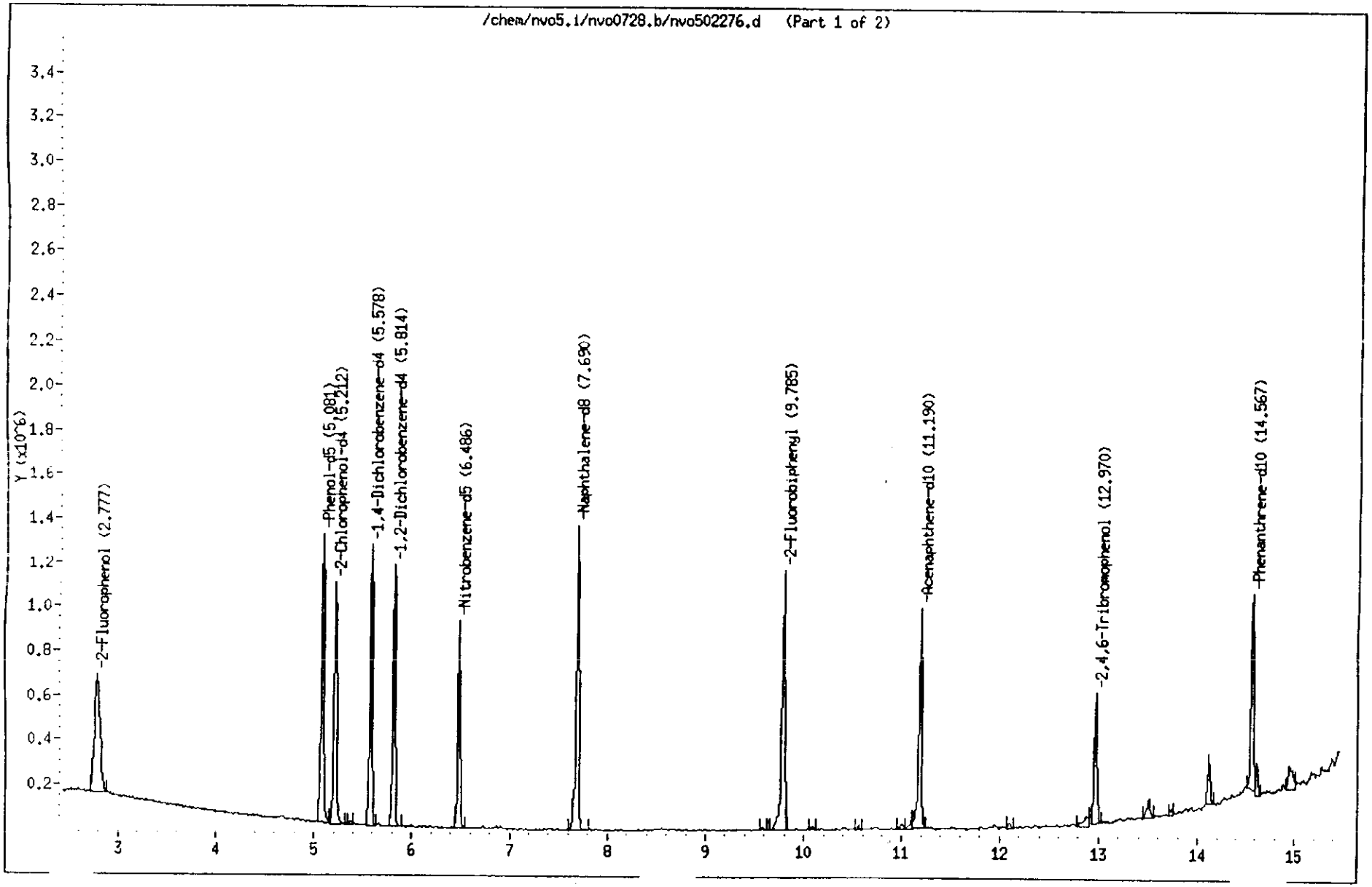
Data file : /chem/nvo5.i/nvo0728.b/nvo502276.d
Lab Smp Id: CDMHNSS3*43 Client Smp ID: WC1-01
Inj Date : 28-JUL-1994 12:10 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : CDMHNSS3*43
Misc Info : CDM Hanford N. Slope
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42 Quant Type: ISTD
Cal Date : 28-JUL-94 09:34 Cal File: nvo502274.d
Als bottle: 2
Dil Factor: 2.000
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)
* 1 1,4-Dichlorobenzene-d4	152.00	5.578	5.579	(1.000)	370011	40	
$ 2 2-Fluorophenol	112.00	2.785	2.786	(0.499)	653058	50	50000
$ 3 Phenol-d5	99.00	5.081	5.090	(0.911)	870426	59	59000
$ 6 2-Chlorophenol-d4	132.00	5.212	5.212	(0.934)	646162	58	58000
$ 10 1,2-Dichlorobenzene-d4	152.00	5.814	5.814	(1.042)	332020	41	41000
* 17 Naphthalene-d8	136.00	7.690	7.699	(1.000)	1140549	40	
$ 18 Nitrobenzene-d5	82.00	6.486	6.486	(0.843)	535623	47	47000
* 31 Acenaphthene-d10	164.00	11.190	11.190	(1.000)	453772	40	
$ 35 2-Fluorobiphenyl	172.00	9.785	9.794	(0.874)	756807	46	46000
$ 51 2,4,6-Tribromophenol	330.00	12.970	12.979	(1.159)	144190	56	56000
* 52 Phenanthrene-d10	188.00	14.567	14.568	(1.000)	640953	40	
* 63 Chrysene-d12	240.00	20.860	20.852	(1.000)	497459	40	
$ 65 Terphenyl-d14	244.00	18.451	18.434	(0.885)	592743	46	46000
* 71 Perylene-d12	264.00	24.010	23.985	(1.000)	552351	40	

Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d
Date : 28-JUL-1994 12:10
Client ID: WC1-01
Sample Info: CDMHNSS3x43
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



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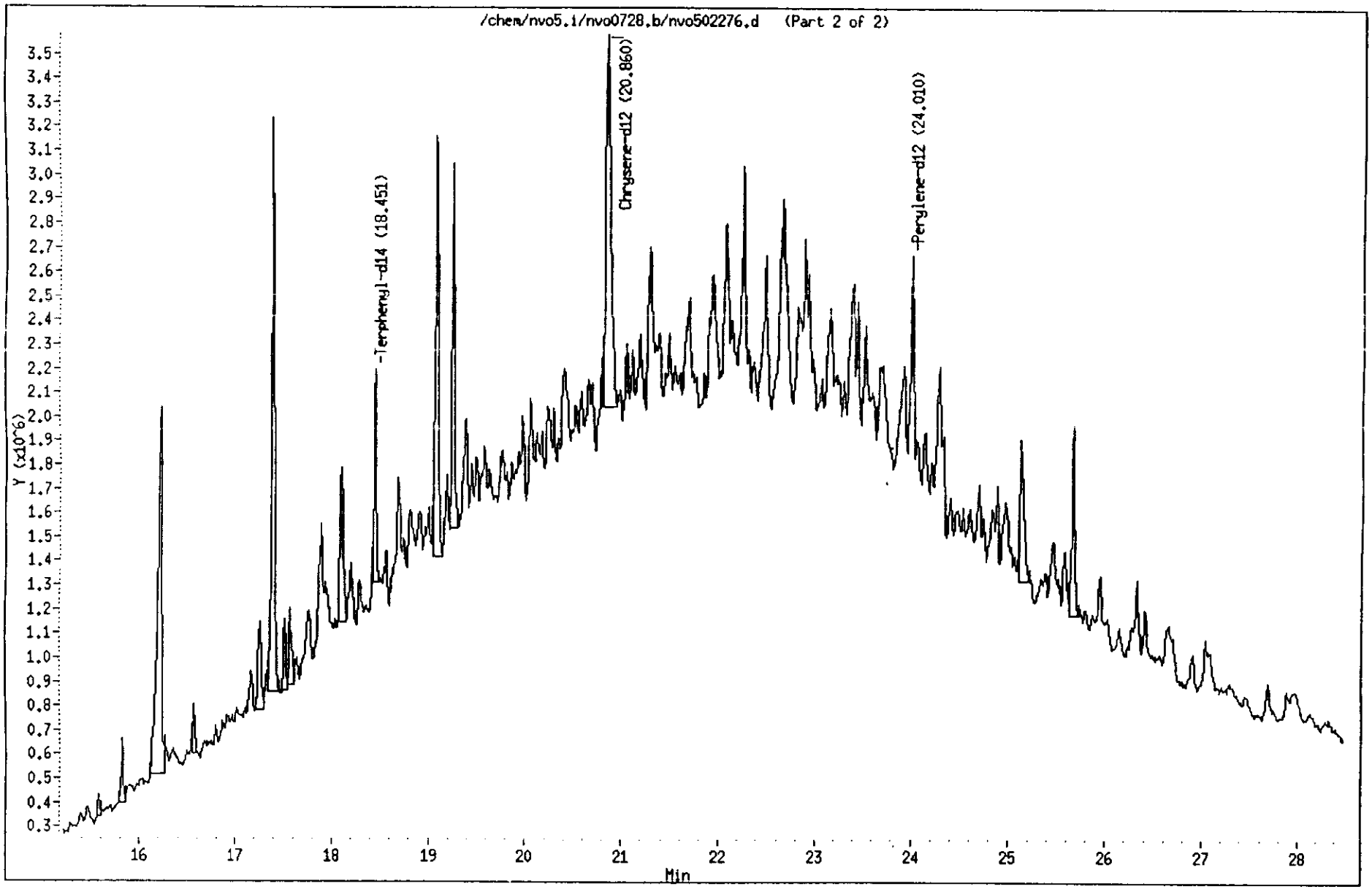
Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d
Date : 28-JUL-1994 12:10
Client ID: WC1-01
Sample Info: CDMHNSS3x43
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



700107

Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d
Report Date: 29-Jul-1994 08:50

Environmental Science and Engineering

Unknown Compounds Quantitation Report

Data file : /chem/nvo5.i/nvo0728.b/nvo502276.d
Lab Smp Id: CDMHNSS3*43 Client Smp ID: WC1-01
Inj Date : 28-JUL-1994 12:10 Autotune Date: 11-Jul-94 08:48:1
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : CDMHNSS3*43
Misc Info : CDM Hanford N. Slope
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42
Cal Date : 28-JUL-94 09:34 Cal File: nvo502274.d
Als bottle: 2
Dil Factor: 2.000 Target Version: 3.10
Integrator: HP RTE Compound Sublist: all.sub
Sample Matrix: SOIL
Quantitative Mode : Use RF of Nearest Std

ISTD	RT	AREA	AMOUNT
* 52 Phenanthrene-d10	14.567	1721402	40.000
63 Chrysene-d12	20.860	5392477	40.000

		CONCENTRATIONS				QUANT		
RT	AREA	ON-COL(ng)	FINAL(ug/Kg)	QUAL	LIBRARY	LIB ENTRY	CPND #	
Unknown Alkane					CAS #:			
13.511	205838	5	4800	90	WILEY 1	129714	52	
Tetradecanoic acid					CAS #: 544-6[illegible]-8			
14.114	396020	9	9200	94	WILEY 1	47290	52	
Unknown Alkane					CAS #:			
14.611	282683	6	6600	86	WILEY 1	127019	52	
Benzene, 1,1'-[thiobis(methylene)]bis-					CAS #: 538-74-9			
14.943	374348	9	8700	87	WILEY 1	124482	52	
Hexadecanoic acid, methyl ester					CAS #: 112-39-0			
15.815	448427	10	10000	94	WILEY 1	63197	52	
Hexadecanoic acid					CAS #: 57-10 3			
16.217	4891865	110	110000	95	WILEY 1	126163	52	

Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d
Report Date: 29-Jul-1994 08:50

RT	AREA	CONCENTRATIONS ON-COL(ng)	FINAL(ug/Kg)	QUAL	QUANT LIBRARY	LIB ENTRY	CPND #
Unknown Alkane				CAS #:			
16.566	292068	7	6800	81	WILEY.1	124388	52
Unknown Alkane				CAS #:			
17.247	892497	21	21000	87	WILEY.1	120812	52
Unknown				CAS #:			
17.386	4855295	110	110000	50	WILEY.1	28072	52
Unknown Alkane				CAS #:			
17.509	452359	10	10000	80	WILEY.1	71785	52
Unknown				CAS #:			
17.561	674831	16	16000	74	WILEY.1	127467	52
Octadecanoic acid				CAS #: 57-11-4			
18.102	1440144	11	11000	97	WILEY 1	127077	63
Unknown				CAS #:			
19.079	3918908	29	29000	27	WILEY 1	38959	63
Unknown				CAS #:			
19.254	2903759	22	22000	59	WILEY 1	17268	63
Unknown				CAS #:			
25.128	1666766	12	12000	43	WILEY 1	127747	63
Unknown				CAS #:			
25.669	1574390	12	12000	45	WILEY 1	128901	63

Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

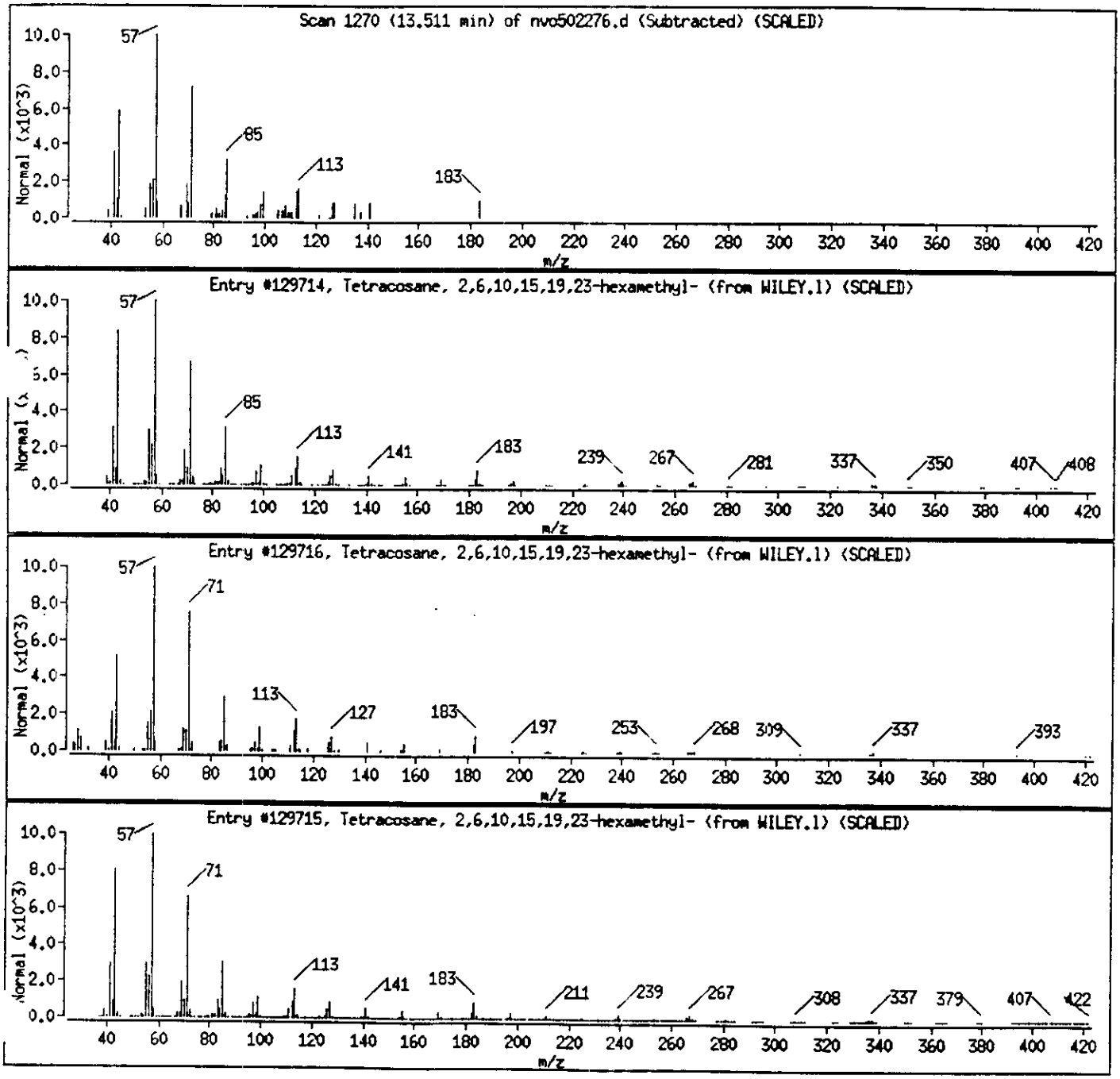
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Tetracosane, 2,6,10,15,19,23-hexamethyl-	111-01-3	WILEY.1	129714	90	C30H62	422
Tetracosane, 2,6,10,15,19,23-hexamethyl-	111-01-3	WILEY.1	129716	83	C30H62	422
Tetracosane, 2,6,10,15,19,23-hexamethyl-	111-01-3	WILEY.1	129715	83	C30H62	422



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

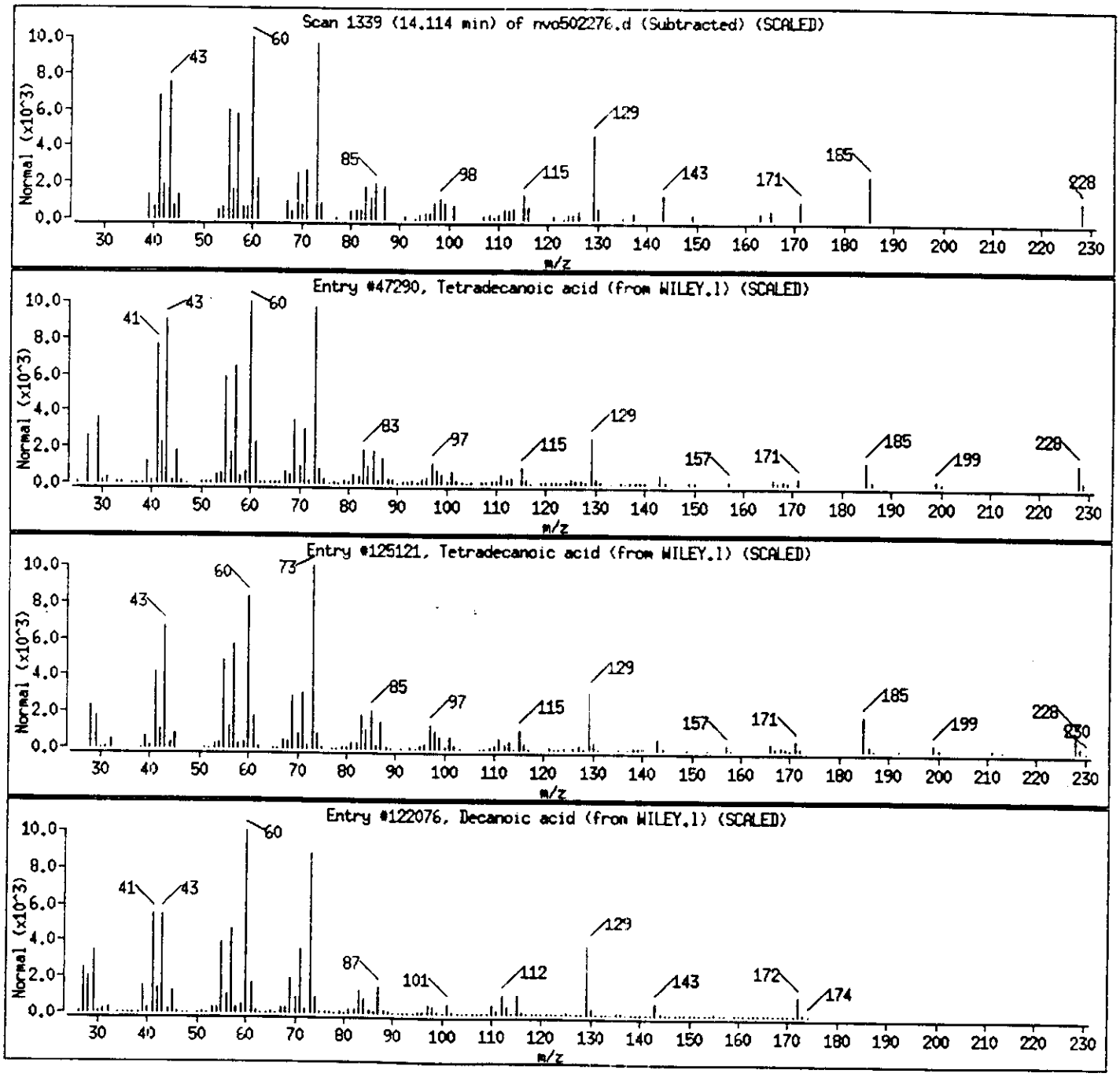
Client ID: WC1-01 | Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5MS | Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Tetradecanoic acid	544-63-8	WILEY.1	47290	94	C14H28O2	228
Tetradecanoic acid	544-63-8	WILEY.1	125121	93	C14H28O2	228
Decanoic acid	334-48-5	WILEY.1	122076	53	C10H20O2	172



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

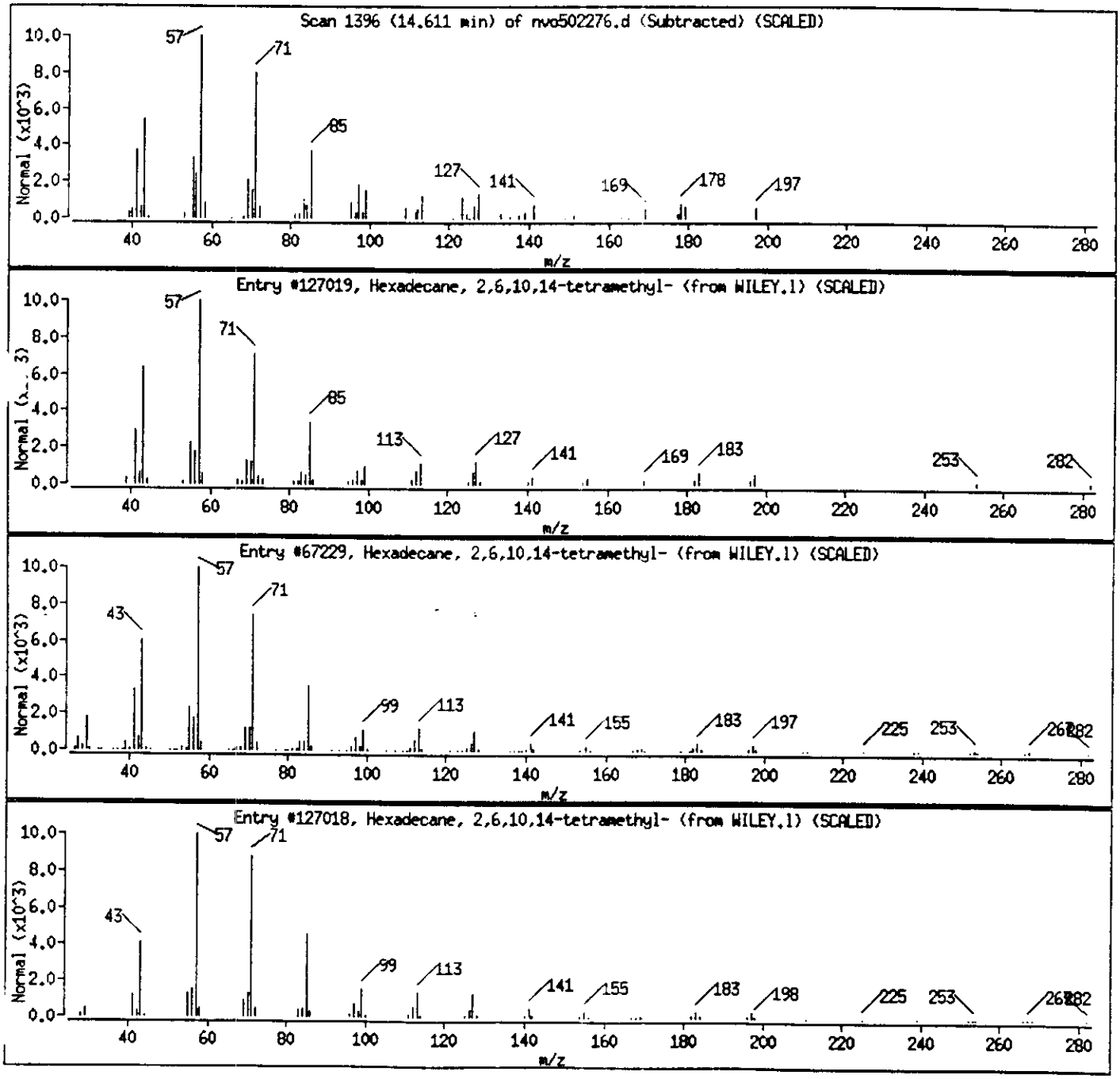
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3x43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Hexadecane, 2,6,10,14-tetramethyl-	638-36-8	WILEY.1	127019	86	C20H42	282
Hexadecane, 2,6,10,14-tetramethyl-	638-36-8	WILEY.1	67229	86	C20H42	282
Hexadecane, 2,6,10,14-tetramethyl-	638-36-8	WILEY.1	127018	80	C20H42	282



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Date : 28-JUL-1994 12:10

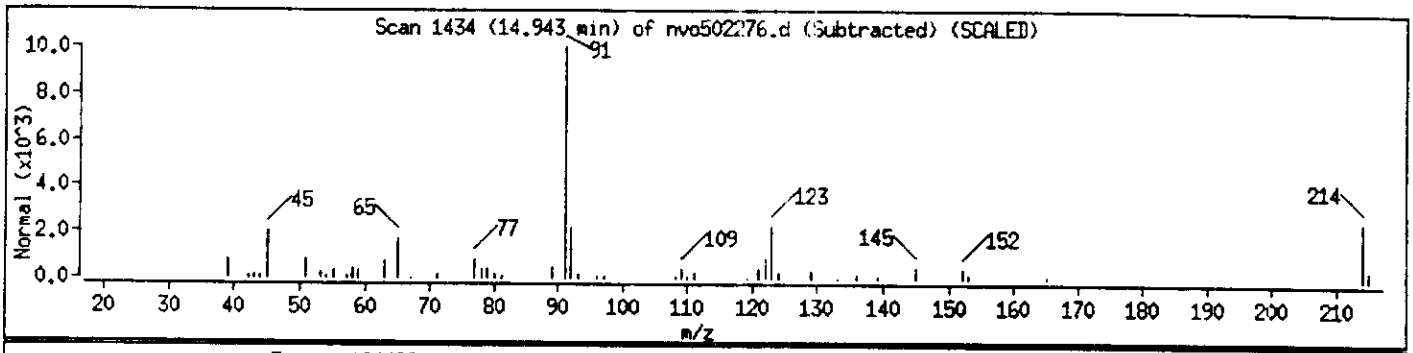
Client ID: WC1-01 Instrument: nvo5.i

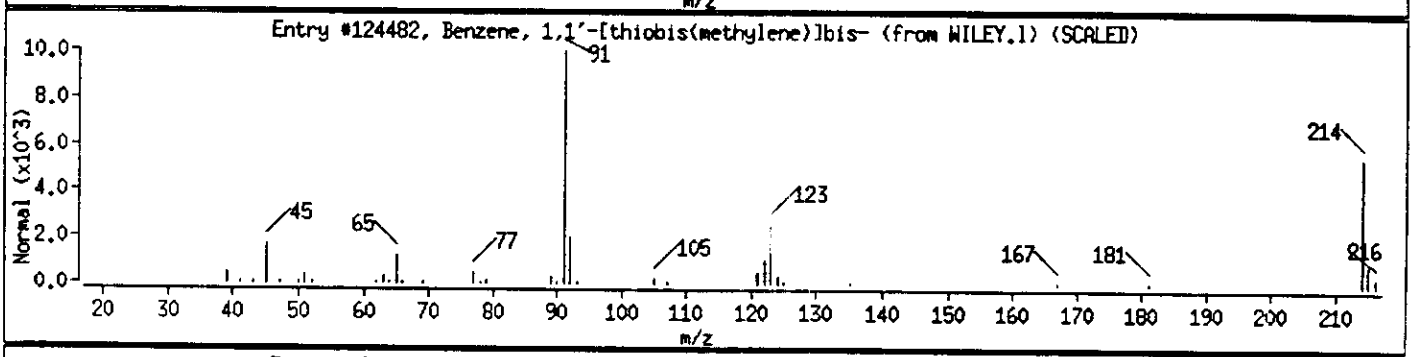
Sample Info: CDMHNSS3*43

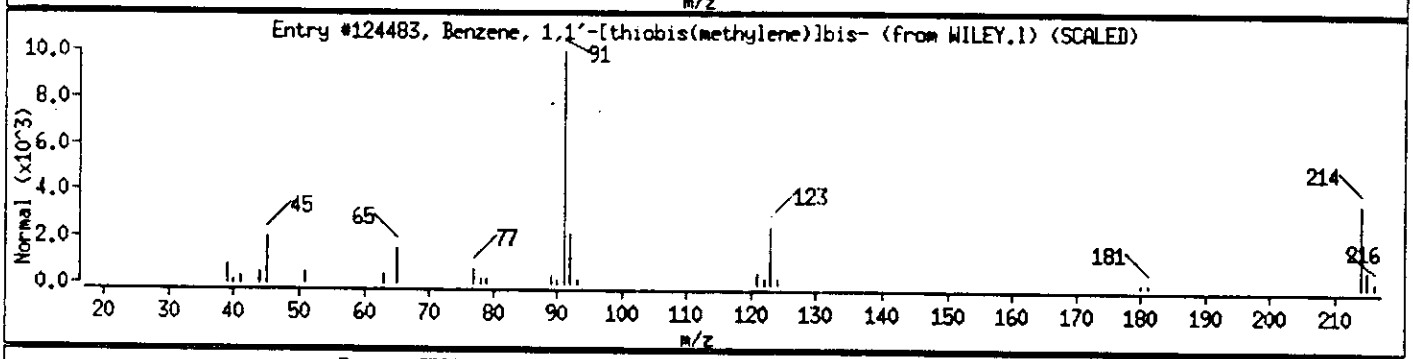
Volume Injected (uL): 2.0 Operator: WAY/AT

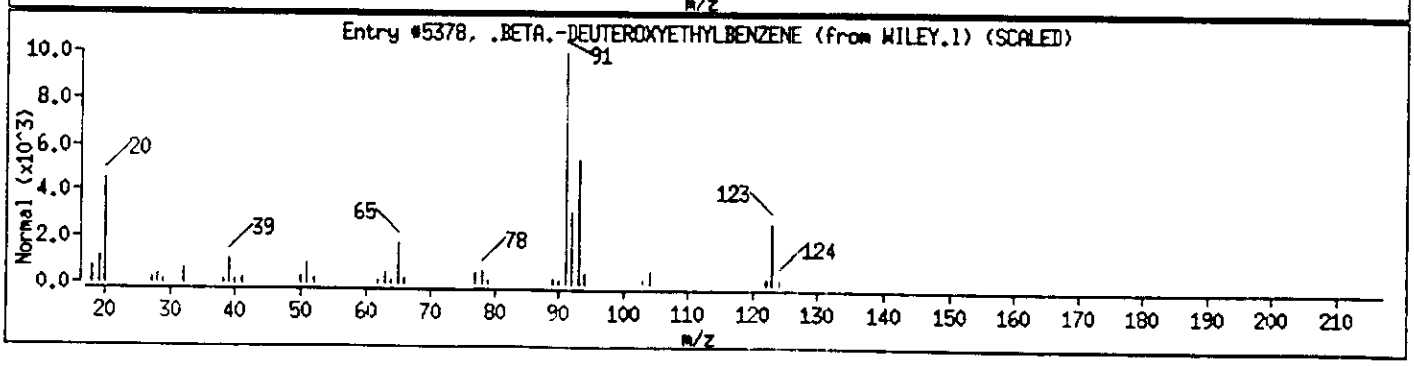
Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1,1'-[thiobis(methylene)]bis-	538-74-9	WILEY.1	124482	87	C14H14S	214
Benzene, 1,1'-[thiobis(methylene)]bis-	538-74-9	WILEY.1	124483	87	C14H14S	214
.BETA.-DEUTEROXYETHYLBENZENE	0-00-0	WILEY.1	5378	43	C8H9DO	122









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Date : 28-JUL-1994 12:10

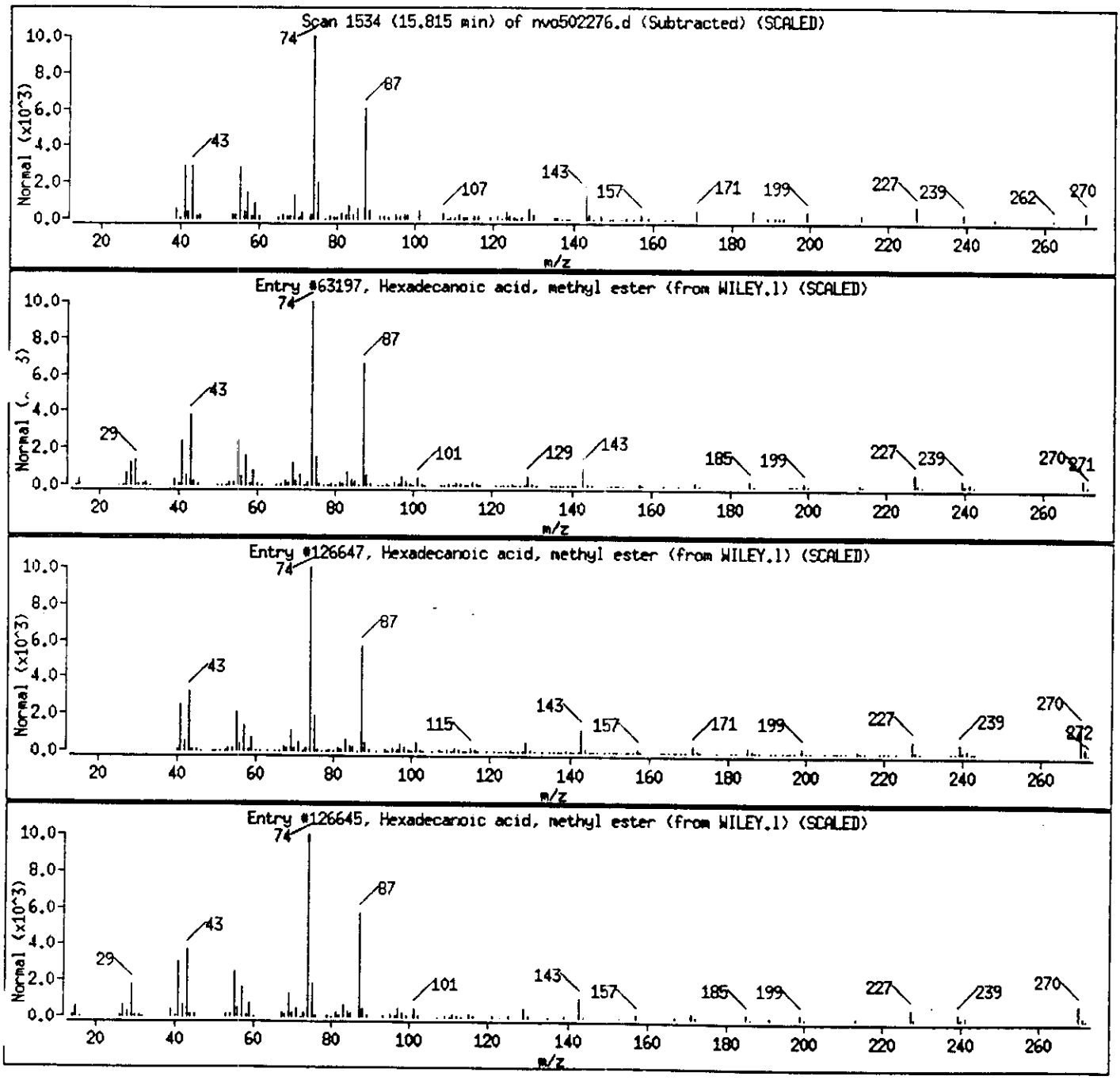
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Hexadecanoic acid, methyl ester	112-39-0	WILEY.1	63197	94	C17H3402	270
Hexadecanoic acid, methyl ester	112-39-0	WILEY.1	126647	94	C17H3402	270
Hexadecanoic acid, methyl ester	112-39-0	WILEY.1	126645	94	C17H3402	270



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Date : 28-JUL-1994 12:10

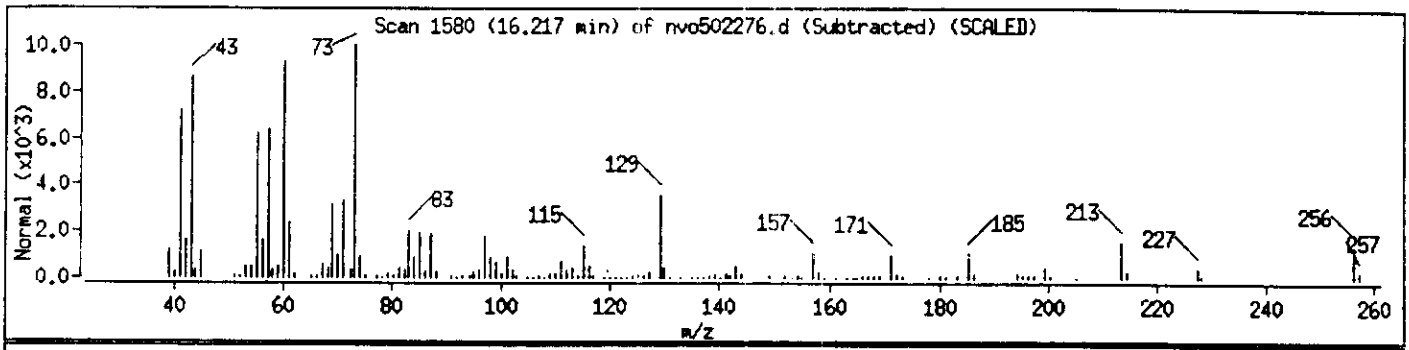
Client ID: WC1-01 Instrument: nvo5.i

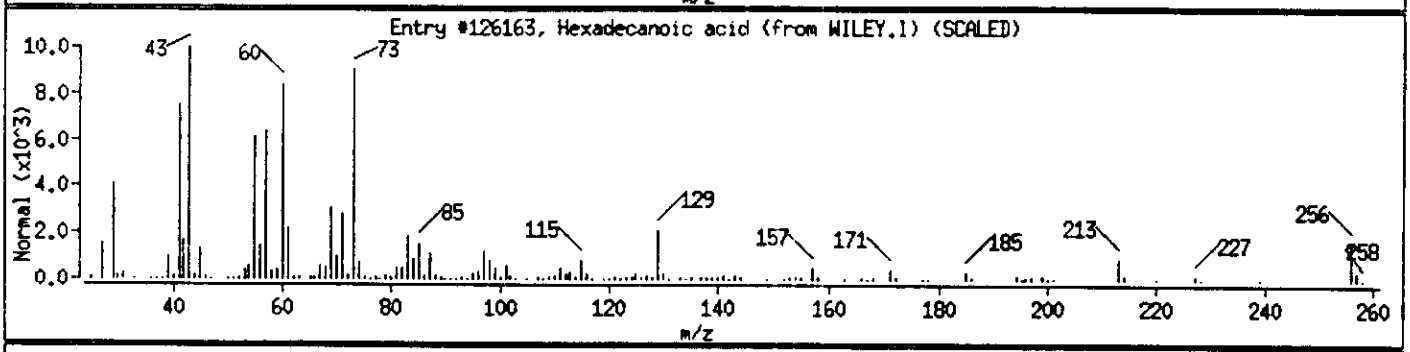
Sample Info: CDMHNSS3×43

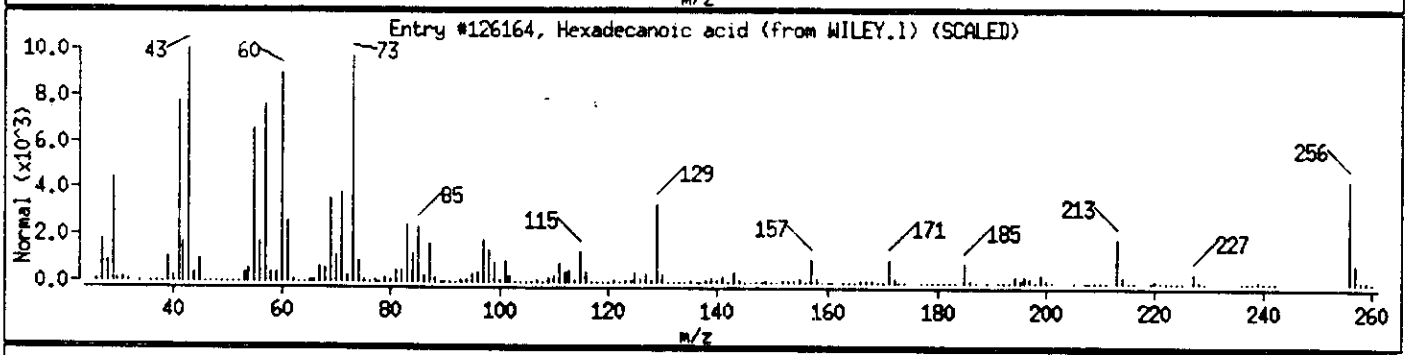
Volume Injected (uL): 2.0 Operator: WAV/AT

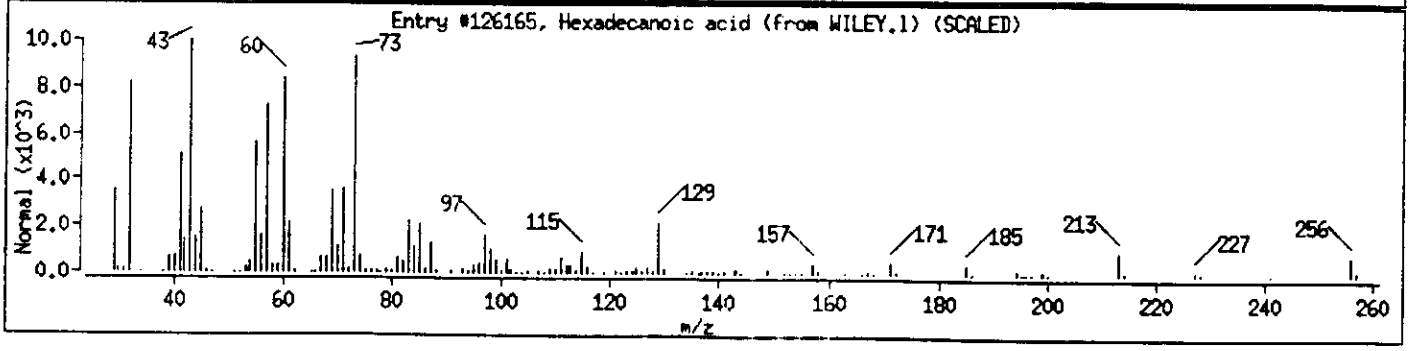
Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Hexadecanoic acid	57-10-3	WILEY.1	126163	95	C16H3202	256
Hexadecanoic acid	57-10-3	WILEY.1	126164	94	C16H3202	256
Hexadecanoic acid	57-10-3	WILEY.1	126165	93	C16H3202	256









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Date : 28-JUL-1994 12:10

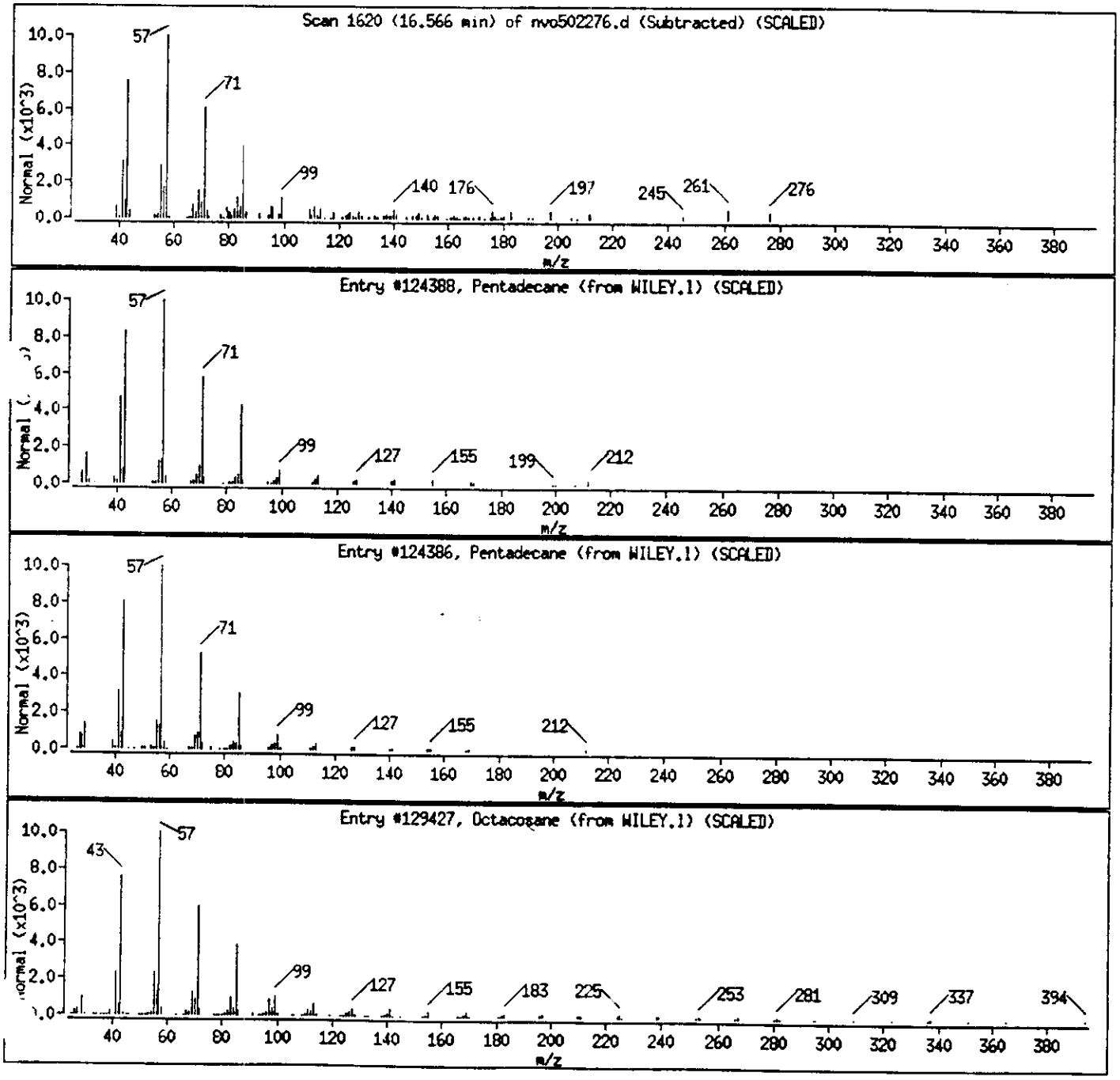
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3M43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Pentadecane	629-62-9	WILEY.1	124388	81	C15H32	212
Pentadecane	629-62-9	WILEY.1	124386	81	C15H32	212
Octacosane	630-02-4	WILEY.1	129427	80	C28H58	394



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Date : 28-JUL-1994 12:10

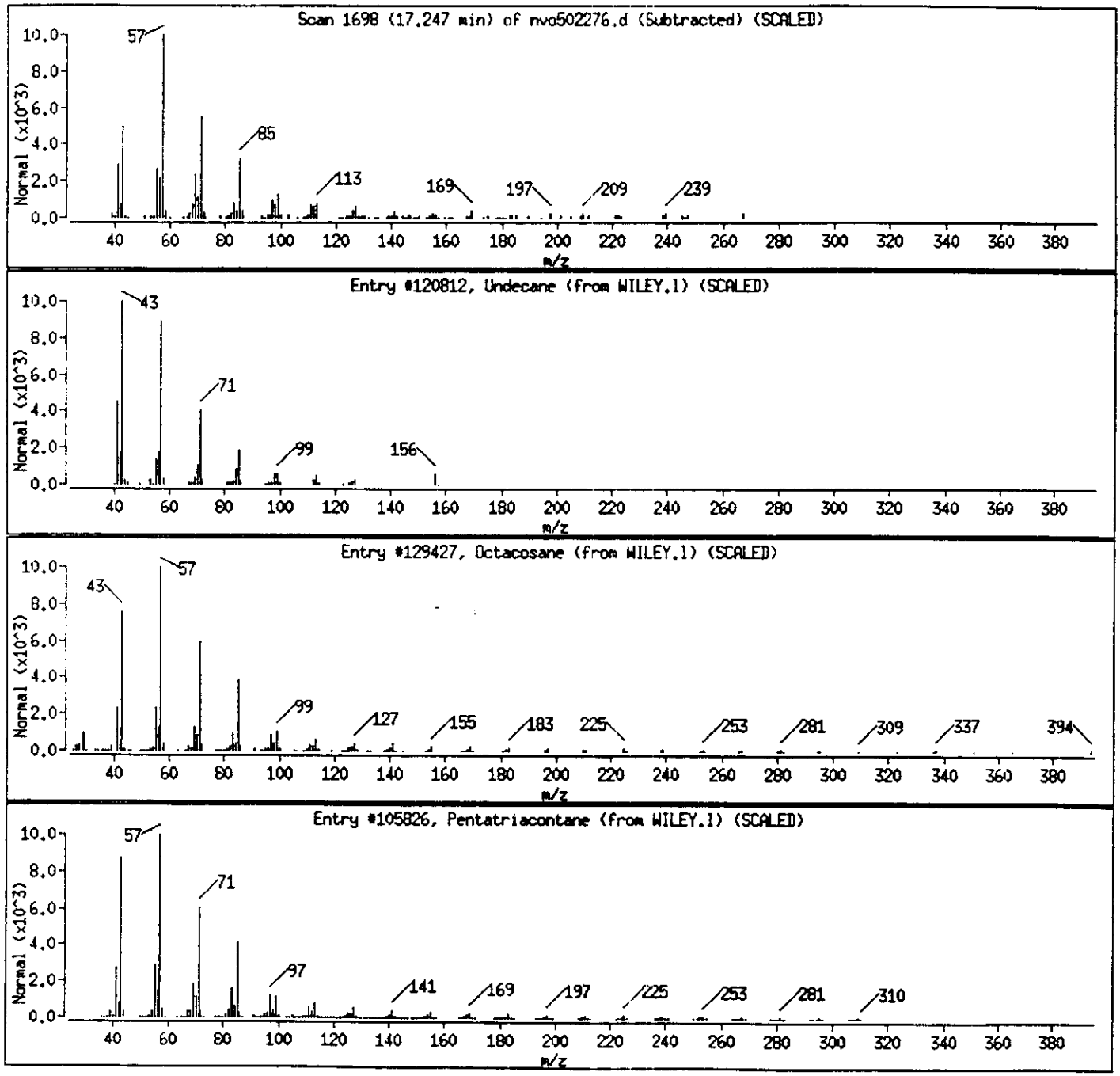
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Undecane	1120-21-4	WILEY.1	120812	87	C11H24	156
Octacosane	630-02-4	WILEY.1	129427	80	C28H58	394
Pentatriacontane	630-07-9	WILEY.1	105826	80	C35H72	493



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Date : 28-JUL-1994 12:10

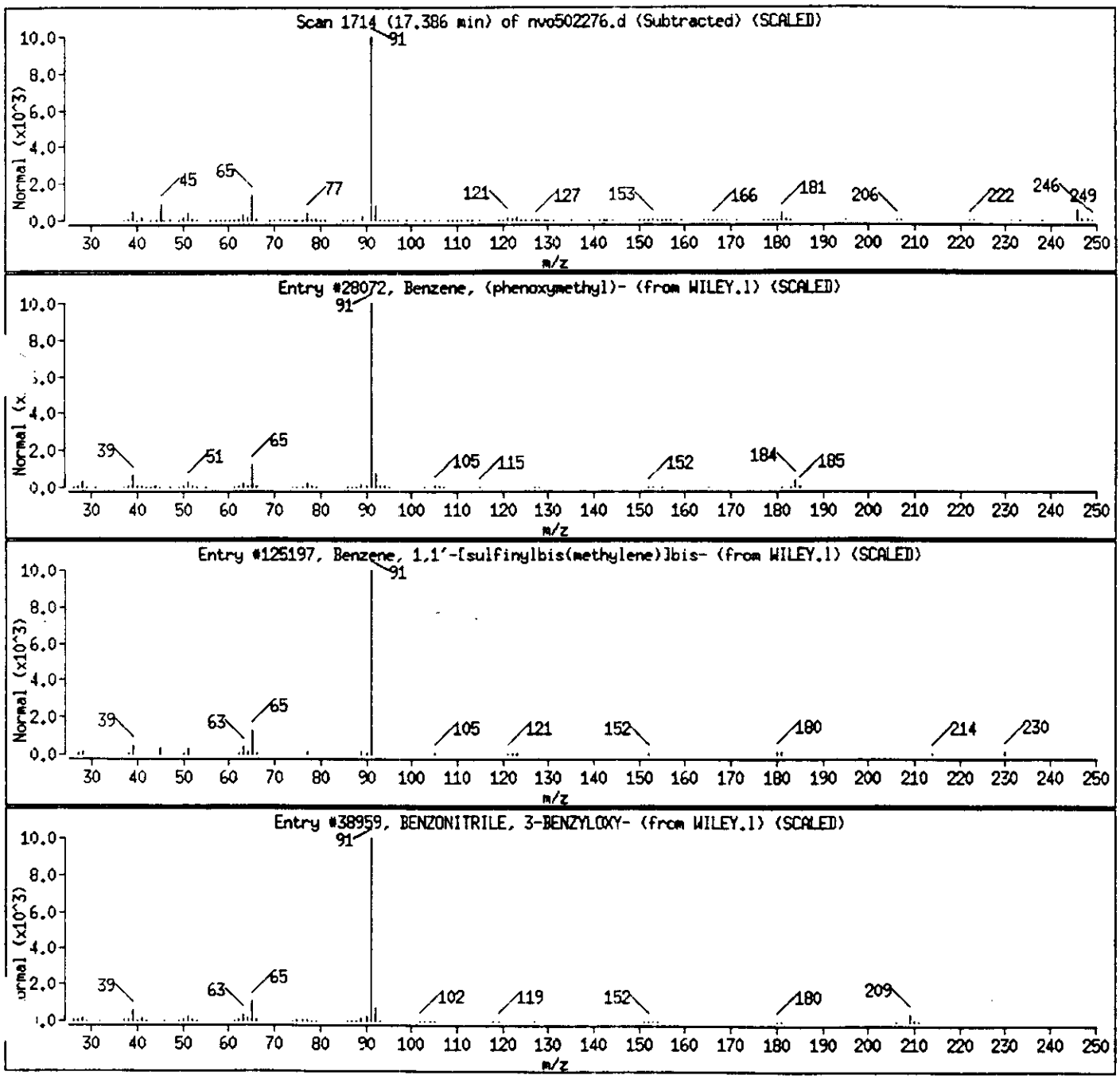
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, (phenoxymethyl)-	946-80-5	WILEY.1	28072	50	C13H12O	184
Benzene, 1,1'-[sulfinylbis(methylene)]bi	621-08-9	WILEY.1	125197	50	C14H14OS	230
BENZONITRILE, 3-BENZYLOXY-	0-00-0	WILEY.1	38959	50	C14H11NO	209



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

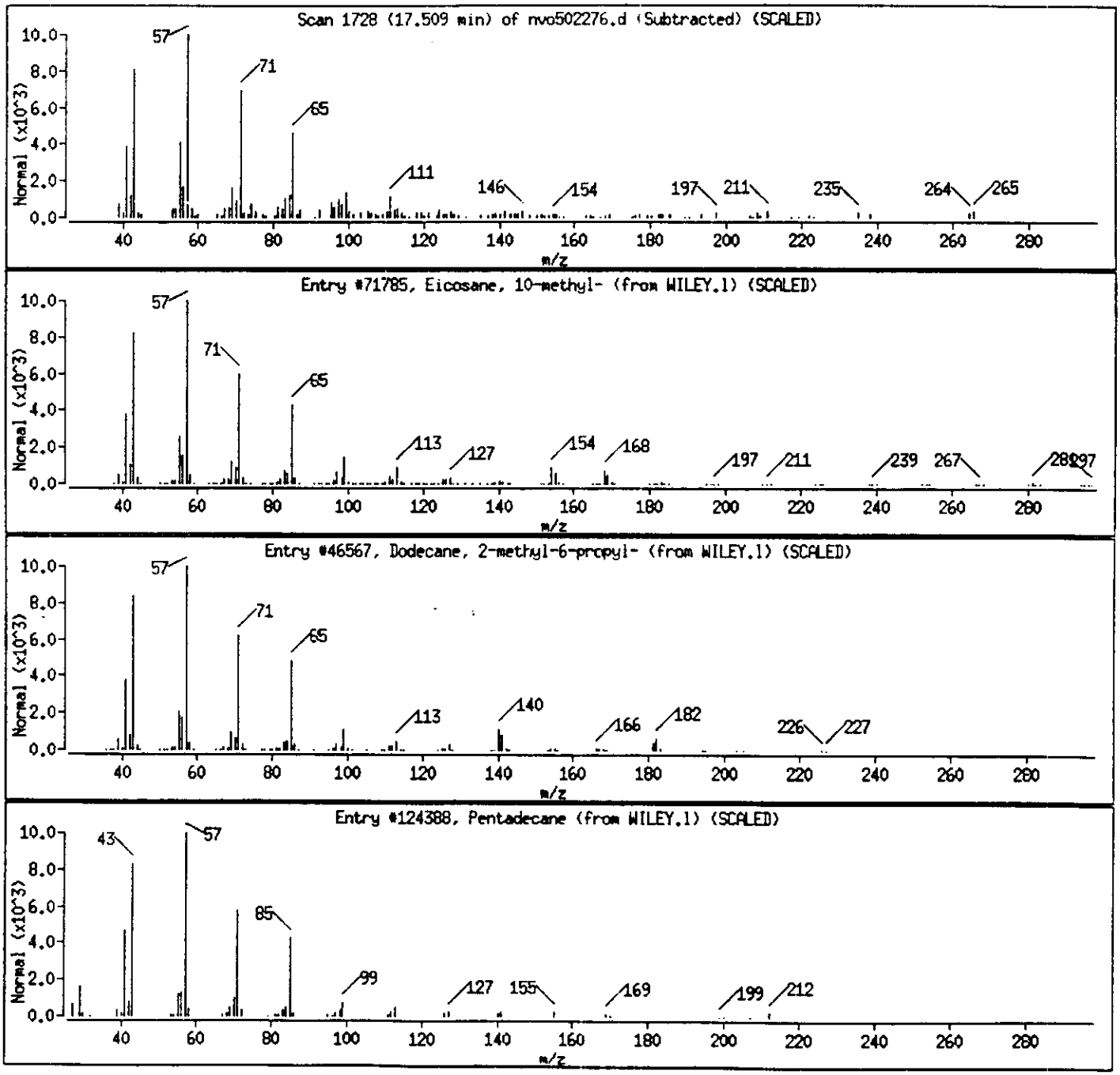
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3×43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Eicosane, 10-methyl-	54833-23-7	WILEY.1	71785	80	C21H44	296
Dodecane, 2-methyl-6-propyl-	55045-08-4	WILEY.1	46567	64	C16H34	226
Pentadecane	629-62-9	WILEY.1	124388	64	C15H32	212



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

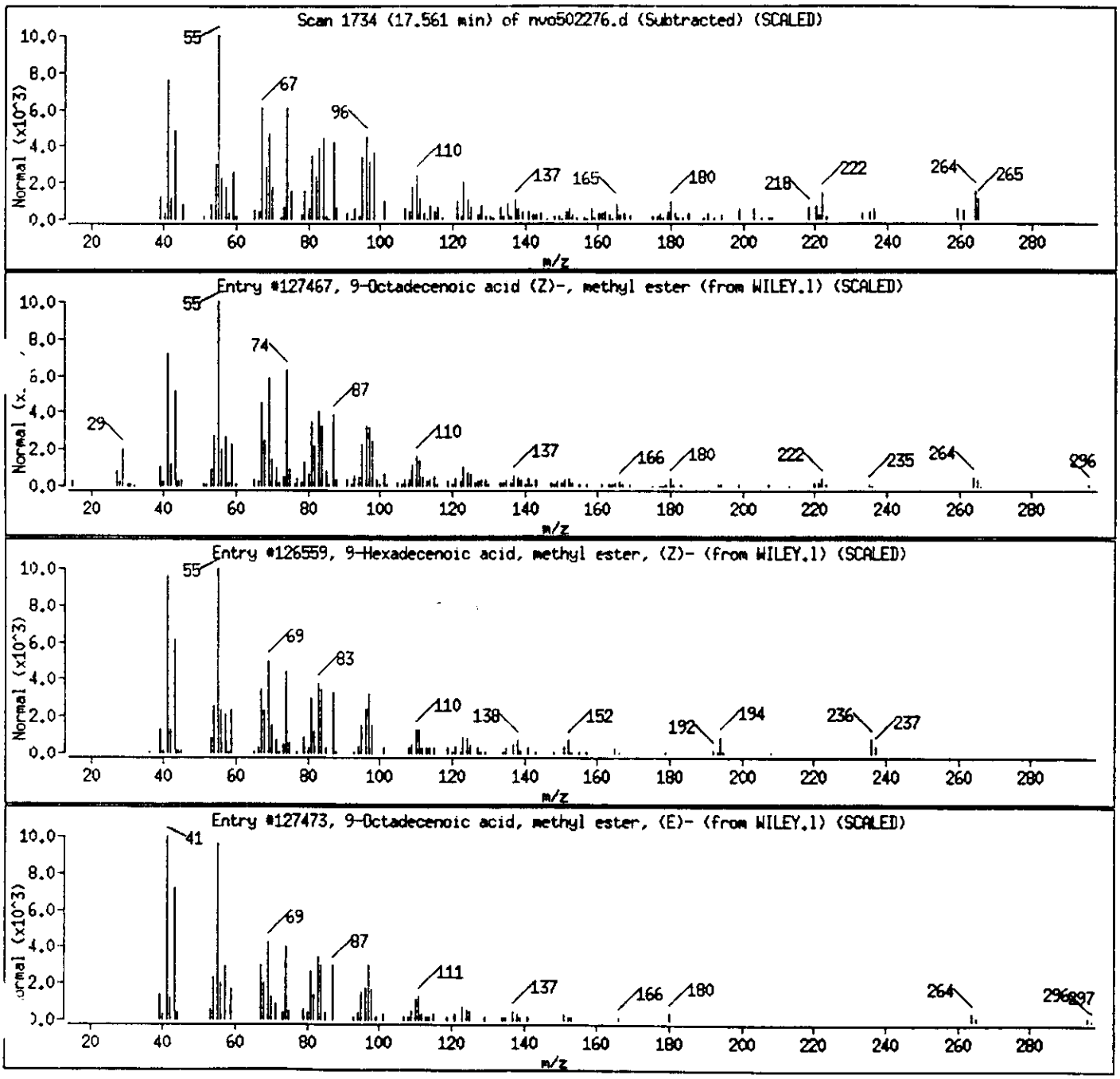
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3×43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
9-Octadecenoic acid (Z)-, methyl ester	112-62-9	WILEY.1	127467	74	C19H36O2	296
9-Hexadecenoic acid, methyl ester, (Z)-	1120-25-8	WILEY.1	126559	49	C17H32O2	268
9-Octadecenoic acid, methyl ester, (E)-	1937-62-8	WILEY.1	127473	47	C19H36O2	296



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

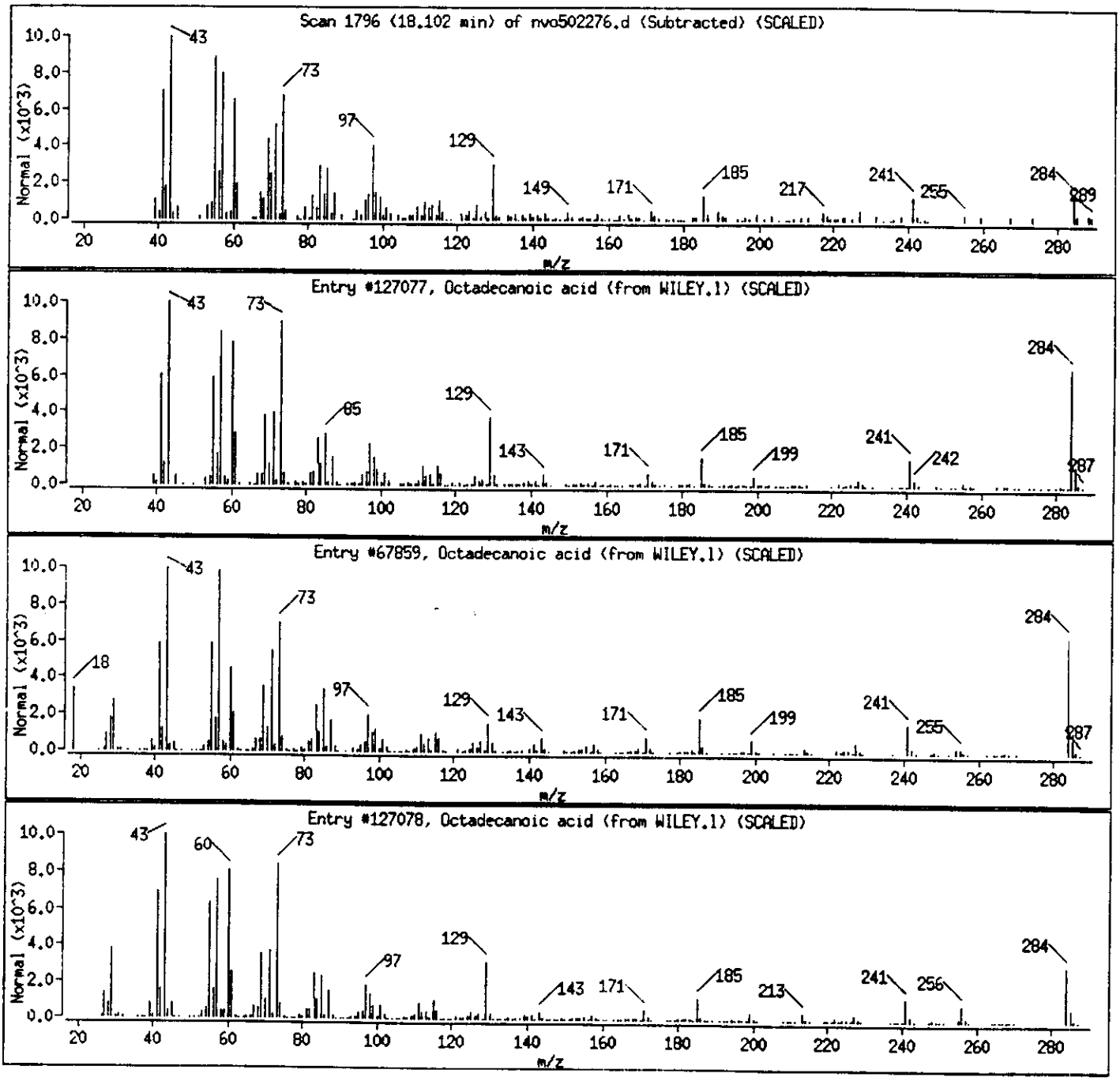
Client ID: WC1-01 | Instrument: nvo5.i

Sample Info: CDMHNSS3×43

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5MS | Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Octadecanoic acid	57-11-4	WILEY.1	127077	97	C18H36O2	284
Octadecanoic acid	57-11-4	WILEY.1	67859	97	C18H36O2	284
Octadecanoic acid	57-11-4	WILEY.1	127078	93	C18H36O2	284



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

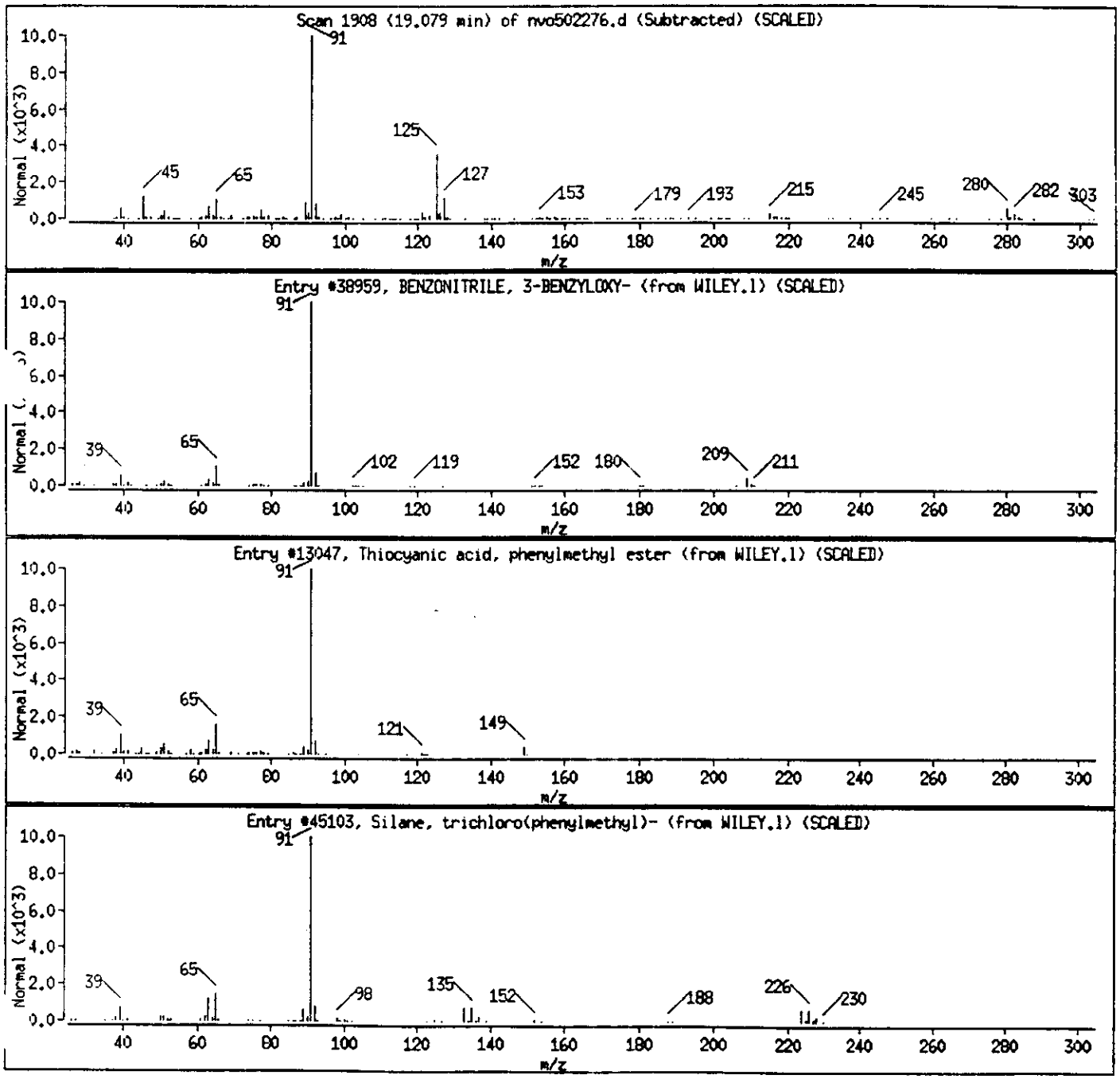
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3×43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
BENZONITRILE, 3-BENZYLOXY-	0-00-0	WILEY.1	38959	27	C14H11NO	209
Thiocyanic acid, phenylmethyl ester	3012-37-1	WILEY.1	13047	27	C8H7NS	149
Silane, trichloro(phenylmethyl)-	770-10-5	WILEY.1	45103	25	C7H7Cl3Si	224



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

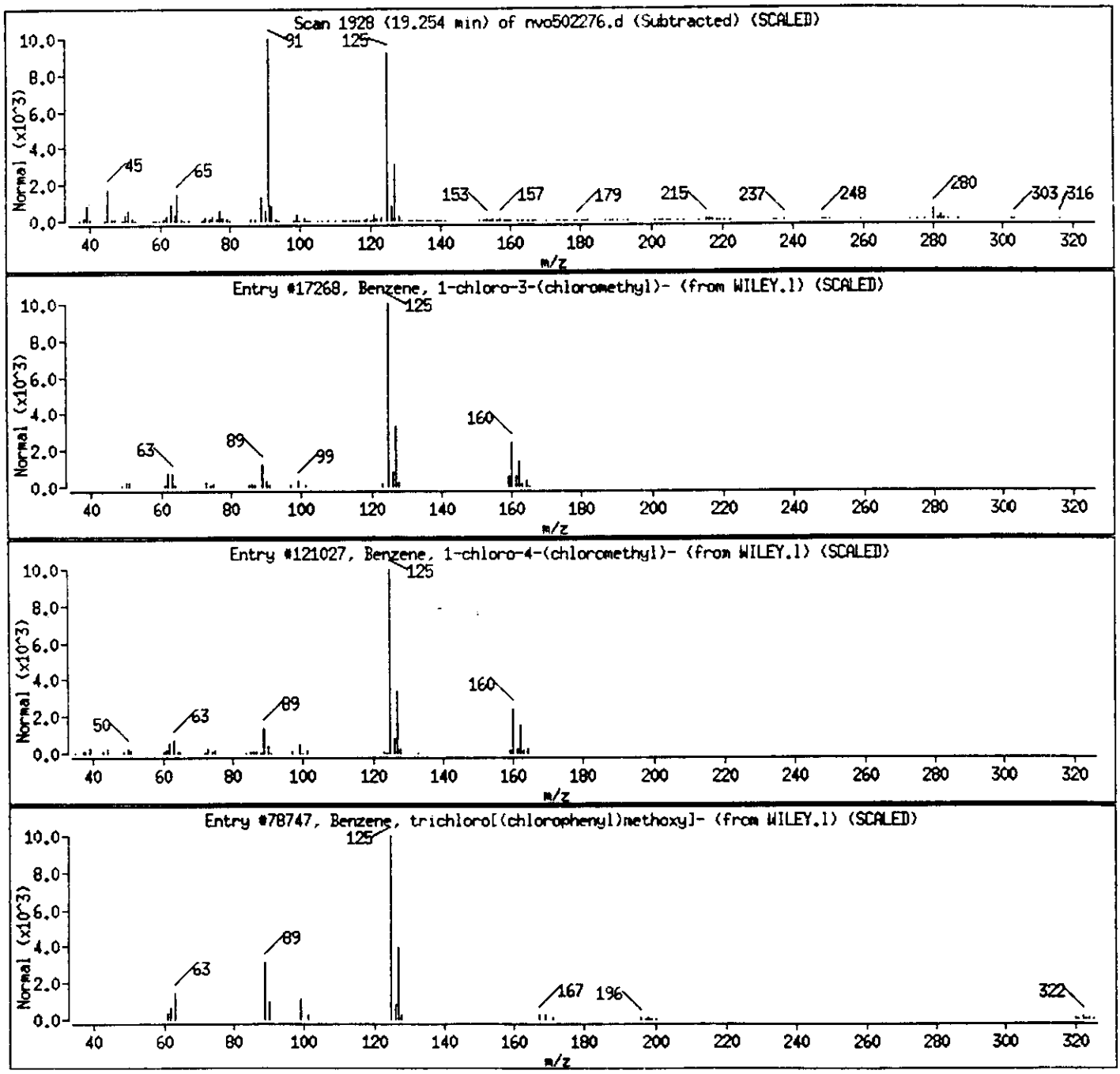
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3x43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Benzene, 1-chloro-3-(chloromethyl)-	620-20-2	WILEY.1	17268	59	C7H6Cl2	160
Benzene, 1-chloro-4-(chloromethyl)-	104-83-6	WILEY.1	121027	59	C7H6Cl2	160
Benzene, trichloro[(chlorophenyl)methoxy	67332-31-4	WILEY.1	78747	59	C13H8Cl4O	320



Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

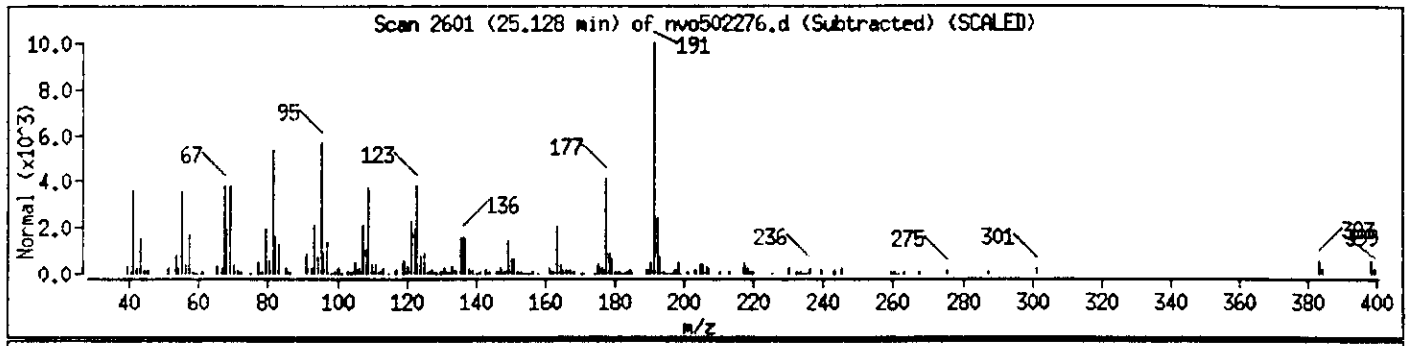
Client ID: WC1-01 Instrument: nvo5.i

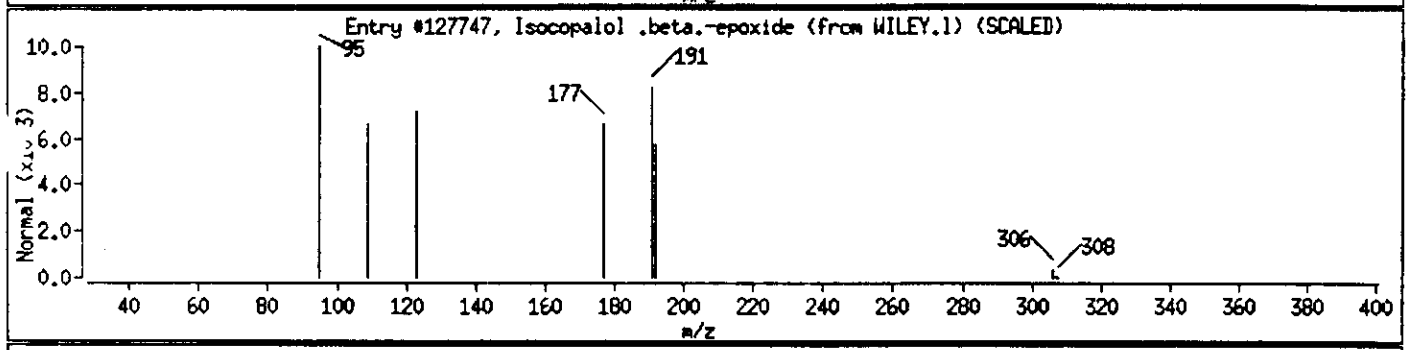
Sample Info: CDMHNSS3×43

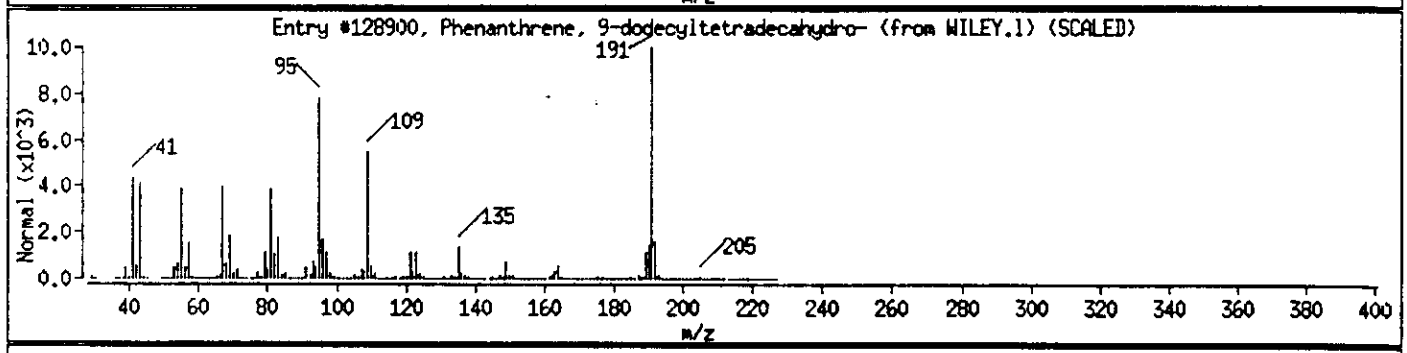
Volume Injected (uL): 2.0 Operator: WAV/AT

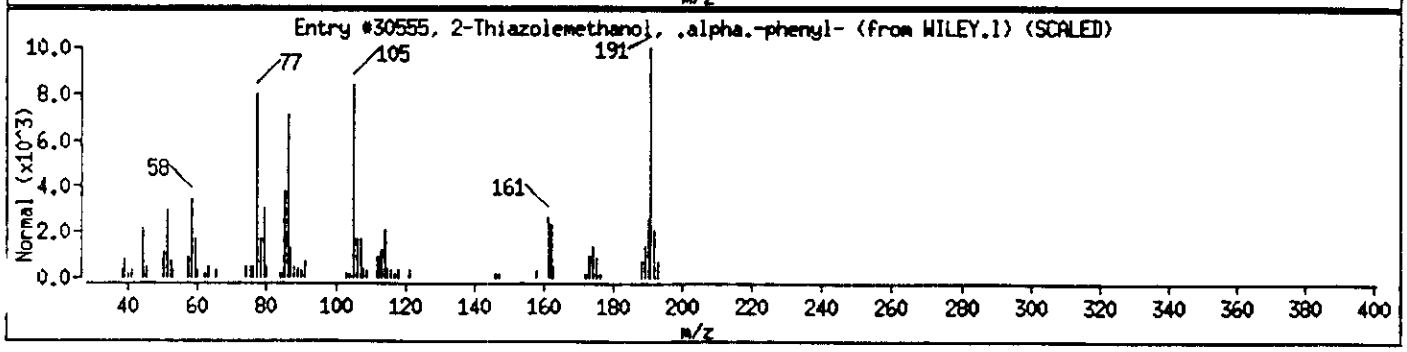
Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Isocopalol .beta.-epoxide	72264-56-3	WILEY.1	127747	43	C20H34O2	306
Phenanthrene, 9-dodecyltetradecahydro-	55334-01-5	WILEY.1	128900	38	C26H48	360
2-Thiazolemethanol, .alpha.-phenyl-	879-52-7	WILEY.1	30555	38	C10H9NOS	191









Data File: /chem/nvo5.i/nvo0728.b/nvo502276.d

Date : 28-JUL-1994 12:10

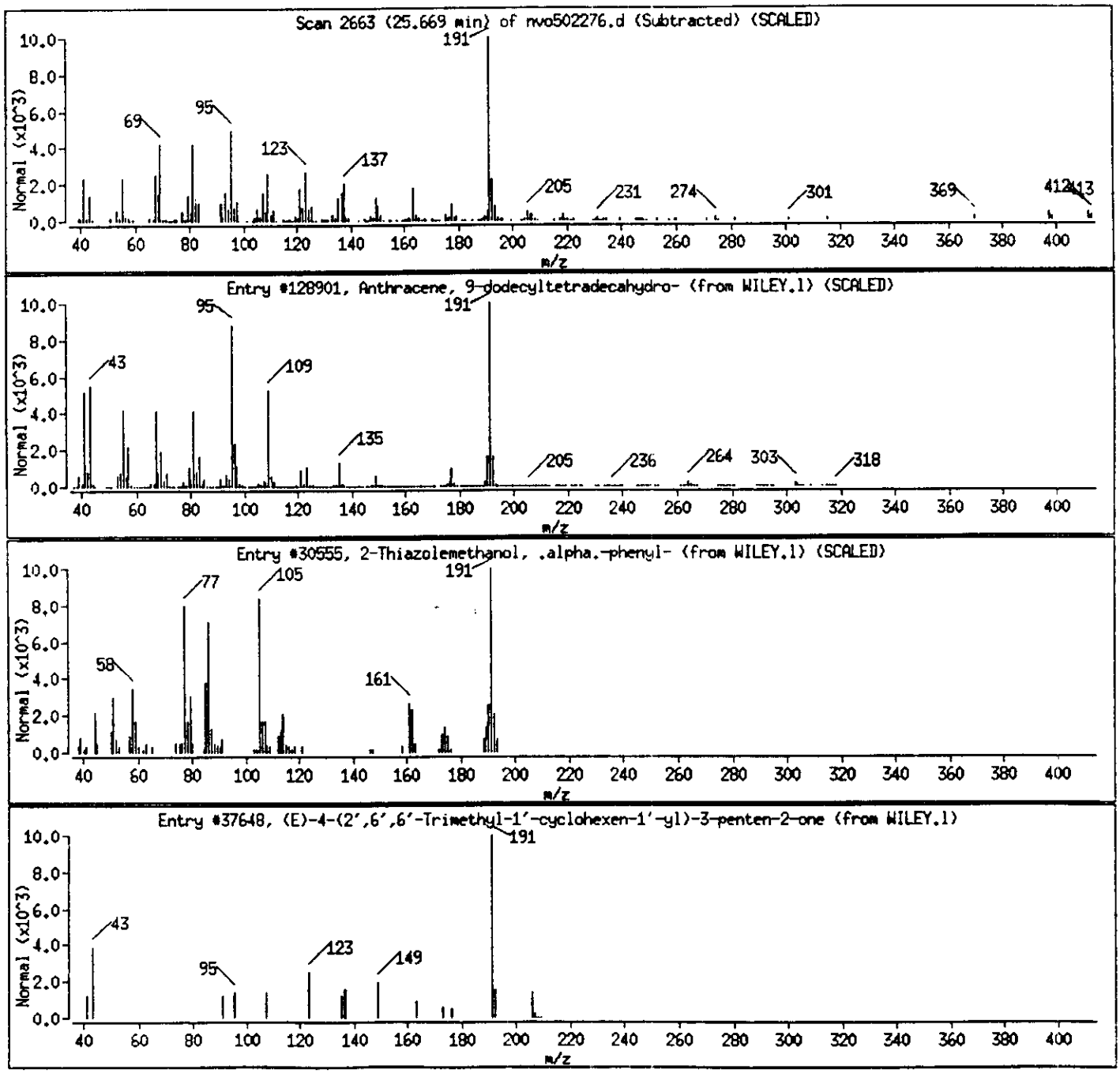
Client ID: WC1-01 Instrument: nvo5.i

Sample Info: CDMHNSS3*43

Volume Injected (uL): 2.0 Operator: WAV/AT

Column phase: DB-5MS Column diameter: 0.25

Library Search Compound Match	CAS Number	Library	Entry	Quality	Formula	Weight
Anthracene, 9-dodecyltetradecahydro-	55401-75-7	WILEY.1	128901	45	C26H48	360
2-Thiazolemethanol, .alpha.-phenyl-	879-52-7	WILEY.1	30555	41	C10H9NOS	191
(E)-4-(2',6',6'-Trimethyl-1'-cyclohexen-	89128-17-6	WILEY.1	37648	38	C14H22O	206



1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MS

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43M

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502277.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted:07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	85000	
111-44-4	Bis(2-Chloroethyl)ether	20000	U
95-57-8	2-Chlorophenol	75000	
541-73-1	1,3-Dichlorobenzene	20000	U
106-46-7	1,4-Dichlorobenzene	51000	
95-50-1	1,2-Dichlorobenzene	20000	U
95-48-7	2-Methylphenol	20000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	20000	U
106-44-5	4-Methylphenol	20000	U
621-64-7	N-Nitroso-di-n-propylamine	49000	
67-72-1	Hexachloroethane	20000	U
98-95-3	Nitrobenzene	20000	U
78-59-1	Isophorone	20000	U
88-75-5	2-Nitrophenol	20000	U
105-67-9	2,4-Dimethyphenol	20000	U
111-91-1	Bis(2-Chloroethoxy)methane	20000	U
120-83-2	2,4-Dichlorophenol	20000	U
120-82-1	1,2,4-Trichlorobenzene	48000	
91-20-3	Naphthalene	20000	U
106-47-8	4-Chloroaniline	20000	U
87-68-3	Hexachlorobutadiene	20000	U
59-50-7	4-Chloro-3-methylphenol	74000	
91-57-6	2-Methylnaphthalene	20000	U
77-47-4	Hexachlorocyclopentadiene	20000	U
88-06-2	2,4,6-Trichlorophenol	20000	U
95-95-4	2,4,5-Trichlorophenol	50000	U
91-58-7	2-Chloronaphthalene	20000	U
88-74-4	2-Nitroaniline	50000	U
131-11-3	Dimethyl phthalate	20000	U
208-96-8	Acenaphthylene	20000	U
606-20-2	2,6-Dinitrotoluene	20000	U
99-09-2	3-Nitroaniline	50000	U
83-32-9	Acenaphthene	33000	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MS

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43M

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502277.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	50000	U
100-02-7	4-Nitrophenol	72000	
132-64-9	Dibenzofuran	20000	U
121-14-2	2,4-Dinitrotoluene	43000	
84-66-2	Diethyl phthalate	20000	U
7005-72-3	4-Chlorophenyl-phenylether	20000	U
86-73-7	Fluorene	20000	U
100-01-6	4-Nitroaniline	50000	U
534-52-1	4,6-Dinitro-2-methylphenol	50000	U
86-30-6	N-Nitrosodiphenylamine (1)	20000	U
101-55-3	4-Bromophenyl-phenylether	20000	U
118-74-1	Hexachlorobenzene	20000	U
87-86-5	Pentachlorophenol	91000	
85-01-8	Phenanthrene	20000	U
120-12-7	Anthracene	20000	U
86-74-8	Carbazole	20000	U
84-74-2	Di-n-butylphthalate	20000	U
206-44-0	Fluoranthene	20000	U
129-00-0	Pyrene	43000	
85-68-7	Butylbenzylphthalate	20000	U
91-94-1	3,3'-Dichlorobenzidine	20000	U
56-55-3	Benzo(a)anthracene	20000	U
218-01-9	Chrysene	20000	U
117-81-7	bis(2-Ethylhexyl)phthalate	20000	U
117-84-0	Di-n-octylphthalate	20000	U
205-99-2	Benzo(b)fluoranthene	20000	U
207-08-9	Benzo(k)fluoranthene	20000	U
50-32-8	Benzo(a)pyrene	20000	U
193-39-5	Indeno(1,2,3-cd)pyrene	20000	U
53-70-3	Dibenzo(a,h)anthracene	20000	U
191-24-2	Benzo(g,h,i)perylene	20000	U

(1) - Cannot be separated from Diphenylamine

Data File: /chem/nvo5.i/nvo0728.b/nvo502277.d
port Date: 29-Jul-1994 08:33

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0728.b/nvo502277.d
Lab Smp Id: CDMHNSS3*43MS Client Smp ID: WC1-01MS
Inj Date : 28-JUL-1994 12:50 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : CDMHNSS3*43MS
Misc Info : CDM Hanford N. Slope
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42 Quant Type: ISTD
Cal Date : 28-JUL-94 09:34 Cal File: nvo502274.d
Als bottle: 3 QC Sample: MS
Dil Factor: 2.000
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)
	1 1,4-Dichlorobenzene-d4	152.00	5.580	5.579	(1 000)	347640	40	
	2 2-Fluorophenol	112.00	2.787	2.786	(0 499)	651185	53	53000
	3 Phenol-d5	99.00	5.091	5.090	(0 912)	923153	67	67000
	4 Phenol	94.00	5.117	5.107	(0 917)	1248923	85	85000(R)
$	6 2-Chlorophenol-d4	132.00	5.213	5.212	(0 934)	687865	65	65000
	7 2-Chlorophenol	128.00	5.248	5.247	(0 941)	948019	75	75000
	9 1,4-Dichlorobenzene	146.00	5.615	5.605	(1 006)	712996	51	51000
$	10 1,2-Dichlorobenzene-d4	152.00	5.824	5.814	(1 044)	352316	47	47000
	15 N-Nitroso-di-n-propylamine	70.00	6.278	6.277	(1 125)	418929	49	49000
*	17 Naphthalene-d8	136.00	7.692	7.699	(1 000)	1169451	40	
$	18 Nitrobenzene-d5	82.00	6.487	6.486	(0 843)	581327	50	50000
	25 1,2,4-Trichlorobenzene	180.00	7.605	7.603	(0 989)	471305	48	48000
	29 4-Chloro-3-methylphenol	107.00	8.818	8.816	(1 146)	665123	74	74000
*	31 Acenaphthene-d10	164.00	11.191	11.190	(1 000)	479836	40	
$	35 2-Fluorobiphenyl	172.00	9.795	9.794	(0 875)	870086	50	50000
	42 Acenaphthene	153.00	11.261	11.269	(1 006)	517933	33	33000
	44 4-Nitrophenol	109.00	11.637	11.635	(1 040)	166098	72	72000
	46 2,4-Dinitrotoluene	165.00	11.680	11.679	(1 044)	259058	43	43000
$	51 2,4,6-Tribromophenol	330.00	12.972	12.979	(1 159)	174838	65	65000
*	52 Phenanthrene-d10	188.00	14.569	14.568	(1 000)	688087	40	
	57 Pentachlorophenol	266.00	14.168	14.166	(0 972)	176775	91	91000(R)
*	63 Chrysene-d12	240.00	20.861	20.852	(1 000)	498145	40	
	64 Pyrene	202.00	17.955	17.945	(0 861)	819160	43	43000
$	65 Terphenyl-d14	244.00	18.453	18.434	(0 885)	636533	49	49000
*	71 Perylene-d12	264.00	24.021	23.985	(1.000)	672079	40	

Data File: /chem/nvo5.i/nvo0728.b/nvo502277.d
Report Date: 29-Jul-1994 08:33

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

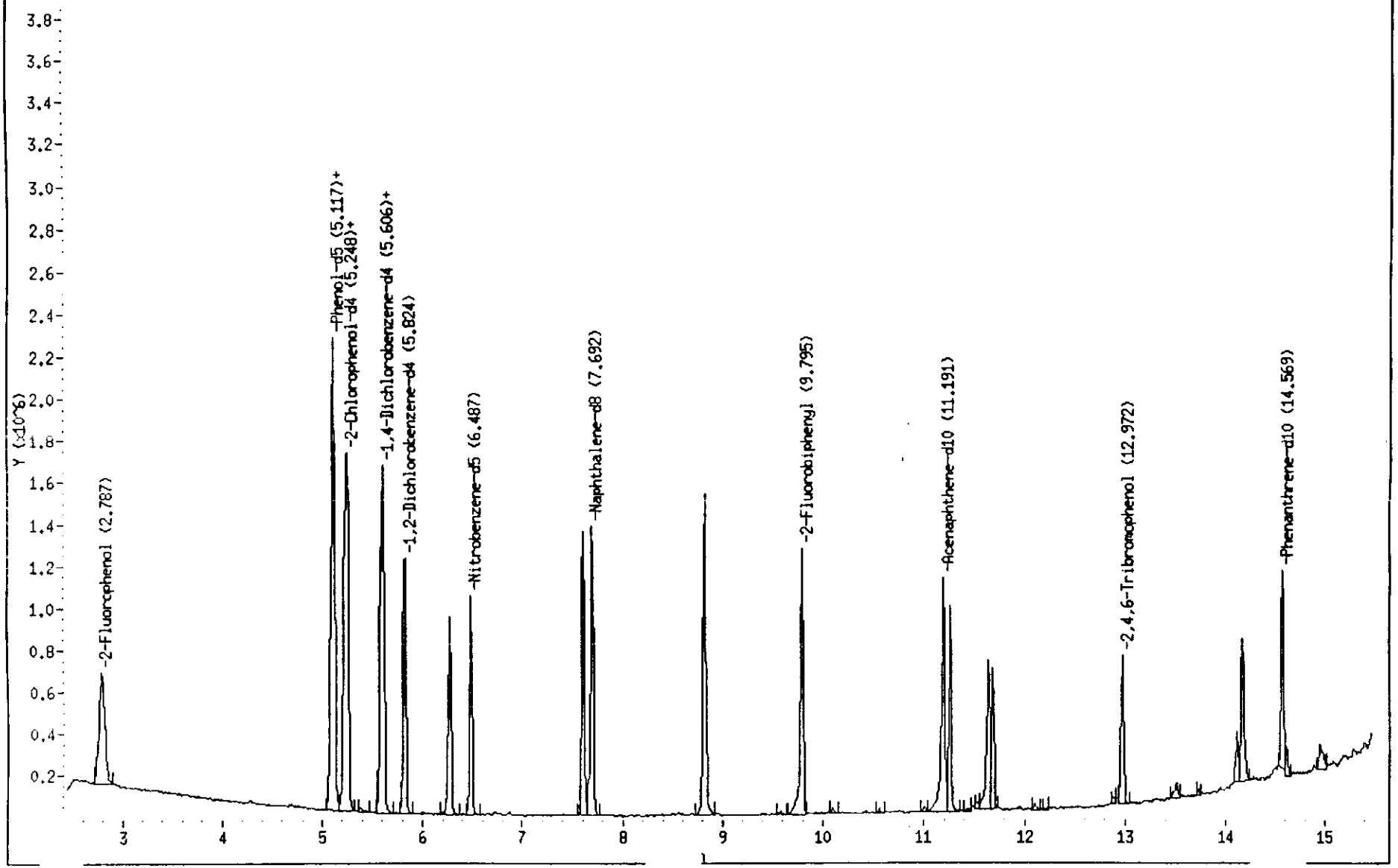
Data File: /chem/nvo5.i/nvo0728.b/nvo502277.d
Date : 28-JUL-1994 12:50
Client ID: WC1-01MS
Sample Info: CDMHNSS3M43MS
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

C00130

/chem/nvo5.i/nvo0728.b/nvo502277.d (Part 1 of 2)

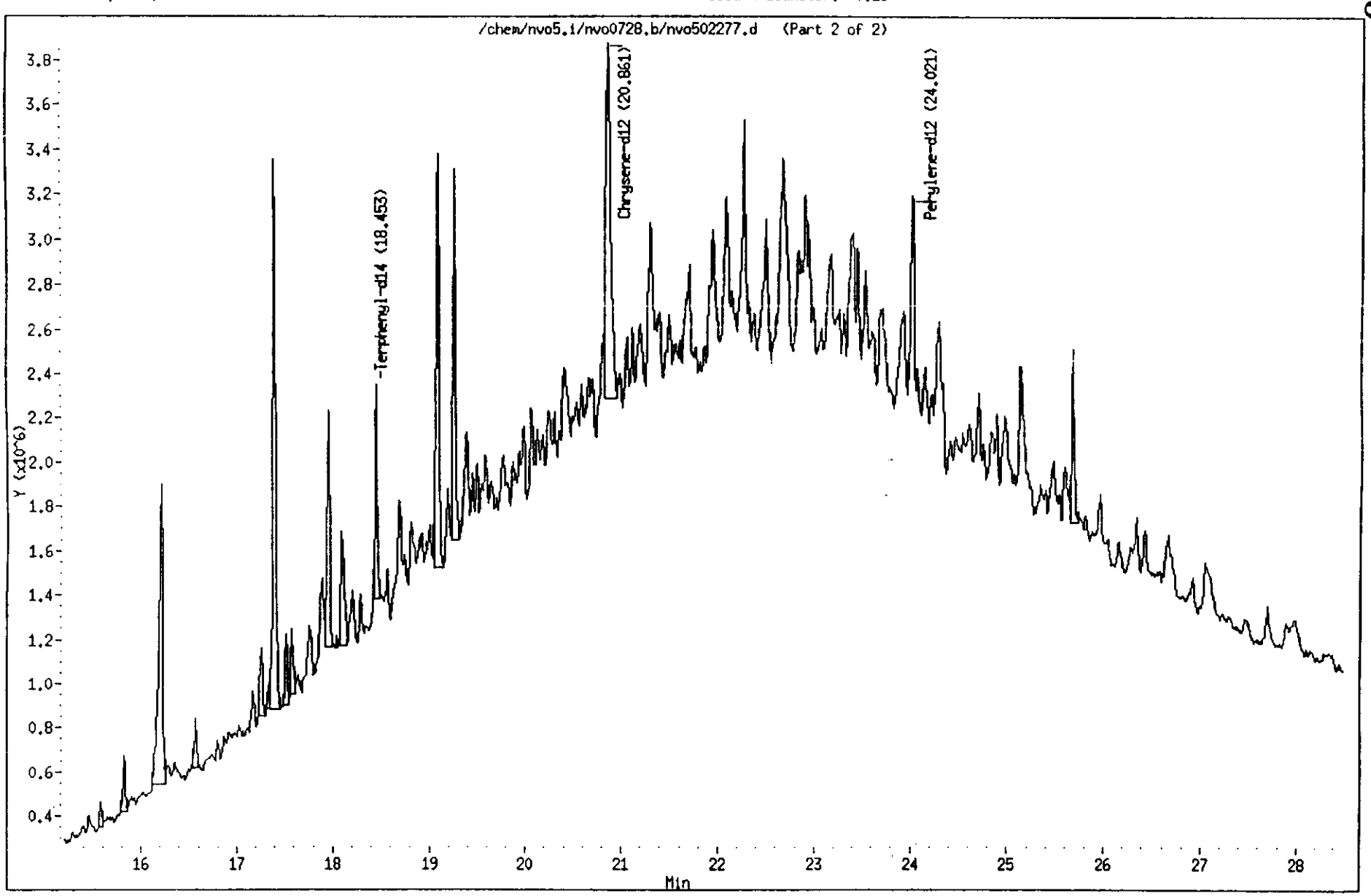


Data File: /chem/nvo5.i/nvo0728.b/nvo502277.d
Date : 28-JUL-1994 12:50
Client ID: WC1-01MS
Sample Info: CDMHNSS3*43MS
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

000131



SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MSD

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43M

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502278.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	77000	
111-44-4	Bis(2-Chloroethyl)ether	20000	U
95-57-8	2-Chlorophenol	69000	
541-73-1	1,3-Dichlorobenzene	20000	U
106-46-7	1,4-Dichlorobenzene	47000	
95-50-1	1,2-Dichlorobenzene	20000	U
95-48-7	2-Methylphenol	20000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	20000	U
106-44-5	4-Methylphenol	20000	U
621-64-7	N-Nitroso-di-n-propylamine	48000	
67-72-1	Hexachloroethane	20000	U
98-95-3	Nitrobenzene	20000	U
78-59-1	Isophorone	20000	U
88-75-5	2-Nitrophenol	20000	U
105-67-9	2,4-Dimethyphenol	20000	U
111-91-1	Bis(2-Chloroethoxy)methane	20000	U
120-83-2	2,4-Dichlorophenol	20000	U
120-82-1	1,2,4-Trichlorobenzene	45000	
91-20-3	Naphthalene	20000	U
106-47-8	4-Chloroaniline	20000	U
87-68-3	Hexachlorobutadiene	20000	U
59-50-7	4-Chloro-3-methylphenol	71000	
91-57-6	2-Methylnaphthalene	20000	U
77-47-4	Hexachlorocyclopentadiene	20000	U
88-06-2	2,4,6-Trichlorophenol	20000	U
95-95-4	2,4,5-Trichlorophenol	50000	U
91-58-7	2-Chloronaphthalene	20000	U
88-74-4	2-Nitroaniline	50000	U
131-11-3	Dimethyl phthalate	20000	U
208-96-8	Acenaphthylene	20000	U
606-20-2	2,6-Dinitrotoluene	20000	U
99-09-2	3-Nitroaniline	50000	U
83-32-9	Acenaphthene	29000	

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

WC1-01MSD

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: CDMHNSS3*43M

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502278.D

Level: (low/med) MED Date Received: 07/16/94

% Moisture: 3 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) Y pH: 6.2

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	50000	U
100-02-7	4-Nitrophenol	68000	
132-64-9	Dibenzofuran	20000	U
121-14-2	2,4-Dinitrotoluene	40000	
84-66-2	Diethyl phthalate	20000	U
7005-72-3	4-Chlorophenyl-phenylether	20000	U
86-73-7	Fluorene	20000	U
100-01-6	4-Nitroaniline	50000	U
534-52-1	4,6-Dinitro-2-methylphenol	50000	U
86-30-6	N-Nitrosodiphenylamine (1)	20000	U
101-55-3	4-Bromophenyl-phenylether	20000	U
118-74-1	Hexachlorobenzene	20000	U
87-86-5	Pentachlorophenol	95000	
85-01-8	Phenanthrene	20000	U
120-12-7	Anthracene	20000	U
86-74-8	Carbazole	20000	U
84-74-2	Di-n-butylphthalate	20000	U
206-44-0	Fluoranthene	20000	U
129-00-0	Pyrene	44000	
85-68-7	Butylbenzylphthalate	20000	U
91-94-1	3,3'-Dichlorobenzidine	20000	U
56-55-3	Benzo(a)anthracene	20000	U
218-01-9	Chrysene	20000	U
117-81-7	bis(2-Ethylhexyl)phthalate	20000	U
117-84-0	Di-n-octylphthalate	20000	U
205-99-2	Benzo(b)fluoranthene	20000	U
207-08-9	Benzo(k)fluoranthene	20000	U
50-32-8	Benzo(a)pyrene	20000	U
193-39-5	Indeno(1,2,3-cd)pyrene	20000	U
53-70-3	Dibenzo(a,h)anthracene	20000	U
191-24-2	Benzo(g,h,i)perylene	20000	U

(1) - Cannot be separated from Diphenylamine

Data File: /chem/nvo5.i/nvo0728.b/nvo502278.d
port Date: 29-Jul-1994 08:33

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0728.b/nvo502278.d
Lab Smp Id: CDMHNSS3*43MSD
Client Smp ID: WC1-01MSD
Inj Date : 28-JUL-1994 13:26
Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT
Inst ID: nvo5.i
Smp Info : CDMHNSS3*43MSD
Misc Info : CDM Hanford N. Slope
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42
Quant Type: ISTD
Cal Date : 28-JUL-94 09:34
Cal File: nvo502274.d
Als bottle: 4
QC Sample: MSD
Dil Factor: 2.000
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)
*	1	1,4-Dichlorobenzene-d4	152.00	5.579	5.579	(1.000)	328668	40	
	2	2-Fluorophenol	112.00	2.777	2.786	(0.498)	534408	46	46000
	3	Phenol-d5	99.00	5.090	5.090	(0.912)	812068	62	62000
	4	Phenol	94.00	5.116	5.107	(0.917)	1071790	77	77000(R)
$	6	2-Chlorophenol-d4	132.00	5.212	5.212	(0.934)	608213	61	61000
	7	2-Chlorophenol	128.00	5.247	5.247	(0.941)	825274	69	69000
	9	1,4-Dichlorobenzene	146.00	5.605	5.605	(1.005)	621500	47	47000
$	10	1,2-Dichlorobenzene-d4	152.00	5.814	5.814	(1.042)	308872	43	43000
	15	N-Nitroso-di-n-propylamine	70.00	6.277	6.277	(1.125)	386447	48	48000
*	17	Naphthalene-d8	136.00	7.700	7.699	(1.000)	1142434	40	
$	18	Nitrobenzene-d5	82.00	6.487	6.486	(0.842)	529792	46	46000
	25	1,2,4-Trichlorobenzene	180.00	7.604	7.603	(0.988)	431593	45	45000
	29	4-Chloro-3-methylphenol	107.00	8.817	8.816	(1.145)	623384	71	71000
*	31	Acenaphthene-d10	164.00	11.191	11.190	(1.000)	509342	40	
$	35	2-Fluorobiphenyl	172.00	9.794	9.794	(0.875)	847037	46	46000
	42	Acenaphthene	153.00	11.260	11.269	(1.006)	482178	29	29000
	44	4-Nitrophenol	109.00	11.636	11.635	(1.040)	166539	68	68000
	46	2,4-Dinitrotoluene	165.00	11.679	11.679	(1.044)	253686	40	40000
$	51	2,4,6-Tribromophenol	330.00	12.980	12.979	(1.160)	179980	63	63000
*	52	Phenanthrene-d10	188.00	14.568	14.568	(1.000)	724958	40	
	57	Pentachlorophenol	266.00	14.175	14.166	(0.973)	193290	95	95000(R)
*	63	Chrysene-d12	240.00	20.869	20.852	(1.000)	519606	40	
	64	Pyrene	202.00	17.963	17.945	(0.861)	883987	44	44000
$	65	Terphenyl-d14	244.00	18.452	18.434	(0.884)	692232	52	52000
*	71	Perylene-d12	264.00	24.011	23.985	(1.000)	523507	40	

Data File: /chem/nvo5.i/nvo0728.b/nvo502278.d
Report Date: 29-Jul-1994 08:33

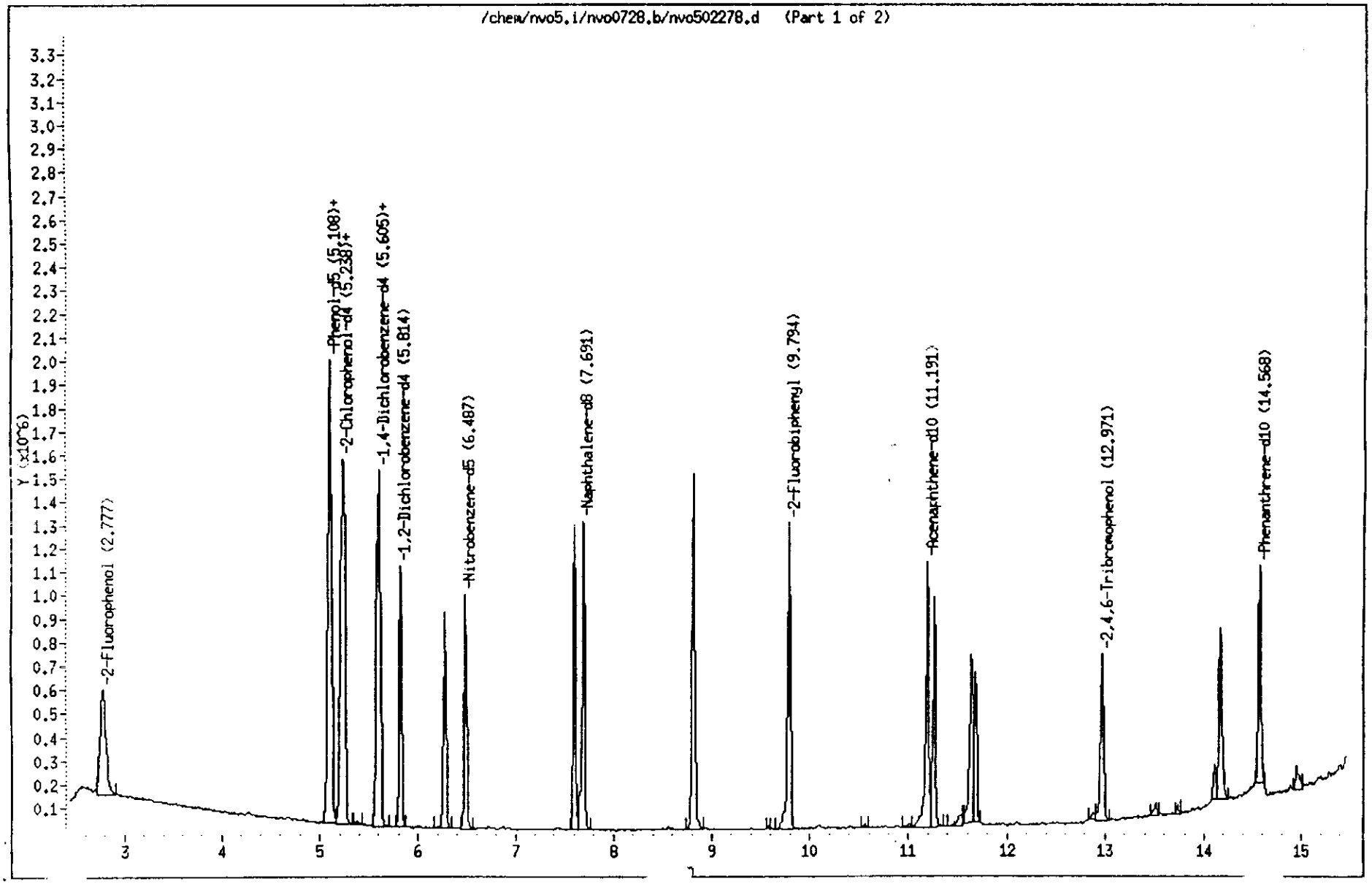
QC Flag Legend

R - Spike/Surrogate failed recovery limits.

Data File: /chem/nvo5.i/nvo0728.b/nvo502278.d
Date : 28-JUL-1994 13:26
Client ID: WC1-01MSD
Sample Info: CDMHNSS3*43MSD
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

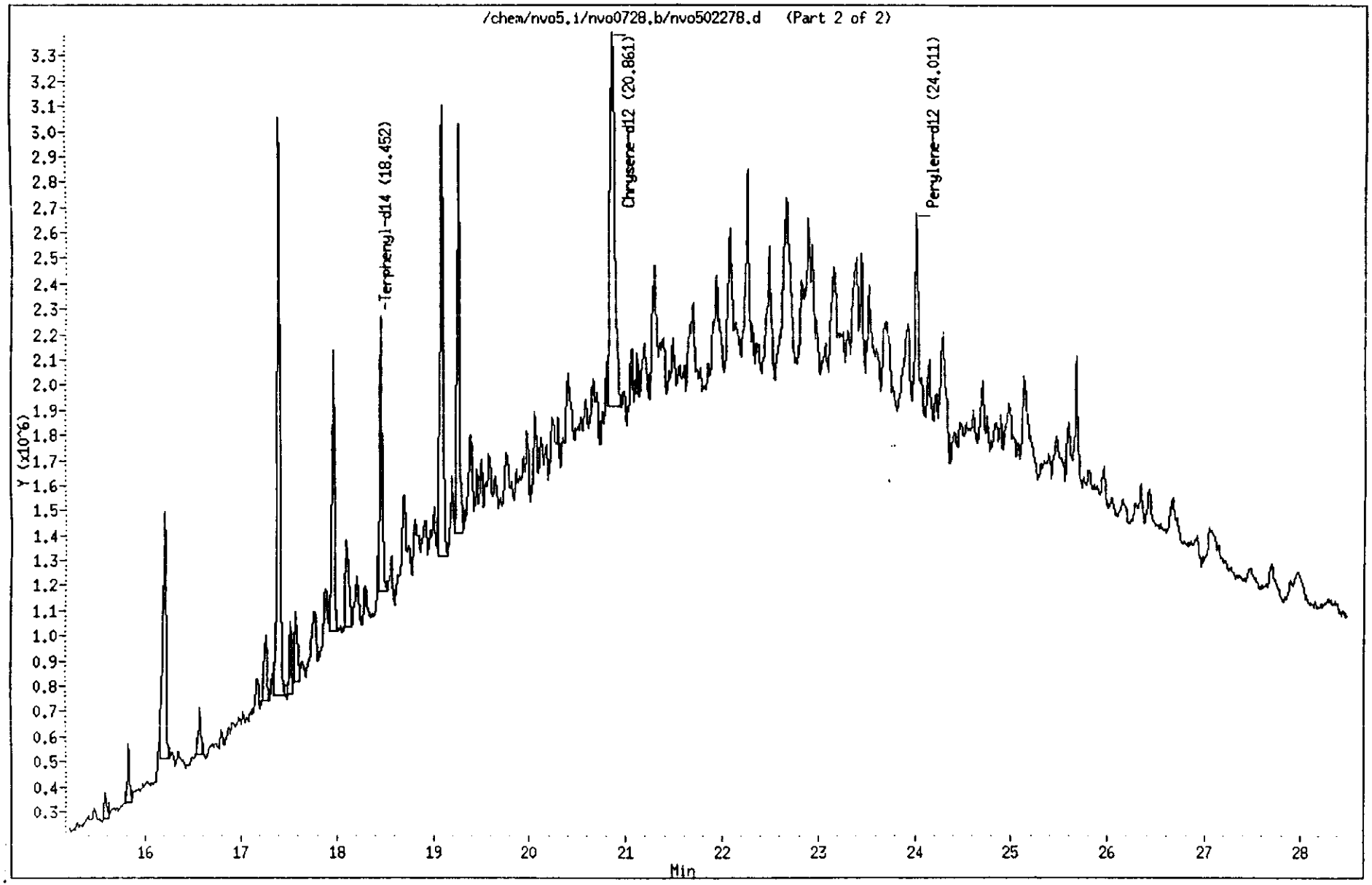


000136

Data File: /chem/nvo5.i/nvo0728.b/nvo502278.d
Date : 28-JUL-1994 13:26
Client ID: WC1-01MSD
Sample Info: CDMHNSS3*43MSD
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



000137

Standards Data

6B
SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Instrument ID: NVO5 Calibration Date(s): 07/27/94

Calibration Times: 1352 1619

LAB FILE ID: RRF20 =NVO502269.D RRF50 =NVO502268.D
RRF80 =NVO502270.D RRF120=NVO502271.D RRF160=NVO502272.D

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Phenol *	1.661	1.761	1.422	1.678	1.510	1.606	8.5*
Bis(2-Chloroethyl)ether *	1.476	1.576	1.316	1.553	1.362	1.457	7.9*
2-Chlorophenol *	1.405	1.508	1.291	1.523	1.327	1.411	7.4*
1,3-Dichlorobenzene *	1.522	1.617	1.426	1.624	1.432	1.524	6.3*
1,4-Dichlorobenzene *	1.511	1.608	1.389	1.594	1.408	1.502	6.8*
1,2-Dichlorobenzene *	1.403	1.492	1.263	1.471	1.298	1.385	7.4*
2-Methylphenol *	1.195	1.293	1.008	1.239	1.096	1.166	9.8*
2,2'-oxybis(1-Chloropropane)	1.294	1.493	1.191	1.391	1.180	1.310	10.2
4-Methylphenol *	1.175	1.337	1.019	1.260	1.131	1.184	10.3*
N-Nitroso-di-n-propylamine *	0.891	1.057	0.803	0.973	0.869	0.918	10.7*
Hexachloroethane *	0.636	0.687	0.628	0.726	0.632	0.662	6.6*
Nitrobenzene *	0.390	0.408	0.354	0.394	0.359	0.381	6.2*
Isophorone *	0.627	0.749	0.611	0.681	0.627	0.659	8.7*
2-Nitrophenol *	0.243	0.264	0.235	0.267	0.239	0.250	5.9*
2,4-Dimethyphenol *	0.334	0.375	0.315	0.360	0.324	0.341	7.4*
Bis(2-Chloroethoxy)methane *	0.388	0.424	0.363	0.409	0.370	0.391	6.6*
2,4-Dichlorophenol *	0.255	0.295	0.245	0.279	0.255	0.266	7.7*
1,2,4-Trichlorobenzene *	0.319	0.336	0.299	0.335	0.300	0.318	5.8*
Naphthalene *	1.071	1.136	0.980	1.092	0.989	1.054	6.4*
4-Chloroaniline	0.352	0.425	0.357	0.403	0.375	0.382	8.1
Hexachlorobutadiene	0.188	0.191	0.179	0.202	0.176	0.187	5.5
4-Chloro-3-methylphenol *	0.249	0.339	0.261	0.295	0.283	0.285	12.3*
2-Methylnaphthalene *	0.632	0.743	0.607	0.679	0.613	0.655	8.7*
Hexachlorocyclopentadiene	0.114	0.120	0.163	0.189	0.166	0.151	21.5
2,4,6-Trichlorophenol *	0.432	0.439	0.386	0.419	0.401	0.415	5.3*
2,4,5-Trichlorophenol *	0.446	0.510	0.426	0.460	0.452	0.459	6.8*
2-Chloronaphthalene *	1.299	1.261	1.146	1.226	1.145	1.215	5.6*
2-Nitroaniline	0.394	0.498	0.410	0.426	0.442	0.434	9.2
Dimethyl phthalate	1.394	1.624	1.315	1.344	1.353	1.406	8.9
Acenaphthylene *	1.610	1.721	1.466	1.575	1.522	1.579	6.1*
2,6-Dinitrotoluene *	0.307	0.388	0.312	0.328	0.341	0.335	9.6*
3-Nitroaniline	0.475	0.586	0.492	0.521	0.533	0.521	8.2
Acenaphthene *	1.256	1.338	1.121	1.209	1.169	1.219	6.8*
2,4-Dinitrophenol	0.097	0.235	0.222	0.251	0.272	0.215	32.0
4-Nitrophenol	0.136	0.204	0.168	0.186	0.206	0.180	16.2
Dibenzofuran *	1.827	2.063	1.669	1.726	1.748	1.807	8.5*
2,4-Dinitrotoluene *	0.403	0.545	0.415	0.447	0.477	0.457	12.4*

* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

6C

SEMIVOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Instrument ID: NVO5 Calibration Date(s): 07/27/94

Calibration Times: 1352 1619

LAB FILE ID: RRF20 =NVO502269.D RRF50 =NVO502268.D
RRF80 =NVO502270.D RRF120=NVO502271.D RRF160=NVO502272.D

COMPOUND	RRF20	RRF50	RRF80	RRF120	RRF160	$\overline{RRF}$	% RSD
Diethyl phthalate	1.426	1.773	1.301	1.372	1.475	1.469	12.4
4-Chlorophenyl-phenylether *	0.620	0.726	0.573	0.606	0.628	0.631	9.1*
Fluorene *	1.265	1.488	1.171	1.208	1.279	1.282	9.6*
4-Nitroaniline	0.475	0.586	0.492	0.521	0.533	0.521	8.2
4,6-Dinitro-2-methylphenol	0.143	0.204	0.193	0.202	0.203	0.189	13.8
N-Nitrosodiphenylamine (1)	0.548	0.594	0.510	0.500	0.510	0.532	7.4
4-Bromophenyl-phenylether *	0.252	0.260	0.237	0.229	0.225	0.241	6.2*
Hexachlorobenzene *	0.273	0.292	0.256	0.256	0.248	0.265	6.6*
Pentachlorophenol *	0.000	0.107	0.112	0.122	0.128	0.117	7.9*
Phenanthrene *	1.204	1.297	1.126	1.103	1.088	1.164	7.5*
Anthracene *	1.019	1.122	0.957	0.940	0.939	0.995	7.8*
Carbazole	1.025	1.156	0.979	0.988	0.996	1.029	7.1
Di-n-butylphthalate	1.709	1.878	1.575	1.607	1.635	1.681	7.2
Fluoranthene *	1.209	1.314	1.137	1.180	1.183	1.205	5.5*
Pyrene *	1.514	1.734	1.381	1.433	1.482	1.509	9.0*
Butylbenzylphthalate	0.890	0.977	0.844	0.872	0.881	0.893	5.6
3,3'-Dichlorobenzidine	0.334	0.382	0.347	0.355	0.335	0.351	5.6
Benzo(a)anthracene *	1.234	1.334	1.160	1.211	1.191	1.226	5.4*
Chrysene *	1.125	1.210	1.055	1.086	1.062	1.107	5.7*
bis(2-Ethylhexyl)phthalate	1.197	1.318	1.144	1.173	1.149	1.196	6.0
Di-n-octylphthalate	1.979	2.006	1.799	1.793	1.880	1.891	5.2
Benzo(b)fluoranthene *	1.041	1.104	0.971	0.997	0.996	1.022	5.1*
Benzo(k)fluoranthene *	1.063	1.132	0.980	0.984	1.009	1.034	6.2*
Benzo(a)pyrene *	0.856	0.945	0.833	0.848	0.840	0.864	5.3*
Indeno(1,2,3-cd)pyrene *	0.739	0.808	0.761	0.786	0.783	0.776	3.4*
Dibenzo(a,h)anthracene *	0.749	0.846	0.780	0.799	0.790	0.793	4.4*
Benzo(g,h,i)perylene *	0.784	0.854	0.771	0.785	0.795	0.798	4.1*
Nitrobenzene-d5 *	0.379	0.393	0.344	0.389	0.353	0.372	5.9*
2-Fluorobiphenyl *	1.469	1.407	1.281	1.382	1.274	1.362	6.1*
Terphenyl-d14 *	1.011	1.152	0.948	0.980	1.011	1.020	7.6*
Phenol-d5 *	1.552	1.673	1.373	1.632	1.445	1.535	8.2*
2-Fluorophenol *	1.178	1.275	1.161	1.267	1.083	1.193	6.7*
2,4,6-Tribromophenol	0.185	0.256	0.195	0.219	0.223	0.216	12.8
2-Chlorophenol-d4 *	1.155	1.231	1.026	1.237	1.085	1.147	8.0*
1,2-Dichlorobenzene-d4 *	0.828	0.857	0.743	0.871	0.758	0.811	7.1*

) - Cannot be separated from Diphenylamine
* Compounds with required minimum RRF and maximum %RSD values.
All other compounds must meet a minimum RRF of 0.010.

Report Date : 28-Jul-1994 07:50

Environmental Science and Engineering

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUL-94 13:52
End Cal Date : 27-JUL-94 16:19
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/nvo5.i/nvo0727.b/clp390epc.m
Cal Date : 27-Jul-1994 21:41 user2
Curve Type : Average

Calibration File Names:
Level 1: /chem/nvo5.i/nvo0727.b/nvo502269.d
Level 2: /chem/nvo5.i/nvo0727.b/nvo502268.d
Level 3: /chem/nvo5.i/nvo0727.b/nvo502270.d
Level 4: /chem/nvo5.i/nvo0727.b/nvo502271.d
Level 5: /chem/nvo5.i/nvo0727.b/nvo502272.d

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
4 Phenol	1.66075	1.76053	1.42162	1.67768	1.51001	1.60612	8.538
5 Bis(2-Chloroethyl)ether	1.47564	1.57592	1.31592	1.55345	1.36211	1.45661	7.880
7 2-Chlorophenol	1.40506	1.50802	1.29066	1.52262	1.32670	1.41061	7.392
8 1,3-Dichlorobenzene	1.52177	1.61731	1.42592	1.62397	1.43219	1.52423	6.289
9 1,4-Dichlorobenzene	1.51137	1.60779	1.38919	1.59369	1.40771	1.50195	6.766
11 1,2-Dichlorobenzene	1.40273	1.49216	1.26311	1.47071	1.29807	1.38536	7.358
12 2-Methylphenol	1.19493	1.29296	1.00849	1.23854	1.09575	1.16613	9.774
13 4-Methylphenol	1.17532	1.33692	1.01915	1.26029	1.13073	1.18448	10.278
14 2,2'-oxybis(1-Chloropropane)	1.29412	1.49295	1.19121	1.39086	1.17974	1.30977	10.196
15 N-Nitroso-di-n-propylamine	0.89079	1.05692	0.80303	0.97274	0.86892	0.91848	10.704
16 Hexachloroethane	0.63576	0.68742	0.62756	0.72595	0.63158	0.66165	6.559
19 Nitrobenzene	0.38986	0.40804	0.35354	0.39438	0.35913	0.38099	6.185
20 Isophorone	0.62748	0.74946	0.61073	0.68239	0.62654	0.65912	8.670
21 2-Nitrophenol	0.24328	0.26384	0.23541	0.26708	0.23868	0.24966	5.903
22 2,4-Dimethyphenol	0.33374	0.37475	0.31508	0.36025	0.32357	0.34148	7.375
23 Bis(2-Chloroethoxy)methane	0.38765	0.42363	0.36292	0.40871	0.36996	0.39057	6.552
24 2,4-Dichlorophenol	0.25454	0.29452	0.24501	0.27878	0.25516	0.26560	7.683
25 1,2,4-Trichlorobenzene	0.31912	0.33630	0.29857	0.33550	0.30011	0.31792	5.756
26 Naphthalene	1.07134	1.13621	0.97973	1.09225	0.98924	1.05376	6.407
27 4-Chloroaniline	0.35176	0.42500	0.35702	0.40314	0.37523	0.38243	8.144
28 Hexachlorobutadiene	0.18812	0.19052	0.17867	0.20193	0.17589	0.18703	5.540
29 4-Chloro-3-methylphenol	0.24866	0.33932	0.26066	0.29457	0.28283	0.28521	12.347
30 2-Methylnaphthalene	0.63236	0.74342	0.60728	0.67936	0.61260	0.65500	8.703
32 Hexachlorocyclopentadiene	0.11425	0.11981	0.16341	0.18936	0.16617	0.15060	21.462
33 2,4,6-Trichlorophenol	0.43157	0.43903	0.38602	0.41880	0.40050	0.41519	5.272
34 2,4,5-Trichlorophenol	0.44621	0.51020	0.42589	0.46030	0.45179	0.45888	6.835
36 2-Chloronaphthalene	1.29887	1.26100	1.14647	1.22573	1.14478	1.21537	5.655

port Date : 28-Jul-1994 07:50

Environmental Science and Engineering

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUL-94 13:52
End Cal Date : 27-JUL-94 16:19
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/nvo5.i/nvo0727.b/clp390epc.m
Cal Date : 27-Jul-1994 21:41 user2
Curve Type : Average

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
37 2-Nitroaniline	0.39440	0.49806	0.41037	0.42608	0.44245	0.43427	9.185
38 Dimethyl phthalate	1.39406	1.62447	1.31537	1.34384	1.35323	1.40619	8.906
39 Acenaphthylene	1.61013	1.72108	1.46605	1.57461	1.52225	1.57882	6.104
40 2,6-Dinitrotoluene	0.30721	0.38814	0.31247	0.32795	0.34055	0.33526	9.646
41 3-Nitroaniline	0.47466	0.58564	0.49188	0.52105	0.53324	0.52129	8.208
42 Acenaphthene	1.25640	1.33803	1.12125	1.20935	1.16902	1.21881	6.829
43 2,4-Dinitrophenol	0.09650	0.23508	0.22204	0.25090	0.27233	0.21537	32.059
44 4-Nitrophenol	0.13597	0.20427	0.16769	0.18645	0.20616	0.18011	16.200
45 Dibenzofuran	1.82666	2.06331	1.66879	1.72593	1.74821	1.80658	8.540
46 2,4-Dinitrotoluene	0.40313	0.54495	0.41459	0.44655	0.47677	0.45720	12.438
47 Diethyl phthalate	1.42560	1.77269	1.30087	1.37187	1.47533	1.46927	12.357
48 4-Chlorophenyl-phenylether	0.61973	0.72620	0.57302	0.60605	0.62827	0.63065	9.102
49 Fluorene	1.26501	1.48791	1.17065	1.20790	1.27927	1.28215	9.599
50 4-Nitroaniline	0.47466	0.58564	0.49188	0.52105	0.53324	0.52129	8.208
53 4,6-Dinitro-2-methylphenol	0.14302	0.20367	0.19283	0.20228	0.20338	0.18904	13.813
54 N-Nitrosodiphenylamine	0.54823	0.59406	0.50955	0.49953	0.51043	0.53236	7.358
55 4-Bromophenyl-phenylether	0.25241	0.25998	0.23671	0.22892	0.22542	0.24069	6.221
56 Hexachlorobenzene	0.27332	0.29191	0.25602	0.25561	0.24843	0.26506	6.634
57 Pentachlorophenol	+++++	0.10730	0.11197	0.12247	0.12752	0.11730	7.931
58 Phenanthrene	1.20426	1.29725	1.12626	1.10336	1.08842	1.16391	7.464
59 Anthracene	1.01900	1.12182	0.95727	0.93959	0.93949	0.99543	7.819
60 Carbazole	1.02524	1.15576	0.97905	0.98843	0.99567	1.02883	7.098
61 Di-n-butylphthalate	1.70935	1.87846	1.57456	1.60700	1.63530	1.68094	7.206
62 Fluoranthene	1.20850	1.31412	1.13665	1.17993	1.18334	1.20451	5.521
64 Pyrene	1.51425	1.73396	1.38091	1.43274	1.48190	1.50875	8.990
66 Butylbenzylphthalate	0.89042	0.97722	0.84401	0.87158	0.88077	0.89280	5.630
67 3,3'-Dichlorobenzidine	0.33380	0.38244	0.34654	0.35457	0.33519	0.35051	5.645
68 Benzo(a)anthracene	1.23396	1.33431	1.16026	1.21100	1.19135	1.22617	5.401
69 Chrysene	1.12460	1.20987	1.05509	1.08613	1.06171	1.10748	5.724
70 bis(2-Ethylhexyl)phthalate	1.19733	1.31775	1.14390	1.17339	1.14864	1.19620	5.954
72 Di-n-octylphthalate	1.97863	2.00640	1.79890	1.79346	1.87968	1.89142	5.228
73 Benzo(b)fluoranthene	1.04110	1.10440	0.97148	0.99687	0.99646	1.02206	5.129
74 Benzo(k)fluoranthene	1.06326	1.13238	0.98000	0.98446	1.00896	1.03381	6.219
75 Benzo(a)pyrene	0.85564	0.94501	0.83302	0.84758	0.83957	0.86416	5.321

Report Date : 28-Jul-1994 07:50

Environmental Science and Engineering

INITIAL CALIBRATION DATA

Start Cal Date : 27-JUL-94 13:52
End Cal Date : 27-JUL-94 16:19
Quant Method : ISTD
Target Version : 3.10
Integrator : HP RTE
Method file : /chem/nvo5.i/nvo0727.b/clp390epc.m
Cal Date : 27-Jul-1994 21:41 user2
Curve Type : Average

Compound	20 Level 1	50 Level 2	80 Level 3	120 Level 4	160 Level 5	RRF	% RSD
76 Indeno(1,2,3-cd)pyrene	0.73925	0.80818	0.76130	0.78580	0.78300	0.77551	3.378
77 Dibenzo(a,h)anthracene	0.74900	0.84629	0.78007	0.79865	0.79045	0.79289	4.451
78 Benzo(g,h,i)perylene	0.78364	0.85438	0.77083	0.78548	0.79544	0.79795	4.102
$ 2 2-Fluorophenol	1.17763	1.27463	1.16107	1.26650	1.08337	1.19264	6.674
$ 3 Phenol-d5	1.55210	1.67261	1.37350	1.63231	1.44523	1.53515	8.165
$ 6 2-Chlorophenol-d4	1.15522	1.23066	1.02586	1.23732	1.08530	1.14687	8.004
$ 10 1,2-Dichlorobenzene-d4	0.82788	0.85678	0.74341	0.87074	0.75820	0.81140	7.108
$ 18 Nitrobenzene-d5	0.37888	0.39337	0.34381	0.38930	0.35318	0.37171	5.943
$ 35 2-Fluorobiphenyl	1.46857	1.40686	1.28072	1.38193	1.27437	1.36249	6.146
$ 51 2,4,6-Tribromophenol	0.18487	0.25594	0.19495	0.21938	0.22307	0.21564	12.843
$ 65 Terphenyl-d14	1.01146	1.15177	0.94788	0.98045	1.01061	1.02043	7.636

Data File: /chem/nvo5.i/nvo0727.b/nvo502269.d
Report Date: 27-Jul-1994 15:05

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0727.b/nvo502269.d
Lab Smp Id: SSTD20 — Client Smp ID: SSTD20
Inj Date : 27-JUL-94 14:28 — Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT — Inst ID: nvo5.i
Smp Info : SSTD20 20ng on col
Misc Info : 10ug/ml CLP STD 1000-7-1
Comment :
Method : /chem/nvo5.i/nvo0727.b/clp390epc.m
Meth Date : 27-Jul-1994 15:05 — Quant Type: ISTD
Cal Date : 27-JUL-94 13:52 — Cal File: nvo502268.d
Als bottle: 3 — Calibration Sample, Level: 1
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 CAL-AMT (ng)	ON-COL (ng)
	1	1,4-Dichlorobenzene-d4	152.00	5.578	5.578	(1.000)	329702	40	
	2	2-Fluorophenol	112.00	2.785	2.785	(0.499)	194133	20	19
	3	Phenol-d5	99.00	5.081	5.081	(0.911)	255865	20	19
	4	Phenol	94.00	5.107	5.107	(0.915)	273776	20	19
	5	Bis(2-Chloroethyl)ether	93.00	5.194	5.194	(0.931)	243260	20	19
$	6	2-Chlorophenol-d4	132.00	5.211	5.211	(0.934)	190438	20	19
	7	2-Chlorophenol	128.00	5.238	5.238	(0.939)	231625	20	19
	8	1,3-Dichlorobenzene	146.00	5.473	5.473	(0.981)	250865	20	19
	9	1,4-Dichlorobenzene	146.00	5.604	5.604	(1.005)	249151	20	19
$	10	1,2-Dichlorobenzene-d4	152.00	5.814	5.814	(1.042)	136477	20	20
	11	1,2-Dichlorobenzene	146.00	5.840	5.840	(1.047)	231242	20	19
	12	2-Methylphenol	108.00	6.067	6.067	(1.088)	196985	20	19
	13	4-Methylphenol	108.00	6.329	6.329	(1.135)	193753	20	19
	14	2,2'-oxybis(1-Chloropropane)	45.00	6.075	6.075	(1.089)	213336	20	18
	15	N-Nitroso-di-n-propylamine	70.00	6.276	6.276	(1.125)	146848	20	18
	16	Hexachloroethane	117.00	6.381	6.381	(1.144)	104806	20	19
*	17	Naphthalene-d8	136.00	7.699	7.699	(1.000)	1051852	40	
$	18	Nitrobenzene-d5	82.00	6.486	6.486	(0.842)	199265	20	20
	19	Nitrobenzene	77.00	6.512	6.512	(0.846)	205038	20	20
	20	Isophorone	82.00	6.922	6.922	(0.899)	330007	20	18
	21	2-Nitrophenol	139.00	7.044	7.044	(0.915)	127946	20	19
	22	2,4-Dimethyphenol	107.00	7.184	7.184	(0.933)	175523	20	19
	23	Bis(2-Chloroethoxy)methane	93.00	7.324	7.324	(0.951)	203876	20	19
	24	2,4-Dichlorophenol	162.00	7.489	7.489	(0.973)	133869	20	18
	25	1,2,4-Trichlorobenzene	180.00	7.603	7.603	(0.988)	167835	20	19
	26	Naphthalene	128.00	7.734	7.734	(1.005)	563447	20	19
	27	4-Chloroaniline	127.00	7.856	7.856	(1.020)	185001	20	18
	28	Hexachlorobutadiene	225.00	7.961	7.961	(1.034)	98938	20	20
	29	4-Chloro-3-methylphenol	107.00	8.816	8.816	(1.145)	130775	20	17

Data File: /chem/nvo5.i/nvo0727.b/nvo502269.d
Report Date: 27-Jul-1994 15:05

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	CONCENTRATIONS ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.034	9.034	(1.173)	332572	20	18
*	31 Acenaphthene-d10	164.00	11.190	11.190	(1.000)	367570	40	
	32 Hexachlorocyclopentadiene	237.00	9.340	9.340	(0.835)	20997	20	20
	33 2,4,6-Trichlorophenol	196.00	9.628	9.628	(0.860)	79317	20	20
	34 2,4,5-Trichlorophenol	196.00	9.706	9.706	(0.867)	82007	20	19(a)
$	35 2-Fluorobiphenyl	172.00	9.793	9.793	(0.875)	269901	20	20
	36 2-Chloronaphthalene	162.00	10.003	10.003	(0.894)	238712	20	20
	37 2-Nitroaniline	65.00	10.247	10.247	(0.916)	72485	20	18(a)
	38 Dimethyl phthalate	163.00	10.684	10.684	(0.955)	256208	20	18
	39 Acenaphthylene	152.00	10.876	10.876	(0.972)	295917	20	19
	40 2,6-Dinitrotoluene	165.00	10.797	10.797	(0.965)	56460	20	18
	41 3-Nitroaniline	138.00	10.247	10.247	(0.916)	87234	20	18(a)
	42 Acenaphthene	153.00	11.260	11.260	(1.006)	230908	20	19
	43 2,4-Dinitrophenol	184.00	11.390	11.390	(1.018)	17736	20	12(a)
	44 4-Nitrophenol	109.00	11.635	11.635	(1.040)	24989	20	16(a)
	45 Dibenzofuran	168.00	11.652	11.652	(1.041)	335712	20	19
	46 2,4-Dinitrotoluene	165.00	11.678	11.678	(1.044)	74090	20	17
	47 Diethyl phthalate	149.00	12.272	12.272	(1.097)	262004	20	18
	48 4-Chlorophenyl-phenylether	204.00	12.464	12.464	(1.114)	113897	20	18
	49 Fluorene	166.00	12.412	12.412	(1.109)	232490	20	18
	50 4-Nitroaniline	138.00	10.247	10.247	(0.916)	87234	20	18(a)
$	51 2,4,6-Tribromophenol	330.00	12.970	12.970	(1.159)	33976	20	17
*	52 Phenanthrene-d10	188.00	14.567	14.567	(1.000)	517356	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.586	12.586	(0.864)	36995	20	16(a)
	54 N-Nitrosodiphenylamine	169.00	12.743	12.743	(0.875)	141815	20	19
	55 4-Bromophenyl-phenylether	248.00	13.581	13.581	(0.932)	65294	20	20
	56 Hexachlorobenzene	284.00	13.660	13.660	(0.938)	70703	20	19
	57 Pentachlorophenol	266.00	14.166	14.166	(0.972)	14932	20	14(a)
	58 Phenanthrene	178.00	14.620	14.620	(1.004)	311515	20	19
	59 Anthracene	178.00	14.733	14.733	(1.011)	263593	20	19
	60 Carbazole	167.00	15.161	15.161	(1.041)	265207	20	19
	61 Di-n-butylphthalate	149.00	16.138	16.138	(1.108)	442171	20	19
	62 Fluoranthene	202.00	17.421	17.421	(1.196)	312613	20	19
*	63 Chrysene-d12	240.00	20.842	20.842	(1.000)	432887	40	
	64 Pyrene	202.00	17.936	17.936	(0.861)	327749	20	19
$	65 Terphenyl-d14	244.00	18.433	18.433	(0.884)	218924	20	19
	66 Butylbenzylphthalate	149.00	19.699	19.699	(0.945)	192726	20	19
	67 3,3'-Dichlorobenzidine	252.00	20.842	20.842	(1.000)	72249	20	19
	68 Benzo(a)anthracene	228.00	20.816	20.816	(0.999)	267083	20	19
	69 Chrysene	228.00	20.895	20.895	(1.002)	243412	20	19
	70 bis(2-Ethylhexyl)phthalate	149.00	21.148	21.148	(1.015)	259155	20	19
*	71 Perylene-d12	264.00	23.975	23.975	(1.000)	390753	40	
	72 Di-n-octylphthalate	149.00	22.631	22.631	(0.944)	386578	20	20
	73 Benzo(b)fluoranthene	252.00	23.207	23.207	(0.968)	203407	20	19
	74 Benzo(k)fluoranthene	252.00	23.260	23.260	(0.970)	207736	20	19
	75 Benzo(a)pyrene	252.00	23.853	23.853	(0.995)	167171	20	19
	76 Indeno(1,2,3-cd)pyrene	276.00	25.948	25.948	(1.082)	144433	20	19
	77 Dibenzo(a,h)anthracene	278.00	26.000	26.000	(1.084)	146336	20	19
	78 Benzo(g,h,i)perylene	276.00	26.428	26.428	(1.102)	153105	20	19

Data File: /chem/nvo5.i/nvo0727.b/nvo502269.d
Report Date: 27-Jul-1994 15:05

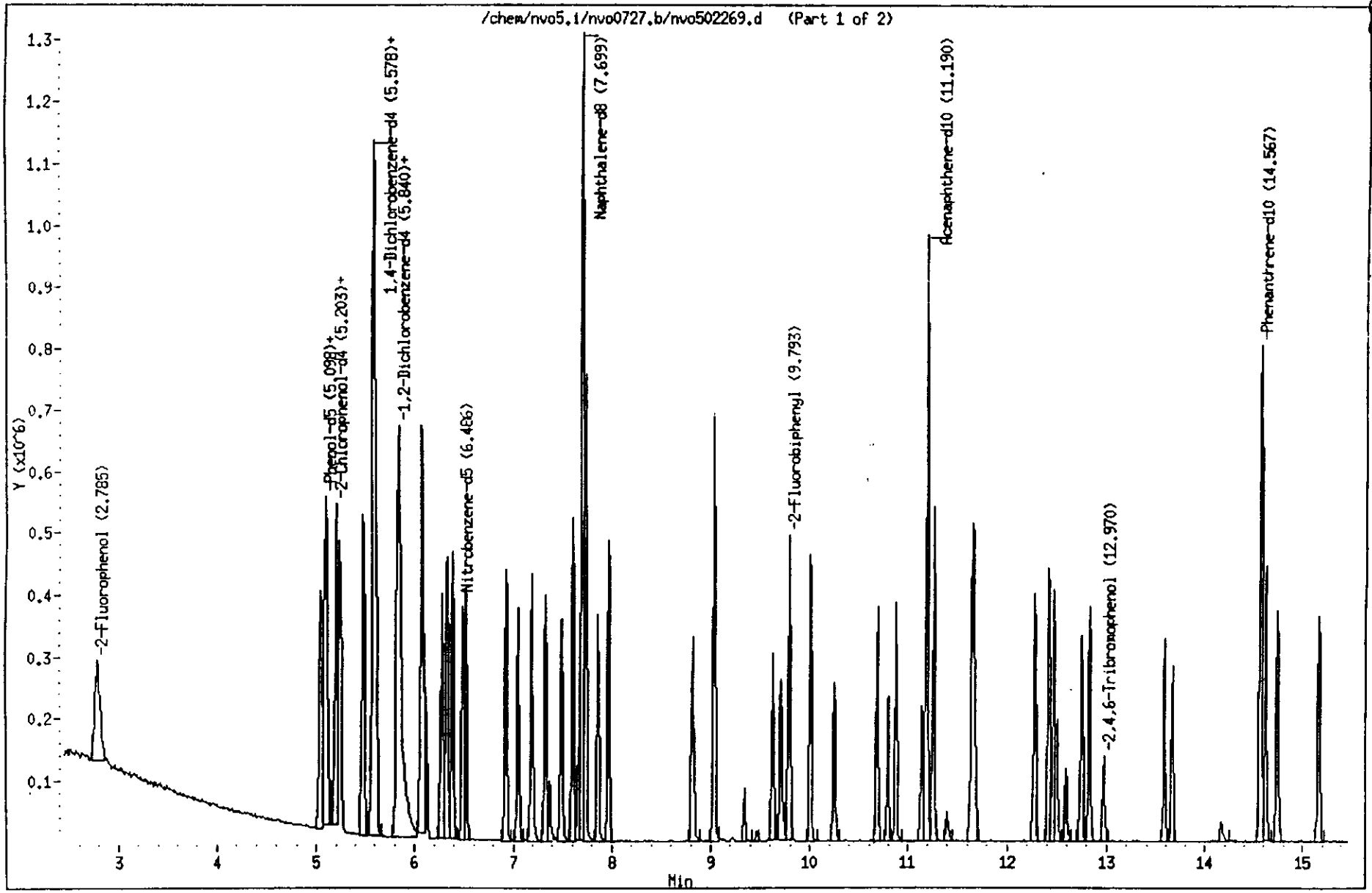
QC Flag Legend

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

Data File: /chem/nvo5.i/nvo0727.b/nvo502269.d
Date : 27-JUL-94 14:28
Client ID: SSTD20
Sample Info: SSTD20 20ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

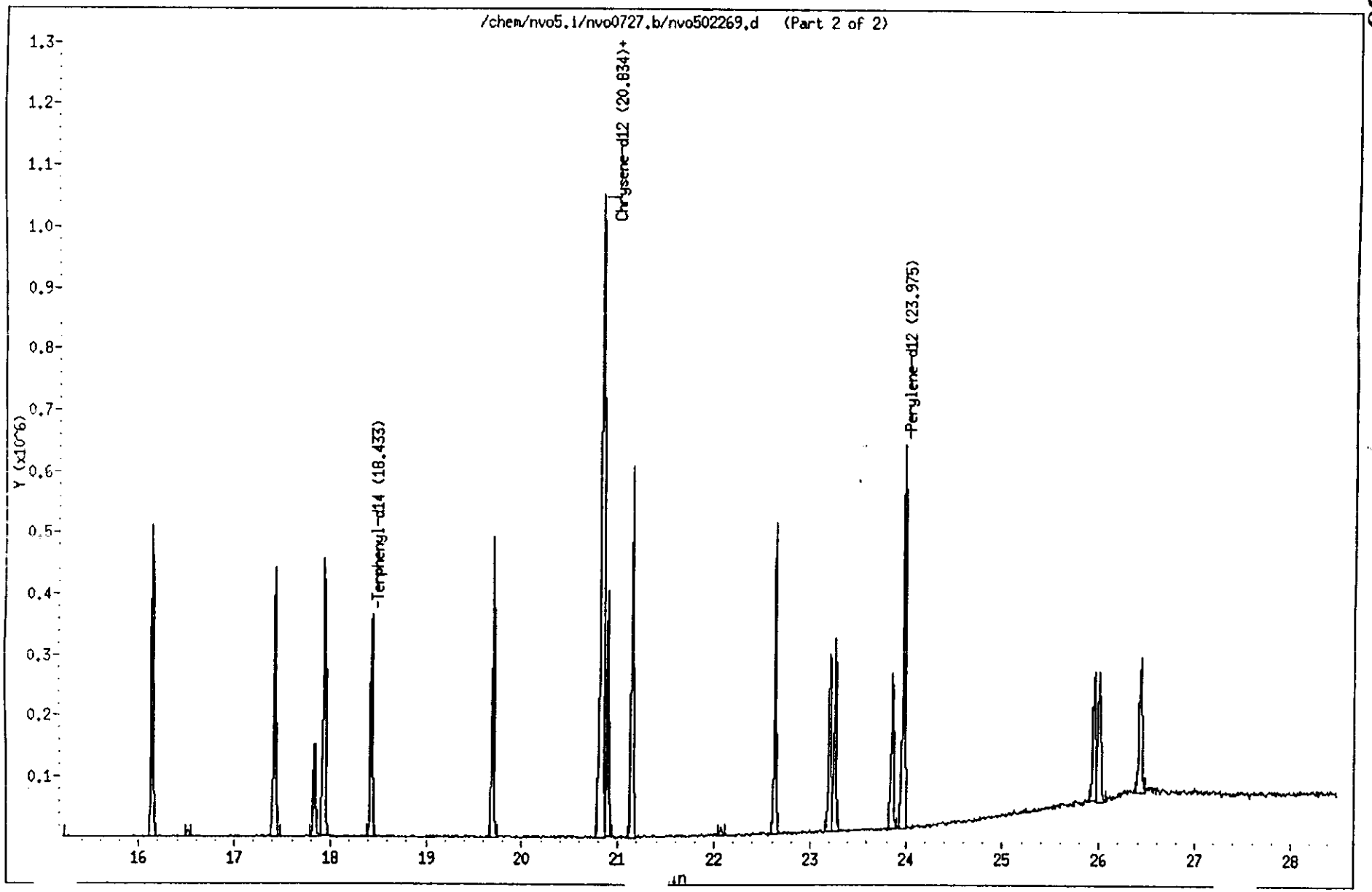


000147

Data File: /chem/nvo5.i/nvo0727.b/nvo502269.d
Date : 27-JUL-94 14:28
Client ID: SSTD20
Sample Info: SSTD20 20ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



C00148

Data File: /chem/nvo5.i/nvo0727.b/nvo502268.d
Report Date: 27-Jul-1994 14:28

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0727.b/nvo502268.d
Lab Smp Id: SSTD50 Client Smp ID: SSTD50
Inj Date : 27-JUL-94 13:52 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : SSTD50 50ng on col
Misc Info : 25ug/ml CLP STD 1000-8-1
Comment :
Method : /chem/nvo5.i/nvo0727.b/clp390epc.m
Meth Date : 27-Jul-1994 14:27 Quant Type: ISTD
Cal Date : 27-JUL-94 13:52 Cal File: nvo502268.d
Als bottle: 2 Calibration Sample, Level: 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 CAL-AMT (ng)	ON-COL (ng)
*	1 1,4-Dichlorobenzene-d4	152.00	5.570	5.570	(1.000)	156783	40	
$	2 2-Fluorophenol	112.00	2.716	2.716	(0.488)	249800	50	50
$	3 Phenol-d5	99.00	5.073	5.073	(0.911)	327797	50	50
	4 Phenol	94.00	5.099	5.099	(0.915)	345027	50	50
	5 Bis(2-Chloroethyl)ether	93.00	5.186	5.186	(0.931)	308847	50	50
$	6 2-Chlorophenol-d4	132.00	5.204	5.204	(0.934)	241182	50	50
	7 2-Chlorophenol	128.00	5.230	5.230	(0.939)	295540	50	50
	8 1,3-Dichlorobenzene	146.00	5.466	5.466	(0.981)	316959	50	50
	9 1,4-Dichlorobenzene	146.00	5.597	5.597	(1.005)	315093	50	50
$	10 1,2-Dichlorobenzene-d4	152.00	5.806	5.806	(1.042)	167911	50	50
	11 1,2-Dichlorobenzene	146.00	5.832	5.832	(1.047)	292433	50	50
	12 2-Methylphenol	108.00	6.068	6.068	(1.089)	253392	50	50
	13 4-Methylphenol	108.00	6.321	6.321	(1.135)	262007	50	50
	14 2,2'-oxybis(1-Chloropropane)	45.00	6.059	6.059	(1.088)	292587	50	50
	15 N-Nitroso-di-n-propylamine	70.00	6.277	6.277	(1.127)	207133	50	50
	16 Hexachloroethane	117.00	6.373	6.373	(1.144)	134719	50	50
*	17 Naphthalene-d8	136.00	7.691	7.691	(1.000)	538110	40	
$	18 Nitrobenzene-d5	82.00	6.478	6.478	(0.842)	264597	50	50
	19 Nitrobenzene	77.00	6.513	6.513	(0.847)	274461	50	50
	20 Isophorone	82.00	6.923	6.923	(0.900)	504118	50	50
	21 2-Nitrophenol	139.00	7.045	7.045	(0.916)	177469	50	50
	22 2,4-Dimethyphenol	107.00	7.185	7.185	(0.934)	252068	50	50
	23 Bis(2-Chloroethoxy)methane	93.00	7.325	7.325	(0.952)	284947	50	50
	24 2,4-Dichlorophenol	162.00	7.482	7.482	(0.973)	198108	50	50
	25 1,2,4-Trichlorobenzene	180.00	7.604	7.604	(0.989)	226206	50	50
	26 Naphthalene	128.00	7.735	7.735	(1.006)	764256	50	50
	27 4-Chloroaniline	127.00	7.857	7.857	(1.022)	285874	50	50
	28 Hexachlorobutadiene	225.00	7.962	7.962	(1.035)	128152	50	50
	29 4-Chloro-3-methylphenol	107.00	8.817	8.817	(1.146)	228241	50	50

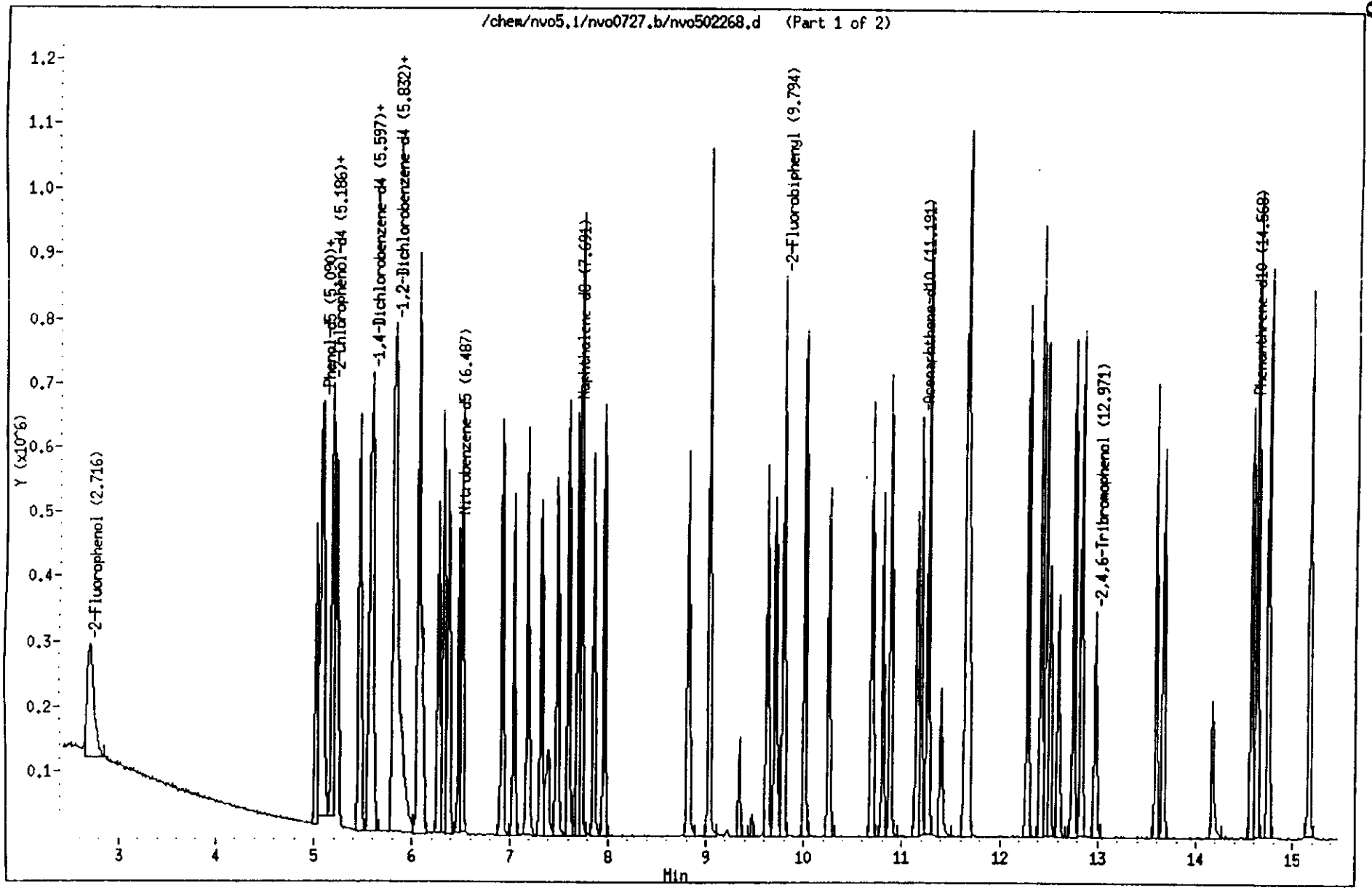
Data File: /chem/nvo5.i/nvo0727.b/nvo502268.d
Report Date: 27-Jul-1994 14:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	CONCENTRATIONS ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.035	9.035	(1.175)	500051	50	50
*	31 Acenaphthene-d10	164.00	11.191	11.191	(1.000)	250328	40	
	32 Hexachlorocyclopentadiene	237.00	9.341	9.341	(0.835)	37488	50	50
	33 2,4,6-Trichlorophenol	196.00	9.629	9.629	(0.860)	137378	50	50
	34 2,4,5-Trichlorophenol	196.00	9.707	9.707	(0.867)	159647	50	50
$	35 2-Fluorobiphenyl	172.00	9.794	9.794	(0.875)	440219	50	50
	36 2-Chloronaphthalene	162.00	10.013	10.013	(0.895)	394580	50	50
	37 2-Nitroaniline	65.00	10.257	10.257	(0.917)	155849	50	50
	38 Dimethyl phthalate	163.00	10.693	10.693	(0.956)	508312	50	50
	39 Acenaphthylene	152.00	10.877	10.877	(0.972)	538542	50	50
	40 2,6-Dinitrotoluene	165.00	10.798	10.798	(0.965)	121452	50	50
	41 3-Nitroaniline	138.00	10.257	10.257	(0.917)	183252	50	50
	42 Acenaphthene	153.00	11.261	11.261	(1.006)	418684	50	50
	43 2,4-Dinitrophenol	184.00	11.400	11.400	(1.019)	73560	50	50
	44 4-Nitrophenol	109.00	11.636	11.636	(1.040)	63919	50	50
	45 Dibenzofuran	168.00	11.653	11.653	(1.041)	645630	50	50
	46 2,4-Dinitrotoluene	165.00	11.680	11.680	(1.044)	170521	50	50
	47 Diethyl phthalate	149.00	12.282	12.282	(1.097)	554693	50	50
	48 4-Chlorophenyl-phenylether	204.00	12.474	12.474	(1.115)	227236	50	50
	49 Fluorene	166.00	12.421	12.421	(1.110)	465583	50	50
	50 4-Nitroaniline	138.00	10.257	10.257	(0.917)	183252	50	50
	51 2,4,6-Tribromophenol	330.00	12.980	12.980	(1.160)	80086	50	50
	52 Phenanthrene-d10	188.00	14.568	14.568	(1.000)	420758	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.596	12.596	(0.865)	107119	50	50
	54 N-Nitrosodiphenylamine	169.00	12.753	12.753	(0.875)	312442	50	50
	55 4-Bromophenyl-phenylether	248.00	13.591	13.591	(0.933)	136734	50	50
	56 Hexachlorobenzene	284.00	13.669	13.669	(0.938)	153531	50	50
	57 Pentachlorophenol	266.00	14.167	14.167	(0.972)	56432	50	50
	58 Phenanthrene	178.00	14.621	14.621	(1.004)	682284	50	50
	59 Anthracene	178.00	14.743	14.743	(1.012)	590018	50	50
	60 Carbazole	167.00	15.171	15.171	(1.041)	607869	50	50
	61 Di-n-butylphthalate	149.00	16.148	16.148	(1.108)	987973	50	50
	62 Fluoranthene	202.00	17.431	17.431	(1.196)	691160	50	50
*	63 Chrysene-d12	240.00	20.843	20.843	(1.000)	328761	40	
	64 Pyrene	202.00	17.946	17.946	(0.861)	712574	50	50
$	65 Terphenyl-d14	244.00	18.435	18.435	(0.884)	473320	50	50
	66 Butylbenzylphthalate	149.00	19.700	19.700	(0.945)	401589	50	50
	67 3,3'-Dichlorobenzidine	252.00	20.843	20.843	(1.000)	157166	50	50
	68 Benzo(a)anthracene	228.00	20.826	20.826	(0.999)	548337	50	50
	69 Chrysene	228.00	20.904	20.904	(1.003)	497198	50	50
	70 bis(2-Ethylhexyl)phthalate	149.00	21.157	21.157	(1.015)	541529	50	50
*	71 Perylene-d12	264.00	23.976	23.976	(1.000)	333476	40	
	72 Di-n-octylphthalate	149.00	22.632	22.632	(0.944)	836357	50	50
	73 Benzo(b)fluoranthene	252.00	23.217	23.217	(0.968)	460365	50	50
	74 Benzo(k)fluoranthene	252.00	23.270	23.270	(0.971)	472027	50	50
	75 Benzo(a)pyrene	252.00	23.863	23.863	(0.995)	393924	50	50
	76 Indeno(1,2,3-cd)pyrene	276.00	25.958	25.958	(1.083)	336884	50	50
	77 Dibenzo(a,h)anthracene	278.00	26.010	26.010	(1.085)	352773	50	50
	78 Benzo(g,h,i)perylene	276.00	26.438	26.438	(1.103)	356143	50	50

Data File: /chem/nvo5.i/nvo0727.b/nvo502268.d
Date : 27-JUL-94 13:52
Client ID: SSTD50
Sample Info: SSTD50 50ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

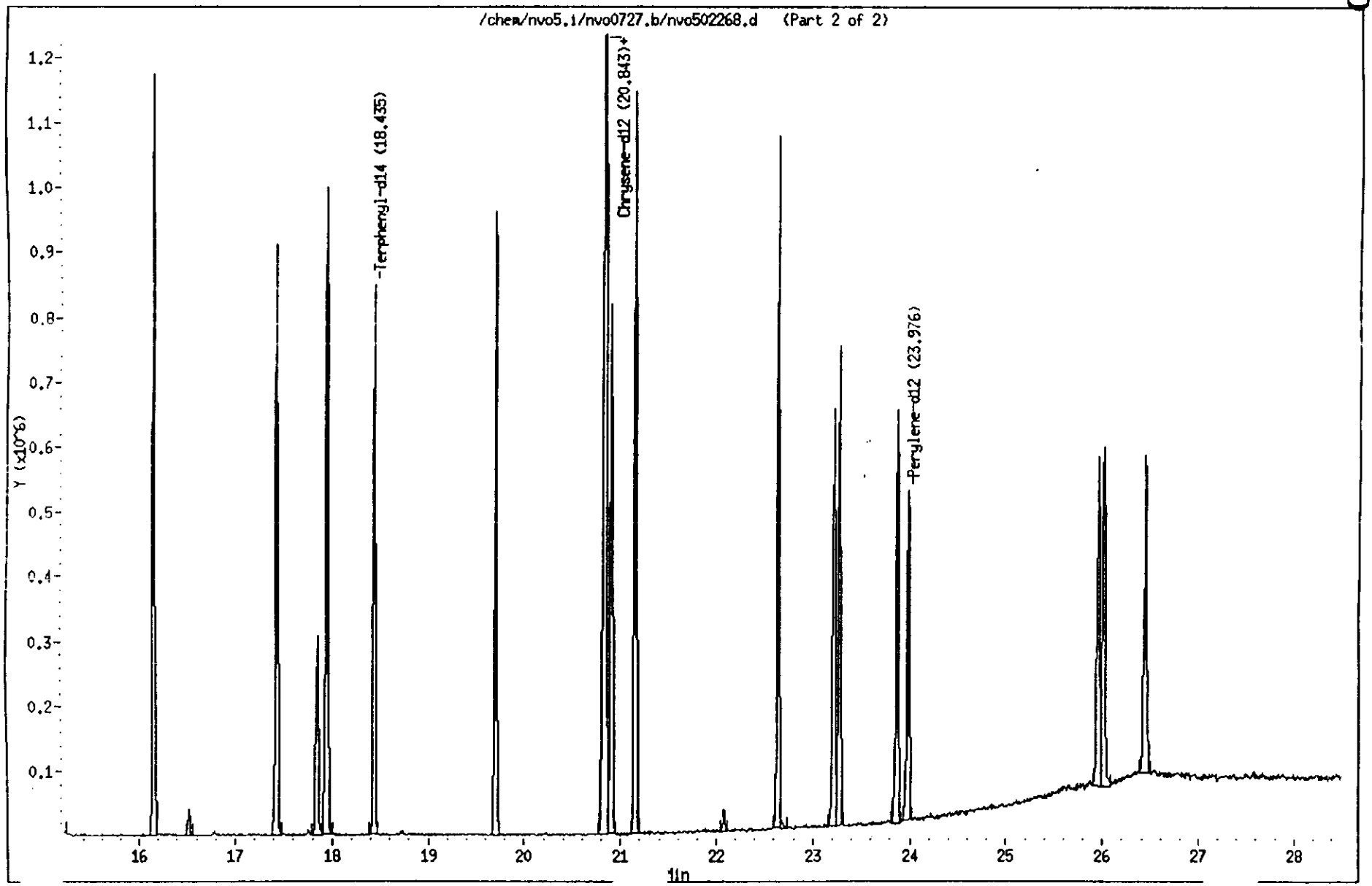


000151

Data File: /chem/nvo5.i/nvo0727.b/nvo502268.d
Date : 27-JUL-94 13:52
Client ID: SSTD50
Sample Info: SSTD50 50ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



000152

Data File: /chem/nvo5.i/nvo0727.b/nvo502270.d
Report Date: 27-Jul-1994 15:42

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0727.b/nvo502270.d
Lab Smp Id: SSTD80 Client Smp ID: SSTD80
Inj Date : 27-JUL-94 15:06 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : SSTD80 80ng on col
Misc Info : 40ug/ml CLP STD 1000-7-2
Comment :
Method : /chem/nvo5.i/nvo0727.b/clp390epc.m
Meth Date : 27-Jul-1994 15:41 Quant Type: ISTD
Cal Date : 27-JUL-94 13:52 Cal File: nvo502268.d
Als bottle: 4 Calibration Sample, Level: 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 CAL-AMT (ng)	ON-COL (ng)
*	1	1,4-Dichlorobenzene-d4	152.00	5.581	5.581	(1.000)	352697	40	
$	2	2-Fluorophenol	112.00	2.806	2.806	(0.503)	819015	80	77
$	3	Phenol-d5	99.00	5.101	5.101	(0.914)	968858	80	72
	4	Phenol	94.00	5.127	5.127	(0.919)	1002800	80	70
	5	Bis(2-Chloroethyl)ether	93.00	5.215	5.215	(0.934)	928244	80	72
$	6	2-Chlorophenol-d4	132.00	5.223	5.223	(0.936)	723634	80	72
	7	2-Chlorophenol	128.00	5.250	5.250	(0.941)	910423	80	74
	8	1,3-Dichlorobenzene	146.00	5.485	5.485	(0.983)	1005837	80	75
	9	1,4-Dichlorobenzene	146.00	5.616	5.616	(1.006)	979927	80	74
$	10	1,2-Dichlorobenzene-d4	152.00	5.826	5.826	(1.044)	524399	80	73
	11	1,2-Dichlorobenzene	146.00	5.852	5.852	(1.048)	890994	80	73
	12	2-Methylphenol	108.00	6.079	6.079	(1.089)	711383	80	69
	13	4-Methylphenol	108.00	6.332	6.332	(1.134)	718906	80	69
	14	2,2'-oxybis(1-Chloropropane)	45.00	6.070	6.070	(1.088)	840270	80	72
	15	N-Nitroso-di-n-propylamine	70.00	6.288	6.288	(1.127)	566450	80	70
	16	Hexachloroethane	117.00	6.384	6.384	(1.144)	442678	80	77
*	17	Naphthalene-d8	136.00	7.702	7.702	(1.000)	1073390	40	
$	18	Nitrobenzene-d5	82.00	6.498	6.498	(0.844)	738075	80	74
	19	Nitrobenzene	77.00	6.532	6.532	(0.848)	758977	80	74
	20	Isophorone	82.00	6.943	6.943	(0.901)	1311106	80	74
	21	2-Nitrophenol	139.00	7.056	7.056	(0.916)	505370	80	76
	22	2,4-Dimethyphenol	107.00	7.196	7.196	(0.934)	676400	80	74
	23	Bis(2-Chloroethoxy)methane	93.00	7.335	7.335	(0.952)	779105	80	74
	24	2,4-Dichlorophenol	162.00	7.492	7.492	(0.973)	525980	80	74
	25	1,2,4-Trichlorobenzene	180.00	7.606	7.606	(0.988)	640973	80	75
	26	Naphthalene	128.00	7.737	7.737	(1.005)	2103271	80	74
	27	4-Chloroaniline	127.00	7.859	7.859	(1.020)	766434	80	76
	28	Hexachlorobutadiene	225.00	7.964	7.964	(1.034)	383572	80	77
	29	4-Chloro-3-methylphenol	107.00	8.819	8.819	(1.145)	559576	80	74

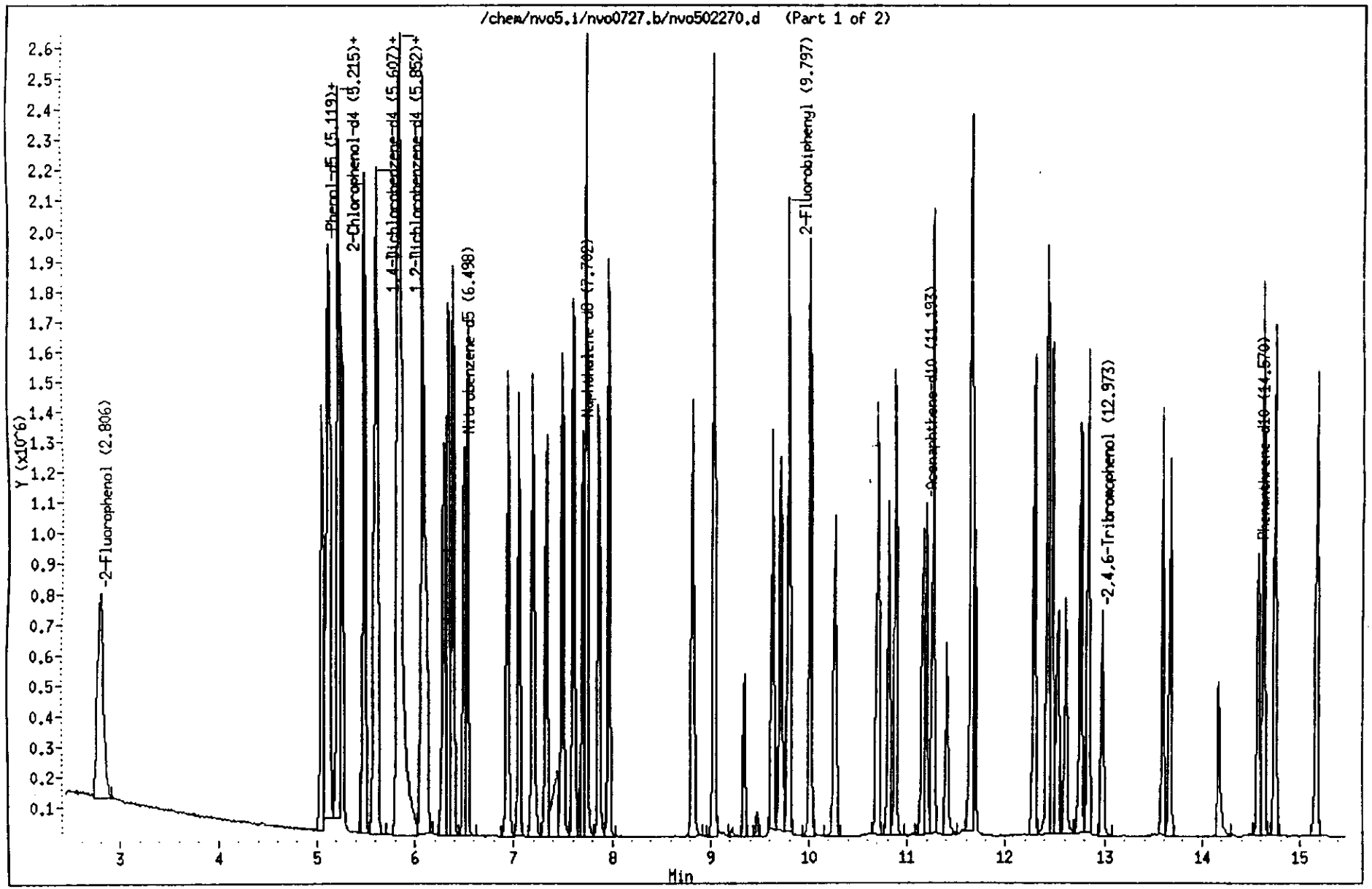
Data File: /chem/nvo5.i/nvo0727.b/nvo502270.d
eport Date: 27-Jul-1994 15:42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.037	9.037	(1.173)	1303704	80	73
*	31 Acenaphthene-d10	164.00	11.193	11.193	(1.000)	435545	40	
	32 Hexachlorocyclopentadiene	237.00	9.343	9.343	(0.835)	142343	80	99
	33 2,4,6-Trichlorophenol	196.00	9.631	9.631	(0.860)	336260	80	74
	34 2,4,5-Trichlorophenol	196.00	9.709	9.709	(0.867)	370989	80	74
$	35 2-Fluorobiphenyl	172.00	9.797	9.797	(0.875)	1115627	80	74
	36 2-Chloronaphthalene	162.00	10.015	10.015	(0.895)	998676	80	74
	37 2-Nitroaniline	65.00	10.259	10.259	(0.917)	357473	80	76
	38 Dimethyl phthalate	163.00	10.695	10.695	(0.956)	1145806	80	73
	39 Acenaphthylene	152.00	10.879	10.879	(0.972)	1277063	80	73
	40 2,6-Dinitrotoluene	165.00	10.809	10.809	(0.966)	272188	80	74
	41 3-Nitroaniline	138.00	10.268	10.268	(0.917)	428470	80	76
	42 Acenaphthene	153.00	11.271	11.271	(1.007)	976708	80	72
	43 2,4-Dinitrophenol	184.00	11.402	11.402	(1.019)	193413	80	96
	44 4-Nitrophenol	109.00	11.647	11.647	(1.041)	146071	80	79
	45 Dibenzofuran	168.00	11.655	11.655	(1.041)	1453664	80	72
	46 2,4-Dinitrotoluene	165.00	11.690	11.690	(1.044)	361147	80	73
	47 Diethyl phthalate	149.00	12.293	12.293	(1.098)	1133179	80	69
	48 4-Chlorophenyl-phenylether	204.00	12.476	12.476	(1.115)	499154	80	72
	49 Fluorene	166.00	12.423	12.423	(1.110)	1019741	80	72
	50 4-Nitroaniline	138.00	10.268	10.268	(0.917)	428470	80	76
	51 2,4,6-Tribromophenol	330.00	12.982	12.982	(1.160)	169816	80	74
	52 Phenanthrene-d10	188.00	14.570	14.570	(1.000)	614116	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.607	12.607	(0.865)	236846	80	86
	54 N-Nitrosodiphenylamine	169.00	12.755	12.755	(0.875)	625844	80	74
	55 4-Bromophenyl-phenylether	248.00	13.593	13.593	(0.933)	290735	80	76
	56 Hexachlorobenzene	284.00	13.671	13.671	(0.938)	314455	80	75
	57 Pentachlorophenol	266.00	14.169	14.169	(0.972)	137520	80	97
	58 Phenanthrene	178.00	14.632	14.632	(1.004)	1383314	80	74
	59 Anthracene	178.00	14.745	14.745	(1.012)	1175752	80	74
	60 Carbazole	167.00	15.173	15.173	(1.041)	1202502	80	74
	61 Di-n-butylphthalate	149.00	16.150	16.150	(1.108)	1933930	80	73
	62 Fluoranthene	202.00	17.433	17.433	(1.196)	1396074	80	74
*	63 Chrysene-d12	240.00	20.854	20.854	(1.000)	518617	40	
	64 Pyrene	202.00	17.948	17.948	(0.861)	1432324	80	72
$	65 Terphenyl-d14	244.00	18.437	18.437	(0.884)	983171	80	73
	66 Butylbenzylphthalate	149.00	19.702	19.702	(0.945)	875433	80	75
	67 3,3'-Dichlorobenzidine	252.00	20.845	20.845	(1.000)	359447	80	78
	68 Benzo(a)anthracene	228.00	20.828	20.828	(0.999)	1203457	80	75
	69 Chrysene	228.00	20.915	20.915	(1.003)	1094376	80	75
	70 bis(2-Ethylhexyl)phthalate	149.00	21.151	21.151	(1.014)	1186493	80	75
*	71 Perylene-d12	264.00	23.987	23.987	(1.000)	524768	40	
	72 Di-n-octylphthalate	149.00	22.635	22.635	(0.944)	1888009	80	75
	73 Benzo(b)fluoranthene	252.00	23.219	23.219	(0.968)	1019603	80	75
	74 Benzo(k)fluoranthene	252.00	23.280	23.280	(0.971)	1028540	80	74
	75 Benzo(a)pyrene	252.00	23.874	23.874	(0.995)	874287	80	76
	76 Indeno(1,2,3-cd)pyrene	276.00	25.968	25.968	(1.083)	799017	80	79
	77 Dibenzo(a,h)anthracene	278.00	26.021	26.021	(1.085)	818708	80	79
	78 Benzo(g,h,i)perylene	276.00	26.457	26.457	(1.103)	809016	80	77

Data File: /chem/nvo5.i/nvo0727.b/nvo502270.d
Date : 27-JUL-94 15:06
Client ID: SSTD80
Sample Info: SSTD80 80ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



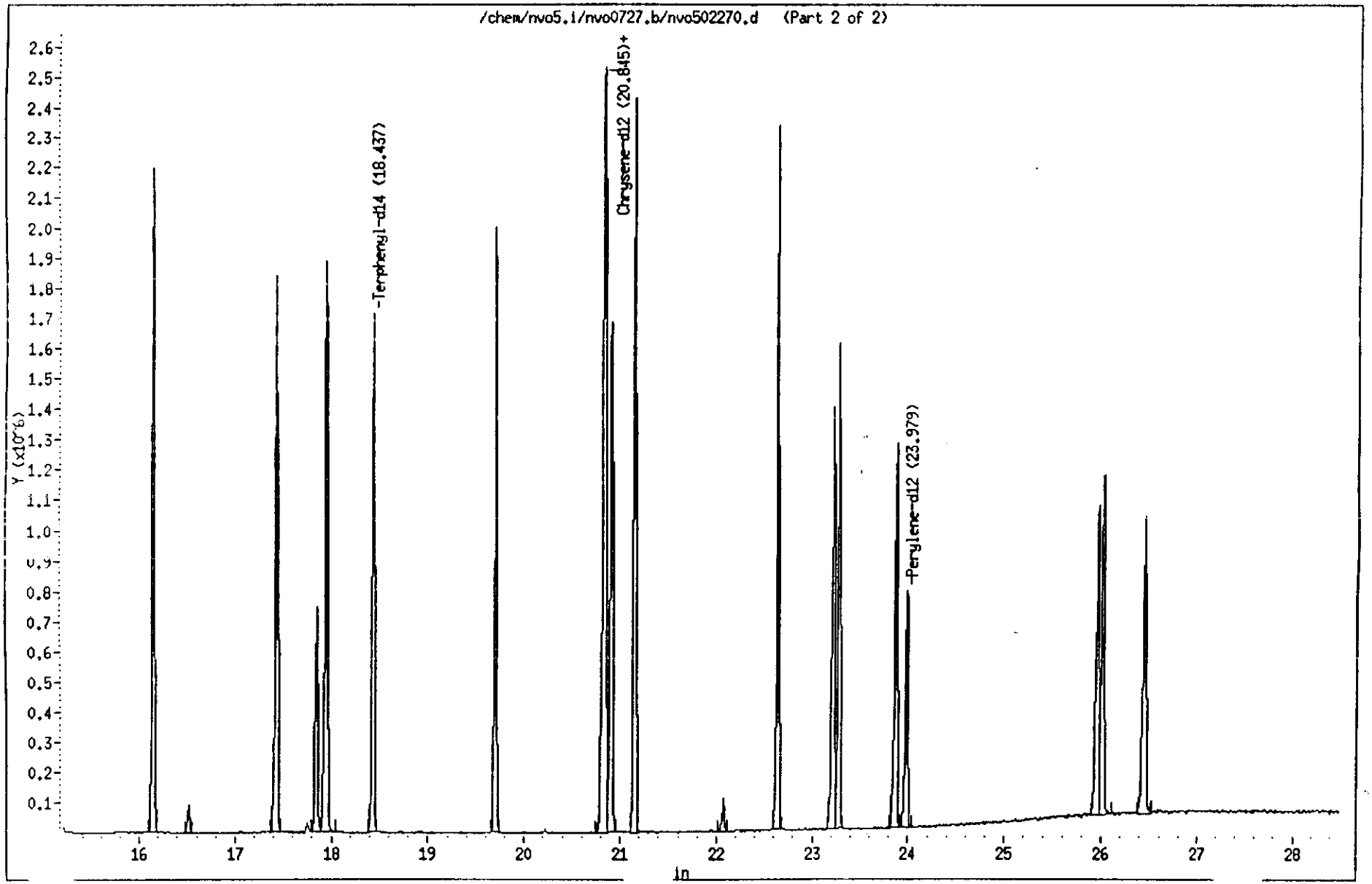
000155

Data File: /chem/nvo5.i/nvo0727.b/nvo502270.d
Date : 27-JUL-94 15:06
Client ID: SSTD80
Sample Info: SSTD80 80ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

000156



Data File: /chem/nvo5.i/nvo0727.b/nvo502271.d
Report Date: 27-Jul-1994 16:19

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0727.b/nvo502271.d
Lab Smp Id: SSTD120 Client Smp ID: SSTD120
Inj Date : 27-JUL-94 15:42 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : SSTD120 120ng on col
Misc Info : 60ug/ml CLP STD 1000-7-3
Comment :
Method : /chem/nvo5.i/nvo0727.b/clp390epc.m
Meth Date : 27-Jul-1994 16:19 Quant Type: ISTD
Cal Date : 27-JUL-94 13:52 Cal File: nvo502268.d
Als bottle: 5 Calibration Sample, Level: 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 CAL-AMT (ng)	ON-COL (ng)
*	1	1,4-Dichlorobenzene-d4	152.00	5.581	5.581	(1.000)	286525	40	
$	2	2-Fluorophenol	112.00	2.788	2.788	(0.500)	1088652	120	120
$	3	Phenol-d5	99.00	5.109	5.109	(0.916)	1403092	120	120
	4	Phenol	94.00	5.136	5.136	(0.920)	1442089	120	120
	5	Bis(2-Chloroethyl)ether	93.00	5.223	5.223	(0.936)	1335304	120	120
$	6	2-Chlorophenol-d4	132.00	5.223	5.223	(0.936)	1063568	120	130
	7	2-Chlorophenol	128.00	5.258	5.258	(0.942)	1308805	120	130
	8	1,3-Dichlorobenzene	146.00	5.485	5.485	(0.983)	1395920	120	120
	9	1,4-Dichlorobenzene	146.00	5.616	5.616	(1.006)	1369894	120	120
$	10	1,2-Dichlorobenzene-d4	152.00	5.825	5.825	(1.044)	748464	120	130
	11	1,2-Dichlorobenzene	146.00	5.851	5.851	(1.048)	1264188	120	120
	12	2-Methylphenol	108.00	6.078	6.078	(1.089)	1064618	120	120
	13	4-Methylphenol	108.00	6.340	6.340	(1.136)	1083315	120	130
	14	2,2'-oxybis(1-Chloropropane)	45.00	6.078	6.078	(1.089)	1195551	120	120
	15	N-Nitroso-di-n-propylamine	70.00	6.305	6.305	(1.130)	836147	120	120
	16	Hexachloroethane	117.00	6.384	6.384	(1.144)	624005	120	130
*	17	Naphthalene-d8	136.00	7.701	7.701	(1.000)	937816	40	
$	18	Nitrobenzene-d5	82.00	6.506	6.506	(0.845)	1095265	120	120
	19	Nitrobenzene	77.00	6.541	6.541	(0.849)	1109574	120	120
	20	Isophorone	82.00	6.951	6.951	(0.903)	1917058	120	120
	21	2-Nitrophenol	139.00	7.064	7.064	(0.917)	751410	120	130
	22	2,4-Dimethyphenol	107.00	7.195	7.195	(0.934)	1013540	120	120
	23	Bis(2-Chloroethoxy)methane	93.00	7.335	7.335	(0.952)	1149873	120	120
	24	2,4-Dichlorophenol	162.00	7.501	7.501	(0.974)	784331	120	120
	25	1,2,4-Trichlorobenzene	180.00	7.614	7.614	(0.989)	943905	120	120
	26	Naphthalene	128.00	7.745	7.745	(1.006)	3073002	120	120
	27	4-Chloroaniline	127.00	7.867	7.867	(1.022)	1134224	120	120
	28	Hexachlorobutadiene	225.00	7.972	7.972	(1.035)	568129	120	130
	29	4-Chloro-3-methylphenol	107.00	8.827	8.827	(1.146)	828750	120	120

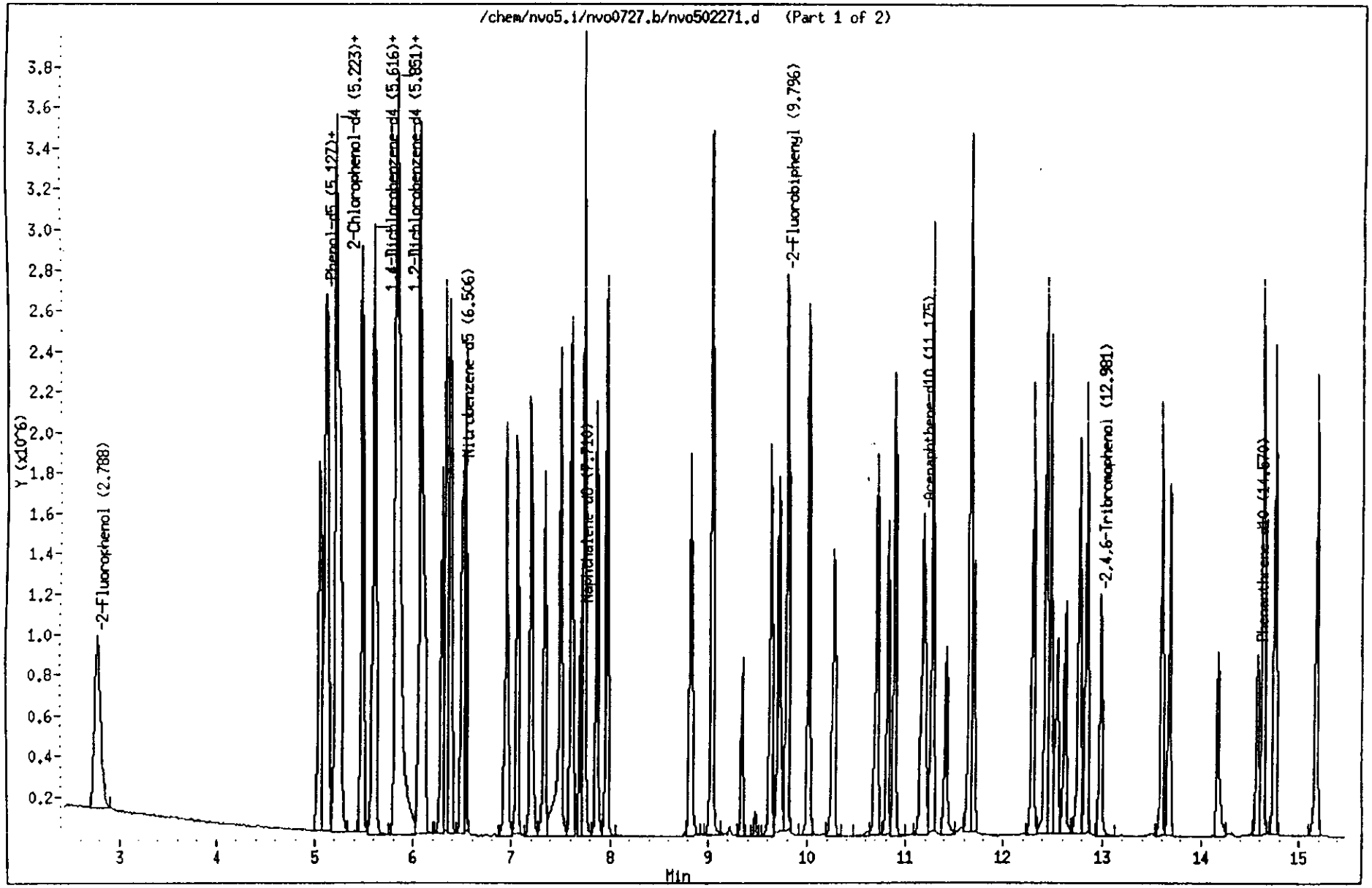
Data File: /chem/nvo5.i/nvo0727.b/nvo502271.d
Report Date: 27-Jul-1994 16:19

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	CONCENTRATIONS ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.045	9.045	(1.175)	1911352	120	120
*	31 Acenaphthene-d10	164.00	11.192	11.192	(1.000)	398158	40	
	32 Hexachlorocyclopentadiene	237.00	9.342	9.342	(0.835)	226187	120	150
	33 2,4,6-Trichlorophenol	196.00	9.630	9.630	(0.860)	500242	120	120
	34 2,4,5-Trichlorophenol	196.00	9.709	9.709	(0.867)	549820	120	120
$	35 2-Fluorobiphenyl	172.00	9.805	9.805	(0.876)	1650676	120	120
	36 2-Chloronaphthalene	162.00	10.014	10.014	(0.895)	1464101	120	120
	37 2-Nitroaniline	65.00	10.267	10.267	(0.917)	508944	120	120
	38 Dimethyl phthalate	163.00	10.704	10.704	(0.956)	1605188	120	110
	39 Acenaphthylene	152.00	10.887	10.887	(0.973)	1880833	120	120
	40 2,6-Dinitrotoluene	165.00	10.817	10.817	(0.966)	391731	120	120
	41 3-Nitroaniline	138.00	10.267	10.267	(0.917)	622376	120	120
	42 Acenaphthene	153.00	11.271	11.271	(1.007)	1444536	120	120
	43 2,4-Dinitrophenol	184.00	11.411	11.411	(1.019)	299691	120	150
	44 4-Nitrophenol	109.00	11.655	11.655	(1.041)	222713	120	130
	45 Dibenzofuran	168.00	11.664	11.664	(1.042)	2061583	120	110
	46 2,4-Dinitrotoluene	165.00	11.699	11.699	(1.045)	533393	120	120
	47 Diethyl phthalate	149.00	12.301	12.301	(1.099)	1638660	120	110
	48 4-Chlorophenyl-phenylether	204.00	12.475	12.475	(1.115)	723909	120	120
	49 Fluorene	166.00	12.432	12.432	(1.111)	1442802	120	110
	50 4-Nitroaniline	138.00	10.267	10.267	(0.917)	622376	120	120
	51 2,4,6-Tribromophenol	330.00	12.981	12.981	(1.160)	262043	120	120
	52 Phenanthrene-d10	188.00	14.570	14.570	(1.000)	616948	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.624	12.624	(0.866)	374381	120	130
	54 N-Nitrosodiphenylamine	169.00	12.772	12.772	(0.877)	924548	120	110
	55 4-Bromophenyl-phenylether	248.00	13.592	13.592	(0.933)	423700	120	110
	56 Hexachlorobenzene	284.00	13.680	13.680	(0.939)	473103	120	110
	57 Pentachlorophenol	266.00	14.168	14.168	(0.972)	226672	120	150
	58 Phenanthrene	178.00	14.631	14.631	(1.004)	2042154	120	110
	59 Anthracene	178.00	14.753	14.753	(1.013)	1739035	120	110
	60 Carbazole	167.00	15.181	15.181	(1.042)	1829440	120	110
	61 Di-n-butylphthalate	149.00	16.149	16.149	(1.108)	2974316	120	110
	62 Fluoranthene	202.00	17.441	17.441	(1.197)	2183864	120	120
*	63 Chrysene-d12	240.00	20.854	20.854	(1.000)	525788	40	
	64 Pyrene	202.00	17.956	17.956	(0.861)	2259946	120	110
$	65 Terphenyl-d14	244.00	18.445	18.445	(0.884)	1546522	120	120
	66 Butylbenzylphthalate	149.00	19.710	19.710	(0.945)	1374795	120	120
	67 3,3'-Dichlorobenzidine	252.00	20.854	20.854	(1.000)	559292	120	120
	68 Benzo(a)anthracene	228.00	20.836	20.836	(0.999)	1910179	120	120
	69 Chrysene	228.00	20.923	20.923	(1.003)	1713215	120	120
	70 bis(2-Ethylhexyl)phthalate	149.00	21.159	21.159	(1.015)	1850867	120	120
*	71 Perylene-d12	264.00	23.987	23.987	(1.000)	530661	40	
	72 Di-n-octylphthalate	149.00	22.643	22.643	(0.944)	2855165	120	110
	73 Benzo(b)fluoranthene	252.00	23.227	23.227	(0.968)	1587003	120	120
	74 Benzo(k)fluoranthene	252.00	23.297	23.297	(0.971)	1567240	120	110
	75 Benzo(a)pyrene	252.00	23.882	23.882	(0.996)	1349333	120	120
	76 Indeno(1,2,3-cd)pyrene	276.00	25.977	25.977	(1.083)	1250978	120	120
	77 Dibenzo(a,h)anthracene	278.00	26.029	26.029	(1.085)	1271438	120	120
	78 Benzo(g,h,i)perylene	276.00	26.465	26.465	(1.103)	1250477	120	120

Data File: /chem/nvo5.i/nvo0727.b/nvo502271.d
Date : 27-JUL-94 15:42
Client ID: SSTD120
Sample Info: SSTD120 120ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

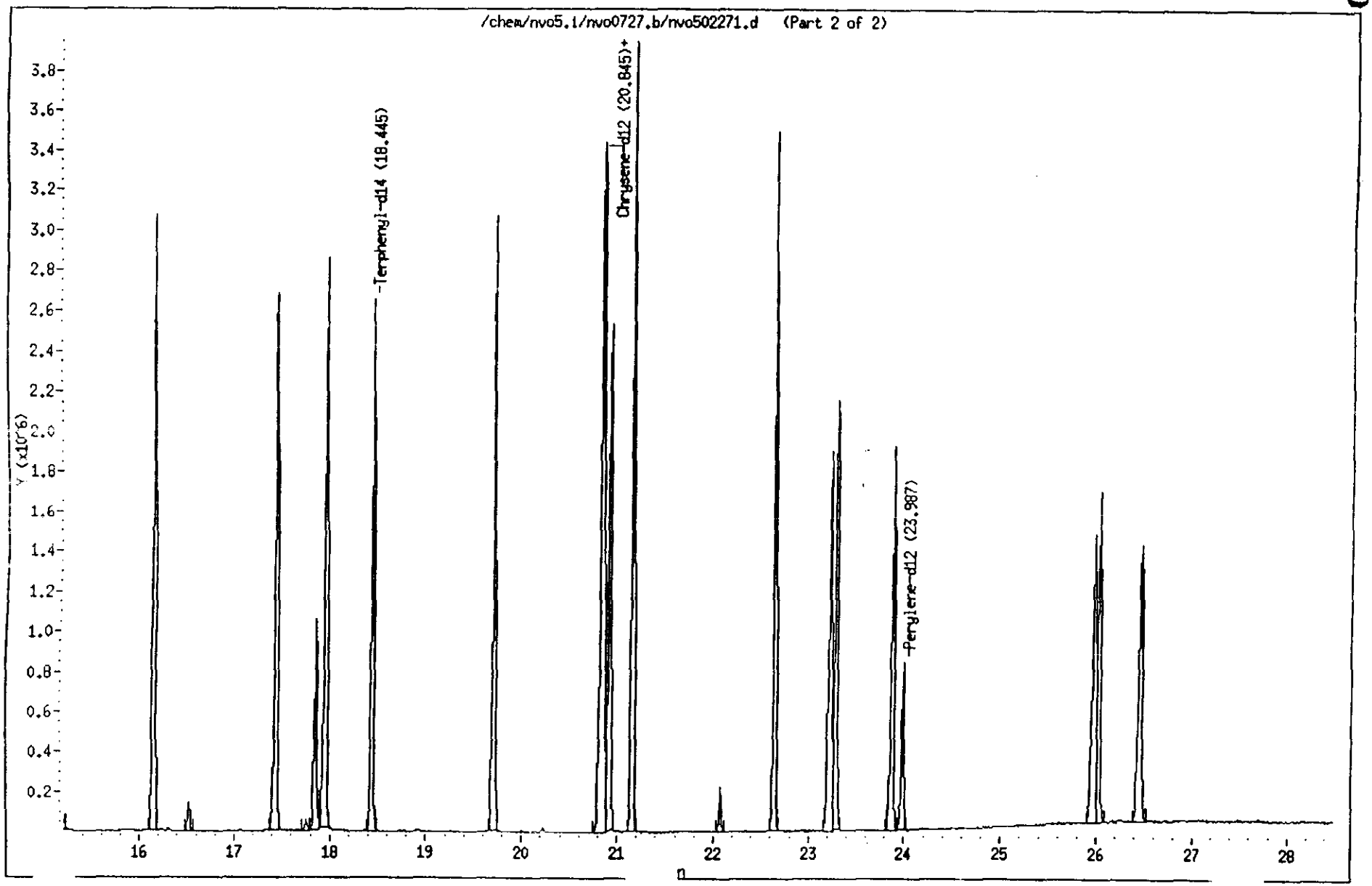


000159

Data File: /chem/nvo5.i/nvo0727.b/nvo502271.d
Date : 27-JUL-94 15:42
Client ID: SSTD120
Sample Info: SSTD120 120ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



000160

Data File: /chem/nvo5.i/nvo0727.b/nvo502272.d
Report Date: 27-Jul-1994 16:56

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0727.b/nvo502272.d
Lab Smp Id: SSTD160 — Client Smp ID: SSTD160
Inj Date : 27-JUL-94 16:19 — Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT — Inst ID: nvo5.i
Smp Info : SSTD160 160ng on col
Misc Info : 80ug/ml CLP STD 1000-7-4
Comment :
Method : /chem/nvo5.i/nvo0727.b/clp390epc.m
Meth Date : 27-Jul-1994 16:56 — Quant Type: ISTD
Cal Date : 27-JUL-94 13:52 — Cal File: nvo502268.d
Als bottle: 6 — Calibration Sample, Level: 5
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 CAL-AMT (ng)	ON-COL (ng)
*	1 1,4-Dichlorobenzene-d4	152.00	5.570	5.570	(1.000)	219670	40	
$	2 2-Fluorophenol	112.00	2.716	2.716	(0.488)	951934	160	140
$	3 Phenol-d5	99.00	5.090	5.090	(0.914)	1269897	160	150
	4 Phenol	94.00	5.117	5.117	(0.919)	1326812	160	150
	5 Bis(2-Chloroethyl)ether	93.00	5.204	5.204	(0.934)	1196857	160	150
$	6 2-Chlorophenol-d4	132.00	5.204	5.204	(0.934)	953632	160	150
	7 2-Chlorophenol	128.00	5.239	5.239	(0.940)	1165741	160	150
	8 1,3-Dichlorobenzene	146.00	5.474	5.474	(0.983)	1258434	160	150
	9 1,4-Dichlorobenzene	146.00	5.597	5.597	(1.005)	1236926	160	150
$	10 1,2-Dichlorobenzene-d4	152.00	5.815	5.815	(1.044)	666216	160	150
	11 1,2-Dichlorobenzene	146.00	5.841	5.841	(1.049)	1140583	160	150
	12 2-Methylphenol	108.00	6.077	6.077	(1.091)	962814	160	150
	13 4-Methylphenol	108.00	6.338	6.338	(1.138)	993551	160	150
	14 2,2'-oxybis(1-Chloropropane)	45.00	6.068	6.068	(1.089)	1036611	160	140
	15 N-Nitroso-di-n-propylamine	70.00	6.295	6.295	(1.130)	763500	160	150
	16 Hexachloroethane	117.00	6.373	6.373	(1.144)	554955	160	150
*	17 Naphthalene-d8	136.00	7.700	7.700	(1.000)	719370	40	
$	18 Nitrobenzene-d5	82.00	6.495	6.495	(0.844)	1016273	160	150
	19 Nitrobenzene	77.00	6.530	6.530	(0.848)	1033381	160	150
	20 Isophorone	82.00	6.941	6.941	(0.901)	1802864	160	150
	21 2-Nitrophenol	139.00	7.054	7.054	(0.916)	686809	160	150
	22 2,4-Dimethyphenol	107.00	7.194	7.194	(0.934)	931053	160	150
	23 Bis(2-Chloroethoxy)methane	93.00	7.333	7.333	(0.952)	1064558	160	150
	24 2,4-Dichlorophenol	162.00	7.490	7.490	(0.973)	734211	160	150
	25 1,2,4-Trichlorobenzene	180.00	7.613	7.613	(0.989)	863556	160	150
	26 Naphthalene	128.00	7.743	7.743	(1.006)	2846522	160	150
	27 4-Chloroaniline	127.00	7.866	7.866	(1.022	1079724	160	160
	28 Hexachlorobutadiene	225.00	7.970	7.970	(1.035	506128	160	150
	29 4-Chloro-3-methylphenol	107.00	8.817	8.817	(1.145	813828	160	160

Data File: /chem/nvo5.i/nvo0727.b/nvo502272.d
Report Date: 27-Jul-1994 16:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.035	9.035	(1.173)	1762750	160	150
*	31 Acenaphthene-d10	164.00	11.191	11.191	(1.000)	309668	40	
	32 Hexachlorocyclopentadiene	237.00	9.341	9.341	(0.835)	205833	160	180(A)
	33 2,4,6-Trichlorophenol	196.00	9.629	9.629	(0.860)	496094	160	150
	34 2,4,5-Trichlorophenol	196.00	9.707	9.707	(0.867)	559622	160	160
$	35 2-Fluorobiphenyl	172.00	9.794	9.794	(0.875)	1578527	160	150
	36 2-Chloronaphthalene	162.00	10.013	10.013	(0.895)	1418005	160	150
	37 2-Nitroaniline	65.00	10.274	10.274	(0.918)	548050	160	160(A)
	38 Dimethyl phthalate	163.00	10.702	10.702	(0.956)	1676202	160	150
	39 Acenaphthylene	152.00	10.885	10.885	(0.973)	1885566	160	150
	40 2,6-Dinitrotoluene	165.00	10.816	10.816	(0.966)	421824	160	160(A)
	41 3-Nitroaniline	138.00	10.274	10.274	(0.918)	660511	160	160(A)
	42 Acenaphthene	153.00	11.269	11.269	(1.007)	1448032	160	150
	43 2,4-Dinitrophenol	184.00	11.409	11.409	(1.019)	337322	160	200(A)
	44 4-Nitrophenol	109.00	11.662	11.662	(1.042)	255362	160	180(A)
	45 Dibenzofuran	168.00	11.662	11.662	(1.042)	2165454	160	150
	46 2,4-Dinitrotoluene	165.00	11.706	11.706	(1.046)	590566	160	170(A)
	47 Diethyl phthalate	149.00	12.299	12.299	(1.099)	1827442	160	160(A)
	48 4-Chlorophenyl-phenylether	204.00	12.474	12.474	(1.115)	778217	160	160
	49 Fluorene	166.00	12.430	12.430	(1.111)	1584592	160	160
	50 4-Nitroaniline	138.00	10.274	10.274	(0.918)	660511	160	160(A)
	51 2,4,6-Tribromophenol	330.00	12.989	12.989	(1.161)	276310	160	160(A)
	52 Phenanthrene-d10	188.00	14.568	14.568	(1.000)	522800	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.631	12.631	(0.867)	425308	160	170(A)
	54 N-Nitrosodiphenylamine	169.00	12.770	12.770	(0.877)	1067413	160	150
	55 4-Bromophenyl-phenylether	248.00	13.600	13.600	(0.933)	471398	160	150
	56 Hexachlorobenzene	284.00	13.678	13.678	(0.939)	519512	160	150
	57 Pentachlorophenol	266.00	14.176	14.176	(0.973)	266666	160	190(A)
	58 Phenanthrene	178.00	14.638	14.638	(1.005)	2276096	160	150
	59 Anthracene	178.00	14.752	14.752	(1.013)	1964653	160	150
	60 Carbazole	167.00	15.188	15.188	(1.043)	2082135	160	150
	61 Di-n-butylphthalate	149.00	16.157	16.157	(1.109)	3419731	160	160
	62 Fluoranthene	202.00	17.440	17.440	(1.197)	2474601	160	160
*	63 Chrysene-d12	240.00	20.852	20.852	(1.000)	427713	40	
	64 Pyrene	202.00	17.963	17.963	(0.861)	2535310	160	160
$	65 Terphenyl-d14	244.00	18.443	18.443	(0.884)	1728997	160	160
	66 Butylbenzylphthalate	149.00	19.717	19.717	(0.946)	1506873	160	160
	67 3,3'-Dichlorobenzidine	252.00	20.852	20.852	(1.000)	573454	160	150
	68 Benzo(a)anthracene	228.00	20.835	20.835	(0.999)	2038221	160	160
	69 Chrysene	228.00	20.922	20.922	(1.003)	1816425	160	150
	70 bis(2-Ethylhexyl)phthalate	149.00	21.157	21.157	(1.015)	1965144	160	150
*	71 Perylene-d12	264.00	23.976	23.976	(1.000)	380766	40	
	72 Di-n-octylphthalate	149.00	22.641	22.641	(0.944)	2862879	160	160
	73 Benzo(b)fluoranthene	252.00	23.226	23.226	(0.969)	1517664	160	160
	74 Benzo(k)fluoranthene	252.00	23.296	23.296	(0.972)	1536717	160	160
	75 Benzo(a)pyrene	252.00	23.880	23.880	(0.996)	1278724	160	160
	76 Indeno(1,2,3-cd)pyrene	276.00	25.975	25.975	(1.083)	1192565	160	160(A)
	77 Dibenzo(a,h)anthracene	278.00	26.027	26.027	(1.086)	1203901	160	160
	78 Benzo(g,h,i)perylene	276.00	26.464	26.464	(1.104)	1211506	160	160

Data File: /chem/nvo5.i/nvo0727.b/nvo502272.d
Report Date: 27-Jul-1994 16:56

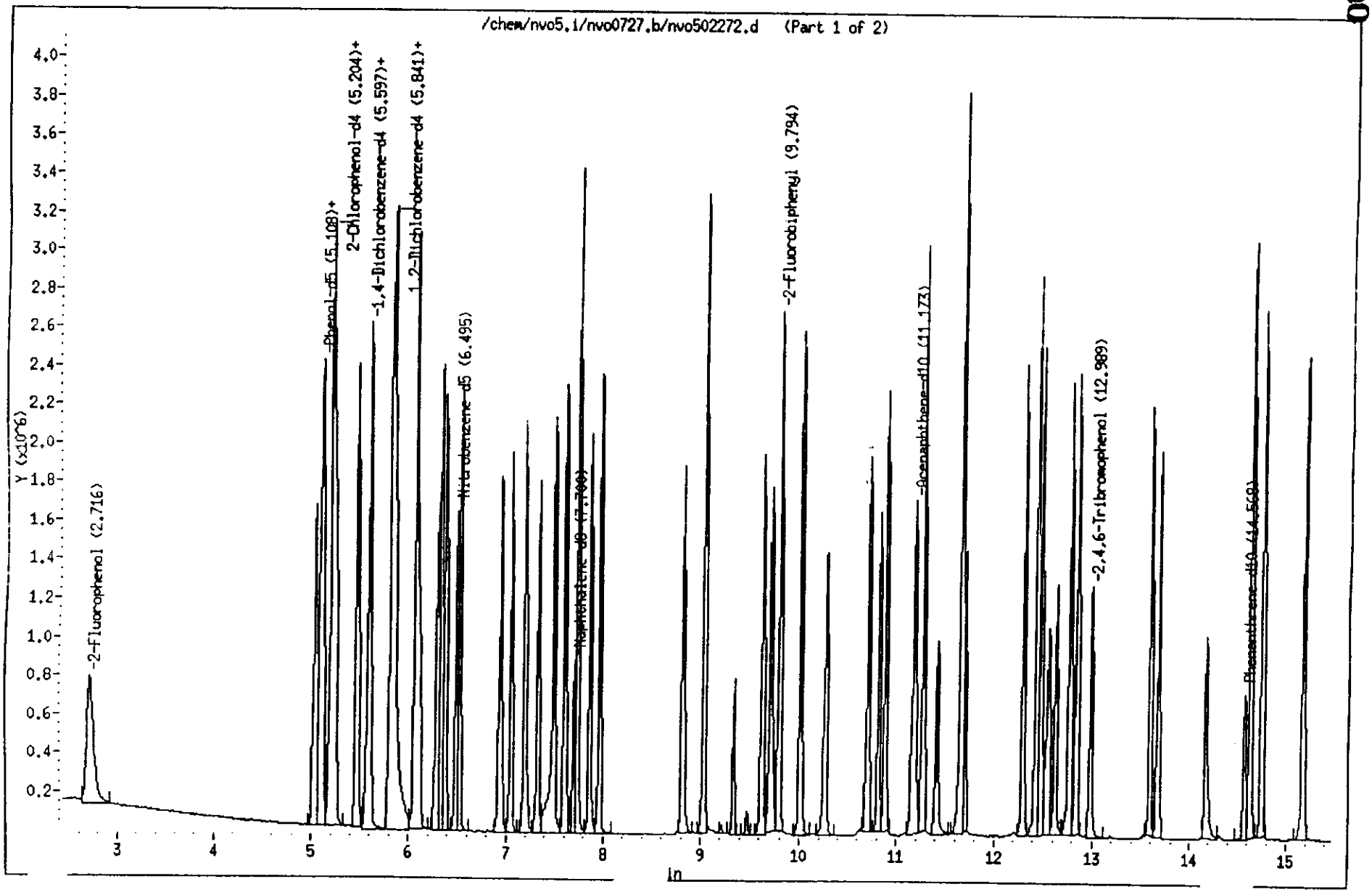
QC Flag Legend

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

Data File: /chem/nvo5.i/nvo0727.b/nvo502272.d
Date : 27-JUL-94 16:19
Client ID: SSTD160
Sample Info: SSTD160 160ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

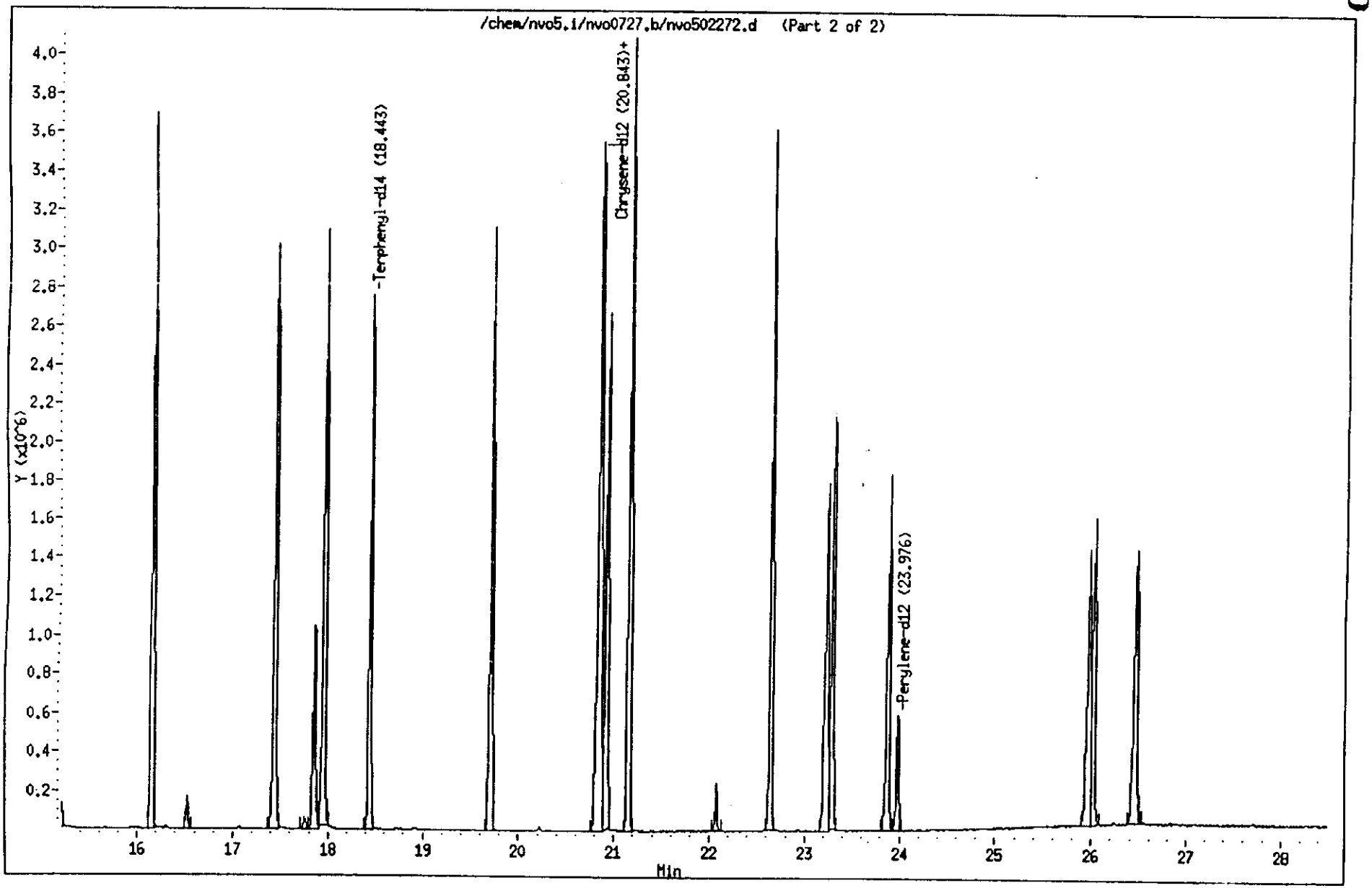


000164

Data File: /chem/nvo5.i/nvo0727.b/nvo502272.d
Date : 27-JUL-94 16:19
Client ID: SSTD160
Sample Info: SSTD160 160ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



000165

7B

SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Instrument ID: NVO5 Calibration Date: 07/28/94 Time: 0934

Lab File ID: NVO502274.D Init. Calibration Date(s): 07/27/94

Init. Calibration Times: 1352 1619

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Phenol	1.606	1.688	0.800	-5.1	25.0
Bis(2-Chloroethyl)ether	1.457	1.538	0.700	-5.6	25.0
2-Chlorophenol	1.411	1.457	0.800	-3.3	25.0
1,3-Dichlorobenzene	1.524	1.664	0.600	-9.2	25.0
1,4-Dichlorobenzene	1.502	1.616	0.500	-7.6	25.0
1,2-Dichlorobenzene	1.385	1.497	0.400	-8.1	25.0
2-Methylphenol	1.166	1.248	0.700	-7.1	25.0
2,2'-oxybis(1-Chloropropane)	1.310	1.407		-7.4	
4-Methylphenol	1.184	1.229	0.600	-3.8	25.0
N-Nitroso-di-n-propylamine	0.918	0.981	0.500	-6.8	25.0
Hexachloroethane	0.662	0.728	0.300	-10.1	25.0
Nitrobenzene	0.381	0.417	0.200	-9.4	25.0
Isophorone	0.659	0.748	0.400	-13.4	25.0
2-Nitrophenol	0.250	0.258	0.100	-3.5	25.0
2,4-Dimethyphenol	0.341	0.364	0.200	-6.5	25.0
Bis(2-Chloroethoxy)methane	0.391	0.422	0.300	-8.1	25.0
2,4-Dichlorophenol	0.266	0.283	0.200	-6.6	25.0
1,2,4-Trichlorobenzene	0.318	0.337	0.200	-6.0	25.0
Naphthalene	1.054	1.145	0.700	-8.6	25.0
4-Chloroaniline	0.382	0.405		-5.9	
Hexachlorobutadiene	0.187	0.196		-5.1	
4-Chloro-3-methylphenol	0.285	0.306	0.200	-7.3	25.0
2-Methylnaphthalene	0.655	0.723	0.400	-10.3	25.0
Hexachlorocyclopentadiene	0.151	0.158		-4.9	
2,4,6-Trichlorophenol	0.415	0.434	0.200	-4.4	25.0
2,4,5-Trichlorophenol	0.459	0.496	0.200	-8.1	25.0
2-Chloronaphthalene	1.215	1.286	0.800	-5.8	25.0
2-Nitroaniline	0.434	0.491		-13.1	
Dimethyl phthalate	1.406	1.569		-11.6	
Acenaphthylene	1.579	1.700	1.300	-7.7	25.0
2,6-Dinitrotoluene	0.335	0.363	0.200	-8.2	25.0
3-Nitroaniline	0.521	0.547		-5.0	
Acenaphthene	1.219	1.314	0.800	-7.8	25.0
2,4-Dinitrophenol	0.215	0.225		-4.6	
4-Nitrophenol	0.180	0.194		-7.5	
Dibenzofuran	1.807	1.978	0.800	-9.5	25.0
2,4-Dinitrotoluene	0.457	0.500	0.200	-9.4	25.0

All other compounds must meet a minimum RRF of 0.010.

7C
SEMIVOLATILE CONTINUING CALIBRATION CHECK

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Instrument ID: NV05 Calibration Date: 07/28/94 Time: 0934

Lab File ID: NV0502274.D Init. Calibration Date(s): 07/27/94

Init. Calibration Times: 1352 1619

COMPOUND	$\overline{RRF}$	RRF50	MIN RRF	%D	MAX %D
Diethyl phthalate	1.469	1.625		-10.6	
4-Chlorophenyl-phenylether	0.631	0.680	0.400	-7.8	25.0
Fluorene	1.282	1.401	0.900	-9.2	25.0
4-Nitroaniline	0.521	0.547		-5.0	
4,6-Dinitro-2-methylphenol	0.189	0.210		-10.9	
N-Nitrosodiphenylamine (1)	0.532	0.596		-12.0	
4-Bromophenyl-phenylether	0.241	0.265	0.100	-10.3	25.0
Hexachlorobenzene	0.265	0.291	0.100	-9.8	25.0
Pentachlorophenol	0.117	0.113	0.050	4.1	25.0
Phenanthrene	1.164	1.290	0.700	-10.8	25.0
Anthracene	0.995	1.114	0.700	-12.0	25.0
Carbazole	1.029	1.157		-12.4	
Di-n-butylphthalate	1.681	1.869		-11.2	
Fluoranthene	1.205	1.367	0.600	-13.5	25.0
Pyrene	1.509	1.542	0.600	-2.2	25.0
Butylbenzylphthalate	0.893	0.959		-7.4	
3,3'-Dichlorobenzidine	0.351	0.394		-12.5	
Benzo(a)anthracene	1.226	1.317	0.800	-7.4	25.0
Chrysene	1.107	1.241	0.700	-12.1	25.0
bis(2-Ethylhexyl)phthalate	1.196	1.322		-10.5	
Di-n-octylphthalate	1.891	2.251		-19.0	
Benzo(b)fluoranthene	1.022	1.176	0.700	-15.1	25.0
Benzo(k)fluoranthene	1.034	1.191	0.700	-15.2	25.0
Benzo(a)pyrene	0.864	0.964	0.700	-11.5	25.0
Indeno(1,2,3-cd)pyrene	0.776	0.761	0.500	1.9	25.0
Dibenzo(a,h)anthracene	0.793	0.803	0.400	-1.3	25.0
Benzo(g,h,i)perylene	0.798	0.772	0.500	3.3	25.0
Nitrobenzene-d5	0.372	0.401	0.200	-7.9	25.0
2-Fluorobiphenyl	1.362	1.461	0.700	-7.3	25.0
Terphenyl-d14	1.020	1.033	0.500	-1.2	25.0
Phenol-d5	1.535	1.593	0.800	-3.8	25.0
2-Fluorophenol	1.193	1.416	0.600	-18.7	25.0
2,4,6-Tribromophenol	0.216	0.225		-4.4	
2-Chlorophenol-d4	1.147	1.209	0.800	-5.4	25.0
1,2-Dichlorobenzene-d4	0.811	0.865	0.400	-6.7	25.0

(1) Cannot be separated from Diphenylamine
All other compounds must meet a minimum RRF of 0.010.

Data File: /chem/nvo5.i/nvo0728.b/nvo502274.d
Report Date: 28-Jul-1994 10:42

Environmental Science and Engineering

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nvo5.i
Lab File ID: nvo502274.d
Analysis Type: WATER
Lab Sample ID: SSTD50
Quant Type: ISTD

Injection Date: 28-JUL-94 09:34
Init. Calibration Date(s): 07/27/94 07/27/94
Init. Calibration Times: 13:52 16:19
Method File: /chem/nvo5.i/nvo0728.b/clp390epc.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
$	2 2-Fluorophenol	1.193	1.416	0.600	18.7	25.0
$	3 Phenol-d5	1.535	1.593	0.800	3.8	25.0
	4 Phenol	1.606	1.688	0.800	5.1	25.0
	5 Bis(2-Chloroethyl)ether	1.457	1.538	0.700	5.6	25.0
$	6 2-Chlorophenol-d4	1.147	1.209	0.800	5.4	25.0
	7 2-Chlorophenol	1.411	1.457	0.800	3.3	25.0
	8 1,3-Dichlorobenzene	1.524	1.664	0.600	9.2	25.0
	9 1,4-Dichlorobenzene	1.502	1.616	0.500	7.6	25.0
$	10 1,2-Dichlorobenzene-d4	0.811	0.865	0.400	6.7	25.0
	11 1,2-Dichlorobenzene	1.385	1.497	0.400	8.1	25.0
	12 2-Methylphenol	1.166	1.248	0.700	7.1	25.0
	13 4-Methylphenol	1.184	1.229	0.600	3.8	25.0
	14 2,2'-oxybis(1-Chloropropane)	1.310	1.407	0.010	7.4	
	15 N-Nitroso-di-n-propylamine	0.918	0.981	0.500	6.8	25.0
	16 Hexachloroethane	0.662	0.728	0.300	10.1	25.0
$	18 Nitrobenzene-d5	0.372	0.401	0.200	7.9	25.0
	19 Nitrobenzene	0.381	0.417	0.200	9.4	25.0
	20 Isophorone	0.659	0.748	0.400	13.4	25.0
	21 2-Nitrophenol	0.250	0.258	0.100	3.5	25.0
	22 2,4-Dimethyphenol	0.341	0.364	0.200	6.5	25.0
	23 Bis(2-Chloroethoxy)methane	0.391	0.422	0.300	8.1	25.0
	24 2,4-Dichlorophenol	0.266	0.283	0.200	6.6	25.0
	25 1,2,4-Trichlorobenzene	0.318	0.337	0.200	6.0	25.0
	26 Naphthalene	1.054	1.145	0.700	8.6	25.0
	27 4-Chloroaniline	0.382	0.405	0.010	5.9	
	28 Hexachlorobutadiene	0.187	0.196	0.010	5.1	
	29 4-Chloro-3-methylphenol	0.285	0.306	0.200	7.3	25.0
	30 2-Methylnaphthalene	0.655	0.723	0.400	10.3	25.0
	32 Hexachlorocyclopentadiene	0.151	0.158	0.010	4.9	
	33 2,4,6-Trichlorophenol	0.415	0.434	0.200	4.4	25.0
	34 2,4,5-Trichlorophenol	0.459	0.496	0.200	8.1	25.0
$	35 2-Fluorobiphenyl	1.362	1.461	0.700	7.3	25.0
	36 2-Chloronaphthalene	1.215	1.286	0.800	5.8	25.0
	37 2-Nitroaniline	0.434	0.491	0.010	13.1	
	38 Dimethyl phthalate	1.406	1.569	0.010	11.6	
	39 Acenaphthylene	1.579	1.700	1.300	7.7	25.0
	40 2,6-Dinitrotoluene	0.335	0.363	0.200	8.2	25.0
	41 3-Nitroaniline	0.521	0.547	0.010	5.0	
	42 Acenaphthene	1.219	1.314	0.800	7.8	25.0
	43 2,4-Dinitrophenol	0.215	0.225	0.010	4.6	

Data File: /chem/nvo5.i/nvo0728.b/nvo502274.d
Report Date: 28-Jul-1994 10:42

Environmental Science and Engineering

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: nvo5.i
Lab File ID: nvo502274.d
Analysis Type: WATER
Lab Sample ID: SSTD50
Quant Type: ISTD

Injection Date: 28-JUL-94 09:34
Init. Calibration Date(s): 07/27/94 07/27/94
Init. Calibration Times: 13:52 16:19
Method File: /chem/nvo5.i/nvo0728.b/clp390epc.m

	COMPOUND	RRF	RF50	MIN RRF	%D	MAX %D
	44 4-Nitrophenol	0.180	0.194	0.010	7.5	
	45 Dibenzofuran	1.807	1.978	0.800	9.5	25.0
	46 2,4-Dinitrotoluene	0.457	0.500	0.200	9.4	25.0
	47 Diethyl phthalate	1.469	1.625	0.010	10.6	
	48 4-Chlorophenyl-phenylether	0.631	0.680	0.400	7.8	25.0
	49 Fluorene	1.282	1.401	0.900	9.2	25.0
	50 4-Nitroaniline	0.521	0.547	0.010	5.0	
$	51 2,4,6-Tribromophenol	0.216	0.225	0.010	4.4	
	53 4,6-Dinitro-2-methylphenol	0.189	0.210	0.010	10.9	
	54 N-Nitrosodiphenylamine	0.532	0.596	0.010	12.0	
	55 4-Bromophenyl-phenylether	0.241	0.265	0.100	10.3	25.0
	56 Hexachlorobenzene	0.265	0.291	0.100	9.8	25.0
	57 Pentachlorophenol	0.117	0.113	0.050	4.1	25.0
	58 Phenanthrene	1.364	1.290	0.700	10.8	25.0
	59 Anthracene	0.995	1.114	0.700	12.0	25.0
	60 Carbazole	1.029	1.157	0.010	12.4	
	61 Di-n-butylphthalate	1.681	1.869	0.010	11.2	
	62 Fluoranthene	1.205	1.367	0.600	13.5	25.0
	64 Pyrene	1.509	1.542	0.600	2.2	25.0
$	65 Terphenyl-d14	1.020	1.033	0.500	1.2	25.0
	66 Butylbenzylphthalate	0.893	0.959	0.010	7.4	
	67 3,3'-Dichlorobenzidine	0.351	0.394	0.010	12.5	
	68 Benzo(a)anthracene	1.226	1.317	0.800	7.4	25.0
	69 Chrysene	1.107	1.241	0.700	12.1	25.0
	70 bis(2-Ethylhexyl)phthalate	1.196	1.322	0.010	10.5	
	72 Di-n-octylphthalate	1.891	2.251	0.010	19.0	
	73 Benzo(b)fluoranthene	1.022	1.176	0.700	15.1	25.0
	74 Benzo(k)fluoranthene	1.034	1.191	0.700	15.2	25.0
	75 Benzo(a)pyrene	0.864	0.964	0.700	11.5	25.0
	76 Indeno(1,2,3-cd)pyrene	0.776	0.761	0.500	1.9	25.0
	77 Dibenzo(a,h)anthracene	0.793	0.803	0.400	1.3	25.0
	78 Benzo(g,h,i)perylene	0.798	0.772	0.500	3.3	25.0

Data File: /chem/nvo5.i/nvc0728.b/nvo502274.d
Report Date: 28-Jul-1994 10:42

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

Data file : /chem/nvo5.i/nvo0728.b/nvo502274.d
Lab Smp Id: SSTD50 Client Smp ID: SSTD50
Inj Date : 28-JUL-94 09:34 Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT Inst ID: nvo5.i
Smp Info : SSTD50 50ng on col
Misc Info : 25ug/ml CLP STD 1000-8-1
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42 Quant Type: ISTD
Cal Date : 28-JUL-94 09:34 Cal File: nvo502274.d
Als bottle: 2 Continuing Calibration Sample
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 CAL-AMT (ng)	ON-COL (ng)
* 1	1,4-Dichlorobenzene-d4	152.00	5.579	5.579	(1.000)	269907	40	
$ 2	2-Fluorophenol	112.00	2.786	2.786	(0.499)	477642	50	59
3	Phenol-d5	99.00	5.090	5.090	(0.912)	537569	50	52
4	Phenol	94.00	5.107	5.107	(0.916)	569575	50	52
5	Bis(2-Chloroethyl)ether	93.00	5.203	5.203	(0.933)	518915	50	53
$ 6	2-Chlorophenol-d4	132.00	5.212	5.212	(0.934)	408015	50	53
7	2-Chlorophenol	128.00	5.247	5.247	(0.941)	491408	50	52
8	1,3-Dichlorobenzene	146.00	5.483	5.483	(0.983)	561358	50	54
9	1,4-Dichlorobenzene	146.00	5.605	5.605	(1.005)	545258	50	54
$ 10	1,2-Dichlorobenzene-d4	152.00	5.814	5.814	(1.042)	291980	50	53
11	1,2-Dichlorobenzene	146.00	5.840	5.840	(1.047)	505144	50	54
12	2-Methylphenol	108.00	6.076	6.076	(1.089)	421211	50	54
13	4-Methylphenol	108.00	6.329	6.329	(1.135)	414646	50	52
14	2,2'-oxybis(1-Chloropropane)	45.00	6.067	6.067	(1.088)	474578	50	54
15	N-Nitroso-di-n-propylamine	70.00	6.277	6.277	(1.125)	330982	50	53
16	Hexachloroethane	117.00	6.382	6.382	(1.144)	245685	50	55
* 17	Naphthalene-d8	136.00	7.699	7.699	(1.000)	837676	40	
$ 18	Nitrobenzene-d5	82.00	6.486	6.486	(0.842)	419794	50	54
19	Nitrobenzene	77.00	6.521	6.521	(0.847)	436399	50	55
20	Isophorone	82.00	6.931	6.931	(0.900)	782983	50	57
21	2-Nitrophenol	139.00	7.054	7.054	(0.916)	270488	50	52
22	2,4-Dimethyphenol	107.00	7.184	7.184	(0.933)	380672	50	53
23	Bis(2-Chloroethoxy)methane	93.00	7.324	7.324	(0.951)	441917	50	54
24	2,4-Dichlorophenol	162.00	7.490	7.490	(0.973)	296506	50	53
25	1,2,4-Trichlorobenzene	180.00	7.603	7.603	(0.988)	353019	50	53
26	Naphthalene	128.00	7.734	7.734	(1.005)	1198413	50	54
27	4-Chloroaniline	127.00	7.856	7.856	(1.020)	423872	50	53
28	Hexachlorobutadiene	225.00	7.970	7.970	(1.035)	205728	50	52
29	4-Chloro-3-methylphenol	107.00	8.816	8.816	(1.145)	320364	50	54

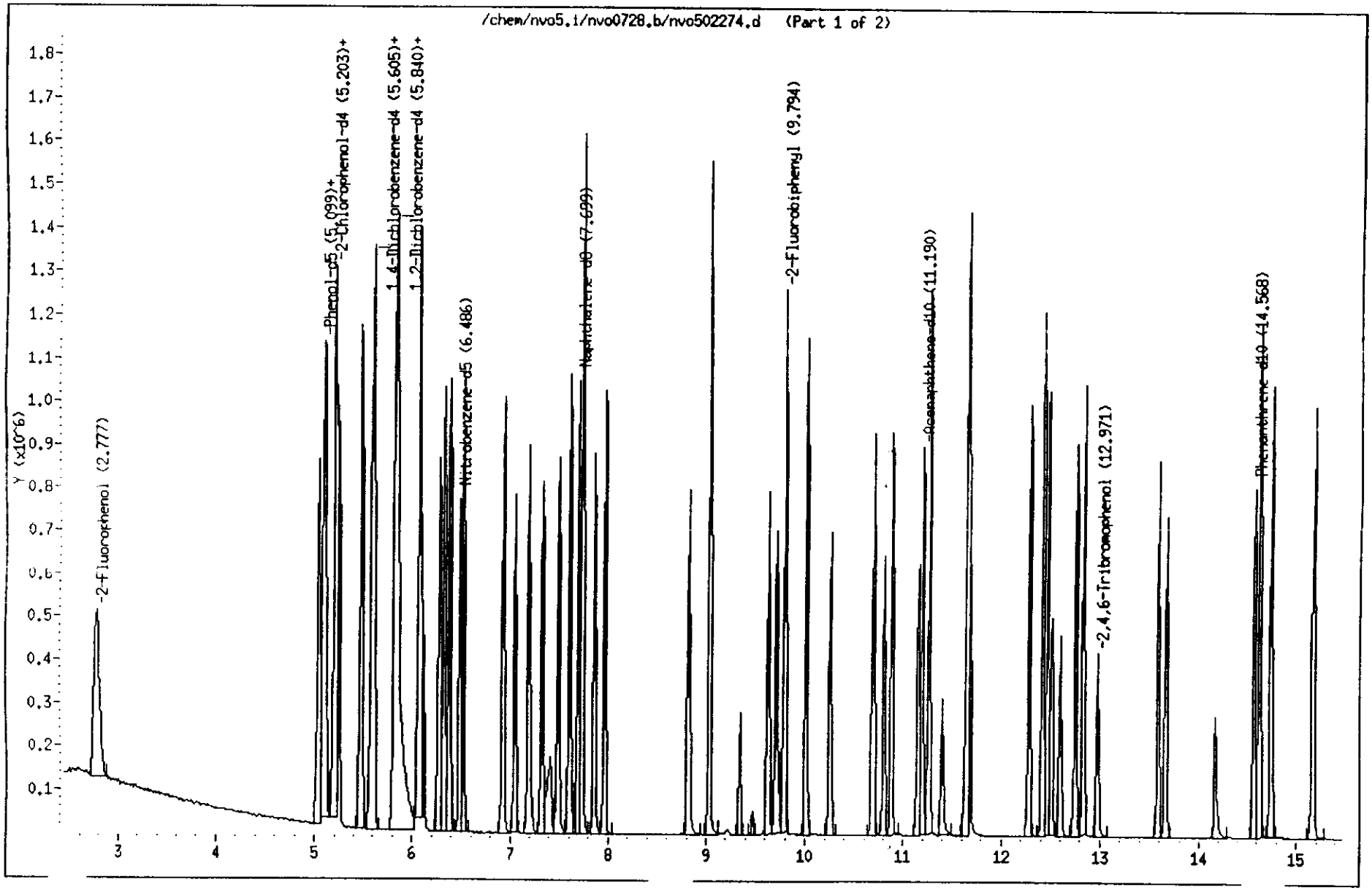
Data File: /chem/nvo5.i/nvo0728.b/nvo502274.d
Report Date: 28-Jul-1994 10:42

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS CAL-AMT (ng)	CONCENTRATIONS ON-COL (ng)
	30 2-Methylnaphthalene	142.00	9.035	9.035	(1.173)	756538	50	55
*	31 Acenaphthene-d10	164.00	11.190	11.190	(1.000)	347807	40	
	32 Hexachlorocyclopentadiene	237.00	9.340	9.340	(0.835)	68655	50	52
	33 2,4,6-Trichlorophenol	196.00	9.628	9.628	(0.860)	188478	50	52
	34 2,4,5-Trichlorophenol	196.00	9.707	9.707	(0.867)	215574	50	54
$	35 2-Fluorobiphenyl	172.00	9.794	9.794	(0.875)	635364	50	54
	36 2-Chloronaphthalene	162.00	10.012	10.012	(0.895)	559122	50	53
	37 2-Nitroaniline	65.00	10.257	10.257	(0.917)	213548	50	56
	38 Dimethyl phthalate	163.00	10.693	10.693	(0.956)	682104	50	56
	39 Acenaphthylene	152.00	10.876	10.876	(0.972)	738954	50	54
	40 2,6-Dinitrotoluene	165.00	10.806	10.806	(0.966)	157666	50	54
	41 3-Nitroaniline	138.00	10.257	10.257	(0.917)	237887	50	52
	42 Acenaphthene	153.00	11.269	11.269	(1.007)	571480	50	54
	43 2,4-Dinitrophenol	184.00	11.400	11.400	(1.019)	97922	50	52
	44 4-Nitrophenol	109.00	11.635	11.635	(1.040)	84163	50	54
	45 Dibenzofuran	168.00	11.653	11.653	(1.041)	859927	50	55
	46 2,4-Dinitrotoluene	165.00	11.679	11.679	(1.044)	217390	50	55
	47 Diethyl phthalate	149.00	12.281	12.281	(1.097)	706509	50	55
	48 4-Chlorophenyl-phenylether	204.00	12.473	12.473	(1.115)	295465	50	54
	49 Fluorene	166.00	12.421	12.421	(1.110)	608906	50	55
	50 4-Nitroaniline	138.00	10.257	10.257	(0.917)	237887	50	52
$	51 2,4,6-Tribromophenol	330.00	12.979	12.979	(1.160)	97921	50	52
*	52 Phenanthrene-d10	188.00	14.568	14.568	(1.000)	514714	40	
	53 4,6-Dinitro-2-methylphenol	198.00	12.595	12.595	(0.865)	134902	50	55
	54 N-Nitrosodiphenylamine	169.00	12.753	12.753	(0.875)	383758	50	56
	55 4-Bromophenyl-phenylether	248.00	13.590	13.590	(0.933)	170742	50	55
	56 Hexachlorobenzene	284.00	13.669	13.669	(0.938)	187315	50	55
	57 Pentachlorophenol	266.00	14.166	14.166	(0.972)	72403	50	48
	58 Phenanthrene	178.00	14.620	14.620	(1.004)	829681	50	55
	59 Anthracene	178.00	14.742	14.742	(1.012)	717013	50	56
	60 Carbazole	167.00	15.170	15.170	(1.041)	744110	50	56
	61 Di-n-butylphthalate	149.00	16.148	16.148	(1.108)	1202613	50	56
	62 Fluoranthene	202.00	17.430	17.430	(1.196)	879719	50	57
*	63 Chrysene-d12	240.00	20.852	20.852	(1.000)	472840	40	
	64 Pyrene	202.00	17.945	17.945	(0.861)	911322	50	51
$	65 Terphenyl-d14	244.00	18.434	18.434	(0.884)	610385	50	51
	66 Butylbenzylphthalate	149.00	19.708	19.708	(0.945)	566850	50	54
	67 3,3'-Dichlorobenzidine	252.00	20.843	20.843	(1.000)	233036	50	56
	68 Benzo(a)anthracene	228.00	20.825	20.825	(0.999)	778201	50	54
	69 Chrysene	228.00	20.904	20.904	(1.002)	733758	50	56
	70 bis(2-Ethylhexyl)phthalate	149.00	21.157	21.157	(1.015)	781582	50	55
*	71 Perylene-d12	264.00	23.985	23.985	(1.000)	446797	40	
	72 Di-n-octylphthalate	149.00	22.632	22.632	(0.944)	1256989	50	59
	73 Benzo(b)fluoranthene	252.00	23.217	23.217	(0.968)	656837	50	58
	74 Benzo(k)fluoranthene	252.00	23.278	23.278	(0.971)	665248	50	58
	75 Benzo(a)pyrene	252.00	23.871	23.871	(0.995)	538284	50	56
	76 Indeno(1,2,3-cd)pyrene	276.00	25.957	25.957	(1.082)	425028	50	49
	77 Dibenzo(a,h)anthracene	278.00	26.009	26.009	(1.084)	448502	50	51
	78 Benzo(g,h,i)perylene	276.00	26.446	26.446	(1.103)	430898	50	48

Data File: /chem/nvo5.i/nvo0728.b/nvo502274.d
Date : 28-JUL-94 09:34
Client ID: SSTD50
Sample Info: SSTD50 50ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

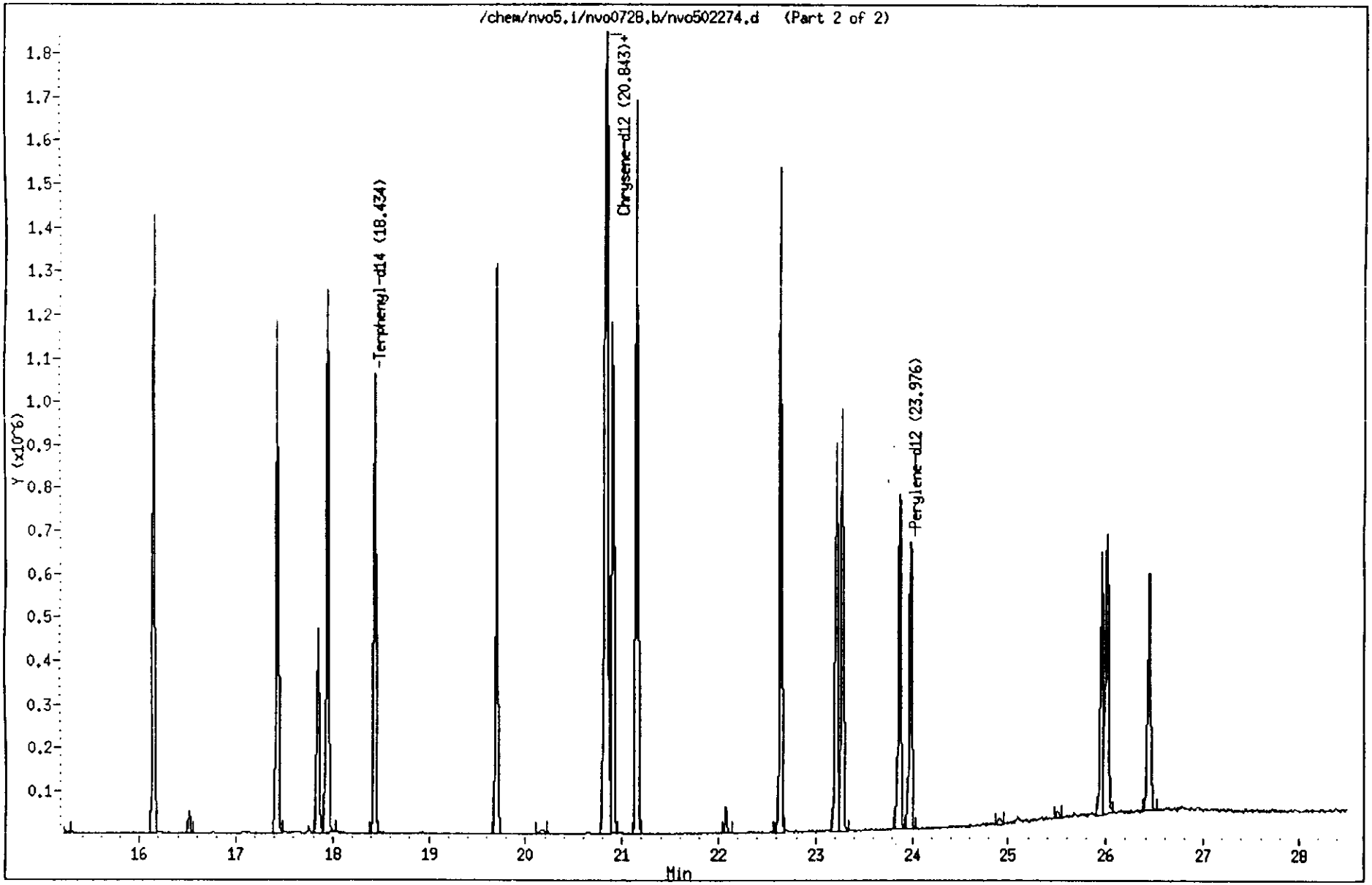


0001172

Data File: /chem/nvo5.i/nvo0728.b/nvo502274.d
Date : 28-JUL-94 09:34
Client ID: SSTD50
Sample Info: SSTD50 50ng on col
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



Raw QC Data

Data File: /chem/nvo5.i/nvo0727.b/nvo502267.d

Date : 27-JUL-94 13:29

Client ID: DFTPP

Instrument: nvo5.i

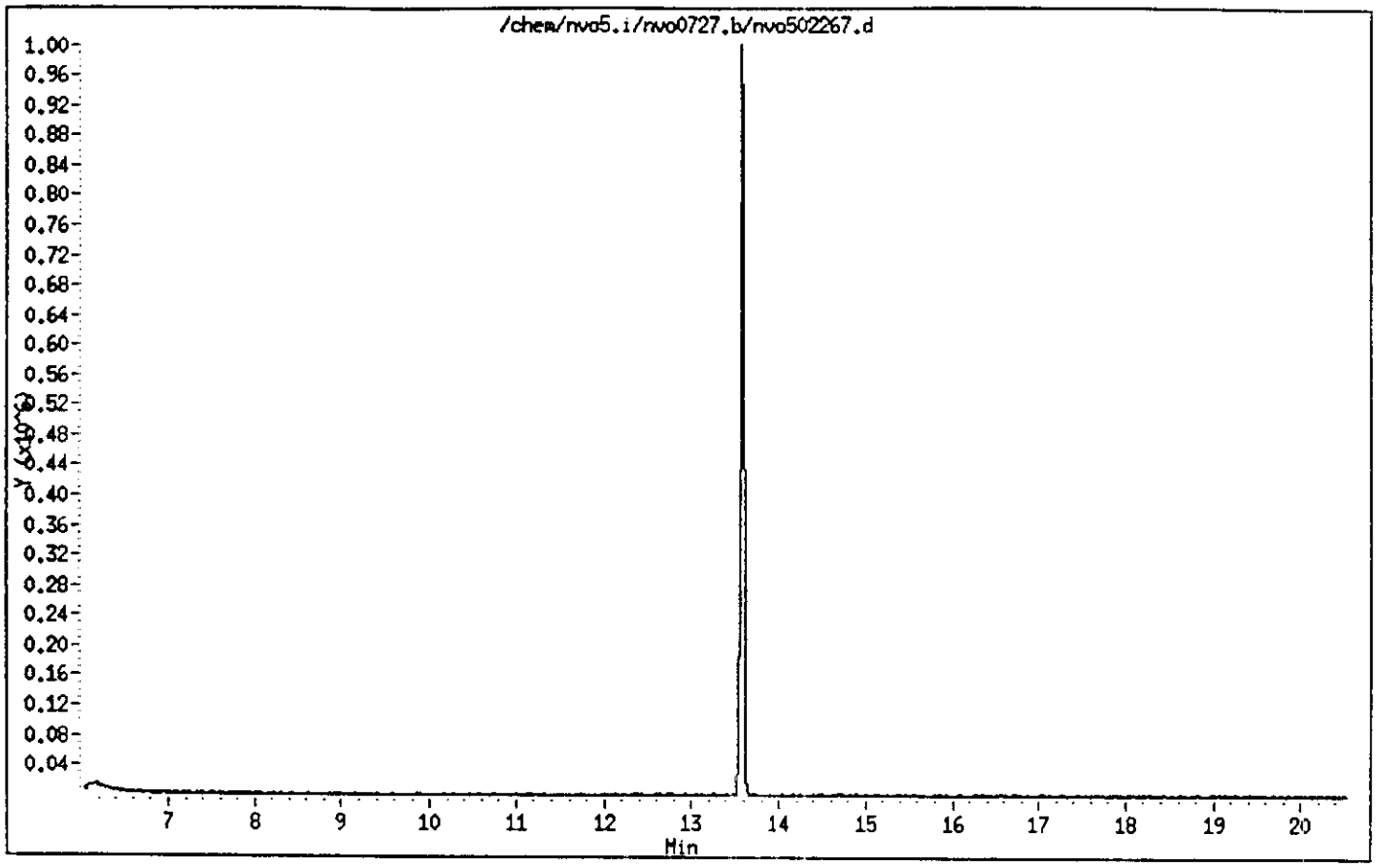
Sample Info: DFTPP

Volume Injected (uL): 2.0

Operator: WAV/AT

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/nvo5.i/nvo0727.b/nvo502267.d

Date : 27-JUL-94 13:29

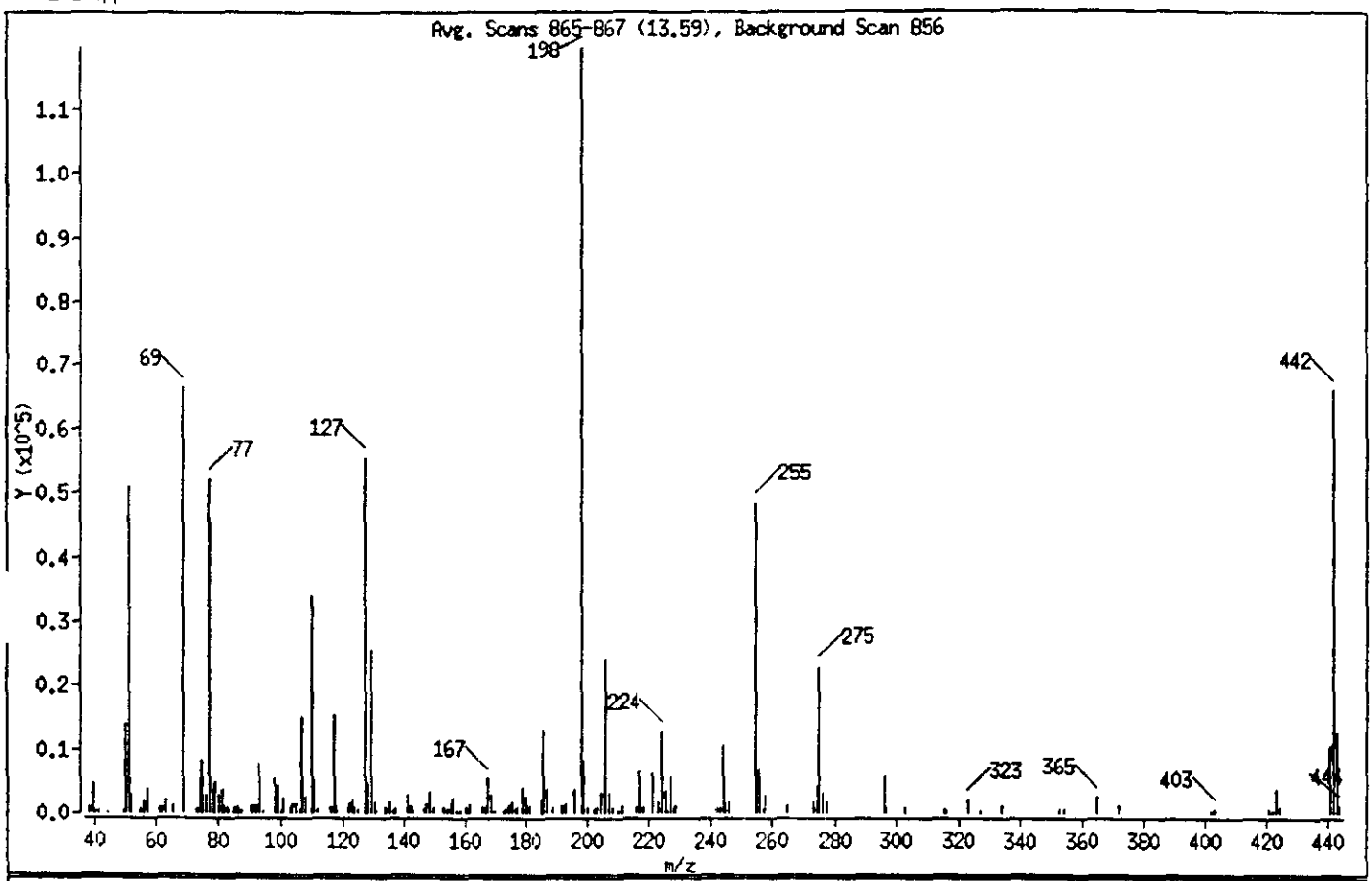
Client ID: DFTPP | Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5 | Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	42.50
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	55.53
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	46.36
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	6.87
275	10.00 - 30.00% of mass 198	19.11
365	Greater than 0.75% of mass 198	2.06
441	Present, but less than mass 443	8.64
442	40.00 - 110.00% of mass 198	55.37
443	15.00 - 24.00% of mass 442	10.61 (19.15)

Data File: /chem/nvo5.i/nvo0727.b/nvo502267.d

Date : 27-JUL-94 13:29

Client ID: DFTPP | Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5 | Column diameter: 0.25

Data File: nvo502267.d

Spectrum : Avg. Scans 865-867 (13.59), Background Scan 856

Largest m/z: 198.00

Number of peaks: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.00	926	105.00	1484	168.00	2848	242.05	760
39.10	4603	106.10	594	169.00	392	243.05	903
40.00	168	106.95	15057	171.95	369	244.00	10492
41.10	202	107.95	2564	172.95	673	245.00	1488
44.05	17	109.95	33888	174.05	1101	246.00	1831
49.15	221	110.95	5125	175.05	1800	254.95	48352
50.05	13964	111.95	663	176.05	666	255.95	6830
51.00	50832	116.00	808	176.95	813	257.15	465
52.00	2783	117.00	15358	178.95	3822	257.95	2779
55.00	568	118.00	1230	180.00	2534	265.00	1141
56.00	1776	122.00	1299	181.00	1149	272.95	1582
57.00	3679	122.95	1924	185.00	1948	274.05	4143
60.95	749	123.85	858	186.00	13019	275.05	22864
62.05	846	125.05	557	187.10	3545	276.00	3012
63.05	2017	127.05	55448	188.95	964	277.00	1806
65.05	1072	128.05	4631	191.95	1151	296.00	5599
69.00	66416	129.05	25424	193.05	1294	297.00	921
73.10	511	130.05	1834	196.00	3571	302.95	735
74.10	5400	130.95	191	198.00	119616	315.00	704
74.95	8080	134.00	723	199.00	8217	315.95	187
76.05	2902	135.00	1780	199.90	709	322.95	1931
77.05	52008	136.00	658	201.50	492	326.90	202
78.05	3752	137.00	985	203.10	742	333.95	1136
78.95	4731	140.95	2953	203.95	3230	352.05	448
80.05	2964	141.95	1090	205.05	5525	354.05	668
81.05	3738	142.95	368	206.05	24096	364.95	2466
82.05	1023	146.05	555	207.05	3003	372.00	994
83.00	892	147.05	1409	207.95	748	402.05	175
85.00	849	147.90	3472	210.05	206	403.05	621
86.00	1076	148.90	741	211.05	996	420.90	557
87.00	441	153.00	799	216.00	722	422.00	210
90.95	1111	154.00	687	217.00	6637	423.00	3617
92.05	1000	155.00	1502	218.00	797	424.00	735
92.95	7548	155.95	2129	221.05	6094	441.10	10336
94.05	374	157.05	170	223.05	1641	442.00	66232

Data File: /chem/nvo5.i/nvo0727.b/nvo502267.d

Date : 27-JUL-94 13:29

Client ID: DFTPP

Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0

Operator: WAV/AT

Column phase: DB-5

Column diameter: 0.25

Data File: nvo502267.d

Spectrum : Avg. Scans 865-867 (13.59), Background Scan 856

Largest m/z: 198.00

Number of peaks: 160

m/z	Y	m/z	Y	m/z	Y	m/z	Y
98.05	5477	157.75	349	224.05	12584	443.10	12686
99.00	4321	160.05	774	225.05	3323	443.95	1267
100.00	172	160.95	1339	226.05	184		
101.00	2125	165.00	930	226.95	5632		
103.00	823	166.00	989	228.00	858		
104.00	1436	167.00	5456	228.90	1012		

Data File: /chem/nvo5.i/nvo0728.b/nvo502273.d

Date : 28-JUL-94 08:29

Client ID: DFTPP

Instrument: nvo5.i

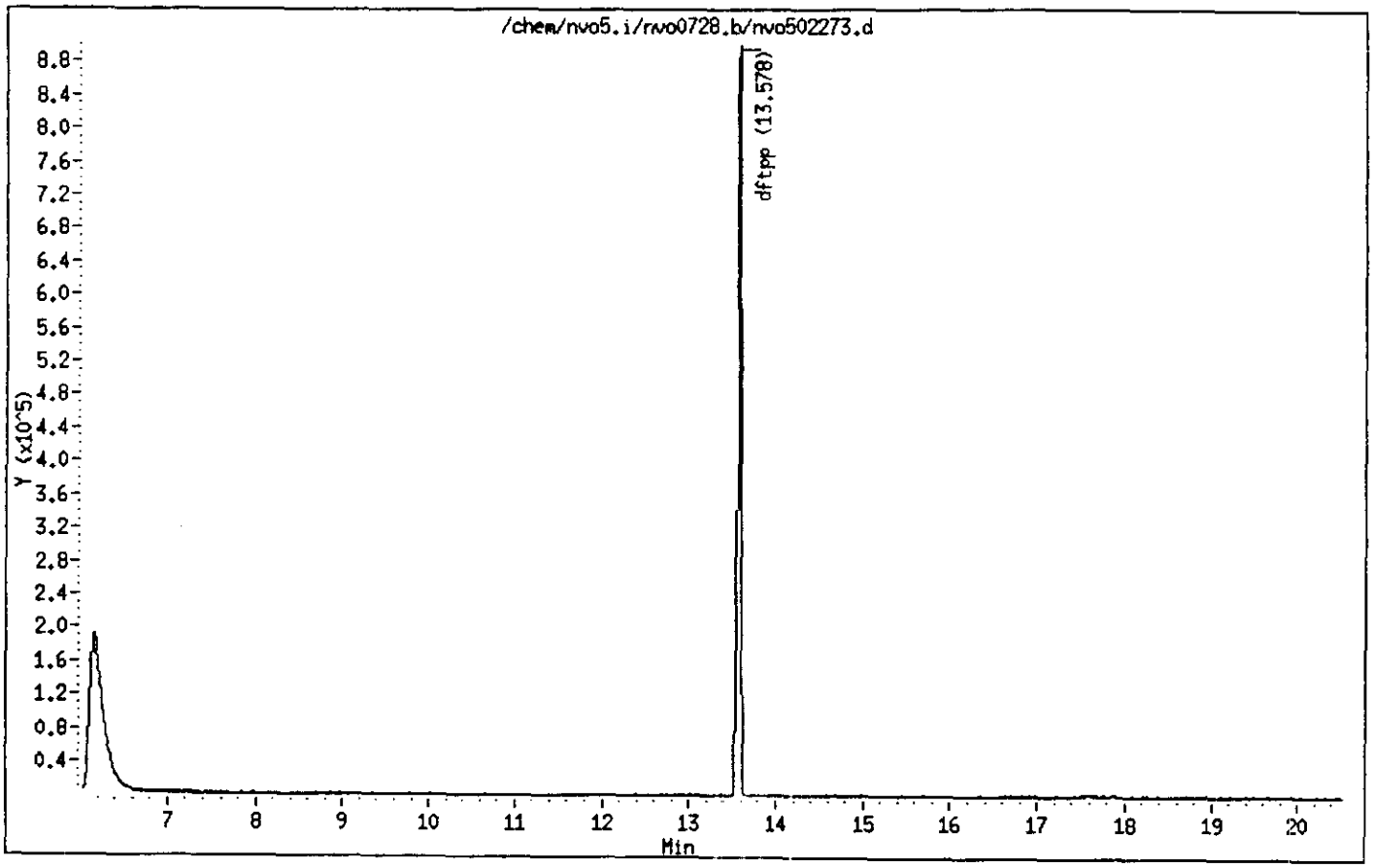
Sample Info: DFTPP

Volume Injected (uL): 2.0

Operator: WAV/AT

Column phase: DB-5

Column diameter: 0.25



Data File: /chem/nvo5.i/nvo0728.b/nvo5C2273.d

Date : 28-JUL-94 08:29

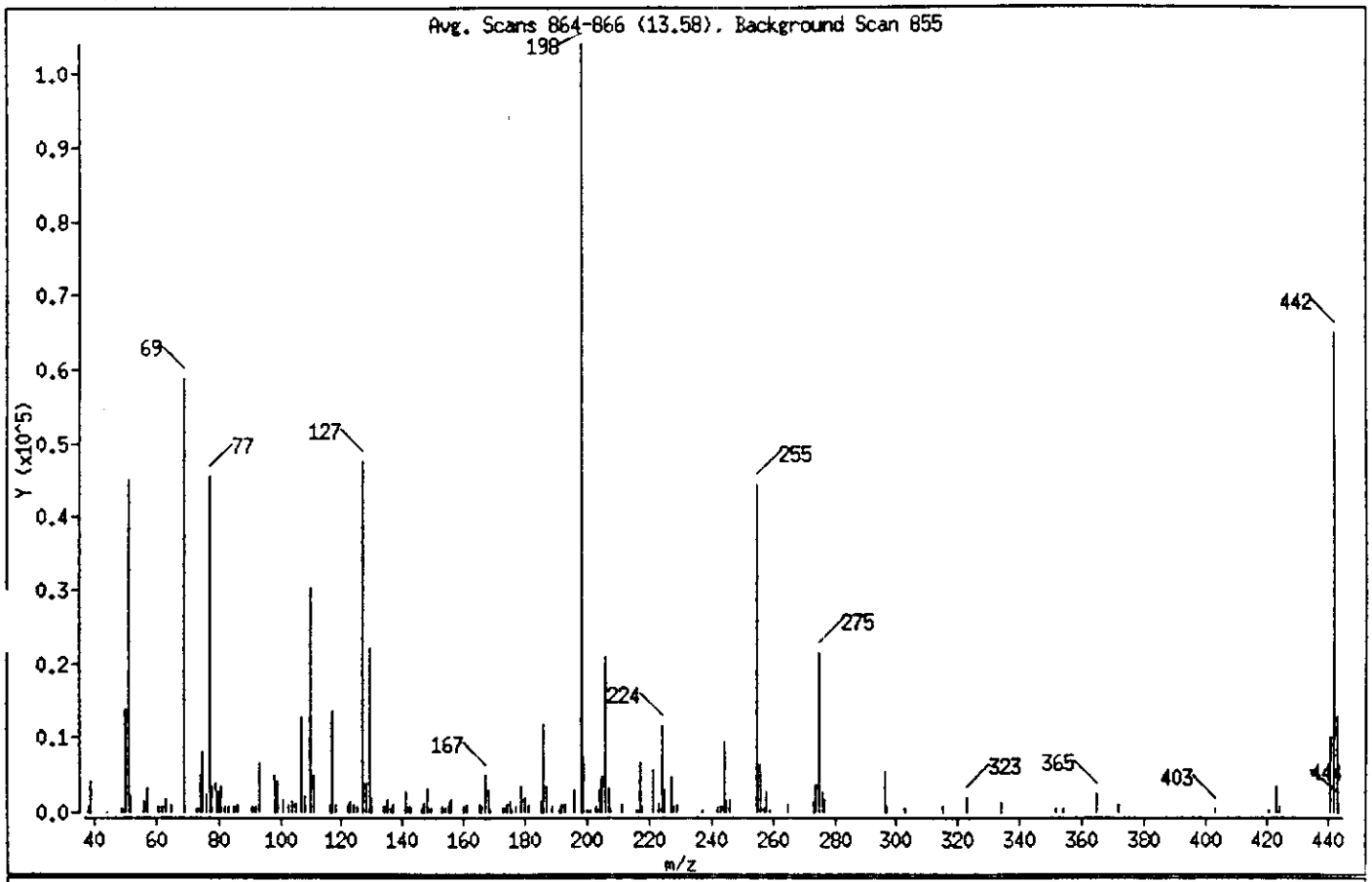
Client ID: DFTPP | Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5 | Column diameter: 0.25

1 dftpp



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
198	Base Peak, 100% relative abundance	100.00
51	30.00 - 80.00% of mass 198	43.19
68	Less than 2.00% of mass 69	0.00 (0.00)
69	Mass 69 relative abundance	56.61
70	Less than 2.00% of mass 69	0.00 (0.00)
127	25.00 - 75.00% of mass 198	45.67
197	Less than 1.00% of mass 198	0.00
199	5.00 - 9.00% of mass 198	7.01
275	10.00 - 30.00% of mass 198	20.57
365	Greater than 0.75% of mass 198	2.26
441	Present, but less than mass 443	9.62
442	40.00 - 110.00% of mass 198	62.31
443	15.00 - 24.00% of mass 442	12.20 (19.58)

Data File: /chem/nvo5.i/nvo0728.b/nvo502273.d

Date : 28-JUL-94 08:29

Client ID: DFTPP | Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5 | Column diameter: 0.25

Data File: nvo502273.d
Spectrum : Avg. Scans 864-866 (13.58), Background Scan 855
Largest m/z: 198.00
Number of peaks: 145

m/z	Y	m/z	Y	m/z	Y	m/z	Y
38.10	773	107.95	2221	174.05	931	241.95	616
39.10	4227	109.95	30240	174.95	1537	243.05	723
44.05	49	110.95	4835	176.05	207	244.00	9435
49.05	400	116.00	978	176.95	845	245.00	1404
50.05	13720	117.00	13525	178.95	3526	245.90	1831
51.00	44912	118.00	965	180.00	2034	254.95	44344
52.00	2243	122.00	1067	181.00	992	255.95	6439
56.00	1416	122.95	1583	185.00	1517	257.05	420
57.00	3261	123.95	863	186.00	11843	257.95	2601
60.95	659	124.95	708	187.00	3405	259.05	196
62.05	700	127.05	47488	189.05	815	265.00	1002
63.05	1702	128.05	3973	190.95	348	272.95	1532
65.05	1047	129.05	22136	191.95	1002	274.05	3738
69.00	58864	129.95	1900	192.95	1038	275.05	21392
73.10	426	133.90	676	196.00	2968	276.00	2802
74.00	4995	135.00	1719	198.00	103992	277.00	1756
74.95	8088	136.00	604	199.00	7293	296.00	5487
76.05	2404	137.10	989	200.00	170	297.00	770
77.05	45456	140.95	2716	201.30	189	302.95	479
78.05	3383	141.95	750	203.00	752	314.90	653
78.95	3920	142.95	397	203.95	2973	323.05	1853
80.05	2719	146.05	386	204.95	4772	333.95	1107
81.05	3385	147.05	1303	206.05	20936	351.95	403
81.95	800	148.00	3094	207.05	3191	354.05	586
83.00	789	149.00	480	207.95	599	364.95	2346
84.90	784	152.90	796	211.05	892	372.00	1055
86.00	1015	154.00	473	216.00	241	402.85	604
90.95	846	155.00	1350	216.90	6648	420.90	180
92.05	827	155.95	1754	218.00	746	423.00	3456
92.95	6559	159.95	701	221.05	5663	424.00	724
97.95	4848	161.05	931	223.05	1350	441.10	10002
99.00	4088	165.00	878	224.05	11673	442.00	64792
101.00	1731	166.00	756	225.05	3053	443.00	12684
102.90	868	167.00	4814	226.95	4723	443.95	1116
104.00	1562	168.00	2933	227.90	712		

Data File: /chem/nvo5.i/nvo0728.b/nvo502273.d

Date : 28-JUL-94 08:29

Client ID: DFTPP | Instrument: nvo5.i

Sample Info: DFTPP

Volume Injected (uL): 2.0 | Operator: WAV/AT

Column phase: DB-5 | Column diameter: 0.25

Data File: nvo502273.d

Spectrum : Avg. Scans 864-866 (13.58), Background Scan 855

Largest m/z: 198.00

Number of peaks: 145

m/z	Y	m/z	Y	m/z	Y	m/z	Y
105.00	1231	168.90	172	229.00	867		
106.95	12856	173.05	452	236.95	177		

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKS1

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: SBLKS1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502275.D

Level: (low/med) MED Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted:07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	10000	U
111-44-4	Bis(2-Chloroethyl)ether	10000	U
95-57-8	2-Chlorophenol	10000	U
541-73-1	1,3-Dichlorobenzene	10000	U
106-46-7	1,4-Dichlorobenzene	10000	U
95-50-1	1,2-Dichlorobenzene	10000	U
95-48-7	2-Methylphenol	10000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10000	U
106-44-5	4-Methylphenol	10000	U
621-64-7	N-Nitroso-di-n-propylamine	10000	U
67-72-1	Hexachloroethane	10000	U
98-95-3	Nitrobenzene	10000	U
78-59-1	Isophorone	10000	U
88-75-5	2-Nitrophenol	10000	U
105-67-9	2,4-Dimethyphenol	10000	U
111-91-1	Bis(2-Chloroethoxy)methane	10000	U
120-83-2	2,4-Dichlorophenol	10000	U
120-82-1	1,2,4-Trichlorobenzene	10000	U
91-20-3	Naphthalene	10000	U
106-47-8	4-Chloroaniline	10000	U
87-68-3	Hexachlorobutadiene	10000	U
59-50-7	4-Chloro-3-methylphenol	10000	U
91-57-6	2-Methylnaphthalene	10000	U
77-47-4	Hexachlorocyclopentadiene	10000	U
88-06-2	2,4,6-Trichlorophenol	10000	U
95-95-4	2,4,5-Trichlorophenol	25000	U
91-58-7	2-Chloronaphthalene	10000	U
88-74-4	2-Nitroaniline	25000	U
131-11-3	Dimethyl phthalate	10000	U
208-96-8	Acenaphthylene	10000	U
606-20-2	2,6-Dinitrotoluene	10000	U
99-09-2	3-Nitroaniline	25000	U
83-32-9	Acenaphthene	10000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SBLKS1

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: SBLKS1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NV0502275.D

Level: (low/med) MED Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(UL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
51-28-5	2,4-Dinitrophenol	25000	U
100-02-7	4-Nitrophenol	25000	U
132-64-9	Dibenzofuran	10000	U
121-14-2	2,4-Dinitrotoluene	10000	U
84-66-2	Diethyl phthalate	10000	U
7005-72-3	4-Chlorophenyl-phenylether	10000	U
86-73-7	Fluorene	10000	U
100-01-6	4-Nitroaniline	25000	U
534-52-1	4,6-Dinitro-2-methylphenol	25000	U
86-30-6	N-Nitrosodiphenylamine (1)	10000	U
101-55-3	4-Bromophenyl-phenylether	10000	U
118-74-1	Hexachlorobenzene	10000	U
87-86-5	Pentachlorophenol	25000	U
85-01-8	Phenanthrene	10000	U
120-12-7	Anthracene	10000	U
86-74-8	Carbazole	10000	U
84-74-2	Di-n-butylphthalate	10000	U
206-44-0	Fluoranthene	10000	U
129-00-0	Pyrene	10000	U
85-68-7	Butylbenzylphthalate	10000	U
91-94-1	3,3'-Dichlorobenzidine	10000	U
56-55-3	Benzo(a)anthracene	10000	U
218-01-9	Chrysene	10000	U
117-81-7	bis(2-Ethylhexyl)phthalate	10000	U
117-84-0	Di-n-octylphthalate	10000	U
205-99-2	Benzo(b)fluoranthene	10000	U
207-08-9	Benzo(k)fluoranthene	10000	U
50-32-8	Benzo(a)pyrene	10000	U
193-39-5	Indeno(1,2,3-cd)pyrene	10000	U
53-70-3	Dibenzo(a,h)anthracene	10000	U
191-24-2	Benzo(g,h,i)perylene	10000	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SBLKS1

Lab Name: ESE Contract: NA

Lab Code: ESE Case No.: NA SAS No.: NA SDG No.: 51539

Matrix: (soil/water) SOIL Lab Sample ID: SBLKS1

Sample wt/vol: 1.0 (g/mL) G Lab File ID: NVO502275.D

Level: (low/med) MED Date Received: / /

% Moisture: 0 decanted: (Y/N) N Date Extracted: 07/27/94

Concentrated Extract Volume: 500(uL) Date Analyzed: 07/28/94

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) Y pH: 7.0

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

Data File: /chem/nvo5.i/nvo0728.b/nvo502275.d
Report Date: 29-Jul-1994 08:32

Environmental Science and Engineering

Semivolatile CLP 3/90 SOW

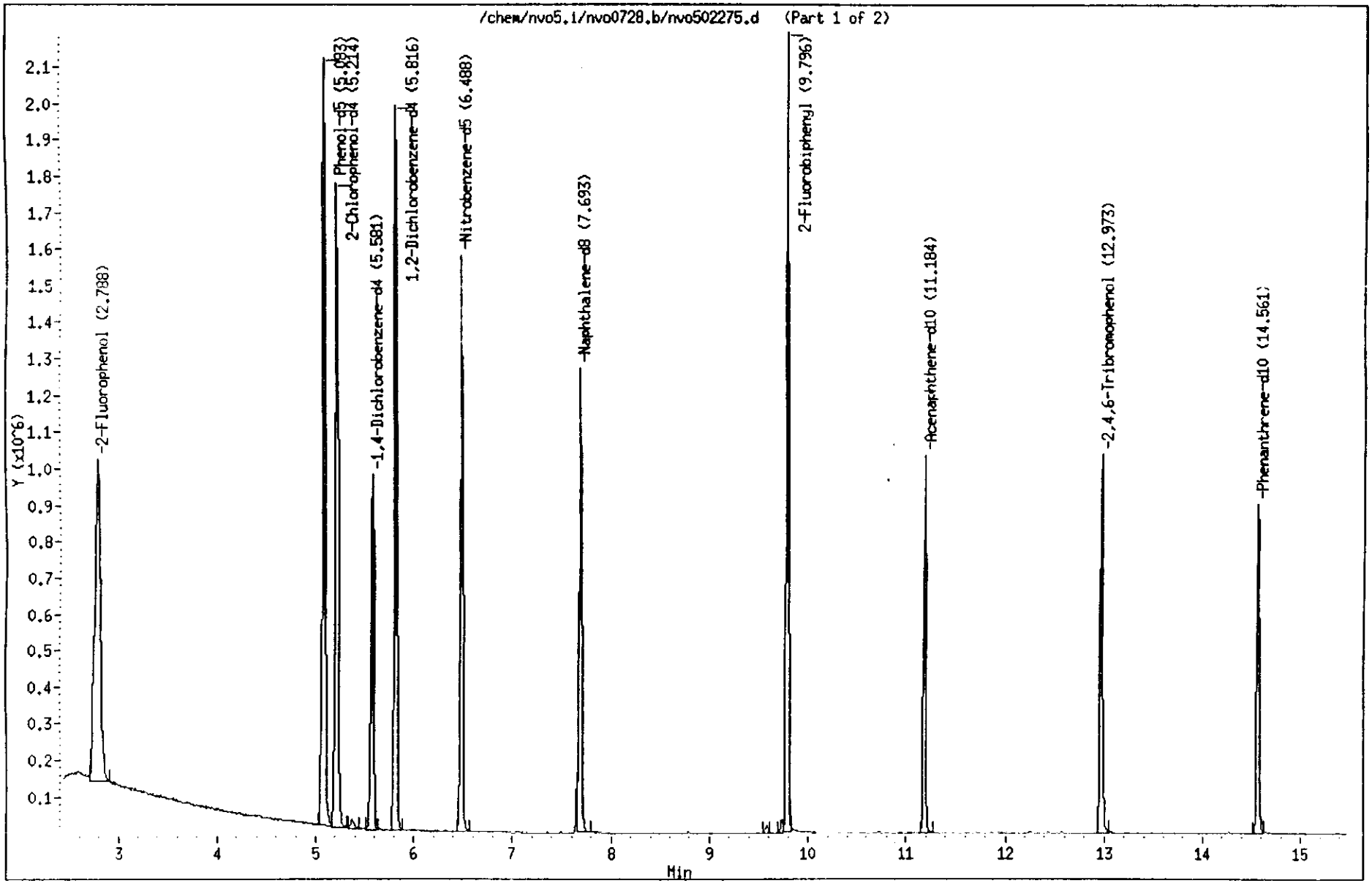
Data file : /chem/nvo5.i/nvo0728.b/nvo502275.d
Lab Smp Id: SBLKS1 — Client Smp ID: SBLKS1
Inj Date : 28-JUL-1994 11:37 — Autotune Date: 11-Jul-94 08:48
Operator : WAV/AT — Inst ID: nvo5.i
Smp Info : SBLKS1
Misc Info : CDM Hanford N. Slope
Comment :
Method : /chem/nvo5.i/nvo0728.b/clp390epc.m
Meth Date : 28-Jul-1994 10:42 — Quant Type: ISTD
Cal Date : 28-JUL-94 09:34 — Cal File: nvo502274.d
Als bottle: 1 — QC Sample: BLANK
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)
	1 1,4-Dichlorobenzene-d4	152.00	5.581	5.579	(1.000)	285642	40	
	2 2-Fluorophenol	112.00	2.788	2.786	(0.500)	1045838	100	52000
.	3 Phenol-d5	99.00	5.083	5.090	(0.911)	1379921	120	61000
$	6 2-Chlorophenol-d4	132.00	5.214	5.212	(0.934)	1053553	120	61000
$	10 1,2-Dichlorobenzene-d4	152.00	5.816	5.814	(1.042)	545051	88	44000
*	17 Naphthalene-d8	136.00	7.693	7.699	(1.000)	988262	40	
$	18 Nitrobenzene-d5	82.00	6.488	6.486	(0.843)	860356	87	43000
*	31 Acenaphthene-d10	164.00	11.192	11.190	(1.000)	414023	40	
$	35 2-Fluorobiphenyl	172.00	9.796	9.794	(0.875)	1235213	82	41000
$	51 2,4,6-Tribromophenol	330.00	12.973	12.979	(1.159)	227955	98	49000
*	52 Phenanthrene-d10	188.00	14.561	14.568	(1.000)	578741	40	
*	63 Chrysene-d12	240.00	20.836	20.851	(1.000)	401837	40	
$	65 Terphenyl-d14	244.00	18.436	18.434	(0.885)	899462	87	43000
*	71 Perylene-d12	264.00	23.978	23.985	(1.000)	400374	40	

Data File: /chem/nvo5.i/nvo0728.b/nvo502275.d
Date : 28-JUL-1994 11:37
Client ID: SBLKS1
Sample Info: SBLKS1
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25

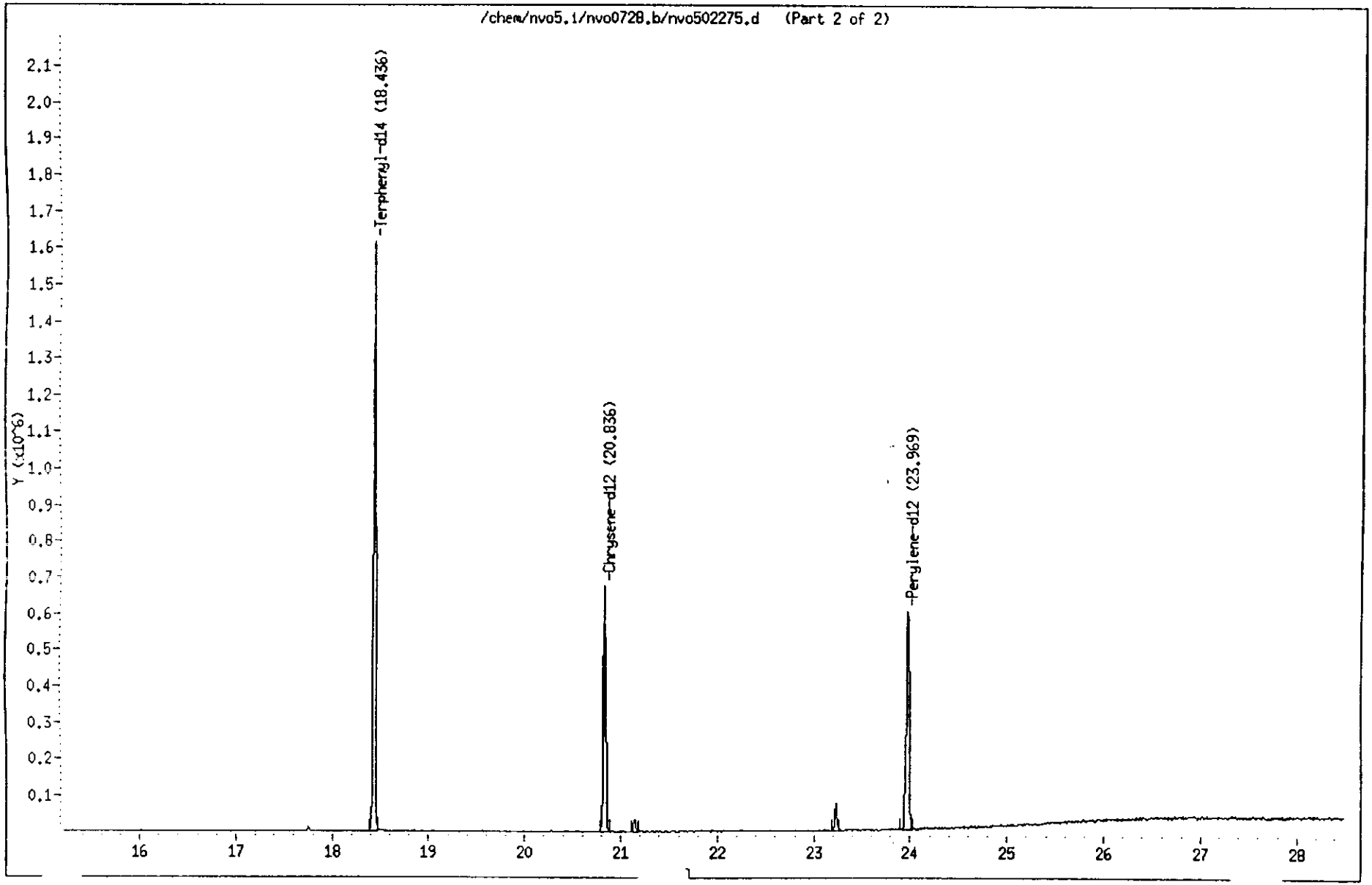


000187

Data File: /chem/nvo5.i/nvo0728.b/nvo502275.d
Date : 28-JUL-1994 11:37
Client ID: SBLKS1
Sample Info: SBLKS1
Volume Injected (uL): 2.0
Column phase: DB-5MS

Instrument: nvo5.i

Operator: WAV/AT
Column diameter: 0.25



000188

Other Relevant Documents

ESE ENVIRONMENTAL SCIENCE AND ENGINEERING, INC.

CHROMATOGRAPHIC ANALYSIS LOG

Date: 7/27/94
Analyst: FF(2790)
Project: CD HANSFORD
Case No.: N/A
Instrument ID: 1002A
Data System ID: N/A
Analysis Type: 3/90 BNA

COLUMN		INJECTOR		DETECTOR	
Length		Type		Type	
OD		Temp °C		Attn.	
ID		Volume		Range	
Phase		Carrier Gas		Temp °C	
Thickness		Type		Make-up	
Support		Flow Rate			
Loading					
Oven Temp. Initial	°C			for	Min.
Rate A		Final Temp A °C		for	Min.
Rate B		Final B °C		for	Min.

Comments: 1.0ml 3/90 GPC Chk 890:2C 8/16/94, n 10ml Mec 12 +0.5ml 3/90 Surr 1OVS-S-1 + 1060-0-1' 3/90 Mdm x 0.5ml in 10ml mec

Run No.	Sample No.	Run No.	Sample No.	Run No.	Sample No.
1	GPC chk				
2	SPK chk		d = 24		
3	mec 12		c = 26		
4	BLK		w = 10		
5	.43				
6	43 MS		mec 12 lot# HH1295		
7	43 MSD				
8	end Std		Chart Speed = 10 cm/hr		
			range =	0.5	
			sensitivity =	0.5	

BOOK NO: 731

FORM 87303

~~000036~~

000190

Environmental Science & Engineering, Inc.

GC/MS INSTRUMENT LOGSHEET

INSTRUMENT ID NV05

DATE 7/28/94 PROJECT NAME CDM Hanford N. Slope CLP 3190 SOW

OPERATOR WAV/AT CAL FILE clp390epc 7/27/94

MASS RANGE 35-500 A/D 2^2 METH FILE clp390epc

THRESHOLD 1000 E. M. 1753 ID FILE ↓

SCAN DELAY 2.8 min SURR — DATE UPLOADED

PURGE DELAY 1.0 min INT STD CLP mix protocol lot 093092913 UPLOAD NAME ATHAN5

INJ VOL 2.0 µL EPC SPK CONC 20 µg/mL DATE SIGN

GC PROG 50°x2min, 50°C→120°C @ 20°/min, 120°C→320°C @ 10°/min, t_3=3min COL DB5 MS 0.25 mm id.

FRN	SAMPLE ID	EXT DATE	WT/ VOL	DIL FACT	COMMENTS	TAPE DATE
nv0502273	DFTPP 50ng					
2274	SSTD 50 50ng on col			1.00	25µg/mL CLP STD 100ug/mL	
2275	SBLKS1	7-27-94	1.0gm	1.00	MED-LEVEL	
2276	CDMHNSS3 * 43	↓	↓	2.00	↓	
2277	↓ * 43 MS			↓		
↓ 2278	↓ * 43 MSD	↓	↓	↓	↓	

AT 7/29/94

Read and Understood by

SIGNED 7/29/94 DATE SIGNED 7/29/94 DATE PAGE 1 OF 1

ESE. ENVIRONMENTAL SCIENCE AND ENGINEERING, INC. | **ORGANIC LABORATORY/EXTRACTION LOG SHEET**

BOOK NO: 587 050

PROJECT: CDM Hanford
PROJECT NO.: 1944 0226 0203 CASE NO. NA
EXTRACTOR(S): DJD (2796) CLEAN-UP: GPC
DATE: 7-27-94 TIME: 10am

EXTRACTION METHOD: 3/90 mid level Soil BNA
SAMPLE FRACTION: SS
CHECKED BY: DJC
BALANCE USED: # 4

SAMPLE NO.	VOLUME-ml MASS-gr.	INITIAL/ FINAL pH	TYPE/DATE OF CLEAN-UP	FINAL VOL SOLVENT	SURRO-GATE ADDED Y/N	COMMENTS
CDMHNSS3* 43	1.0g	6.23	GPC	1.0ml/MeCl2	Y	0.5ml 3/90 CLP SVOC 1005-5-1
43ms						150 Acid 100 BNS WAV 5-23-94 Exp 5/23/95
43msD						to All
BLK						
						0.5ml to 43ms, 43msD 3/90 CLP Matrix
						1000-6-1 150 Acid 100 BNS ug/ml AT 6/9/94
						Exp 6/9/95
						spiked: DJD wit: DJC
						MeCl2 Lot# H11295

CHAIN-OF-CUSTODY RECORD

FORM 87282

000192

PROJECT CDM Hanford

Notebook No. 1041

Continued From Page

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Ext: DJD

Method: 3/6 mid level Soil BNA

Samples: CDMHNSS3* 43, 43ms, 43msD, BLK

1. weighed up 1.0g of sample used powdered Na_2SO_4 for QC
2. Added 20 g Na_2SO_4 powdered to each, except BLK
3. spiked samples
4. Added 9.0ml $MeCl_2$ to 43ms, 43msD
   Added 9.5ml $MeCl_2$ to 43, BLK
5. Sonicated for 2min.
6. put $MeCl_2$ through pipet with 2-3cm glasswool
   Collected in GC Tube DJD 7-27-94
   loaded on GPC 1002 A 7/27/94

Concentrated to 10ml

Concentrated to .5ml, Brought to 0.5ml in Auto sample vials

TOGCMS DJD 7-28-94

Continued on Page

Read and Understood By

Signed: Dana Peahau Date: 7-27-94

Signed: Lynne Lewis Date: 7-28-94

DATE SAMPLES CDMHNSS3* 43

METHOD 8/90 mid/level Soil/BNA

Chain of Custody	TO LAB B DJD 7-27-94	5/2 7/94	TO GCMS DJD 7-28-94
Rec'd 7/28/94 GC/MS AT			

43
43 MS
43 MSD

GC/MS Semivolatiles Calculations
Soil Samples

$$RRF = \frac{(A_x)(C_{is})}{(A_{is})(C_x)}$$

$$\text{Sample Concentration } (\mu g/Kg) = \frac{(A_x)(I_s)(V_t)}{(A_{is})(RRF)(V_i)(W_s)(D)}$$

A_x = Area of the characteristic ion for the compound to be measured

A_{is} = Area of the characteristic ion for the internal standard

C_x = Standard concentration for the compound to be measured (ng/µL)

C_{is} = Concentration for the internal standard (ng/µL)

I_s = Amount of internal standard injected in nanograms (ng)

V_i = Volume of extract injected (µL)

V_t = Volume of total extract (µL)

W_s = Weight of sample extracted (grams)

$D = \frac{100 - \%\ \text{moisture}}{100}$