THE O'BRIEN CORPORATION

EVALUATION OF QUALITY CONTROL RESULTS (TIER III QA/QC VALIDATION PACKAGE) FOR RCRA FACILITY INVESTIGATION

THE O'BRIEN CORPORATION
SOUTH SAN FRANCISCO, CALIFORNIA

PART 2

February 1992

EMCON ASSOCIATES

FILE

Columbia
Analytical
Services inc.

RECEIVED
DEC 1991

December 12, 1991

Vivian Hsiong
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **The O'Brien Corp./Project #E50-01.06/SJ91-1428**

Dear Vivian:

The enclosed report contains our work orders as follows: Work Order #K916641C for samples received on November 13, 1991; Work Order #K916670C for samples received on November 14, 1991; and Work Order #K916712C for samples received on November 15, 1991.

Please note that metals results for water samples (excluding drinking water) are now being reported in µg/L (ppb) rather than mg/L (ppm).

All analyses were performed in accordance with our laboratory's quality assurance program.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Janice M. Sedlak

Janice M. Sedlak
Project Chemist

JMS/so

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/13/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916641C
Sample Matrix:	Water		

CASE NARRATIVE SUMMARY

All samples were analyzed in accordance with the quality assurance program of Columbia Analytical Services, Inc. Sample WB-1 had a detectable level of arsenic just above the method reporting limit, and a zinc value about twice the method reporting limit. Sample FB-1 had a chloroform value five times the method reporting limit. There was nothing detected in the semivolatile analysis.

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	11/13/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916641C
Sample Matrix:	Water		

Dissolved Priority Pollutant Metals
µg/L (ppb)

	Sample Name:	WB-1	Method Blank
	Lab Code:	K6641-1	K6641-MB
Analyte	**Method**	**MRL**	
Antimony	6010	50	ND ND
Arsenic	7060	5	6 ND
Beryllium	6010	5	ND ND
Cadmium	6010	3	ND ND
Chromium	6010	5	ND ND
Copper	6010	10	ND ND
Lead	7421	2	ND ND
Mercury	7470	0.5	ND ND
Nickel	6010	20	ND ND
Selenium	7740	5	ND ND
Silver	6010	10	ND ND
Thallium	7841	5	ND ND
Zinc	6010	10	21 ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by JMSidlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/13/91
Work Order #: K916641C

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

		Sample Name:	WB-1	FB-1
		Lab Code:	K6641-1	K6641-2
		Date Analyzed:	11/22/91	11/21/91
Analyte	**MRL**			
Chloromethane	1		ND	ND
Vinyl Chloride	1		ND	ND
Bromomethane	1		ND	ND
Chloroethane	1		ND	ND
Trichlorofluoromethane (Freon 11)	1		ND	ND
Trichlorotrifluoroethane (Freon 113)	10		ND	ND
1,1-Dichloroethene	1		ND	ND
Acetone	20		ND	ND
Carbon Disulfide	1		ND	ND
Methylene Chloride	10		ND	ND
trans-1,2-Dichloroethene	1		ND	ND
cis-1,2-Dichloroethene	1		ND	ND
2-Butanone (MEK)	10		ND	ND
1,1-Dichloroethane	1		ND	ND
Chloroform	1		ND	5
1,1,1-Trichloroethane (TCA)	1		ND	ND
Carbon Tetrachloride	1		ND	ND
Benzene	1		ND	ND
1,2-Dichloroethane	1		ND	ND
Vinyl Acetate	10		ND	ND
Trichloroethene (TCE)	1		ND	ND
1,2-Dichloropropane	1		ND	ND
Bromodichloromethane	1		ND	ND
2-Chloroethyl Vinyl Ether	10		ND	ND
trans-1,3-Dichloropropene	1		ND	ND
2-Hexanone	10		ND	ND
4-Methyl-2-pentanone (MIBK)	10		ND	ND
Toluene	1		ND	ND
cis-1,3-Dichloropropene	1		ND	ND
1,1,2-Trichloroethane	1		ND	ND
Tetrachloroethene (PCE)	1		ND	ND
Dibromochloromethane	1		ND	ND
Chlorobenzene	1		ND	ND
Ethylbenzene	1		ND	ND
Styrene	1		ND	ND
Total Xylenes	1		ND	ND
Bromoform	1		ND	ND
1,1,2,2-Tetrachloroethane	1		ND	ND
1,3-Dichlorobenzene	1		ND	ND
1,4-Dichlorobenzene	1		ND	ND
1,2-Dichlorobenzene	1		ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Jim Stallard Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates **Work Order #:** K916641C
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		Method Blank	Method Blank
Lab Code:		K6641-MB	K6641-MB
Date Analyzed:		11/21/91	11/22/91
Analyte	**MRL**		
Chloromethane	1	ND	ND
Vinyl Chloride	1	ND	ND
Bromomethane	1	ND	ND
Chloroethane	1	ND	ND
Trichlorofluoromethane (Freon 11)	1	ND	ND
Trichlorotrifluoroethane (Freon 113)	10	ND	ND
1,1-Dichloroethene	1	ND	ND
Acetone	20	ND	ND
Carbon Disulfide	1	ND	ND
Methylene Chloride	10	ND	ND
trans-1,2-Dichloroethene	1	ND	ND
cis-1,2-Dichloroethene	1	ND	ND
2-Butanone (MEK)	10	ND	ND
1,1-Dichloroethane	1	ND	ND
Chloroform	1	ND	ND
1,1,1-Trichloroethane (TCA)	1	ND	ND
Carbon Tetrachloride	1	ND	ND
Benzene	1	ND	ND
1,2-Dichloroethane	1	ND	ND
Vinyl Acetate	10	ND	ND
Trichloroethene (TCE)	1	ND	ND
1,2-Dichloropropane	1	ND	ND
Bromodichloromethane	1	ND	ND
2-Chloroethyl Vinyl Ether	10	ND	ND
trans-1,3-Dichloropropene	1	ND	ND
2-Hexanone	10	ND	ND
4-Methyl-2-pentanone (MIBK)	10	ND	ND
Toluene	1	ND	ND
cis-1,3-Dichloropropene	1	ND	ND
1,1,2-Trichloroethane	1	ND	ND
Tetrachloroethene (PCE)	1	ND	ND
Dibromochloromethane	1	ND	ND
Chlorobenzene	1	ND	ND
Ethylbenzene	1	ND	ND
Styrene	1	ND	ND
Total Xylenes	1	ND	ND
Bromoform	1	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND
1,3-Dichlorobenzene	1	ND	ND
1,4-Dichlorobenzene	1	ND	ND
1,2-Dichlorobenzene	1	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Jim Siddall Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/13/91
Date Extracted: 11/16/91
Date Analyzed: 11/20/91
Work Order #: K916641C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: WB-1
Lab Code: K6641-1

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Aniline	20	ND	Diethyl Phthalate	5	ND
Bis(2-chloroethyl) Ether	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,2-Dichlorobenzene	5	ND	Fluorene	5	ND
1,3-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
1,4-Dichlorobenzene	5	ND	N-Nitrosodiphenylamine	5	ND
Bis(2-chloroisopropyl) Ether	5	ND	4-Bromophenyl Phenyl Ether	5	ND
N-Nitroso-di-n-propylamine	5	ND	Hexachlorobenzene	5	ND
Hexachloroethane	5	ND	Phenanthrene	5	ND
Nitrobenzene	5	ND	Anthracene	5	ND
Isophorone	5	ND	Di-n-butyl Phthalate	5	ND
Bis(2-chloroethoxy)methane	5	ND	Fluoranthene	5	ND
1,2,4-Trichlorobenzene	5	ND	Pyrene	5	ND
Naphthalene	5	ND	Butylbenzyl Phthalate	5	ND
4-Chloroaniline	5	ND	3,3'-Dichlorobenzidine	20	ND
Hexachlorobutadiene	5	ND	Benz(a)anthracene	5	ND
2-Methylnaphthalene	5	ND	Bis(2-ethylhexyl) Phthalate	5	ND
Hexachlorocyclopentadiene	10	ND	Chrysene	5	ND
2-Chloronaphthalene	5	ND	Di-n-octyl Phthalate	5	ND
2-Nitroaniline	20	ND	Benzo(b)fluoranthene	5	ND
Dimethyl Phthalate	5	ND	Benzo(k)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(a)pyrene	5	ND
3-Nitroaniline	20	ND	Indeno(1,2,3-c,d)pyrene	5	ND
Acenaphthene	5	ND	Dibenz(a,h)anthracene	5	ND
Dibenzofuran	5	ND	Benzo(g,h,i)perylene	5	ND
2,4-Dinitrotoluene	5	ND			

Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol*	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Quantified as 4-methylphenol.

Approved by JM Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Extracted: 11/16/91
Date Analyzed: 11/20/91
Work Order #: K916641C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: Method Blank
Lab Code: K6641-MB

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Aniline	20	ND	Diethyl Phthalate	5	ND
Bis(2-chloroethyl) Ether	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,2-Dichlorobenzene	5	ND	Fluorene	5	ND
1,3-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
1,4-Dichlorobenzene	5	ND	N-Nitrosodiphenylamine	5	ND
Bis(2-chloroisopropyl) Ether	5	ND	4-Bromophenyl Phenyl Ether	5	ND
N-Nitroso-di-n-propylamine	5	ND	Hexachlorobenzene	5	ND
Hexachloroethane	5	ND	Phenanthrene	5	ND
Nitrobenzene	5	ND	Anthracene	5	ND
Isophorone	5	ND	Di-n-butyl Phthalate	5	ND
Bis(2-chloroethoxy)methane	5	ND	Fluoranthene	5	ND
1,2,4-Trichlorobenzene	5	ND	Pyrene	5	ND
Naphthalene	5	ND	Butylbenzyl Phthalate	5	ND
hloroaniline	5	ND	3,3'-Dichlorobenzidine	20	ND
exachlorobutadiene	5	ND	Benz(a)anthracene	5	ND
2-Methylnaphthalene	5	ND	Bis(2-ethylhexyl) Phthalate	5	ND
Hexachlorocyclopentadiene	10	ND	Chrysene	5	ND
2-Chloronaphthalene	5	ND	Di-n-octyl Phthalate	5	ND
2-Nitroaniline	20	ND	Benzo(b)fluoranthene	5	ND
Dimethyl Phthalate	5	ND	Benzo(k)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(a)pyrene	5	ND
3-Nitroaniline	20	ND	Indeno(1,2,3-c,d)pyrene	5	ND
Acenaphthene	5	ND	Dibenz(a,h)anthracene	5	ND
Dibenzofuran	5	ND	Benzo(g,h,i)perylene	5	ND
2,4-Dinitrotoluene	5	ND			

Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol♦	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by JM Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Laboratory Chronicle

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Received: 11/13/91
Work Order #: K916641C

Inorganic Parameters

Analyte	Method	Date Analyzed
Mercury	7470	11/21/91

Approved by [signature] Date 12/12/91

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Work Order #: K916641C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Priority Pollutant Metals
µg/L (ppb)

Sample Name: Batch QC
Lab Code: K6641-1

Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Duplicate Spiked Sample Result	Percent Recovery: Spiked Sample	Percent Recovery: Duplicate Spiked Sample	CAS Acceptance Criteria	Relative Percent Difference
Antimony	50	1,000	ND	970	1,010	97	101	75-125	4
Arsenic	5	80	6	83	87	96	101	75-125	5
Beryllium	5	100	ND	98	99	98	99	75-125	1
Cadmium	3	100	ND	91	97	91	97	75-125	6
Chromium	5	400	ND	378	395	94	99	75-125	4
Copper	10	500	ND	492	491	98	98	75-125	<1
Lead	2	40	ND	46	43	115	108	75-125	7
Mercury	0.5	1	ND	0.9	0.9	90	90	60-140	<1
Nickel	20	1,000	ND	937	976	94	98	75-125	4
Selenium	5	20	ND	22	23	110	115	60-125	4
Silver	10	100	ND	90	94	90	94	75-125	4
Thallium	5	100	ND	91	88	91	88	75-125	3
Zinc	10	1,000	21	936	975	92	95	75-125	4

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916641C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB1	CCB2	CCB3	CCB4
Antimony	6010	50	ND	ND	ND	ND
Arsenic	7060	5	ND	ND	ND	ND
Beryllium	6010	5	ND	ND	ND	ND
Cadmium	6010	3	ND	ND	ND	ND
Chromium	6010	5	ND	ND	ND	ND
Copper	6010	10	ND	ND	ND	ND
Lead	7421	2	ND	ND	ND	ND
Mercury	7470	0.5	ND	ND	--	--
Nickel	6010	20	ND	ND	ND	ND
Selenium	7740	5	ND	ND	ND	ND
Silver	6010	10	ND	ND	ND	ND
Thallium	7841	5	ND	ND	ND	ND
Zinc	6010	10	ND	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916641C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB5	CCB6
Antimony	6010	50	ND	--
Arsenic	7060	5	ND	--
Beryllium	6010	5	ND	--
Cadmium	6010	3	ND	--
Chromium	6010	5	ND	--
Copper	6010	10	ND	--
Nickel	6010	20	ND	--
Silver	6010	10	ND	--
Thallium	7841	5	ND	ND
Zinc	6010	10	ND	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by TW Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916641C

QA/QC Report
Initial Calibration Verification (ICV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Antimony	6010	980	1,040	106
Arsenic	7060	50	53	106
Beryllium	6010	508	486	96
Cadmium	6010	516	530	103
Chromium	6010	514	518	101
Copper	6010	525	519	99
Lead	7421	98	107	109
Mercury	7470	5.0	5.4	108
Nickel	6010	504	514	102
Selenium	7740	50	54	108
Silver	6010	517	492	95
Thallium	7841	101	101	100
Zinc	6010	3,050	3,050	100

ICV Source: EPA ICV

Approved by TM Siddall Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916641C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV1 Result	Percent Recovery	CCV2 Result	Percent Recovery	CCV3 Result	Percent Recovery
Antimony	6010	5,000	4,900	98	4,920	98	5,030	101
rsenic	7060	40	40	100	39	98	40	100
eryllium	6010	500	482	96	499	100	523	105
Cadmium	6010	500	501	100	517	104	533	107
Chromium	6010	5,000	4,960	99	5,130	103	5,280	106
Copper	6010	500	489	98	490	98	510	102
Lead	7421	40	41	102	40	100	38	95
Mercury	7470	3.0	3.1	103	3.0	100	--	--
Nickel	6010	500	490	98	514	103	524	105
Selenium	7740	40	40	100	42	105	41	102
Silver	6010	500	497	99	508	102	524	105
Thallium	7841	40	39	98	38	95	39	98
Zinc	6010	2,500	2,450	98	2,510	100	2,600	104

pproved by Jim Wallace Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916641C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV4 Result	Percent Recovery	CCV5 Result	Percent Recovery	CCV6 Result	Percent Recovery
Antimony	6010	5,000	5,030	101	5,070	101	--	--
\rsenic	7060	40	38	95	39	98	--	--
Beryllium	6010	500	508	102	511	102	--	--
Cadmium	6010	500	495	99	498	100	--	--
Chromium	6010	5,000	5,010	100	5,050	101	--	--
Copper	6010	500	511	102	511	102	--	--
Lead	7421	40	38	95	--	--	--	--
Nickel	6010	500	505	101	508	102	--	--
Selenium	7740	40	44	110	--	--	--	--
Silver	6010	500	499	100	504	101	--	--
Thallium	7841	40	37	92	37	92	37	92
Zinc	6010	2,500	2,500	100	2,520	101	--	--

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Analyzed:**	11/22/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916641C
Sample Matrix:	Water		

QA/QC Report
Laboratory Control Sample Summary
Dissolved Priority Pollutant Metals
EPA Method 6010
µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Antimony	980	1,040	106	75-125
Arsenic	50	49	98	75-125
Beryllium	508	512	101	75-125
Cadmium	516	526	102	75-125
Chromium	514	519	101	75-125
Copper	525	520	101	75-125
Lead	98	94	96	75-125
Mercury	5.0	5.4	108	75-125
Nickel	504	523	104	75-125
Selenium	50	48	96	75-125
Silver	517	491	95	75-125
Thallium	101	98	97	75-125
Zinc	3,050	2,990	98	75-125

Approved by Jim Siddle Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/13/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/22/91
Sample Matrix:	Water	**Work Order #:**	K916641C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
WB-1	K6641-1	91.1	104	105
Method Blank	K6641-MB	92.9	103	103
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by Jim Siddle Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/13/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/21/91
Sample Matrix:	Water	**Work Order #:**	K916641C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
WB-1	K6641-1MS	90.4	100	106
VB-1	K6641-1DMS	85.1	98.6	106
FB-1	K6641-2	87.4	97.9	105
Method Blank	K6641-MB	97.4	95.6	102
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by JMSiellak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/13/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/21/91
Sample Matrix:	Water	**Work Order #:**	K916641C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name: WB-1
Lab Code: K6641-1

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	50	ND	51.0	51.4	102	103	61-145	1
Trichloroethene	50	ND	59.1	58.7	118	117	71-120	--
Chlorobenzene	50	ND	59.0	60.3	118	120	75-130	2
Toluene	50	ND	58.1	57.4	116	115	76-125	--
Benzene	50	ND	55.8	54.7	112	109	76-127	3

ND None Detected at or above the method reporting limit

Approved by Jim Wallace Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/13/91
Date Extracted: 11/16/91
Date Analyzed: 11/20/91
Work Order #: K916641C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
WB-1	K6641-1	36.2	35.0	111	77.8	78.6	80.9
WB-1	K6641-1MS	58.1	51.7	99.9	83.3	77.5	104
WB-1	K6641-1DMS	58.7	53.3	105	85.2	80.5	87.0
Method Blank	K6641-MB	47.2	28.5	84.0	84.7	82.8	106
Laboratory Control Sample	K6641-LCS	50.4	30.6	93.0	78.7	74.5	108
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/13/91
Date Extracted: 11/16/91
Date Analyzed: 11/20/91
Work Order #: K916641C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: WB-1
Lab Code: K6641-1

Analyte	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria	Relative Percent Difference
Phenol	217	217	ND	95.8	99.7	44.1	45.9	12-89	4
2-Chlorophenol	217	217	ND	96.3	96.2	44.4	44.3	27-123	--
1,4-Dichlorobenzene	87.0	87.0	ND	79.5	82.5	91.4	94.8	36-97	4
N-Nitroso-di-n-propylamine	87.0	87.0	ND	81.4	86.2	93.6	99.1	41-116	6
1,2,4-Trichlorobenzene	87.0	87.0	ND	91.1	93.8	*105	*108	39-98	3
4-Chloro-3-methylphenol	217	217	ND	159	160	73.3	73.7	23-97	1
Acenaphthene	87.0	87.0	ND	81.9	86.4	94.1	99.3	46-118	5
4-Nitrophenol	217	217	ND	121	137	55.8	63.1	10-80	12
2,4-Dinitrotoluene	87.0	87.0	ND	82.0	89.2	94.2	*102	24-96	8
Pentachlorophenol	217	217	ND	189	205	87.1	94.5	9-103	8
Pyrene	87.0	87.0	ND	99.0	83.3	114	95.7	26-127	17

ND None Detected at or above the method reporting limit
* Outside acceptance limits. Since no target analytes were detected in the sample, the elevated percent recovery does not adversely impact the data.

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Extracted:**	11/16/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/20/91
Sample Matrix:	Water	**Work Order #:**	K916641C

QA/QC Report
Laboratory Control Sample Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: Laboratory Control Sample

Analyte	Spike Level	Spike Result	Percent Recovery	EPA Percent Recovery Acceptance Criteria
Phenol	100	27.7	27.7	5-112
2-Chlorophenol	100	72.4	72.4	23-134
1,4-Dichlorobenzene	40.0	37.2	93.0	20-124
N-Nitroso-di-n-propylamine	40.0	37.2	93.0	D-230
1,2,4-Trichlorobenzene	40.0	40.3	101	44-142
4-Chloro-3-methylphenol	100	65.3	65.3	22-147
Acenaphthene	40.0	40.4	101	47-145
4-Nitrophenol	100	22.2	22.2	D-132
2,4-Dinitrotoluene	40.0	33.2	83.0	39-139
Pentachlorophenol	100	75.7	75.7	14-176
Pyrene	40.0	47.5	*119	52-115

D Detected; result must be greater than zero.
* Outside acceptance limits. Since no target analytes were detected in the sample, the elevated percent recovery does not adversely impact the data.

Approved by JWSidlich Date 12/12/91

APPENDIX B

CHAIN OF CUSTODY INFORMATION

Columbia Analytical Services inc.

1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 11/11/91 PAGE 1 OF 1

PROJECT NAME THE O'BRIEN CORP. # E50-01.06

PROJECT MNGR. MARK WHEELER

COMPANY/ADDRESS 450 EAST GRAND AVE

South San Francisco. CA.

PHONE

SAMPLERS SIGNATURE

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO_4, F, NO_2, Alk, TDS, TSS (circle)	NH_3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols					REMARKS
WB-1	11/11/91	11:30		H_2O	20	✓	✓						✓									See Mark Wheeler AND VIVIAN HSiong before analysing
FB-1	11/11/91			↓	2		✓															

RELINQUISHED BY:	RECEIVED BY:
Signature: [signature]	Signature: [signature]
Printed Name: J Bulera	Printed Name: Howard Friedman
Firm: EMCON SJ	Firm: CAS - SJ
Date/Time: 11/11/91 1400	Date/Time: 11-11-91 1900

TURNAROUND REQUIREMENTS:

- ___ 24 hr ___ 48 hr ___ 5 day
- X Standard (~ 10-15 working days)
- ___ Provide Verbal Preliminary Results
- ___ Provide FAX Preliminary Results
- Requested Report Date ___

REPORT REQUIREMENTS

- ___ I. Routine Report
- ___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
- X III. Data Validation Report (includes All Raw Data)
- ___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O. #

Bill to:

SAMPLE RECEIPT:

Shipping VIA: sampler

Shipping #:

Condition: 3 voas have bubbles, some samples taken at 1445.

Lab No.: SJ91-1428

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature: Lori K. Hawn
Printed Name	Printed Name: CAS
Firm	Firm: 11/13/91 1:00
Date/Time	Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

1 voa - WB-1 broken @ lab - 11/13/91 SAR#1963

Samples were taken for WB-1 at 1445 also, per M. Wheeler do not run WB-1 samples at 1130, but run the samples taken at 1445. Dispose of 1130 samples per M. Wheeler 11-12-91 HF

Entire job to Kebo

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

00023

916642

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729

SAMPLE NUMBER(S)	SERVICE REQUEST NUMBER
See Below	91664IC; 916670
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP-Red-Water-GFAA

DATA

SAMPLE 6642 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (6641C; 6670C; 6712C)				50 ml		50 ml	
LCSW 6641C			X				
6641C-1			X				
IDS*							
IS*							
6670C-2							
3							
6712C-2							
3							
6729-1							
2							
3							
6642-1			↓	↓		↓	

1.0ml @ 11/22/91

COMMENTS: * Spike = ~~0.5~~ ml SSS #4
LCSW = ICV-2 = LOT#1290
ICV-4 = " 1290

ANALYST	DATE	PAGE Number
	11/18/91	
REVIEWER	DATE	

[DIGEST2.FRM]

916642, 916661

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729C

SAMPLE NUMBER(S) See Below	SERVICE REQUEST NUMBER 916641C; 916670C
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP - Blue - Water - ICP

DATA

SAMPLE 6661 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW 6641C; 6670C; 6712C; 6642				50 ml		50 ml	
LCSW 6641C			X				
6641C-1			X				
1DS*							
1S*							
6670C-2							
3							
6712C-2							
3							
6729C-1							
2							
3							
6642-1							
6661-1							
2							
3							
4							
5							
	1.0	EA	12/4/91				

COMMENTS: *Spike = 0.5 ml ea SSS #1,2,3 + 100ppm Mo+B
LCSW - ICV-1 = Lot# 0691
ICV-3 = " 1190

ANALYST Ortiz	DATE 11/18/91	PAGE Number
REVIEWER	DATE	

[DIGEST2.FRM]

05025

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

Service Request Number : 916641C ; 916670C ; 916712C ; 916729C ; 916642

Q.C. Sample Number : 641C-1 Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
1 for ICP only	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
	Be	1.25	✓	D37622	9/92	Baker	5	
	Cd	1.25	✓	D22642	6/92	Baker	5	
	Co	12.50	✓	2-4CO	6/92	SPEX	50	
	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

2 ICP	HCl	25.00	✓	E28834		Baker	--	
	Sb	12.50	✓	903464-24	4/92	Fisher	50	
	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW Date Analyzed _____ by _____

3	HNO3	2.50	✓	E17065		Baker	--	
	Ag	1.25	✓	E16618	4/93	Baker	5	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

4 GFAA	HNO3	2.50	✓	E08045		Baker	--	
	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

1.0 12-2-91

Date Prepared 9/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW Date Analyzed _____ by _____

5 ICP ONLY	HCL	25.00	✓	E28834		Baker	--	
	As	50.00	✓	D22643	6/92	Baker	200	
	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

DIG1101

0426

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

916712C; 916729C; 916642; 916661

Service Request Number : 916641C; 916670C

Q.C. Sample Number : 641C-1* Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP) Water
Circle type of sample : Soil

EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
1	Be	1.25	✓	D37622	9/92	Baker	5	
for	Cd	1.25	✓	D22642	6/92	Baker	5	
ICP	Co	12.50	✓	2-4CO	6/92	SPEX	50	1.0
only	Cu	6.25	✓	D22638	6/92	Baker	25	~~0.5~~
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	EA 12/4/9
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

	HCl	25.00	✓	E28834		Baker	--	1.0
2	Sb	12.50	✓	903464-24	4/92	Fisher	50	~~0.5~~
ICP	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW — Date Analyzed _____ by _____

	HNO3	2.50	✓	E17065		Baker	--	1.0
3	Ag	1.25	✓	E16618	4/93	Baker	5	~~0.5~~

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

	HNO3	2.50	✓	E08045		Baker	--	
4	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
GFAA	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW — Date Analyzed _____ by _____

5	HCL	25.00	✓	E28834		Baker	--	
ICP	As	50.00	✓	D22643	6/92	Baker	200	
ONLY	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by LN — Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

* Spike = 0.5 ml of 100 ppm Mo & B

DIG1101

0-0027

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729, 6670C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	ICV (50.4)	—	—	—	—	52.6	104%
2	CCV, (49	—	—	—	—	39.5	99%
3	CCB,	—	—	—	—	<1	<0.001
4	PBW 6641, 6712, 6729, 6642 6670	50	50	—	—	<1	<0.001
5	LCSW (50.4)	50		1	2	24.6	98%
6	6641C-1			—	—	6.0	0.006
7	C-1A					26.8	104%
8	~~C-1D5~~					>	—
9	~~C-1B~~					>	—
10	6712-C-2	50	50			12.3	0.012
11	C-2A					32.4	100%
12	6712C-3	50	50			9.3	0.009
13	CCV$_2$ (49	—	—	—	—	39.0	98%
14	CCB$_2$	—	—	—	—	<1	<0.001
15	6729C-1	50	50			6.2	0.006
16	C-1A					26.6	102%
17	C-2					21.0	0.021
18	C-3					21.4	0.021
19	6642-1	50	50			>	—
20	1A					>	—
21	6670C-2	50	50			6.3	0.006
22	C-3					4.3	0.004
23	C-3A					25.3	105%
24	CCV$_3$ (40	—	—	—	—	39.6	99%
25	CCB$_3$	—	—	—	—	<1	<0.001

COMMENTS:

SPIKE LEVEL: A: 20 ug/L

ANALYST: CJ Bruno	DATE: 11/19/91	PAGE NUMBER: 1
REVIEWER	DATE:	

(AMCSGFA1.FRM)

04128

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:	SERVICE REQUEST # : 91-663C, 6641C
ANALYSIS FOR: As	METHOD: GFAA

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	PBW 6631C	50	50			<1	<0.001
27	6631C-1					<1	<0.001
28	C-1A					17.8	89%
29	C-1D5					>	—
30	C-15					>	—
31	C-2					<1	<0.001
32	C-3					26	0.003
33	C-4					>B	—
34	C-5					2.1	0.002
35	C-6	↓	↓			>B	—
36	CCV$_4$ (40)	—	—			38.1	95%
37	CCB$_4$	—	—			<1	<0.001
38	6631C7	50	50			>B	—
39	C-8	↓	↓			>B	—
40	C-9	↓	↓	↓	↓	17.7	0.018
41	6641C-15	50	50	1	2	41.6	0.083 / 96%
42	C-1D5	↓	↓	↓	↓	43.4	0.087 / 101%
43	CCV$_5$ (40)	—	—	—	—	39.2	98%
44	CCB$_5$	—	—	—	—	<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6641C-15 @ 80 ug/l A: 20 ug/l

ANALYST: CJ Bruno	DATE: 11/19/91	PAGE Number: 2
REVIEWER:	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso. WA 98626 (206) 577-7222

OPERATOR CJ Burro
DATE 11/19/91 08:00
BATCH As

PROGRAM 6 As EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.004
STANDARD 1	10.0	4.7	0.031	0.030	0.032
STANDARD 2	20.0	2.5	0.062	0.061	0.064
STANDARD 3	40.0	0.3	0.115	0.116	0.115
STANDARD 4	60.0	2.5	0.174	0.177	0.171
SAMPLE 1 ICV	52.6	2.6	0.152	0.149	0.155
SAMPLE 2 CCV1	39.5	0.7	0.114	0.114	0.115
SAMPLE 3 CCB1	-0.2	99.9	-0.001	-0.001	0.000
SAMPLE 4 PB6641	-0.3	66.9	-0.001	-0.000	-0.001
SAMPLE 5 LCS	24.6 1:2	2.2	0.076	0.077	0.075
SAMPLE 6 6641-1	6.0	2.4	0.019	0.018	0.019
SAMPLE 7	26.8	0.3	0.082	0.082	0.082
SAMPLE 8	OVER	1.5	0.253	0.250	0.256
SAMPLE 9	OVER	0.9	0.247	0.245	0.248
SAMPLE 10	12.3	1.6	0.038	0.039	0.038
SAMPLE 11	32.4	0.0	0.097	0.097	0.097
SAMPLE 12	9.3	2.1	0.029	0.029	0.029
SAMPLE 13 CCV2	39.0	0.9	0.113	0.112	0.114
SAMPLE 14 CCB2	-0.6	30.8	-0.002	-0.002	-0.002
SAMPLE 15	6.2	2.8	0.019	0.019	0.020
SAMPLE 16	26.6	0.4	0.082	0.081	0.082
SAMPLE 17	21.0	2.2	0.066	0.065	0.067
SAMPLE 18	21.4	1.7	0.066	0.067	0.066
SAMPLE 19	OVER	1.1	0.667*	0.673*	0.662*
SAMPLE 20	OVER	99.9	0.339*	0.677*	0.001
SAMPLE 21	6.3	2.8	0.020	0.020	0.019
SAMPLE 22	4.3	3.4	0.013	0.014	0.013
SAMPLE 23	25.3	1.5	0.078	0.079	0.077
SAMPLE 24 CCV3	39.6	0.4	0.115	0.114	0.115
SAMPLE 25 CCB3	-0.1	99.9	-0.000	-0.001	0.001
SAMPLE 26	-0.3	62.3	-0.001	-0.001	-0.001
SAMPLE 27	0.2	0.0	0.000	0.001	0.000
SAMPLE 28	17.8	0.8	0.056	0.055	0.056
SAMPLE 29	OVER	0.2	0.202	0.203	0.202
SAMPLE 30	OVER	1.0	0.202	0.201	0.204
SAMPLE 31	0.5	75.1	0.001	0.001	0.002
SAMPLE 32	2.6	12.2	0.008	0.009	0.007
SAMPLE 33	OVER	17.6	0.257B	0.225B	0.289B
SAMPLE 34	2.1	10.6	0.006	0.006	0.007
SAMPLE 35	49.1B	38.9	0.142B	0.103B	0.181B
SAMPLE 36 CCV4	38.1	2.9	0.111	0.113	0.109
SAMPLE 37 CCB4	-0.5	63.8	-0.001	-0.001	-0.002

cj Bwo
11/19/91
A 5

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
PLE 39	OVER	25.7	0.594B	0.702B	0.486B
SAMPLE 40	17.7	10.3	0.055	0.059	0.051
SAMPLE 41	41.6	1.9	0.120	0.121	0.118
SAMPLE 42	43.4	0.0	0.125	0.125	0.125
SAMPLE 43 CCV5	39.2	0.4	0.114	0.113	0.114
SAMPLE 44 CCB5	-0.3	7.8	-0.001	-0.001	-0.001
SAMPLE 45	-0.3	44.4	-0.001	-0.001	-0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.007	0.007
SAMPLE 1	40.5	0.2	0.117	0.117	0.117
SAMPLE 2	-0.3	51.1	-0.001	-0.001	-0.001
SAMPLE 3	OVER	0.9	0.275	0.277	0.273
SAMPLE 4	55.2	99.9	0.160	0.321	-0.002
SAMPLE 5	35.6	1.6	0.105	0.104	0.106
SAMPLE 6	35.3	1.9	0.105	0.103	0.106
SAMPLE 7	10.1	3.7	0.031	0.032	0.031
SAMPLE 8	-0.1	99.9	-0.000	0.000	-0.001
SAMPLE 9	45.2	0.9	0.130	0.131	0.130
PLE 10	OVER	14.4	0.201B	0.222B	0.181B
SAMPLE 11	8.3	3.0	0.026	0.025	0.026
SAMPLE 12	30.4	2.0	0.092	0.091	0.093
SAMPLE 13	38.6	0.9	0.112	0.113	0.112
SAMPLE 14	-0.2	0.0	-0.001	-0.001	-0.001
SAMPLE 15	6.3	3.1	0.020	0.019	0.020
SAMPLE 16	39.6	0.5	0.114	0.115	0.114
SAMPLE 17	-0.3	14.0	-0.001	-0.001	-0.001

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6631

SAMPLE NUMBER:

SERVICE REQUEST #: 91-6641C, 6712C, 6729C, 6670C 6631C

ANALYSIS FOR: Pb | METHOD: GFAA

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	PBW6641,6670,6712,6729,6642	50	50	—	—	<2	<0.002
2	LCSW(984)	50		1	5	18.7	95%
3	6641C-1			—	—	<2	<0.002
4	C-1A					22.2	111%
5	C-1DS					458	0.046/115% ①
6	C-5					430	0.043/108%
7	6712C-2					17.4	0.017
8	C-2A					40.3	114%
9	C-3					<2	<0.002
10	CCV123(40)	—	—			38.3	96%
11	CCB123	—	—			<2	<0.002
12	6729C-1	50	50			17.6	0.018
13	C-1A					406	115%
14	C-2					6.9	0.007
15	C-3					9.7	0.010
16	6670C-2	50	50			<2	<0.002
17	C-3					13.8	0.004
18	C-3A					235	98%
19	6642-1	50	50			<2	<0—
20	6642-1					<1	—
21	1A					24.5	—
22	CCV3(40)	—	—			38.1	95%
23	CCB3 and 12/0	—	—			<1	<0.001
24	PBW 6631C	50	50			<1	<0.001
25	6631C-1					<1	<0.001

COMMENTS: ① Spiked at 40 ug/L

SPIKE LEVEL: A: 20 ug/L

ANALYST: J Bruno | DATE: 11/19/91 | PAGE NUMBER: 3

REVIEWER: | DATE:

CAMCSGFAT.FRM1

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2

1317 South 13th Street P.O. Box 479

Kelso, WA 98626 (206) 577-7222

OPERATOR CJ Burra

DATE 11/19/91 Time 09:00

BATCH Pb

PROGRAM 19 Pb EPA/PTI PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.003	0.002	0.004
STANDARD 1	5.0	5.0	0.009	0.009	0.009
STANDARD 2	30.0	0.8	0.053	0.053	0.054
STANDARD 3	40.0	1.7	0.070	0.069	0.070
STANDARD 4	50.0	0.3	0.087	0.087	0.087
SAMPLE 1 ICV	21.4	0.2	0.038	0.038	0.038
SAMPLE 2 CCV1	41.1	1.0	0.071	0.071	0.072
SAMPLE 3 CCB1	0.8	18.9	0.001	0.002	0.001
SAMPLE 4	1.0	17.6	0.002	0.002	-0.002
SAMPLE 5	2.4	89.3	0.004	0.007	0.002
SAMPLE 6	25.6	2.0	0.046	0.046	0.045
SAMPLE 7	6.4	2.2	0.012	0.011	0.012

J Bruno
11/19/91
pb

[illegible]	10	0.9	24.1	0.002	0.002	0.001
[illegible]PLE	11	0.8	11.6	0.001	0.002	0.001
SAMPLE	12	0.9	0.0	0.002	0.002	0.002
[illegible]MPLE	13	1.1	8.1	0.002	0.002	0.002
SAMPLE	14	39.7	3.3	0.069	0.067	0.071
SAMPLE	15	0.5	40.2	0.001	0.001	0.001
SAMPLE	16	0.9	7.6	0.002	0.002	0.002
SAMPLE	17	1.3	5.2	0.002	0.002	0.002
SAMPLE	18	1.8	16.6	0.003	0.003	0.004
SAMPLE	19	1.0	11.1	0.002	0.002	0.002
AMPLE	20	1.0	8.9	0.002	0.002	0.002
AMPLE	21	23.0	0.0	0.041	0.041	0.041
MPLE	22	0.8	47.0	0.001	0.001	0.002
MPLE	23	1.1	28.9	0.002	0.002	0.002
MPLE	24	1.4	11.5	0.002	0.003	0.002
MPLE	25	1.4	3.4	0.003	0.003	0.002
M	26	40.8	1.8	0.071	0.070	0.072
MPLE	27	1.2	15.0	0.002	0.002	0.002
PLE	28	1.7	2.0	0.003	0.003	0.003
PLE	29	1.2	46.2	0.002	0.002	0.003
PLE	30	2.2	1.5	0.004	0.004	0.004
PLE	31	1.2	42.1	0.002	0.003	0.002
LE	32	1.0	39.1	0.002	0.002	0.001
LE	33	1.1	20.1	0.002	0.002	0.002
LE	34 CCV2	40.4	1.5	0.070	0.069	0.071
LE	35 CCB2	1.3	15.4	0.002	0.003	0.002

cf Bruno 11/19/99 Pb

BLANK	0.0		-0.001	-0.000	-0.002
SAMPLE 1 PBW	-0.06641	99.9	-0.000	0.000	-0.000
SAMPLE 2 LCS	18.7	0.8	0.034	0.033	0.034
SAMPLE 3 6641-1	0.0	99.9	0.000	0.001	-0.001
SAMPLE 4	22.2	1.9	0.040	0.039	0.040
SAMPLE 5	45.8	1.0	0.080	0.080	0.079
SAMPLE 6	43.0	0.8	0.075	0.074	0.075
SAMPLE 7	17.4	1.3	0.031	0.031	0.032
SAMPLE 8	40.3	1.5	0.070	0.071	0.069
SAMPLE 9	-0.6	11.6	-0.001	-0.001	-0.001
SAMPLE 10 CCV3	38.3	2.5	0.067	0.068	0.066
SAMPLE 11 CCB3	-1.4	12.6	-0.003	-0.002	-0.003
SAMPLE 12	17.6	2.7	0.032	0.031	0.032
SAMPLE 13	40.6	0.9	0.071	0.070	0.071
SAMPLE 14	6.9	2.6	0.013	0.013	0.012
SAMPLE 15	9.7	0.0	0.018	0.018	0.018
SAMPLE 16	-0.9	9.9	-0.002	-0.002	-0.002
SAMPLE 17	3.8	6.6	0.007	0.007	0.007
SAMPLE 18	23.5	0.8	0.042	0.042	0.042
SAMPLE 19	-1.1	0.0	-0.002	-0.002	-0.002
SAMPLE 20	0.0	0.0	0.000	0.000	0.000
SAMPLE 21	24.5	0.4	0.044	0.044	0.044
SAMPLE 22 CCV4	38.1	4.0	0.067	0.065	0.068
SAMPLE 23 CCB4	-1.0	4.5	-0.002	-0.002	-0.002
BLANK	0.0		-0.001	-0.000	-0.001
SAMPLE 24	-0.4	16.7	-0.001	-0.001	-0.001
SAMPLE 25	0.3	76.7	0.001	0.000	0.001
SAMPLE 26	21.1	0.2	0.038	0.038	0.038
SAMPLE 27	39.6	1.4	0.069	0.068	0.070
SAMPLE 28	38.9	0.7	0.068	0.068	0.068

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[redacted]PLE 31	8.6	0.4	0.016	0.016	0.016
SAMPLE 32	0.4	81.2	0.001	0.000	0.001
SAMPLE 33	0.6	99.9	0.001	0.003	-0.001
S LE 34	36.0	3.4	0.063	0.065	0.062
SAMPLE 35	-0.3	51.4	-0.001	-0.000	-0.001
BLANK	0.0		0.000	0.001	-0.000
RESLOPE 3	40.0	5.5	0.062	0.060	0.065
SAMPLE 36	1.0	99.9	0.002	0.003	0.000
SAMPLE 37	OVER	8.6	0.262B	0.277B	0.246B
SAMPLE 38	1.0	38.1	0.002	0.001	0.002
SAMPLE 39	0.8	24.3	0.001	0.001	0.002
SAMPLE 40	OVER	1.0	0.118	0.119	0.117
SAMPLE 41	0.4	99.9	0.001	0.000	0.001
SAMPLE 42	41.0	1.0	0.064	0.064	0.063
SAMPLE 43	0.4	50.4	0.001	0.001	0.000

J Brown
11/19/97
Pb

5

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 9166641

SAMPLE NUMBER: As Listed	SERVICE REQUEST # : 9166641 9166670 9166712 9166729 9166681 9166731
ANALYSIS FOR: Hg	METHOD: CVAA

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	ug/l measured	(mg/L or mg/Kg) Sample (actual)
1	ICV	5.0 ppb				5.43	108%
2	CCV-1	3.0 ppb				3.07	102%
3	CCB-1					<.2	<.0002
4	6641 6670 6712 6729 6681 6731 PBW	20ml	20ml				
5	6641-1						
6	-1DS			⊛		0.88	.0009 90%
7	-1SD			⊛		0.89	.0009 90%
8	6670-2					<.2	<.0002
9	-3						
10	6712-2						
11	6729-1						
12	-1S			⊛		0.92	.0009 90%
13	-1SD			⊛		0.86	.0009 90%
14	CCV-2	3.0 ppb				3.01	100%
15	CCB-2					<.2	<.0002
16	6729-2	20ml	20ml				
17	-3						
18	6681-1						
19	-1D						
20	-1S			⊛		0.95	.0010 100%
21	6731-1					<.2	<.0002
22	-3						
23	-3S			⊛		1.01	.0010 100%
24	-3SD			⊛		0.98	.0010 100%
25	-4					<.2	<.0002

11/21

COMMENTS:

SPIKE LEVEL: ⊛ 1.0 ppb

ANALYST: Sandy Brush	DATE: 11/21/91	PAGE Number:
REVIEWER	DATE:	

[AMKSGFA1.FRM]

Varian SpectrAA 10/20 System Report

(mbia Analytical Services
1..7 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11 21 91
BATCH NO.

PROGRAM 23 Hg

SAMPLE	CONC	%RSD	MEAN ABS	READINGS			
BLANK	0.00		0.001	0.001	0.001	0.001
STANDARD 1	1.00	1.2	0.018	0.018	0.018	0.018
STANDARD 2	3.00	1.4	0.051	0.051	0.051	0.052
STANDARD 3	5.00	0.5	0.083	0.084	0.083	0.083
STANDARD 4	10.00	0.5	0.177	0.177	0.177	0.178
SAMPLE 1 ICV, LCS	5.43	1.4	0.091	0.090	0.092	0.092
SAMPLE 2 CCV1	3.07	1.0	0.052	0.053	0.052	0.052
SAMPLE 3 CCB1	-0.00	99.9	-0.000	0.000	-0.000	-0.000
SAMPLE 4	-0.01	99.9	-0.000	-0.000	0.000	-0.000
SAMPLE 5	-0.00	99.9	-0.000	0.001	-0.001	-0.000
SAMPLE 6	0.66	2.0	0.016	0.016	0.016	0.015
SAMPLE 7	0.89	3.7	0.016	0.016	0.015	0.016
SAMPLE 8	0.04	50.5	0.001	0.001	0.000	0.001
SAMPLE 9	0.02	60.6	0.000	0.000	0.000	0.000
SAMPLE 10	0.04	66.8	0.001	0.000	0.001	0.000
SAMPLE 11	0.01	57.7	0.000	0.000	0.000	0.000
SAMPLE 12	0.92	1.5	0.016	0.016	0.017	0.016
SAMPLE 13	0.86	1.1	0.015	0.015	0.015	0.016
SAMPLE 14 CCV2	3.01	1.3	0.051	0.051	0.052	0.052
SAMPLE 15 CCB2	0.01	73.9	0.000	0.000	0.000	0.000
SAMPLE 16	0.02	56.9	0.000	0.000	0.001	0.000
SAMPLE 17	0.03	69.7	0.001	0.000	0.001	0.000
SAMPLE 18	0.02	30.8	0.000	0.000	0.000	0.000
SAMPLE 19	0.02	99.9	0.000	0.001	-0.000	0.000
SAMPLE 20	0.95	1.5	0.017	0.017	0.016	0.017
SAMPLE 21	0.02	68.3	0.000	0.000	0.000	0.001
SAMPLE 22	0.03	95.9	0.001	0.000	0.000	0.001
SAMPLE 23	1.01	1.5	0.018	0.018	0.018	0.018
SAMPLE 24	0.98	1.2	0.017	0.017	0.017	0.018
SAMPLE 25	0.03	28.3	0.001	0.001	0.000	0.001
SAMPLE 26	3.22	0.7	0.055	0.055	0.054	0.055
SAMPLE 27	0.02	90.1	0.000	0.000	0.000	0.001
SAMPLE 28	0.05	7.5	0.001	0.001	0.001	0.001
SAMPLE 29	0.04	27.1	0.001	0.001	0.001	0.001
SAMPLE 30	0.04	14.1	0.001	0.001	0.001	0.001
SAMPLE 31	0.02	69.4	0.000	0.000	0.000	0.001
SAMPLE 32	0.03	68.8	0.000	0.000	0.001	0.000
SAMPLE 33	0.04	47.2	0.001	0.001	0.001	0.000
SAMPLE 34	0.03	99.9	0.001	0.001	-0.000	0.001
SAMPLE 35	-0.02	73.7	-0.000	-0.000	-0.000	-0.000
SAMPLE 36	9.58	0.2	0.169	0.169	0.169	0.169
SAMPLE 37	-0.04	9.2	-0.001	-0.001	-0.001	-0.001
SAMPLE 38	3.19	0.2	0.054	0.055	0.054	0.054

Sandy Brush

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
PLE 39	-0.03	13.2	-0.000	-0.000	-0.000	-0.001
NK	0.00		-0.001	-0.001	-0.001	-0.001
SAMPLE 40	-0.01	54.6	-0.000	-0.000	-0.000	-0.000
SAMPLE 41	0.01	99.9	0.000	0.000	0.001	-0.001
SAMPLE 42	10.37	1.0	0.185	0.183	0.185	0.187
SAMPLE 43	0.01	99.9	0.000	0.000	-0.000	0.000
SAMPLE 44	0.06	42.9	0.001	0.001	0.001	0.001
SAMPLE 45	0.05	27.8	0.001	0.001	0.001	0.001
SAMPLE 46	0.10	21.4	0.002	0.002	0.001	0.002
SAMPLE 47	0.09	3.6	0.002	0.002	0.002	0.002
SAMPLE 48	0.08	21.0	0.001	0.002	0.001	0.001
SAMPLE 49	3.29	1.1	0.056	0.055	0.056	0.056
SAMPLE 50	3.17	0.5	0.054	0.054	0.054	0.054
SAMPLE 51	0.03	65.7	0.001	0.001	0.000	0.000
SAMPLE 52	10.61	0.4	0.190	0.189	0.190	0.190
SAMPLE 53	3.13	0.5	0.053	0.053	0.054	0.054
SAMPLE 54	0.02	99.9	0.000	0.000	0.001	-0.000

Sandy Brush 11/21/91

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6694/6641/6670/6712
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6694-PBS		100	—	—	<1	<2.0
2	-1	0.096g Dry		1	2	3.8	7.9
3	-1A					15.6	RERUN
4	-1D					3.5	7.3
5	-1A					14.2	104%
6	-1S					14.5	30/105%
7	-2	0.074g				3.0	8.1
8	-3	0.078g				2.9	7.4
9	-4	0.070g				2.7	7.7
10	CCV$_{se}^{2}$(40)					42.0	105%
11	CCB$_{se}^{2}$					<1	<0.001
12	6694-PBW		50	—	—	<1	<0.001
13	-5	50		—	—	<2	<0.002
14	-5A			—	—	23.2	116% *
15	-5D			—	—	<1	<0.001
16	-5S			—	—	12.4	0.012/120%
17	6641/6670/6712 PBW		50			<1	<0.001
18	LCSW			1	2	24.1	96%
19	6641-1	50		—	—	<1	<0.001
20	-1A			—	—	12.0	120%
21	CCV$_{se}^{3}$(40)					41.0	~~105%~~ 102% EA 11/25/91
22	CCB$_{se}^{3}$					<1	<0.001
23	6641-1S	50	50	—	—	22.4	0.022/110%
24	-1SD			—	—	22.9	0.023/115%
25	6670-2			—	—	<1	<0.001

COMMENTS: * post spiked w/ 20 µg/l

SPIKE LEVEL: 20 µg/l (21 µg/kg Dry) A: +10 µg/l

ANALYST	Ivan Unicef	DATE: 11/22/91	PAGE NUMBER: 3
REVIEWER	[signature]	DATE: 11-24-91	

[AWKSGFA1.FRM]

00040

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6670/6712/6710
ANALYSIS FOR: SC	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6670-2A	50	50	—	—	11.9	~~119%~~
27	-3			—	—	<1	<0.001
28	6712-2			—	—	<1	<0.001
29	-2A			—	—	13.5	135%
30	CCV					43.7	109%
31	CCB					<1	<0.001
32	6670-2A			—	—	11.5	115%
33	6710-PBW		50	—	—	<1	<0.001
34	-1 DISS	50		—	—	<1	<0.001
35	-1A			—	—	12.0	120%
36	-1S			—	—	11.6	0.012/120%
37	-1SD			—	—	11.9	0.012/120%
38	-2			—	—	<1	<0.001
39	-3			—	—	<1	<0.001
40	-4			—	—	<1	<0.001
41	-5			—	—	<1	<0.001
42	-6 TOTAL			—	—	<1	<0.001
43	CCV (40)					40.1	100%
44	CCB					<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 10 ug/l A: +10 ug/l

ANALYST Ivan Chicaton	DATE: 11/22/91	PAGE Number: 4
REVIEWER	DATE:	

[AWKSGFA2.FRM]

00041

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR Ivan Urvecha
DATE 11/22/91 08:00
BATCH

PROGRAM 12 Se EPA PLATFORM

SAMPLE	CONC ppb		%RSD	MEAN ABS	READINGS	
BLANK	0.0			0.003	0.004	0.002
STANDARD 1	5.0		7.3	0.008	0.008	0.008
STANDARD 2	30.0		1.0	0.054	0.053	0.054
STANDARD 3	40.0		2.2	0.072	0.074	0.071
STANDARD 4	50.0		0.3	0.092	0.091	0.092
SAMPLE 1 ICV	26.8	1:2	2.6	0.047	0.048	0.047
SAMPLE 2 CCV1	40.4		3.0	0.073	0.072	0.075
SAMPLE 3 CCB1	-0.3		99.9	-0.000	0.000	-0.001
SAMPLE 4	0.5		47.0	0.001	0.001	0.001
SAMPLE 5	0.2		71.7	0.000	0.000	0.000
SAMPLE 6	11.5		3.1	0.019	0.019	0.019
SAMPLE 7	-1.9		11.3	-0.003	-0.003	-0.003
SAMPLE 8	7.0		1.5	0.011	0.011	0.011
SAMPLE 9	39.2		0.6	0.071	0.071	0.071
SAMPLE 10	-0.4		99.9	-0.001	0.000	-0.002
SAMPLE 11	-10.0		1.3	-0.016	-0.016	-0.016
SAMPLE 12	-3.3		10.3	-0.005	-0.006	-0.005
SAMPLE 13	6.6		1.0	0.011	0.011	0.011
SAMPLE 14	-1.7		25.7	-0.003	-0.003	-0.002
SAMPLE 15	9.7		7.5	0.016	0.015	0.017
SAMPLE 16	41.1		0.1	0.075	0.075	0.074
SAMPLE 17	0.6		75.4	0.001	0.000	0.001
SAMPLE 18	-0.3		96.2	-0.000	-0.000	-0.001
SAMPLE 19	20.8		3.2	0.036	0.035	0.037
SAMPLE 20	28.8		1.9	0.051	0.052	0.051
SAMPLE 21	-0.4		0.0	-0.001	-0.001	-0.001
SAMPLE 22	-0.5		99.9	-0.001	-0.000	-0.002
SAMPLE 23	10.8		4.7	0.018	0.017	0.018
SAMPLE 24	9.8		6.3	0.016	0.015	0.017
SAMPLE 25	9.5		3.3	0.016	0.015	0.016
SAMPLE 26	-0.1		0.0	-0.000	-0.000	-0.000
SAMPLE 27	-0.2		16.0	-0.000	-0.000	-0.000
SAMPLE 28	-0.3		51.6	-0.000	-0.001	-0.000
SAMPLE 29	0.2		0.0	0.000	0.000	0.000
SAMPLE 30	38.6		1.4	0.070	0.069	0.071
SAMPLE 31	0.5		14.8	0.001	0.001	0.001
SAMPLE 32	OVER		0.2	0.650*	0.651*	0.649*
SAMPLE 33	OVER		1.8	0.666*	0.658*	0.675*

Ivan Urcelay
11/22/91

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
PLE 34	OVER	2.9	0.248	0.253	0.243
SAMPLE 35	30.8	3.8	0.055	0.057	0.054
SAMPLE 36	39.6	1.1	0.072	0.072	0.071
SAMPLE 37	23.0	0.9	0.040	0.040	0.040
SAMPLE 38	31.3	2.8	0.056	0.057	0.055
SAMPLE 39	38.0	2.5	0.069	0.067	0.070
SAMPLE 40	-0.1	99.9	-0.000	0.000	-0.001
BLANK	0.0		-0.003	-0.004	-0.003
SAMPLE 1	-0.7	5.2	-0.001	-0.001	-0.001
SAMPLE 2	3.8	2.2	0.006	0.006	0.006
SAMPLE 3	15.6	5.1	0.026	0.027	0.025
SAMPLE 4	3.5	2.4	0.006	0.006	0.006
SAMPLE 5	14.2	4.1	0.024	0.024	0.023
SAMPLE 6	14.5	2.3	0.024	0.025	0.024
SAMPLE 7	3.0	0.0	0.005	0.005	0.005
SAMPLE 8	2.9	1.3	0.005	0.005	0.005
SAMPLE 9	2.7	59.8	0.004	0.003	0.006
SAMPLE 10 CCV2	42.0	1.6	0.076	0.075	0.077
SAMPLE 11 CCB2	-0.7	41.5	-0.001	-0.002	-0.001
SAMPLE 12	-0.3	99.9	-0.000	-0.001	0.000
SAMPLE 13	1.0	25.3	0.002	0.001	0.002
SAMPLE 14	23.2	2.7	0.040	0.039	0.041
SAMPLE 15	0.6	95.9	0.001	0.002	0.000
SAMPLE 16	12.4	3.4	0.020	0.021	0.020
SAMPLE 17 PBGA1	-0.2	99.9	-0.000	0.000	-0.001
SAMPLE 18 LCSGA1	24.1	2.1	0.042	0.041	0.043
SAMPLE 19 GA1-1	-0.1	99.9	-0.000	0.001	-0.002
SAMPLE 20	12.0	2.1	0.020	0.019	0.020
SAMPLE 21 CCV3	41.0	1.0	0.074	0.075	0.074
SAMPLE 22 CCB3	0.1	99.9	0.000	0.001	-0.001
SAMPLE 23	22.4	0.3	0.039	0.039	0.039
SAMPLE 24	22.9	0.5	0.040	0.040	0.039
SAMPLE 25	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 26	11.9	0.0	0.020	0.020	0.019
SAMPLE 27	0.4	99.9	0.001	-0.001	0.002
SAMPLE 28	0.7	16.6	0.001	0.001	0.001
SAMPLE 29	13.5	1.7	0.022	0.022	0.023
SAMPLE 30 CCV4	43.7	0.0	0.079	0.079	0.079
SAMPLE 31 CCB4	0.6	66.4	0.001	0.001	0.000
SAMPLE 32	11.5	20.3	0.019	0.022	0.016
SAMPLE 33	-0.2	66.5	-0.000	-0.000	-0.000
SAMPLE 34	0.5	0.0	0.001	0.001	0.001
SAMPLE 35	12.0	2.3	0.020	0.020	0.019
SAMPLE 36	11.6	5.2	0.019	0.018	0.020
SAMPLE 37	11.9	0.0	0.020	0.020	0.020
SAMPLE 38	-0.2	0.0	-0.000	-0.000	-0.000
SAMPLE 39	-0.2	24.1	-0.000	-0.000	-0.000
SAMPLE 40	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 41	-0.6	82.8	-0.001	-0.000	-0.001
SAMPLE 42	-0.5	65.3	-0.001	-0.000	-0.001
SAMPLE 43	40.1	3.1	0.073	0.071	0.074

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # : 6633
ANALYSIS FOR: TI	METHOD: GFAA	6593, 6516, 6631, 6641, 6694

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	ICV (100.7)			1	2	50.6	100%
2	CCVa1(40)	—	—	—	—	39.2	98%
3	CCBa1	—	—	—	-	<1	<0.001
4	6593-PBS	—	50	1	1	<1	<0.2
5	1	0.25	50	1	2	1.1	0.4
6	1A	↓	50	1	2	19.8	94%
7	6633 6516-PBS	—	100	1	1	<1	<0.2
8	6	.50	100	1	2	3.6	1.4
9	6A	.50	100	1	2	23.4	99%
10	6631-PBW	50	50	—	—	<1	<0.001
11	CCV x 2 EA	—	—	—	—	38.5	96%
12	CCB x 2	—	—	—	—	<1	<0.001
13	2	50	50	1	1	~~1.5~~ <2	<0.002
14	2A 12/10	50	50	1	1	19.5	98%
15	6641-PBW	50	50	1	1	<1	<0.001
16	LCSW (100.7)	↓	↓	1	5	19.5	97%
17	1			1	1	<1	<0.001
18	1A			1	1	20.4	102%
19	1S			1	1	OVER Highest ABS	
20	1Sd	↓	↓	1	1	OVER ↓ ↓	
21	6694-PBS		100	1	1	<1	<1.0
22	1	.096	100	1	2	1.4	2.9
23	ICV x 3 EA	—	—	—	—	38.7	97%
24	CCB x 3	—	—	—	—	<1	<0.001
25	1A	.096	100	1	2	20.1	94%

COMMENTS:

SPIKE LEVEL: 6641 @ 100 ug/L or 0.10 mg/L A: +20

ANALYST	DATE: 11-22-91	PAGE NUMBER: 1
REVIEWER	DATE:	

(AWKSGFAT.FRM)

00044

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: Tl	METHOD: GFAA	6694 6685 6670

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6694-1d	.096	100	1	2	<1	<2.1
27	~~1d~~ 1S	.096	100	1	2	48.1	100.2 | 93%
28	~~1S~~ 2	.074	100	1	2	<1	<3.0
29	3	.078	100	1	2	<1	<3.0
30	4	.070	100	1	2	<1	<3.0
31	PBW-6694	50	50	1	1	<1	~~<3.0~~ 0.001
32	5	50	50	1	1	<1	<0.001
33	5D	↓	↓	1	1	<1	<0.001
34	5S	↓	↓	1	1	48.5	0.048 | 96%
35	CCV 4	—	—	—	—	37.2	93%
36	CCB 4	—	—	—	—	<1	<0.001
37	6685-PBS	1.0 As Rec'd	100	—	—	<1	<0.1
38	1	↓	100	1	2	<1	<0.2
39	1A	↓	100	1	2	19.1	96%
40	6670-PBW	50	50	1	1	<1	<0.001
41	2	↓	↓	↓	↓	<1	<0.001
42	2A	↓	↓	↓	↓	19.4	97%
43	3	↓	↓	↓	↓	<1	<0.001
44	CCV 5	—	—	—	—	37.1	93%
45	CCB 5	—	—	—	—	<1	<0.001
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6694 @ ~~100mg/L~~ 50mg/L or ~~104.2mg/Kg~~ .050mg/L A: +20

ANALYST: [signature]	DATE: 11-22-91	PAGE NUMBER: 2
REVIEWER: [signature]	DATE: 11-24-91	

(AWKSGFAZ.FRM)

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: Tl	METHOD: GFAA	6712, 6641 6748, 6633

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6712-PBW	50	50	1	1	<1	<0.001
2	2	50	50	↓	↓	<1	<0.001
3	2A	50	50	↓	↓	18.4	92%
4	6641-~~55~~ 1S	50	50	1	2	43.8	0.088 | 88%
5	~~SD~~ 1SD	↓	↓	1	2	45.5	0.091 | 91%
6	6748-PB		10	1	1	<1	<0.1
7	1	.123 As Rec'd	10	1	2	<1	<0.2
8	1A	.121	↓	1	2	18.1	90%
9	1S	.125	↓	1	2	20.8	3.3 | 82%
10	CCV #4	—	—	—	—	37.2	93%
11	CCB #4 EA 12/3	—	—	—	—	<1	<0.001
12	6633-PBS	- with 6516 -		1	1	- w/6516 -	—
13	4	1.0 As Rec'd	100	1	2	2.9	0.6
14	4A	↓	↓	↓	↓	22.1	96%
15	4S	↓	↓	↓	↓	46.9	9.38 | 94%
16	4SD	↓	↓	↓	↓	47.5	9.5 | 95%
17	8	↓	↓	↓	↓	2.8	0.6
18	12	↓	↓	↓	↓	3.0	0.6
19	16	↓	↓	↓	↓	2.7	0.6
20	20	↓	↓	↓	↓	2.1	0.4
→ 21	CCV	—	—	—	—	38.2	96%
→ 22	CCB	—	—	—	—	<1	<0.001
23							
24							
25							

COMMENTS: 6748 @ 50mg/L or → 4mg/kg → 0.10mg/L 6633 @ ~~50mg/L~~ 100mg/L or ~~5mg/kg~~ 10mg/kg

SPIKE LEVEL: 6641 @ 100mg/L OR ~~0.010mg/L~~ A: +20

ANALYST [signature]	DATE: 11-22-91	PAGE NUMBER: 3
REVIEWER	DATE:	

CAMCSGFA1.FRM1

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.002	0.001	0.003
STANDARD 1	10.0	5.4	0.019	0.018	0.020
STANDARD 2	20.0	3.3	0.037	0.038	0.036
STANDARD 3	40.0	0.5	0.070	0.070	0.070
STANDARD 4	60.0	0.7	0.099	0.098	0.099
SAMPLE 1 ICV	50.6	0.8	0.086	0.085	0.086
SAMPLE 2 CCVI	39.2	1.0	0.069	0.068	0.069
SAMPLE 3 CCBI	0.4	99.9	0.001	0.003	-0.001
SAMPLE 4	0.9	35.3	0.002	0.001	0.002
SAMPLE 5	1.1	17.1	0.002	0.002	0.002
SAMPLE 6	19.8	0.2	0.036	0.036	0.036
SAMPLE 7	0.4	40.3	0.001	0.001	0.001
SAMPLE 8	3.6	6.5	0.007	0.007	0.007
SAMPLE 9	23.4	1.4	0.043	0.042	0.043
SAMPLE 10	0.3	99.9	0.001	0.000	0.001
SAMPLE 11 CCV2	38.5	1.4	0.067	0.068	0.067
SAMPLE 12 CCB2	0.7	28.3	0.001	0.002	0.001
SAMPLE 13	1.5	28.7	0.003	0.003	0.002
SAMPLE 14	19.5	2.2	0.036	0.037	0.035
SAMPLE 15	-0.5	99.9	-0.001	0.001	-0.003
SAMPLE 16	19.5	3.6	0.036	0.035	0.037
SAMPLE 17	0.2	99.9	0.000	-0.000	0.001
SAMPLE 18	20.4	0.4	0.038	0.038	0.037
SAMPLE 19	OVER	0.5	0.148	0.148	0.147
SAMPLE 20	OVER	1.3	0.147	0.145	0.148
SAMPLE 21	0.9	0.0	0.002	0.002	0.002
SAMPLE 22	1.4	26.8	0.003	0.003	0.002
SAMPLE 23 CCV3	38.7	1.4	0.068	0.067	0.069
SAMPLE 24 CCB3	0.4	19.1	0.001	0.001	0.001
SAMPLE 25	20.9	5.2	0.038	0.037	0.040
SAMPLE 26	0.2	64.1	0.000	0.001	0.000
SAMPLE 27	48.1	0.8	0.082	0.082	0.083
SAMPLE 28	0.6	19.6	0.001	0.001	0.001
SAMPLE 29	-0.3	99.9	-0.001	0.000	-0.001
SAMPLE 30	0.2	99.9	0.000	0.001	-0.001
SAMPLE 31	0.1	99.9	0.000	0.001	-0.001
SAMPLE 32	-0.7	75.7	-0.001	-0.002	-0.001
SAMPLE 33	0.0	99.9	0.000	0.001	-0.001
SAMPLE 34 12/10	48.5	0.0	0.083	0.083	0.083
SAMPLE 35 CCV4	37.2	1.1	0.065	0.066	0.065
SAMPLE 36 CCB4	0.1	99.9	0.000	0.000	0.001
SAMPLE 37	0.1	88.8	0.000	0.000	0.000

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	19.1	0.0	0.035	0.035	0.035
SAMPLE 40	0.3	50.0	0.001	0.000	0.001
SAMPLE 41	-0.1	99.9	-0.000	0.000	-0.000
SAMPLE 42	19.4	0.5	0.036	0.036	0.036
SAMPLE 43	-0.3	99.9	-0.001	-0.000	-0.001
SAMPLE 44	37.1	2.3	0.065	0.066	0.064
SAMPLE 45	0.1	99.9	0.000	-0.002	0.002

JBlodgett 11-22-91

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

11-22-91

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.002
SAMPLE 1	-1.2	7.0	-0.002	-0.002	-0.002
SAMPLE 2	-0.4	99.9	-0.001	-0.002	0.001
SAMPLE 3	18.4	1.2	0.034	0.034	0.034
SAMPLE 4	43.8	1.9	0.076	0.075	0.077
SAMPLE 5	45.5	1.6	0.078	0.077	0.079
SAMPLE 6	-0.8	79.0	-0.002	-0.002	-0.001
SAMPLE 7	-0.3	99.9	-0.001	-0.002	0.001
SAMPLE 8	18.1	0.5	0.034	0.034	0.034
SAMPLE 9	20.8	6.1	0.038	0.040	0.037
SAMPLE 10CCV4	37.2	1.7	0.065	0.066	0.065
SAMPLE 11CCB4	-0.5	0.0	-0.001	-0.001	-0.001

BLANK	0.0		0.003	0.004	0.003
SAMPLE 13	2.9	0.0	0.005	0.005	0.005
SAMPLE 14	22.1	1.9	0.040	0.041	0.040
SAMPLE 15	46.9	1.0	0.080	0.080	0.081
SAMPLE 16	47.5	0.8	0.081	0.081	0.082
SAMPLE 17	2.8	16.4	0.005	0.005	0.006
SAMPLE 18	3.0	6.2	0.006	0.006	0.005
SAMPLE 19	2.7	11.4	0.005	0.005	0.006
SAMPLE 20	2.1	33.5	0.004	0.003	0.005
SAMPLE 21	38.2	0.8	0.067	0.067	0.067
SAMPLE 22	0.0	99.9	0.000	-0.000	0.000

Bloodgood 11-22-91

:hod: EPACLP1 Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Avge	.0168	-.0009	.0011	.0042	.0009	.0051	.0000
#1	.0167	-.0006	.0016	.0043	.0009	.0051	.0000
#2	.0169	-.0011	.0007	.0041	.0010	.0050	.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Avge	.0834	.0008	-.0001	.0011	.0316	.0010	.0004
#1	.0831	.0010	-.0004	.0011	.0317	.0010	.0003
#2	.0836	.0006	.0001	.0010	.0314	.0010	.0004

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Avge	.0003	.0001	.0004	.0004	.3536	-.0013	-.0001
#1	.0005	.0001	.0003	.0010	.3536	-.0006	.0000
#2	.0001	.0000	.0004	-.0003	.3537	-.0020	-.0003

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Avge	.1083	-.0026	.0002	.0002	.0483	.0104	.0009
#1	.1074	-.0051	.0001	.0003	.0487	.0101	.0009
#2	.1091	-.0001	.0003	.0001	.0479	.0106	.0009

lem	Tl1908	Li6707	Sr4215
Avge	.0030	.0270	.0000
#1	.0027	.0271	.0000
#2	.0032	.0269	.0000

thod: EPACLP1 Standard: STD3

Elem	Al3082	As1936	Be3130	Ca3179	Co2286	Cu3247	Fe2599
Avge	2.657	.4219	.4640	3.312	.2443	.4153	4.623
#1	2.657	.4209	.4640	3.311	.2441	.4157	4.621
#2	2.657	.4230	.4640	3.312	.2444	.4149	4.626

Elem	Pb2203	Mg2795	Mg3832	Mn2576	Mo2020	Se1960	V_2924
Avge	2.229	4.598	.4723	.3831	.2353	.3471	.3647
#1	2.227	4.595	.4725	.3830	.2357	.3496	.3646
#2	2.231	4.601	.4721	.3831	.2349	.3446	.3649

Elem	Zn2138	Ti3349
Avge	1.091	.4371
#1	1.091	.4369
#2	1.092	.4374

thod: EPACLP1 Standard: STD2

Elem	Sb2068	Ba4934	Cd2288	Cr2677	Ni2316	K_7665	Ag3280
Avge	1.871	.2859	.2059	4.980	.2230	1.521	.3273
#1	1.875	.2864	.2063	4.982	.2230	1.521	.3274
#2	1.867	.2854	.2056	4.979	.2230	1.520	.3271

Elem	Na5889
Avge	13.71
#1	13.71
#2	13.72

Method: EPACLP1 Standard: STD4

Elem	B_2496	Sn1899	P_2149	Si2881	Tl1908	Li6707
Avge	.8214	11.96	4.061	8.117	.7862	2.785
#1	.8233	11.96	4.062	8.131	.7847	2.803
#2	.8196	11.96	4.061	8.103	.7878	2.767

:hod: EPACLP1 Sample Name: ICV i Operator: WGM
, .n Time: 11/22/91 10:42:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.973	1.040	-.0082	2.057	.4862	.0324	.5304
#1	2.007	1.057	.0072	2.064	.4874	.0341	.5298
#2	1.939	1.023	-.0237	2.050	.4849	.0306	.5309

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.76	.5181	.4895	.5189	2.005	5.142	24.83
#1	49.78	.5216	.4977	.5242	2.011	5.166	24.87
#2	49.74	.5147	.4813	.5135	1.999	5.117	24.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.71	.5064	-.0009	.5136	52.28	.0048	.4917
#1	25.84	.5085	-.0003	.5188	52.41	.0085	.4980
#2	25.58	.5043	-.0015	.5085	52.16	.0011	.4853

lem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	52.64	-.0078	.5316	3.054	.1851	.0194	.0007
#1	52.83	-.0058	.5324	3.058	.1780	.0474	.0007
#2	52.45	-.0097	.5308	3.051	.1922	-.0086	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0482	.0197	.0159
#1	.0249	.0207	.0163
#2	.0715	.0186	.0155

:hod: EPACLP1 Sample Name: ICV-AS,SE ¿ Operator: WGM
, ,n Time: 11/22/91 10:45:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	.0068	4.699	.0008	-.0000	.0044	.0033
#1	.0117	.0038	4.674	.0008	-.0002	.0044	.0030
#2	.0030	.0099	4.723	.0008	.0002	.0044	.0035

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0144	.0024	.0012	.0009	.0042	.0042	.0104
#1	.0170	.0010	.0018	.0009	.0044	-.0006	.0120
#2	.0117	.0039	.0006	.0009	.0040	.0090	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.0009	-.0015	-.0016	.0643	5.133	.0011
#1	-.0004	.0009	-.0033	-.0061	.0092	5.148	.0009
#2	.0240	.0009	.0003	.0029	.1194	5.117	.0013

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0333	.0051	.0004	.0010	.0285	.0154	.0000
#1	.0362	.0037	-.0006	.0016	.0249	.0152	.0000
#2	.0304	.0064	.0014	.0003	.0320	.0156	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0009	.0018	.0000
#1	-.0023	.0021	.0000
#2	.0041	.0016	.0000

thod: EPACLP1 Sample Name: CCVI Operator: WGM
n Time: 11/22/91 10:52:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.897	4.898	.9883	.4952	.4819	.0122	.5010
#1	4.893	4.906	.9782	.4952	.4819	.0149	.5026
#2	4.900	4.889	.9985	.4952	.4819	.0096	.4994

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.849	4.955	.4823	.4886	4.935	4.862	4.888
#1	4.852	4.953	.4829	.4893	4.935	4.857	4.886
#2	4.846	4.957	.4817	.4879	4.934	4.867	4.889

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.873	.4866	.4877	.4902	24.74	.9780	.4967
#1	4.875	.4862	.4868	.4861	24.69	.9956	.4984
#2	4.871	.4870	.4886	.4944	24.79	.9603	.4949

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.86	-.0508	.4941	2.446	.1104	.0170	.4908
#1	24.87	-.0524	.4945	2.447	.1068	.0161	.4905
#2	24.85	-.0491	.4937	2.446	.1139	.0178	.4912

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2771	.0003	.0023
#1	-.2748	.0000	.0023
#2	-.2793	.0005	.0023

Method: EPACLP1 Sample Name: CCB\ Operator: WGM
Run Time: 11/22/91 10:55:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0035	L.0049	L-.0010	L.0003	L.0002	.0009	L.0004
#1	L.0014	L.0053	L-.0041	L.0003	L.0002	.0009	L.0008
#2	L-.0084	L.0045	L.0021	L.0003	L.0002	.0009	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	.0020	L-.0012	L-.0002	L.0006	L.0054	.0023
#1	L.0002	.0022	L.0006	L.0002	L.0012	L.0039	.0030
#2	L-.0011	L.0019	L-.0029	L-.0005	L.0000	L.0070	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	L.0000	L-.0015	L-.0013	L-.1775	L.0008	L-.0002
#1	L-.0050	L.0002	L-.0003	L-.0029	L-.2663	L.0008	L.0009
#2	L.0042	L-.0002	L-.0027	L.0003	L-.0887	L.0008	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0021	.0078	L.0002	L.0007	-.0018	-.0009	.0003
#1	L-.0005	.0037	L.0006	L.0010	.0036	.0059	.0000
#2	L.0047	.0118	L-.0002	L.0003	-.0071	-.0077	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0014	-.0013	.0001
#1	L-.0059	-.0005	.0002
#2	L.0032	-.0021	.0000

Analysis Report QC Standard Fri 11-22-91 11:00:23 AM page 1

Method: EPACLP1 Sample Name: ICSAB Operator: WGM
Run Time: 11/22/91 10:58:44
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	526.4	.0095	4.898	.4871	.4554	.2502	.9042
#1	526.9	.0297	4.911	.4876	.4560	.2494	.9036
#2	525.9	-.0107	4.885	.4866	.4548	.2511	.9048

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	465.2	.4773	.4168	.5361	176.7	4.431	241.4
#1	465.0	.4783	.4159	.5361	176.7	4.414	241.3
#2	465.4	.4763	.4176	.5361	176.8	4.448	241.6

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	484.1	.4686	-.0189	.8439	-1.325	4.498	.8871
#1	484.2	.4682	-.0155	.8461	-1.337	4.528	.8851
#2	483.9	.4690	-.0222	.8416	-1.313	4.468	.8890

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.779	-.0484	.4703	1.143	3.700	.1654	.0072
#1	1.779	-.0518	.4711	1.143	3.741	.1641	.0072
#2	1.779	-.0449	.4695	1.143	3.658	.1667	.0072

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0214	.0849	.4341
#1	-.0075	.0844	.4349
#2	.0502	.0855	.4332

Method: EPACLP1 Sample Name: CCV2 Operator: PN
Run Time: 11/22/91 14:26:29
Comment:
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.928	4.918	.9995	.5129	.4993	.0096	.5172
#1	4.937	4.926	.9906	.5165	.5038	.0079	.5191
#2	4.919	4.910	1.008	.5094	.4948	.0114	.5153

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.066	5.129	.4989	.4898	5.123	4.983	5.071
#1	5.098	5.161	.5015	.4920	5.154	5.011	5.099
#2	5.034	5.096	.4963	.4876	5.092	4.955	5.043

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.115	.5061	.5026	.5143	24.73	1.007	.5081
#1	5.125	.5091	.5068	.5104	24.86	1.036	.5103
#2	5.105	.5031	.4983	.5181	24.61	.9772	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	22.61	-.0485	.4979	2.512	.1468	.0181	.5039
#1	Q22.46	-.0479	.4996	2.527	.1495	.0165	.5069
#2	22.77	-.0491	.4962	2.498	.1442	.0196	.5010

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2501	.0070	.0025
#1	-.2680	.0067	.0027
#2	-.2323	.0073	.0023

Method: EPACLP1 Sample Name: CCB 2 Operator: WGM
Run Time: 11/22/91 14:44:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0128	L.0065	L-.0055	L.0005	L.0002	.0061	L.0001
#1	.0128	L.0077	L.0007	L.0005	L.0002	.0061	L.0007
#2	.0127	L.0053	L-.0117	L.0005	L.0002	.0061	L-.0005

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0031	L.0003	L.0004	L.0003	L.0001	.0039
#1	.0097	.0032	L.0012	L.0006	L.0008	L.0021	.0042
#2	.0084	.0030	L-.0006	L.0002	L-.0002	L-.0019	.0036

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0001	L.0000	L-.0006	L-.0003	L.3026	L-.0021	L.0009
#1	L.0068	L.0002	L-.0009	L-.0029	L.3770	L-.0074	L.0013
#2	L-.0069	L-.0002	L-.0003	L.0022	L.2283	L.0033	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0944	.0043	L-.0004	L.0010	.0249	.0093	.0000
#1	.0883	.0007	L-.0006	L.0010	.0249	.0099	.0000
#2	.1005	.0079	L-.0002	L.0010	.0249	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0055	.0060	.0000
#1	L-.0078	.0062	.0000
#2	L-.0032	.0057	.0000

Analysis Report Fri 11-22-91 03:27:31 PM page 1

Method: EPACLP1 Sample Name: PBW 6641... Operator: WGM
Run Time: 11/22/91 15:25:52
Comment: 6670, 6712, 6729, 6642, 6661. WATER, 50/50
Je: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0098	L.0046	L-.0106	L-.0000	L.0002	.0079	L.0009
#1	L.0041	L.0015	L-.0095	L.0003	L.0002	.0096	L.0016
#2	.0154	L.0076	L-.0116	L-.0003	L.0002	.0061	L.0002

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0042	L-.0001	L.0006	L-.0002	L-.0011	L.0029	L.0019
#1	L.0046	L-.0010	L-.0000	L-.0005	L-.0012	L-.0019	.0020
#2	L.0038	L.0007	L.0012	L.0002	L-.0009	L.0077	L.0017

Elem	Mg3832	Mn257e	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0007	L-.0000	L-.0009	L.0003	L-.0704	L.0029	L-.0007
#1	L-.0265	L-.0002	L-.0009	L-.0003	L-.1622	L.0033	L-.0013
#2	L.0279	L.0002	L-.0009	L.0010	L.0214	L.0025	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0399	.0040	L.0008	L.0000	.0071	.0542	.0003
#1	L.0378	.0067	L.0002	L.0003	.0214	.0535	.0007
#2	L.0420	.0013	L.0014	L-.0003	-.0071	.0548	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0191	.0052	.0000
#1	L-.0333	.0052	.0000
#2	L-.0050	.0052	.0000

Method: EPACLP1 Sample Name: LCSW 6641 Operator: WGM
Run Time: 11/22/91 15:28:40
Comment: WATER 50/50
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.010	1.039	Q.0060	2.134	.5122	.0315	.5263
#1	2.003	1.041	Q.0087	2.126	.5109	.0324	.5256
#2	2.016	1.037	Q.0032	2.142	.5136	.0306	.5271

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.20	.5187	.4948	.5196	2.039	5.044	25.21
#1	50.18	.5181	.4954	.5180	2.037	5.061	25.20
#2	50.22	.5193	.4942	.5211	2.040	5.028	25.22

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.96	.5150	-.0018	.5233	51.16	Q.0057	.4914
#1	26.86	.5148	-.0015	.5226	51.05	Q.0266	.4910
#2	27.06	.5152	-.0021	.5239	51.28	Q-.0152	.4919

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	47.57	-.0200	.5296	2.993	.1798	.0908	.0003
#1	47.37	-.0187	.5281	2.997	.1869	.0901	.0000
#2	47.77	-.0213	.5312	2.989	.1727	.0914	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.0219	.0212	.0169
#1	-.0200	.0207	.0168
#2	-.0237	.0218	.0170

Method: EPACLP1 Sample Name: 6641-1 Operator: WGM
Run Time: 11/22/91 15:31:46
Comment: WATER, 50/50, DISSOLVED
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0349	L.0046	L.0030	1.098	L-.0002	.3894	L-.0000
#1	.0360	L-.0007	L.0050	1.097	L-.0002	.3841	L-.0001
#2	.0339	L.0100	L.0010	1.098	L-.0002	.3946	L.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.72	L-.0017	L.0018	L.0000	.0352	L.0093	H77.30
#1	27.82	L-.0017	L.0012	L.0002	.0365	L.0019	H77.50
#2	27.62	L-.0017	.0023	L-.0002	.0340	L.0167	H77.10

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.15	.5036	.0030	L.0093	2.268	L-.0032	L-.0006
#1	89.18	.5045	L.0027	.0151	2.451	L.0017	L.0000
#2	89.12	.5026	.0033	L.0035	2.084	L-.0082	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	132.5	.0115	.0021	.0209	.3435	15.53	.0003
#1	132.2	.0109	L.0018	.0206	.3524	15.56	.0007
#2	132.8	.0121	.0025	.0213	.3346	15.50	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L.0169	.0243	.4510
#1	L-.0392	.0249	.4506
#2	.0729	.0238	.4515

Method: EPACLP1 Sample Name: CCV #30 Operator: WGM
Run Time: 11/22/91 15:34:14
Comment:
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.152	5.033	1.044	.5335	.5234	.0122	.5328
#1	5.166	5.061	1.043	.5322	.5229	.0096	.5370
#2	5.138	5.006	1.045	.5347	.5238	.0149	.5286

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.258	5.277	.5137	.5103	5.316	5.116	5.310
#1	5.281	5.293	.5160	.5107	5.323	5.138	5.322
#2	5.235	5.260	.5113	.5100	5.308	5.094	5.297

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.415	.5250	.5211	.5236	25.55	1.051	.5235
#1	5.421	.5255	.5220	.5264	25.61	1.057	.5270
#2	5.409	.5244	.5202	.5207	25.49	1.044	.5200

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	23.34	-.0439	.5149	2.598	.1379	.0262	.5275
#1	23.31	-.0422	.5154	2.608	.1246	.0289	.5282
#2	23.37	-.0455	.5144	2.589	.1513	.0236	.5269

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2593	.0080	.0028
#1	-.2711	.0088	.0029
#2	-.2474	.0073	.0027

Method: EPACLP1 Sample Name: CCB 7 Operator: WGM
Run Time: 11/22/91 15:37:27
Comment:
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0027	L-.0015	L-.0068	L.0005	L.0002	.0026	L-.0006
#1	L-.0035	L.0015	L-.0088	L.0008	L.0002	.0009	L-.0019
#2	L-.0019	L-.0046	L-.0047	L.0003	L.0002	.0044	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0029	L-.0004	L-.0003	L-.0003	L-.0009	L-.0055	.0107
#1	.0069	L.0007	L-.0006	L-.0005	L.0000	L-.0064	.0126
#2	L-.0011	L-.0016	L.0000	L-.0002	L-.0019	L-.0045	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0274	L-.0000	L-.0009	L-.0019	L-.1928	L.0016	L-.0009
#1	L-.0207	L.0002	L-.0009	L-.0016	L.0031	L-.0033	L-.0013
#2	L-.0342	L-.0002	L-.0009	L-.0022	L-.3887	L.0066	L-.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0257	.0012	L-.0018	L.0013	.0142	.0031	-.0003
#1	L.0310	.0001	L-.0022	L.0016	.0107	.0055	-.0007
#2	L.0205	.0022	L-.0014	L.0010	.0178	.0007	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0155	.0044	.0000
#1	L-.0169	.0052	.0000
#2	L-.0141	.0036	.0000

Method: EPACLP1 Sample Name: CCV 1 Operator: WGM
Run Time: 11/22/91 15:45:27
Comment:
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.072	5.029	1.012	.5130	.5085	.0096	.4950
#1	5.048	4.988	1.017	.5090	.5048	.0131	.4925
#2	5.096	5.070	1.008	.5170	.5122	.0061	.4975

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.968	5.010	.4988	.5106	5.036	4.979	5.012
#1	4.960	4.991	.4973	.5061	5.017	4.951	4.996
#2	4.977	5.030	.5003	.5151	5.055	5.008	5.027

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.049	.5015	.5063	.5051	25.03	1.003	.4992
#1	5.034	.4993	.5056	.5038	24.86	.9887	.4972
#2	5.065	.5038	.5069	.5063	25.10	1.018	.5011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.63	-.0533	.5041	2.500	.1130	.0216	.5090
#1	25.41	-.0509	.5027	2.496	.1175	.0187	.5056
#2	25.85	-.0557	.5055	2.503	.1086	.0244	.5124

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2978	.0060	.0026
#1	-.2977	.0062	.0025
#2	-.2978	.0057	.0027

Method: EPACLP1 Sample Name: CCB 3A Operator: WGM
Run Time: 11/22/91 15:48:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0048	L.0096	L.0070	L-.0002	L.0002	.0009	L.0006
#1	L.0027	L.0084	L-.0021	L.0001	L.0002	-.0026	L.0014
#2	L.0070	.0108	L.0162	L-.0004	L.0002	.0044	L-.0003

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0052	.0023	L-.0003	L.0009	L-.0027	L.0057	.0025
#1	L-.0045	.0030	L-.0000	L.0009	L-.0022	L.0087	.0026
#2	L-.0058	L.0016	L-.0006	L.0009	L-.0032	L.0027	.0023

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0162	L.0002	L-.0003	L-.0010	L-.4536	L.0091	L.0004
#1	L.0235	L.0002	L-.0003	L-.0022	L-.4072	L.0214	L.0004
#2	L.0089	L.0002	L-.0003	L.0003	L-.5000	L-.0035	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0051	.0072	L.0000	L.0010	-.0018	.0099	.0000
#1	L.0073	.0055	L.0002	L.0010	.0018	.0112	.0000
#2	L.0030	.0088	L-.0002	L.0010	-.0053	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0392	.0034	.0000
#1	L-.0196	.0036	.0000
#2	L-.0588	.0031	.0000

Method: EPACLP1 Sample Name: 6641-1-SD Operator: WGM
Run Time: 11/22/91 15:52:09
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.938	.9703	L.0064	5.065	.0977	2.313	.0914
#1	3.946	.9727	L.0040	5.072	.0980	2.325	.0921
#2	3.929	.9680	L.0088	5.057	.0974	2.302	.0906

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.74	.3781	.9333	.4916	1.960	.9366	H74.63
#1	26.73	.3774	.9345	.4927	1.962	.9280	H74.66
#2	26.75	.3788	.9321	.4906	1.958	.9451	H74.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.15	1.434	1.876	.9370	1.300	L-.0068	.0902
#1	86.24	1.435	1.876	.9421	1.250	L-.0135	.0900
#2	86.06	1.433	1.875	.9319	1.349	L-.0001	.0904

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	152.1	.0046	.9305	.9335	.3631	15.58	.0000
#1	151.9	.0076	.9328	.9345	.3631	15.60	.0000
#2	152.3	.0016	.9282	.9325	.3631	15.57	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0110	.0215	.4618
#1	L.0018	.0218	.4624
#2	L-.0237	.0212	.4613

Method: EPACLP1 Sample Name: 6641-1-S Operator: WGM
Run Time: 11/22/91 15:57:11
Comment: DISSOLVED, 50/50
' e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.991	1.015	L.0103	5.058	.0988	2.366	.0966
#1	3.981	1.020	L-.0032	5.033	.0983	2.348	.0965
#2	4.001	1.011	L.0238	5.084	.0993	2.384	.0967

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.77	.3954	.9655	.4914	2.009	.9820	H76.41
#1	27.69	.3944	.9646	.4888	2.004	.9837	H76.22
#2	27.85	.3964	.9664	.4940	2.014	.9804	H76.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.22	1.475	1.944	.9760	2.249	L.0085	.0943
#1	85.76	1.471	1.937	.9769	2.333	L.0030	.0936
#2	86.67	1.479	1.950	.9750	2.166	L.0140	.0950

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
' 'ge	148.7	.0046	.9540	.9751	.3960	15.85	.0000
#1	147.6	.0019	.9503	.9725	.4147	15.80	.0000
#2	149.7	.0073	.9577	.9778	.3773	15.89	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0313	.0243	.4575
#1	L-.0180	.0243	.4557
#2	L-.0446	.0243	.4594

6641 thru 6671

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Method: EPACLP1 Sample Name: 6670-2 Operator: WGM
Run Time: 11/22/91 15:59:35
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB w/ 6641 = M.P WGM 11/23/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0551	L.0058	L.0057	.2691	L-.0003	.2109	L.0003
#1	.0583	L.0046	L.0013	.2681	L-.0005	.2109	L.0014
#2	.0519	L.0069	L.0101	.2701	L-.0002	.2109	L-.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	33.48	L-.0019	L.0015	.0122	.9342	L-.0010	49.59
#1	33.61	L-.0016	.0030	.0127	.9337	L.0026	49.58
#2	33.35	L-.0022	L-.0000	.0117	.9348	L-.0047	49.59

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.01	.0571	L.0010	.0111	.5638	L-.0122	L-.0004
#1	53.73	.0573	L.0010	L.0092	.7494	L-.0017	L.0002
#2	54.29	.0569	L.0010	.0130	L.3783	L-.0226	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
/ge	262.6	-.0006	L.0013	.0083	.4014	11.55	.0013
#1	260.4	-.0055	L.0013	.0089	.4325	11.52	.0007
#2	264.8	.0043	L.0013	.0076	.3702	11.57	.0020

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0462	.0181	.3921
#1	L-.0543	.0192	.3898
#2	L-.0380	.0171	.3945

Method: EPACLP1 Sample Name: 6670-3 Operator: WGM
Run Time: 11/22/91 16:01:45
Comment: DISSOLVED, 50/50
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5086	L.0053	L-.0053	.1792	L-.0000	.3062	L.0016
#1	.5377	L.0084	L-.0098	.1809	L.0002	.3124	L.0023
#2	.4795	L.0022	L-.0008	.1774	L-.0002	.3001	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.05	L.0018	.0023	.0057	1.552	L.0081	33.82
#1	25.99	.0023	L.0011	.0052	1.570	L.0061	33.85
#2	26.11	L.0014	.0035	.0062	1.534	L.0101	33.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.64	.9948	L.0004	.0155	3.251	L.0164	L-.0007
#1	35.81	.9957	L.0016	.0130	3.062	L.0072	L-.0014
#2	35.47	.9938	L-.0009	.0181	3.440	L.0257	L-.0001

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.2	.0110	.0029	.0092	.2385	13.00	.0252
#1	127.6	.0070	.0021	.0089	.2385	13.14	.0262
#2	124.8	.0151	.0037	.0095	.2385	12.86	.0242

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0210	.0166	.3050
#1	L-.0247	.0161	.3073
#2	L-.0173	.0171	.3027

Cont from 6641

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Method: EPACLP1 Sample Name: 6712-2 Operator: WGM
Run Time: 11/22/91 16:04:27
Comment: DISSOLVED, 50/50
'e: CONC Corr. Factor: 1

PB = 6641 = N.D. WGM 11/23/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2673	.0127	L-.0006	.1213	L-.0002	.5959	L.0004
#1	.2774	.0115	L-.0094	.1218	L-.0002	.6011	L.0009
#2	.2571	.0138	L.0082	.1208	L-.0002	.5906	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.11	.0088	L-.0000	.0094	.5713	.0229	33.83
#1	14.15	.0076	L-.0006	.0092	.5727	.0209	33.89
#2	14.08	.0099	L.0006	.0096	.5700	.0249	33.77

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.54	.1250	.0079	.0301	5.332	L.0008	L-.0014
#1	35.55	.1256	.0072	.0263	5.314	L-.0050	L-.0016
#2	35.53	.1245	.0085	.0339	5.351	L.0067	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	90.89	.0078	.0060	.0093	.2705	14.55	.0147
#1	90.86	.0082	.0060	.0090	.2723	14.60	.0138
#2	90.93	.0073	.0060	.0096	.2688	14.49	.0157

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0868	.0168	.4130
#1	L-.1178	.0166	.4135
#2	L-.0558	.0171	.4125

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Method: EPACLP1 Sample Name: 6729-1 Operator: WGM
Run Time: 11/22/91 16:08:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB w/ 6641 = N.D.
WGM 11/4/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0437	.0248	L.0056	1.858	L-.0002	1.103	L.0021
#1	.0440	.0233	L-.0026	1.858	L-.0002	1.107	L.0015
#2	.0434	.0264	L.0137	1.859	L-.0002	1.100	L.0026

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.05	.0027	.0051	L.0005	1.454	.0368	H104.0
#1	92.16	.0023	.0054	L.0006	1.455	.0322	H104.1
#2	91.95	.0031	.0048	L.0003	1.453	.0414	H104.0

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.6	.8637	.0075	.0130	16.09	L.0029	L-.0007
#1	126.6	.8641	.0066	L.0085	16.11	L.0159	L-.0005
#2	126.7	.8633	.0085	.0174	16.08	L-.0100	L-.0009

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	149.4	.0090	.0068	.0082	.5331	23.74	.0036
#1	149.5	.0130	.0068	.0082	.5268	23.75	.0033
#2	149.4	.0049	.0068	.0082	.5393	23.73	.0039

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0500	.0546	1.409
#1	L-.0706	.0549	1.408
#2	L-.0295	.0544	1.410

Method: EPACLP1 Sample Name: 6729-2 Operator: WGM
Run Time: 11/22/91 16:10:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0532	.0167	L.0261	.6563	L.0002	.9423	L.0020
#1	.0535	.0194	L.0291	.6548	L.0002	.9458	.0030
#2	.0530	.0139	L.0231	.6578	L.0002	.9388	L.0011

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.12	L-.0004	.0021	.0227	1.674	.0219	H85.99
#1	54.04	L.0006	.0030	.0228	1.674	.0255	H85.91
#2	54.20	L-.0014	L.0012	.0225	1.675	L.0183	H86.07

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.5	.6898	.0160	L.0070	18.44	L-.0072	L-.0000
#1	100.2	.6889	.0147	L.0079	18.43	L-.0114	L.0004
#2	100.8	.6907	.0172	L.0060	18.44	L-.0030	L-.0005

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	129.1	.0072	L.0019	.0065	.8285	16.70	.0013
#1	129.0	.0082	.0021	.0069	.8241	16.69	.0013
#2	129.2	.0061	L.0017	.0062	.8330	16.71	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0417	.0394	1.134
#1	L-.0513	.0394	1.132
#2	L-.0322	.0394	1.136

Method: EPACLP1 Sample Name: 6729-3 Operator: WGM
Run Time: 11/22/91 16:12:42
Comment: DISSOLVED, 50/50
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0326	L-.0001	L.0072	.6681	L-.0000	.9677	L.0013
#1	.0669	.0202	L.0238	.6643	L-.0002	.9703	L.0017
#2	L-.0017	L-.0203	L-.0095	.6718	L.0002	.9651	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.32	L-.0026	L-.0027	.0161	1.708	L.0182	H86.27
#1	54.23	L-.0017	.0036	.0197	1.701	L.0117	H86.09
#2	54.40	L-.0034	L-.0090	.0124	1.716	.0247	H86.44

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	101.8	.6956	.0160	L.0085	18.43	L-.0088	L-.0059
#1	101.5	.6945	.0160	L.0047	18.25	L-.0172	L.0008
#2	102.2	.6967	.0160	.0124	18.62	L-.0003	L-.0127

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
'ge	131.5	.0021	L.0008	.0072	.8036	16.99	.0013
#1	130.8	.0040	L.0017	.0089	.7867	16.97	.0013
#2	132.3	.0001	L-.0002	.0055	.8205	17.00	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0815	.0383	1.152
#1	L-.0415	.0378	1.146
#2	.2045	.0388	1.158

Cont to 6642

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.hod: EPACLP1 Sample Name: CCV45 Operator: WGM
Run Time: 11/22/91 16:21:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.098	5.071	1.009	.5175	.5114	.0122	.4982
#1	5.089	5.046	1.010	.5175	.5106	.0131	.4954
#2	5.107	5.095	1.009	.5175	.5122	.0114	.5009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.027	5.052	.5042	.5114	5.076	5.042	5.047
#1	5.021	5.043	.5015	.5099	5.069	5.027	5.045
#2	5.034	5.061	.5069	.5130	5.083	5.058	5.050

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.100	.5071	.5100	.5079	25.03	.9923	.5044
#1	5.098	.5071	.5106	.5063	24.89	.9953	.5029
#2	5.101	.5071	.5094	.5095	25.17	.9894	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.40	-.0449	.5058	2.516	.0988	.0240	.5131
#1	25.41	-.0416	.5048	2.514	.0961	.0236	.5128
#2	25.39	-.0482	.5068	2.517	.1015	.0244	.5134

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2896	.0065	.0026
#1	-.3024	.0062	.0025
#2	-.2769	.0067	.0027

Method: EPACLP1 Sample Name: CCB 45 Operator: WGM
Run Time: 11/22/91 16:35:32
ıment:
, .de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0016	L.0003	L-.0169	L-.0007	L-.0002	.0009	L.0017
#1	L-.0016	L-.0048	L-.0216	L-.0009	L-.0002	-.0009	L.0024
#2	L.0048	L.0053	L-.0122	L-.0004	L-.0002	.0026	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0096	L.0009	L-.0012	L.0000	L-.0052	L.0014	L.0017
#1	L-.0112	L-.0004	L-.0012	L-.0002	L-.0056	L.0034	L.0014
#2	L-.0081	.0022	L-.0012	L.0002	L-.0047	L-.0006	L.0020

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0056	L-.0000	L-.0012	L-.0026	L-.8123	L.0049	L.0000
#1	L.0007	L-.0002	L- 0015	L-.0029	L-.8216	L-.0102	L-.0000
#2	L.0105	L.0002	L-.0009	L-.0022	L-.8030	L.0200	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
ge	L-.0076	.0064	L.0002	L-.0003	-.0080	.0068	-.0003
#1	L-.0060	.0067	L-.0006	L-.0003	-.0107	.0055	.0000
#2	L-.0092	.0061	L.0010	L-.0003	-.0053	.0081	-.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0041	.0039	.0001
#1	L-.0077	.0036	.0000
#2	L-.0004	.0041	.0002

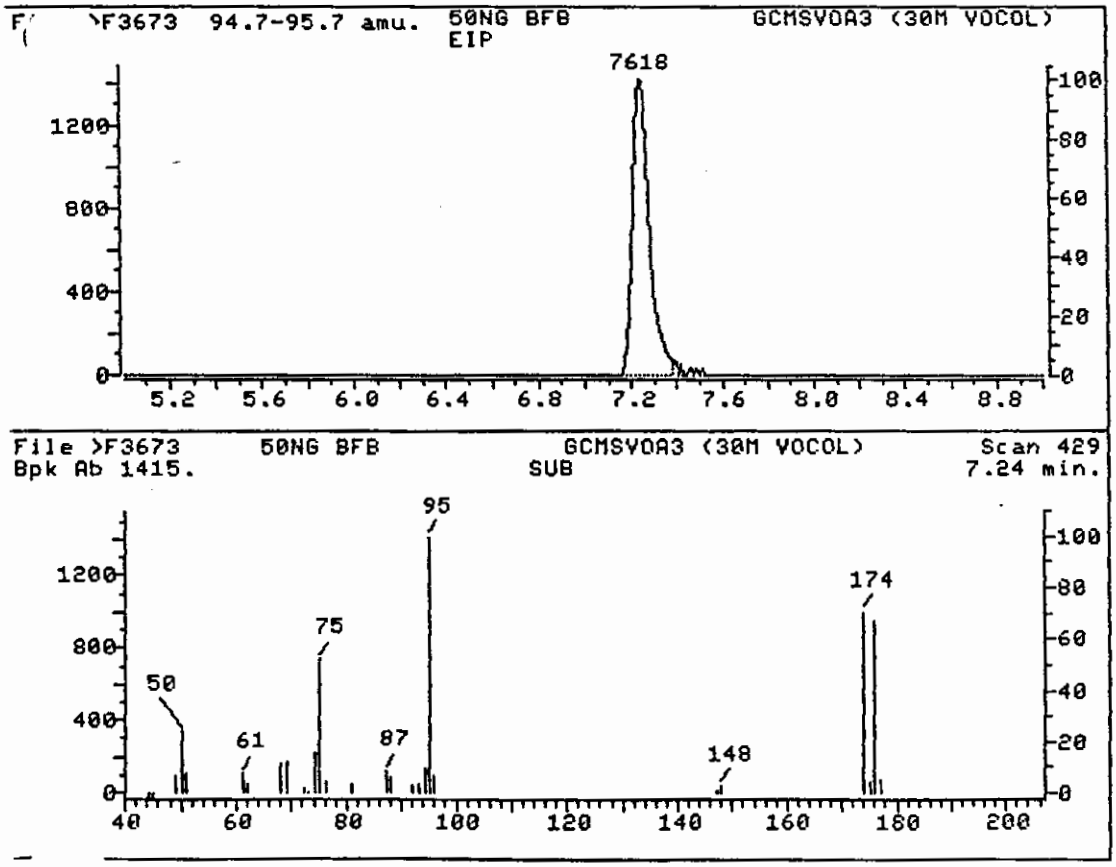
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	23.82	23.82	Ok
75	30-60% of mass 95	52.30	52.30	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.28	7.28	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	71.02	71.02	Ok
175	5-9% of mass 174	4.52	6.37	Ok
176	95-101% of mass 174	67.56	95.12	Ok
177	5-9% of mass 176	5.44	8.05	Ok

Injection Date: 11/21/91
Injection Time: 10:31
Data File: >F3673
Scan: 429

FMGR : AL, Move cursor; then press carriage return :



Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 11:33
Output File: ^F3674::D1 Injected at: 911121 11:09
Data File: >F3674::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911120 08:43

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	23262	50.00	UG/L	92
2)	Chloromethane	.99	50.0	16285	41.83	UG/L	92
3)	Vinyl Chloride	1.09	62.0	20926	39.55	UG/L	97
4)	Bromomethane	1.50	94.0	21597	34.99	UG/L	88
5)	Chloroethane	1.62	64.0	15008	36.35	UG/L	99
6)	Trichlorofluoromethane	1.83	101.0	38402	37.87	UG/L	99
7)	Trichlorotrifluoroethane 113	2.49	101.0	42214	36.13	UG/L	71
8)	1,1-Dichloroethene	2.70	96.0	22388	36.82	UG/L	89
9)	Acetone	2.84	43.0	5215	49.34	UG/L	88
10)	Dimethyl Ketone	2.83	58.0	1492	57.05	UG/L	90
11)	Carbon Disulfide	3.34	76.0	68171	42.21	UG/L	100
12)	Methylene Chloride	3.67	83.9	26469	37.02	UG/L	84
13)	Vinyl Acetate	5.30	86.0	1908	45.45	UG/L	100
14)	Trans-1,2-Dichloroethene	4.14	96.0	25050	36.26	UG/L	89
15)	Cis-1,2-Dichloroethene	6.21	96.0	22847	37.67	UG/L	86
16)	2-Butanone	6.22	72.0	2153	51.96	UG/L	93
17)	1,1-Dichloroethane	5.05	63.0	58214	38.67	UG/L	95
18)	Chloroform	6.49	82.9	57736	38.11	UG/L	93
19)	1,1,1-Trichloroethane	7.13	97.0	43368	37.99	UG/L	97
20)	Carbon Tetrachloride	7.56	116.9	42210	38.21	UG/L	83
21)	1,2-Dichloroethane-d4	7.90	65.0	29738	38.99	UG/L	88
22)	*1,4-Difluorobenzene	8.72	114.0	102058	50.00	UG/L	93
23)	Benzene	7.95	78.0	77117	40.17	UG/L	88
24)	1,2-Dichloroethane	8.08	62.0	33100	42.61	UG/L	93
25)	Trichloroethene	9.14	130.0	33604	39.57	UG/L	95
26)	1,2-Dichloropropane	9.59	63.0	37640	42.07	UG/L	92
27)	Bromodichloromethane	10.04	82.9	56180	41.57	UG/L	93
28)	2-Chloroethylvinyl ether	10.97	63.0	14832	44.87	UG/L	78
29)	Cis-1,3-Dichloropropene	11.24	75.0	51728	41.83	UG/L	93
30)	4-Methyl-2-pentanone	11.36	58.0	9057	55.04	UG/L	78
31)	Toluene-d8	11.57	98.2	85187	41.90	UG/L	91
32)	Toluene	11.71	91.0	81199	40.52	UG/L	89
33)	*Chlorobenzene-d5	14.69	117.0	89437	50.00	UG/L	88
34)	Trans-1,3-Dichloropropene	12.35	75.0	33616	39.88	UG/L	86
35)	1,1,2-Trichloroethane	12.60	97.0	23873	40.69	UG/L	98
36)	2-Hexanone	13.36	58.0	6721	56.28	UG/L	96
37)	Tetrachloroethene	12.95	163.9	30976	37.19	UG/L	94
38)	Dibromochloromethane	13.53	128.9	46141	41.77	UG/L	98
39)	Chlorobenzene	14.76	112.0	63943	38.71	UG/L	92
40)	Ethylbenzene	14.95	91.0	98184	38.99	UG/L	97

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 11:33
Output File: ^F3674::D1 Injected at: 911121 11:09
Data File: >F3674::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911120 08:43

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.17	104.0	69920	45.74	UG/L	84
42)	M+P-Xylene	15.11	91.0	90040	39.27	UG/L	69
43)	O-Xylene	16.02	91.0	97898	44.72	UG/L	87
44)	Bromoform	16.83	172.9	32549	41.55	UG/L	96
45)	1,1,2,2-Tetrachloroethane	17.43	82.9	37993	42.62	UG/L	96
46)	Bromofluorobenzene	17.41	174.0	44536	39.17	UG/L	94
47)	1,3-Dichlorobenzene	19.78	146.0	60445	38.52	UG/L	93
48)	1,4-Dichlorobenzene	20.08	146.0	62497	37.94	UG/L	92
49)	1,2-Dichlorobenzene	20.86	146.0	54801	38.36	UG/L	89

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 11/21/91

Contractor: Columbia Analytical Time: 11:09

Contract No: Laboratory ID: >F3674

Instrument ID: GCMSVOA3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.77738	.70007	9.94		**
Vinyl Chloride	.92696	.89958	2.95	*	
Bromomethane	1.11403	.92842	16.66		
Chloroethane	.62555	.64517	3.14		
Trichlorofluoromethane	1.95392	1.65085	15.51		
Trichlorotrifluoroethane 113	2.34006	1.81472	22.45		
1,1-Dichloroethene	1.20151	.96243	19.90	*	
Acetone	.17341	.22419	29.28		
Carbon Disulfide	3.28773	2.93057	10.86		
Methylene Chloride	1.27826	1.13786	10.98		
Vinyl Acetate	.17302	.08202	52.59		
Trans-1,2-Dichloroethene	1.30768	1.07686	17.65		
Cis-1,2-Dichloroethene	1.37348	.98216	28.49		
`-Butanone	.06353	.09255	45.67		
.,1-Dichloroethane	2.46858	2.50254	1.38		**
Chloroform	2.77221	2.48199	10.47	*	
1,1,1-Trichloroethane	2.15169	1.86433	13.36		
Carbon Tetrachloride	2.12308	1.81455	14.53		
1,2-Dichloroethane-d4	1.33775	1.27839	4.44		
Benzene	.79669	.75562	5.15		
1,2-Dichloroethane	.37973	.32433	14.59		
Trichloroethene	.42926	.32926	23.30		
1,2-Dichloropropane	.36089	.36881	2.19	*	
Bromodichloromethane	.63030	.55047	12.67		
2-Chloroethylvinyl ether	.15538	.14533	6.47		
Cis-1,3-Dichloropropene	.54597	.50685	7.17		
4-Methyl-2-pentanone	.07375	.08874	20.33		
Toluene-d8	.88140	.83469	5.30		
Toluene	.90982	.79562	12.55	*	
Trans-1,3-Dichloropropene	.45656	.37586	17.68		
1,1,2-Trichloroethane	.33618	.26693	20.60		
2-Hexanone	.06693	.07515	12.28		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - 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: Calibration Date: 11/21/91

Contractor: Columbia Analytical Time: 11:09

Contract No: Laboratory ID: >F3674

Instrument ID: GCMSVOA3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Tetrachloroethene	.50284	.34634	31.12		
Dibromochloromethane	.68949	.51591	25.18		
Chlorobenzene	.90562	.71495	21.05		**
Ethylbenzene	1.34590	1.09780	18.43	*	
Styrene	.80955	.78178	3.43		
M+P-Xylene	1.18449	1.00674	15.01		
O-Xylene	1.14863	1.09460	4.70		
Bromoform	.50363	.36393	27.74		**
1,1,2,2-Tetrachloroethane	.46319	.42480	8.29		**
Bromofluorobenzene	.61479	.49796	19.00		
1,3-Dichlorobenzene	.84722	.67584	20.23		
1,4-Dichlorobenzene	.87672	.69878	20.30		
1,2-Dichlorobenzene	.75383	.61273	18.72		

RF - Response Factor from daily standard file at 50.00 UG/L

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

%Diff - % Difference from original average or curve

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

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 09:21
Output File: ^F3692::D1 Injected at: 911122 08:55
Data File: >F3692::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.78	127.9	19350	50.00	UG/L	95
2)	Chloromethane	.99	50.0	14522	53.60	UG/L	95
3)	Vinyl Chloride	1.09	62.0	18461	53.03	UG/L	99
4)	Bromomethane	1.52	94.0	21075	58.66	UG/L	92
5)	Chloroethane	1.62	64.0	14203	56.88	UG/L	99
6)	Trichlorofluoromethane	1.89	101.0	33389	52.26	UG/L	95
7)	Trichlorotrifluoroethane 113	2.48	101.0	39714	56.55	UG/L	71
8)	1,1-Dichloroethene	2.69	96.0	21745	58.32	UG/L	98
9)	Acetone	2.84	43.0	4459	51.39	UG/L	94
10)	Dimethyl Ketone	2.83	58.0	1302	52.45	UG/L	79
11)	Carbon Disulfide	3.34	76.0	60287	53.16	UG/L	100
2)	Methylene Chloride	3.68	83.9	26107	59.29	UG/L	88
13)	Vinyl Acetate	5.33	86.0	1843	58.06	UG/L	100
14)	Trans-1,2-Dichloroethene	4.16	96.0	24384	58.51	UG/L	96
15)	Cis-1,2-Dichloroethene	6.21	96.0	22094	58.13	UG/L	91
16)	2-Butanone	6.21	72.0	1835M	51.23	UG/L	
17)	1,1-Dichloroethane	5.05	63.0	52896	54.62	UG/L	95
18)	Chloroform	6.50	82.9	52423	54.58	UG/L	94
19)	1,1,1-Trichloroethane	7.16	97.0	38205	52.95	UG/L	92
20)	Carbon Tetrachloride	7.54	116.9	36568	52.07	UG/L	91
21)	1,2-Dichloroethane-d4	7.91	65.0	25853	50.16	UG/L	90
22)	*1,4-Difluorobenzene	8.73	114.0	85322	50.00	UG/L	97
23)	Benzene	7.95	78.0	70835	54.94	UG/L	88
24)	1,2-Dichloroethane	8.08	62.0	27840	50.30	UG/L	98
25)	Trichloroethene	9.13	130.0	29493	52.49	UG/L	98
26)	1,2-Dichloropropane	9.58	63.0	33598	53.39	UG/L	99
27)	Bromodichloromethane	10.04	82.9	49192	52.37	UG/L	90
28)	2-Chloroethylvinyl ether	10.98	63.0	13066	52.69	UG/L	80
29)	Cis-1,3-Dichloropropene	11.25	75.0	46451	53.71	UG/L	96
30)	4-Methyl-2-pentanone	11.31	58.0	6708	44.30	UG/L	79
31)	Toluene-d8	11.57	98.2	76615	47.96	UG/L	91
32)	Toluene	11.72	91.0	73349	54.03	UG/L	89
33)	*Chlorobenzene-d5	14.69	117.0	69948	50.00	UG/L	96
34)	Trans-1,3-Dichloropropene	12.35	75.0	30334	57.69	UG/L	89
35)	1,1,2-Trichloroethane	12.60	97.0	22077	59.12	UG/L	95
36)	2-Hexanone	13.35	58.0	5913	56.25	UG/L	95
37)	Tetrachloroethene	12.95	163.9	28216	58.23	UG/L	94
8)	Dibromochloromethane	13.52	128.9	39604	54.87	UG/L	98
39)	Chlorobenzene	14.77	112.0	58047	58.04	UG/L	96
40)	Ethylbenzene	14.96	91.0	87737	57.13	UG/L	98

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 09:21
Output File: ^F3692::D1 Injected at: 911122 08:55
Data File: >F3692::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.17	104.0	57063	52.18	UG/L	78
42)	M+P-Xylene	15.12	91.0	78293	55.59	UG/L	70
43)	O-Xylene	16.03	91.0	79834	52.13	UG/L	90
44)	Bromoform	16.84	172.9	28532	56.04	UG/L	97
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	35713	60.09	UG/L	97
46)	Bromofluorobenzene	17.42	174.0	39432	48.54	UG/L	92
47)	1,3-Dichlorobenzene	19.79	146.0	54227	57.35	UG/L	94
48)	1,4-Dichlorobenzene	20.08	146.0	56615	57.91	UG/L	95
49)	1,2-Dichlorobenzene	20.86	146.0	48657	56.76	UG/L	87

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 11/22/91

Contractor: Columbia Analytical Time: 08:55

Contract No: Laboratory ID: >F3692

Instrument ID: GCMSVOA3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.77738	.75049	3.46		**
Vinyl Chloride	.92696	.95406	2.92	*	
Bromomethane	1.11403	1.08915	2.23		
Chloroethane	.62555	.73401	17.34		
Trichlorofluoromethane	1.95392	1.72553	11.69		
Trichlorotrifluoroethane 113	2.34006	2.05240	12.29		
1,1-Dichloroethene	1.20151	1.12377	6.47	*	
Acetone	.17341	.23044	32.89		
Carbon Disulfide	3.28773	3.11561	5.24		
Methylene Chloride	1.27826	1.34920	5.55		
Vinyl Acetate	.17302	.09525	44.95		
Trans-1,2-Dichloroethene	1.30768	1.26015	3.63		
Cis-1,2-Dichloroethene	1.37348	1.14181	16.87		
Butanone	.06353	.09483	49.26		
1,1-Dichloroethane	2.46858	2.73364	10.74		**
Chloroform	2.77221	2.70920	2.27	*	
1,1,1-Trichloroethane	2.15169	1.97442	8.24		
Carbon Tetrachloride	2.12308	1.88982	10.99		
1,2-Dichloroethane-d4	1.33775	1.33607	.13		
Benzene	.79669	.83021	4.21		
1,2-Dichloroethane	.37973	.32629	14.07		
Trichloroethene	.42926	.34567	19.47		
1,2-Dichloropropane	.36089	.39378	9.11	*	
Bromodichloromethane	.63030	.57655	8.53		
2-Chloroethylvinyl ether	.15538	.15314	1.44		
Cis-1,3-Dichloropropene	.54597	.54442	.28		
4-Methyl-2-pentanone	.07375	.07862	6.61		
Toluene-d8	.88140	.89795	1.88		
Toluene	.90982	.85967	5.51	*	
Trans-1,3-Dichloropropene	.45656	.43367	5.01		
1,1,2-Trichloroethane	.33618	.31562	6.12		
2-Hexanone	.06693	.08453	26.31		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - 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: Calibration Date: 11/22/91

Contractor: Columbia Analytical Time: 08:55

Contract No: Laboratory ID: >F3692

Instrument ID: GCMSVOA3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Tetrachloroethene	.50284	.40339	19.78		
Dibromochloromethane	.68949	.56619	17.88		
Chlorobenzene	.90562	.82986	8.37		**
Ethylbenzene	1.34590	1.25432	6.80	*	
Styrene	.80955	.81579	.77		
M+P-Xylene	1.18449	1.11930	5.50		
O-Xylene	1.14863	1.14133	.63		
Bromoform	.50363	.40790	19.01		**
1,1,2,2-Tetrachloroethane	.46319	.51057	10.23		**
Bromofluorobenzene	.61479	.56373	8.30		
1,3-Dichlorobenzene	.84722	.77525	8.49		
1,4-Dichlorobenzene	.87672	.80939	7.68		
1,2-Dichlorobenzene	.75383	.69562	7.72		

RF - Response Factor from daily standard file at 50.00 UG/L

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

%Diff - % Difference from original average or curve

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

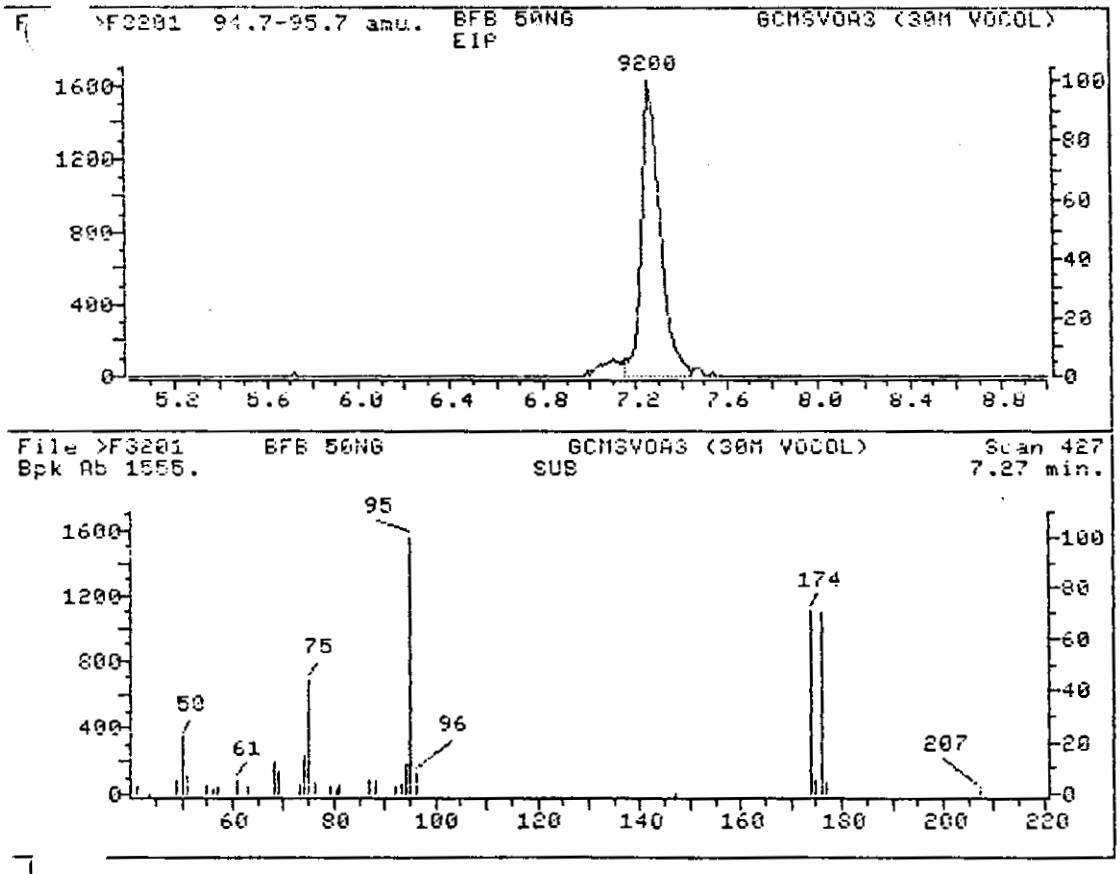
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	22.06	22.06	Ok
75	30-60% of mass 95	44.24	44.24	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	8.10	8.10	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	71.06	71.06	Ok
175	5-9% of mass 174	5.72	8.05	Ok
176	95-101% of mass 174	69.77	98.19	Ok
177	5-9% of mass 176	4.76	6.82	Ok

Injection Date: 10/15/91
Injection Time: 12:30
Data File: >F3201
Scan: 427

FMGR : AL, Move cursor; then press carriage return :



Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:45
Jutput File: ^F3203::D1 Injected at: 911015 13:22
Data File: >F3203::D5 Dilution Factor: 1.00000
Name: 20 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17679	50.00	UG/L	91
2)	Chloromethane	1.00	50.0	5635	23.29	UG/L	94
3)	Vinyl Chloride	1.10	62.0	6796	22.90	UG/L	98
4)	Bromomethane	1.54	94.0	8717	21.28	UG/L	84
5)	Chloroethane	1.64	64.0	4769	21.51	UG/L	98
6)	Trichlorofluoromethane	1.92	101.0	14833	19.83	UG/L	99
7)	Trichlorotrifluoroethane 113	2.50	101.0	16881	20.13	UG/L	80
8)	1,1-Dichloroethene	2.75	96.0	8940	21.74	UG/L	98
9)	Acetone	2.87	43.0	1758	32.36	UG/L	88
10)	Dimethyl Ketone	2.92	58.0	187	18.84	UG/L	65
11)	Carbon Disulfide	3.39	76.0	24381	22.14	UG/L	100
12)	Methylene Chloride	3.73	83.9	9375	20.84	UG/L	96
13)	Vinyl Acetate	5.35	86.0	1264	22.15	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	9612	19.17	UG/L	95
15)	Cis-1,2-Dichloroethene	6.25	96.0	10082	20.41	UG/L	91
16)	2-Butanone	6.26	72.0	399M	15.60	UG/L	
17)	1,1-Dichloroethane	5.10	63.0	17870	21.15	UG/L	94
18)	Chloroform	6.55	82.9	19856	19.17	UG/L	93
19)	1,1,1-Trichloroethane	7.19	97.0	15706	18.48	UG/L	91
20)	Carbon Tetrachloride	7.58	116.9	15440	18.82	UG/L	87
21)	1,2-Dichloroethane-d4	7.94	65.0	10025M	20.92	UG/L	96
22)	*1,4-Difluorobenzene	8.78	114.0	75033	50.00	UG/L	98
23)	Benzene	8.00	78.0	24094	21.39	UG/L	91
24)	1,2-Dichloroethane	8.12	62.0	11850	19.97	UG/L	94
25)	Trichloroethene	9.19	130.0	13067	18.98	UG/L	83
26)	1,2-Dichloropropane	9.62	63.0	11024	21.77	UG/L	98
27)	Bromodichloromethane	10.10	82.9	19044	18.80	UG/L	91
28)	2-Chloroethylvinyl ether	11.03	63.0	5224	23.58	UG/L	87
29)	Cis-1,3-Dichloropropene	11.29	75.0	16402	19.40	UG/L	98
30)	4-Methyl-2-pentanone	11.51	58.0	2317M	28.51	UG/L	
31)	Toluene-d8	11.61	98.2	26549	20.51	UG/L	96
32)	Toluene	11.76	91.0	27135	19.45	UG/L	90
33)	*Chlorobenzene-d5	14.73	117.0	61207	50.00	UG/L	89
34)	Trans-1,3-Dichloropropene	12.39	75.0	11560	19.81	UG/L	89
35)	1,1,2-Trichloroethane	12.65	97.0	8622	21.22	UG/L	100
36)	2-Hexanone	13.52	58.0	1702M	24.98	UG/L	
37)	Tetrachloroethene	13.00	163.9	12662	18.32	UG/L	96
38)	Dibromochloromethane	13.58	128.9	16709	18.41	UG/L	95
39)	Chlorobenzene	14.80	112.0	22610	19.95	UG/L	96
40)	Ethylbenzene	14.99	91.0	32813	19.41	UG/L	99

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:45
Output File: ^F3203::D1 Injected at: 911015 13:22
Data File: >F3203::D5 Dilution Factor: 1.00000
Name: 20 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.21	104.0	20061	20.80	UG/L	91
42)	M+P-Xylene	15.15	91.0	28996	20.42	UG/L	71
43)	O-Xylene	16.07	91.0	29852	21.23	UG/L	86
44)	Bromoform	16.88	172.9	12317	17.71	UG/L	97
45)	1,1,2,2-Tetrachloroethane	17.47	82.9	12405	21.74	UG/L	96
46)	Bromofluorobenzene	17.46	174.0	15289	17.95	UG/L	93
47)	1,3-Dichlorobenzene	19.83	146.0	21988	18.19	UG/L	91
48)	1,4-Dichlorobenzene	20.12	146.0	22712	17.99	UG/L	90
49)	1,2-Dichlorobenzene	20.89	146.0	20378	18.82	UG/L	87

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:18
Output File: ^F3202::D1 Injected at: 911015 12:55
Data File: >F3202::D5 Dilution Factor: 1.00000
Name: 50 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17789	50.00	UG/L	92
2)	Chloromethane	.99	50.0	13385	54.98	UG/L	86
3)	Vinyl Chloride	1.10	62.0	16234	54.36	UG/L	96
4)	Bromomethane	1.53	94.0	21080	51.13	UG/L	86
5)	Chloroethane	1.64	64.0	11989	53.73	UG/L	97
6)	Trichlorofluoromethane	1.93	101.0	35440	47.08	UG/L	97
7)	Trichlorotrifluoroethane 113	2.49	101.0	40993	48.58	UG/L	88
8)	1,1-Dichloroethene	2.74	96.0	20804	50.28	UG/L	98
9)	Acetone	2.89	43.0	2383	43.60	UG/L	94
10)	Dimethyl Ketone	2.89	58.0	460	46.06	UG/L	94
11)	Carbon Disulfide	3.37	76.0	61677	55.65	UG/L	100
12)	Methylene Chloride	3.72	83.9	22496	49.71	UG/L	97
13)	Vinyl Acetate	5.38	86.0	3118	54.30	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	22969	45.52	UG/L	93
15)	Cis-1,2-Dichloroethene	6.24	96.0	24040	48.36	UG/L	89
16)	2-Butanone	6.26	72.0	1049	40.76	UG/L	84
17)	1,1-Dichloroethane	5.09	63.0	43759	51.48	UG/L	93
18)	Chloroform	6.53	82.9	48118	46.16	UG/L	94
19)	1,1,1-Trichloroethane	7.19	97.0	36944	43.20	UG/L	99
20)	Carbon Tetrachloride	7.58	116.9	36168	43.81	UG/L	85
21)	1,2-Dichloroethane-d4	7.93	65.0	24328M	50.46	UG/L	95
22)	*1,4-Difluorobenzene	8.78	114.0	76601	50.00	UG/L	95
23)	Benzene	8.00	78.0	58838	51.18	UG/L	88
24)	1,2-Dichloroethane	8.13	62.0	27733	45.78	UG/L	97
25)	Trichloroethene	9.19	130.0	30942	44.01	UG/L	90
26)	1,2-Dichloropropane	9.62	63.0	26743	51.73	UG/L	91
27)	Bromodichloromethane	10.08	82.9	45478	43.97	UG/L	92
28)	2-Chloroethylvinyl ether	11.01	63.0	12480	55.18	UG/L	86
29)	Cis-1,3-Dichloropropene	11.29	75.0	40368	46.77	UG/L	98
30)	4-Methyl-2-pentanone	11.44	58.0	5377^	64.81	UG/L	97
31)	Toluene-d8	11.61	98.2	66823	50.58	UG/L	93
32)	Toluene	11.76	91.0	65787	46.19	UG/L	88
33)	*Chlorobenzene-d5	14.72	117.0	63050	50.00	UG/L	92
34)	Trans-1,3-Dichloropropene	12.40	75.0	26972	44.87	UG/L	91
35)	1,1,2-Trichloroethane	12.65	97.0	19552	46.72	UG/L	94
36)	2-Hexanone	13.47	58.0	3648M	51.98	UG/L	87
37)	Tetrachloroethene	13.00	163.9	29413	41.30	UG/L	97
38)	Dibromochloromethane	13.56	128.9	39475	42.23	UG/L	99
39)	Chlorobenzene	14.80	112.0	52643	45.10	UG/L	95
40)	Ethylbenzene	14.99	91.0	78213	44.92	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:18
Output File: ^F3202::D1 Injected at: 911015 12:55
Data File: >F3202::D5 Dilution Factor: 1.00000
Name: 50 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.21	104.0	50701	51.04	UG/L	90
42)	M+P-Xylene	15.15	91.0	68676	46.95	UG/L	74
43)	O-Xylene	16.07	91.0	73367	50.66	UG/L	85
44)	Bromoform	16.87	172.9	28102	39.22	UG/L	95
45)	1,1,2,2-Tetrachloroethane	17.47	82.9	27775	47.26	UG/L	98
46)	Bromofluorobenzene	17.44	174.0	37695	42.97	UG/L	97
47)	1,3-Dichlorobenzene	19.83	146.0	51871	41.65	UG/L	93
48)	1,4-Dichlorobenzene	20.12	146.0	53145	40.88	UG/L	93
49)	1,2-Dichlorobenzene	20.90	146.0	47773	42.84	UG/L	89

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:24
Output File: ^F3204::D1 Injected at: 911015 13:48
Data File: >F3204::D5 Dilution Factor: 1.00000
Name: 100 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17402	50.00	UG/L	92
2)	Chloromethane	1.00	50.0	27197	114.19	UG/L	98
3)	Vinyl Chloride	1.10	62.0	32541	111.40	UG/L	95
4)	Bromomethane	1.52	94.0	40518	100.47	UG/L	86
5)	Chloroethane	1.64	64.0	22111	101.30	UG/L	93
6)	Trichlorofluoromethane	1.91	101.0	68668	93.25	UG/L	97
7)	Trichlorotrifluoroethane 113	2.51	101.0	80799	97.88	UG/L	90
8)	1,1-Dichloroethene	2.74	96.0	41188	101.76	UG/L	94
9)	Acetone	2.91	43.0	5967M	111.60	UG/L	88
10)	Dimethyl Ketone	2.92	58.0	1434	146.77	UG/L	97
11)	Carbon Disulfide	3.39	76.0	112405	103.68	UG/L	100
12)	Methylene Chloride	3.74	83.9	43878	99.11	UG/L	92
13)	Vinyl Acetate	5.37	86.0	6012	107.03	UG/L	100
14)	Trans-1,2-Dichloroethene	4.19	96.0	44871	90.90	UG/L	92
15)	Cis-1,2-Dichloroethene	6.27	96.0	47301	97.27	UG/L	89
16)	2-Butanone	6.27	72.0	2361	93.78	UG/L	93
17)	1,1-Dichloroethane	5.10	63.0	85381	102.68	UG/L	95
18)	Chloroform	6.54	82.9	97240	95.36	UG/L	92
19)	1,1,1-Trichloroethane	7.21	97.0	76476	91.41	UG/L	97
20)	Carbon Tetrachloride	7.60	116.9	76068	94.20	UG/L	84
21)	1,2-Dichloroethane-d4	7.95	65.0	46765M	99.15	UG/L	92
22)	*1,4-Difluorobenzene	8.78	114.0	72467	50.00	UG/L	96
23)	Benzene	8.02	78.0	116617	107.22	UG/L	88
24)	1,2-Dichloroethane	8.14	62.0	56303	98.24	UG/L	96
25)	Trichloroethene	9.20	130.0	62896	94.57	UG/L	89
26)	1,2-Dichloropropane	9.62	63.0	52150	106.63	UG/L	93
27)	Bromodichloromethane	10.09	82.9	92898	94.93	UG/L	93
28)	2-Chloroethylvinyl ether	11.03	63.0	23526	109.95	UG/L	85
29)	Cis-1,3-Dichloropropene	11.31	75.0	79877	97.83	UG/L	97
30)	4-Methyl-2-pentanone	11.42	58.0	10744	136.88	UG/L	93
31)	Toluene-d8	11.63	98.2	129120	103.30	UG/L	94
32)	Toluene	11.77	91.0	133684	99.22	UG/L	91
33)	*Chlorobenzene-d5	14.73	117.0	59313	50.00	UG/L	90
34)	Trans-1,3-Dichloropropene	12.40	75.0	54447	96.28	UG/L	93
35)	1,1,2-Trichloroethane	12.66	97.0	40789	103.61	UG/L	96
36)	2-Hexanone	13.41	58.0	8222	124.54	UG/L	83
37)	Tetrachloroethene	13.00	163.9	60438	90.21	UG/L	98
38)	Dibromochloromethane	13.57	128.9	83593	95.06	UG/L	97
39)	Chlorobenzene	14.81	112.0	108505	98.82	UG/L	96
40)	Ethylbenzene	14.99	91.0	162623	99.29	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:24
Output File: ^F3204::D1 Injected at: 911015 13:48
Data File: >F3204::D5 Dilution Factor: 1.00000
Name: 100 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	97935	104.80	UG/L	88
42)	M+P-Xylene	15.16	91.0	146383	106.39	UG/L	72
43)	O-Xylene	16.07	91.0	138139	101.39	UG/L	88
44)	Bromoform	16.87	172.9	63891	94.79	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.48	82.9	58451	105.72	UG/L	97
46)	Bromofluorobenzene	17.46	174.0	74958	90.83	UG/L	95
47)	1,3-Dichlorobenzene	19.84	146.0	104731	89.39	UG/L	91
48)	1,4-Dichlorobenzene	20.11	146.0	108407	88.63	UG/L	92
49)	1,2-Dichlorobenzene	20.90	146.0	93388	89.02	UG/L	87

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:38
Jutput File: ^F3205::D1 Injected at: 911015 14:15
Data File: >F3205::D5 Dilution Factor: 1.00000
Name: 150 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.85	127.9	17045	50.00	UG/L	91
2)	Chloromethane	1.00	50.0	41133	176.32	UG/L	95
3)	Vinyl Chloride	1.10	62.0	47542	166.16	UG/L	97
4)	Bromomethane	1.52	94.0	52947	134.04	UG/L	89
5)	Chloroethane	1.64	64.0	32469	151.87	UG/L	98
6)	Trichlorofluoromethane	1.90	101.0	99040	137.31	UG/L	96
7)	Trichlorotrifluoroethane 113	2.51	101.0	123401	152.61	UG/L	94
8)	1,1-Dichloroethene	2.75	96.0	61767	155.79	UG/L	97
9)	Acetone	2.90	43.0	8030M	153.33	UG/L	91
10)	Dimethyl Ketone	2.90	58.0	1947	203.45	UG/L	94
11)	Carbon Disulfide	3.38	76.0	165137	155.50	UG/L	100
12)	Methylene Chloride	3.74	83.9	66110	152.46	UG/L	95
13)	Vinyl Acetate	5.39	86.0	8851	160.87	UG/L	100
14)	Trans-1,2-Dichloroethene	4.19	96.0	67500	139.61	UG/L	96
15)	Cis-1,2-Dichloroethene	6.27	96.0	70832	148.70	UG/L	90
16)	2-Butanone	6.27	72.0	3476	140.97	UG/L	95
17)	1,1-Dichloroethane	5.10	63.0	127576	156.64	UG/L	95
18)	Chloroform	6.56	82.9	144302	144.47	UG/L	94
19)	1,1,1-Trichloroethane	7.21	97.0	110419	134.74	UG/L	98
20)	Carbon Tetrachloride	7.61	116.9	108447	137.11	UG/L	85
21)	1,2-Dichloroethane-d4	7.95	65.0	67147M	145.34	UG/L	94
22)	*1,4-Difluorobenzene	8.78	114.0	72253	50.00	UG/L	96
23)	Benzene	8.02	78.0	172477	159.04	UG/L	89
24)	1,2-Dichloroethane	8.13	62.0	80565	140.99	UG/L	98
25)	Trichloroethene	9.19	130.0	92307	139.21	UG/L	90
26)	1,2-Dichloropropane	9.62	63.0	77817	159.58	UG/L	91
27)	Bromodichloromethane	10.09	82.9	135700	139.08	UG/L	95
28)	2-Chloroethylvinyl ether	11.03	63.0	30026	140.75	UG/L	84
29)	Cis-1,3-Dichloropropene	11.30	75.0	117020	143.74	UG/L	96
30)	4-Methyl-2-pentanone	11.41	58.0	15401	196.80	UG/L	84
31)	Toluene-d8	11.62	98.2	192153	154.18	UG/L	94
32)	Toluene	11.77	91.0	198198	147.54	UG/L	91
33)	*Chlorobenzene-d5	14.73	117.0	59105	50.00	UG/L	91
34)	Trans-1,3-Dichloropropene	12.40	75.0	79248	140.63	UG/L	93
35)	1,1,2-Trichloroethane	12.66	97.0	57977	147.79	UG/L	97
36)	2-Hexanone	13.37	58.0	11547	175.52	UG/L	82
37)	Tetrachloroethene	13.00	163.9	87034	130.37	UG/L	95
38)	Dibromochloromethane	13.57	128.9	123096	140.48	UG/L	97
39)	Chlorobenzene	14.81	112.0	161467	147.57	UG/L	95
40)	Ethylbenzene	15.00	91.0	241382	147.90	UG/L	99

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:38
Output File: ^F3205::D1 Injected at: 911015 14:15
Data File: >F3205::D5 Dilution Factor: 1.00000
Name: 150 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	140848	151.24	UG/L	89
42)	M+P-Xylene	15.16	91.0	208352	151.96	UG/L	71
43)	O-Xylene	16.07	91.0	195966	144.34	UG/L	87
44)	Bromoform	16.87	172.9	90159	134.23	UG/L	99
45)	1,1,2,2-Tetrachloroethane	17.48	82.9	78878	143.17	UG/L	99
46)	Bromofluorobenzene	17.46	174.0	111302	135.35	UG/L	9E
47)	1,3-Dichlorobenzene	19.83	146.0	150350	128.78	UG/L	92
48)	1,4-Dichlorobenzene	20.11	146.0	155637	127.70	UG/L	93
49)	1,2-Dichlorobenzene	20.90	146.0	130176	124.52	UG/L	88

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 15:07
Output File: ^F3206::D1 Injected at: 911015 14:42
Data File: >F3206::D5 Dilution Factor: 1.00000
Name: 200 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.85	127.9	18001	50.00	UG/L	93
2)	Chloromethane	.99	50.0	54131	219.71	UG/L	94
3)	Vinyl Chloride	1.09	62.0	64551	213.62	UG/L	96
4)	Bromomethane	1.52	94.0	68610	164.46	UG/L	89
5)	Chloroethane	1.63	64.0	36661	162.37	UG/L	94
6)	Trichlorofluoromethane	1.89	101.0	127446	167.31	UG/L	97
7)	Trichlorotrifluoroethane 113	2.49	101.0	163734	191.74	UG/L	99
8)	1,1-Dichloroethene	2.73	96.0	85144	203.35	UG/L	99
9)	Acetone	2.94	43.0	11232M	203.08	UG/L	82
10)	Dimethyl Ketone	2.92	58.0	2872	284.16	UG/L	93
11)	Carbon Disulfide	3.38	76.0	220668	196.76	UG/L	100
12)	Methylene Chloride	3.74	83.9	89819	196.13	UG/L	95
13)	Vinyl Acetate	5.39	86.0	11897	204.75	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	92070	180.31	UG/L	95
15)	Cis-1,2-Dichloroethene	6.26	96.0	96920	192.67	UG/L	89
16)	2-Butanone	6.28	72.0	4786	183.78	UG/L	83
17)	1,1-Dichloroethane	5.10	63.0	173378	201.56	UG/L	96
18)	Chloroform	6.55	82.9	196739	186.51	UG/L	95
19)	1,1,1-Trichloroethane	7.20	97.0	151493	175.05	UG/L	96
20)	Carbon Tetrachloride	7.60	116.9	150665	180.37	UG/L	87
21)	1,2-Dichloroethane-d4	7.95	65.0	89770M	183.99	UG/L	92
22)	*1,4-Difluorobenzene	8.78	114.0	73804	50.00	UG/L	95
23)	Benzene	8.02	78.0	239780	216.46	UG/L	90
24)	1,2-Dichloroethane	8.13	62.0	112658	193.01	UG/L	95
25)	Trichloroethene	9.19	130.0	132020	194.91	UG/L	87
26)	1,2-Dichloropropane	9.63	63.0	108999	218.83	UG/L	99
27)	Bromodichloromethane	10.10	82.9	193742	194.40	UG/L	95
28)	2-Chloroethylvinyl ether	11.02	63.0	41051	188.38	UG/L	86
29)	Cis-1,3-Dichloropropene	11.30	75.0	166906	200.71	UG/L	97
30)	4-Methyl-2-pentanone	11.38	58.0	22485	281.28	UG/L	91
31)	Toluene-d8	11.62	98.2	257639	202.38	UG/L	95
32)	Toluene	11.77	91.0	280291	204.26	UG/L	90
33)	*Chlorobenzene-d5	14.74	117.0	59844	50.00	UG/L	89
34)	Trans-1,3-Dichloropropene	12.40	75.0	114165	200.09	UG/L	91
35)	1,1,2-Trichloroethane	12.65	97.0	83264	209.63	UG/L	97
36)	2-Hexanone	13.35	58.0	17434	261.73	UG/L	89
37)	Tetrachloroethene	13.00	163.9	126909	187.75	UG/L	98
38)	Dibromochloromethane	13.57	128.9	177131	199.65	UG/L	99
39)	Chlorobenzene	14.82	112.0	226055	204.05	UG/L	95
40)	Ethylbenzene	15.00	91.0	339086	205.19	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 15:07
Output File: ^F3206::D1 Injected at: 911015 14:42
Data File: >F3206::D5 Dilution Factor: 1.00000
Name: 200 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	192532	204.19	UG/L	89
42)	M+P-Xylene	15.17	91.0	296787	213.78	UG/L	72
43)	O-Xylene	16.08	91.0	261043	189.90	UG/L	88
44)	Bromoform	16.87	172.9	125025	183.85	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.49	82.9	103208	185.01	UG/L	98
46)	Bromofluorobenzene	17.46	174.0	141714	170.20	UG/L	99
47)	1,3-Dichlorobenzene	19.84	146.0	187791	158.86	UG/L	90
48)	1,4-Dichlorobenzene	20.13	146.0	196629	159.34	UG/L	96
49)	1,2-Dichlorobenzene	20.90	146.0	157435	148.74	UG/L	90

* Compound is ISTD

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSV0A3

Contractor: Columbia Analytical Calibration Date: 10/15/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3203	>F3202	>F3204	>F3205	>F3206				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.79685	.75243	.78143	.80440	.75178	.77738	3.153		**
Vinyl Chloride	.96103	.91259	.93498	.92973	.89649	.92696	2.625	*	
Bromomethane	1.23268	1.18500	1.16418	1.03544	.95286	1.11403	10.408		
Chloroethane	.67439	.67396	.63530	.63497	.50915	.62555	10.860		
Trichlorofluoromethane	2.09755	1.99224	1.97299	1.93683	1.76998	1.95392	6.087		
Trichlorotrifluoroethane 113	2.38715	2.30440	2.32154	2.41324	2.27396	2.34006	2.488		
1,1-Dichloroethene	1.26421	1.16949	1.18343	1.20792	1.18249	1.20151	3.138	*	
Acetone	.24860	.13396	.17145	.15704	.15599	.17341	25.442		
Carbon Disulfide	3.44773	3.46714	3.22966	3.22943	3.06466	3.28773	5.142		
Methylene Chloride	1.32573	1.26460	1.26072	1.29285	1.24742	1.27826	2.446		
Vinyl Acetate	.17874	.17528	.17274	.17309	.16523	.17302	2.871		
Trans-1,2-Dichloroethene	1.35924	1.29119	1.28925	1.32003	1.27868	1.30768	2.497		
Cis-1,2-Dichloroethene	1.42570	1.35140	1.35907	1.38520	1.34604	1.37348	2.391		
2-Butanone	.05642	.05897	.06784	.06798	.06647	.06353	8.559		
1,1-Dichloroethane	2.52701	2.45989	2.45320	2.49489	2.40789	2.46858	1.823		**
Chloroform	2.80785	2.70493	2.79393	2.82198	2.73233	2.77221	1.834	*	
1,1,1-Trichloroethane	2.22100	2.07679	2.19733	2.15936	2.10395	2.15169	2.830		
Carbon Tetrachloride	2.18338	2.03317	2.18561	2.12080	2.09245	2.12308	3.032		
1,2-Dichloroethane-d4	1.41764	1.36759	1.34367	1.31313	1.24674	1.33775	4.757		
Benzene	.80278	.76811	.80462	.79571	.81222	.79669	2.137		
1,2-Dichloroethane	.39483	.36204	.38847	.37168	.38161	.37973	3.447		
Trichloroethene	.43538	.40394	.43396	.42585	.44720	.42926	3.746		
1,2-Dichloropropane	.36731	.34912	.35982	.35900	.36922	.36089	2.207	*	
Bromodichloromethane	.63452	.59370	.64097	.62604	.65627	.63030	3.690		
2-Chloroethylvinyl ether	.17406	.16292	.16232	.13852	.13905	.15538	10.200		
Cis-1,3-Dichloropropene	.54649	.52699	.55113	.53986	.56537	.54597	2.591		
4-Methyl-2-pentanone	.07720	.07019	.07413	.07105	.07616	.07375	4.168		
Toluene-d8	.88458	.87235	.89089	.88648	.87271	.88140	.955		
Toluene	.90410	.85883	.92238	.91437	.94944	.90982	3.638	*	
Trans-1,3-Dichloropropene	.47217	.42779	.45898	.44693	.47693	.45656	4.360		
1,1,2-Trichloroethane	.35217	.31010	.34385	.32697	.34784	.33618	5.184		
2-Hexanone	.06952	.05786	.06931	.06512	.07283	.06693	8.607		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - 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: GCMSV0A3

Contractor: Columbia Analytical Calibration Date: 10/15/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3203	>F3202	>F3204	>F3205	>F3206				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Tetrachloroethene	.51718	.46650	.50948	.49084	.53017	.50284	4.933		
Dibromochloromethane	.68248	.62609	.70468	.69422	.73997	.68949	6.011		
Chlorobenzene	.92351	.83494	.91468	.91062	.94435	.90562	4.594		**
Ethylbenzene	1.34025	1.24049	1.37089	1.36132	1.41654	1.34590	4.843	*	
Styrene	.81939	.80414	.82558	.79434	.80431	.80955	1.565		
M+P-Xylene	1.18434	1.08923	1.23399	1.17504	1.23984	1.18449	5.114		
O-Xylene	1.21931	1.16363	1.16449	1.10519	1.09051	1.14863	4.510		
Bromoform	.50309	.44571	.53859	.50847	.52230	.50363	6.984		**
1,1,2,2-Tetrachloroethane	.50668	.44052	.49273	.44485	.43115	.46319	7.354		**
Bromofluorobenzene	.62448	.59786	.63189	.62771	.59201	.61479	2.997		
1,3-Dichlorobenzene	.89810	.82270	.88287	.84793	.78450	.84722	5.407		
1,4-Dichlorobenzene	.92767	.84290	.91386	.87774	.82142	.87672	5.157		
1,2-Dichlorobenzene	.83234	.75770	.78725	.73415	.65769	.75383	8.629		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 18:04
Output File: ^F3686::D1 Injected at: 911121 17:41
Data File: >F3686::D5 Dilution Factor: 1.00000
Name: K6641-1 WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Date: 911121 11:58

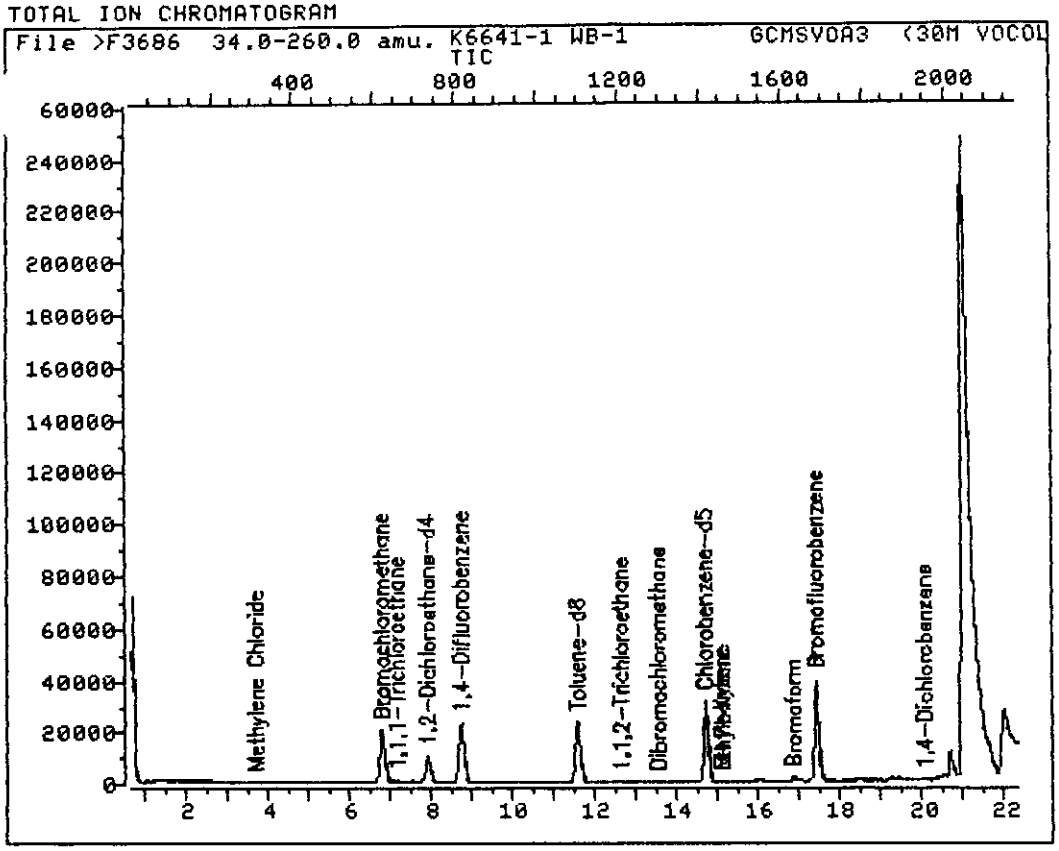
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	19524	50.00	UG/L	93
12)	Methylene Chloride	3.70	83.9	518	1.17	UG/L	88
19)	1,1,1-Trichloroethane	7.15	97.0	785M	1.08	UG/L	87
21)	1,2-Dichloroethane-d4	7.91	65.0	23091	44.40	UG/L	88
22)	*1,4-Difluorobenzene	8.74	114.0	76283	50.00	UG/L	92
24)	1,2-Dichloroethane	8.09	62.0	522M	1.05	UG/L	
31)	Toluene-d8	11.57	98.2	69582	48.72	UG/L	92
33)	*Chlorobenzene-d5	14.69	117.0	63443	50.00	UG/L	91
35)	1,1,2-Trichloroethane	12.62	97.0	527	1.56	UG/L	87
38)	Dibromochloromethane	13.54	128.9	728	1.11	UG/L	87
40)	Ethylbenzene	15.10	91.0	101^	.0725	UG/L	71
42)	M+P-Xylene	15.10	91.0	101^	.0791	UG/L	71
44)	Bromoform	16.85	172.9	762	1.65	UG/L	89
5)	1,1,2,2-Tetrachloroethane	17.42	82.9	1591	2.95	UG/L	95
46)	Bromofluorobenzene	17.41	174.0	39729	53.92	UG/L	92
48)	1,4-Dichlorobenzene	20.06	146.0	243	.274	UG/L	95

* Compound is ISTD

NR

NR
Possible carryover
rr

TOTAL ION CHROMATOGRAM



Data File: >F3686::D5 Quant Output File: ^F3686::D1
Name: K6641-1 WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

Operator ID: JEFFG-2
Quant Time : 911121 18:04
Injected at: 911121 17:41

QUANT REPORT

Operator ID: JEFFG-2
Output File: ^F3696::D1
Data File: >F3696::D5
Name: K6641-1 WB-1
Misc: GCMSVOA3 (30M VOCOL)

Quant Rev: 7
Quant Time: 911122 11:20
Injected at: 911122 10:57
Dilution Factor: 1.00000
Instrument ID: GCMSVOA3

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25
Last Qcal Time: 911122 08:55

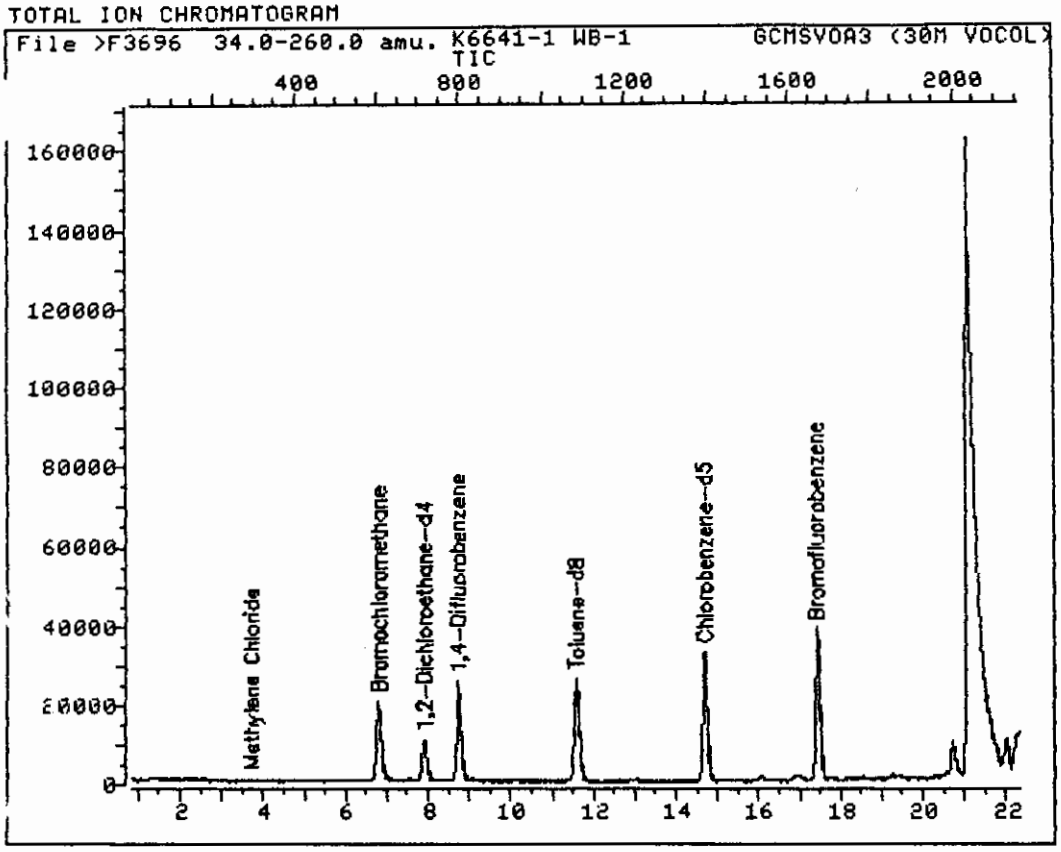
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	18758	50.00	UG/L	93
12)	Methylene Chloride	3.71	83.9	421	.832	UG/L	78
21)	1,2-Dichloroethane-d4	7.91	65.0	22840	45.57	UG/L	90
22)	*1,4-Difluorobenzene	8.72	114.0	79837	50.00	UG/L	90
31)	Toluene-d8	11.57	98.2	74349	51.85	UG/L	91
33)	*Chlorobenzene-d5	14.68	117.0	65762	50.00	UG/L	95
46)	Bromofluorobenzene	17.40	174.0	38963	52.55	UG/L	93

* Compound is ISTD
91.1 - 103.7 - 105.1

Rev 11/26/91

0010

TOTAL ION CHROMATOGRAM



Data File: >F3696::D5 Quant Output File: ^F3696::D1
Name: K6641-1 WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

Operator ID: JEFFG-2
Quant Time : 911122 11:20
Injected at: 911122 10:57

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 19:25
Output File: ^F3689::D1 Injected at: 911121 19:02
Data File: >F3689::D5 Dilution Factor: 1.00000
Name: K6641-1MS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.78	127.9	19804	50.00	UG/L	88
2)	Chloromethane	.99	50.0	10049	36.24	UG/L	91
3)	Vinyl Chloride	1.09	62.0	13864	38.91	UG/L	95
4)	Bromomethane	1.51	94.0	18294	49.75	UG/L	90
5)	Chloroethane	1.63	64.0	10537	41.23	UG/L	99
6)	Trichlorofluoromethane	1.91	101.0	29312	44.83	UG/L	96
7)	Trichlorotrifluoroethane 113	2.47	101.0	34584	48.12	UG/L	80
8)	1,1-Dichloroethene	2.73	96.0	19447	51.02	UG/L	95
11)	Carbon Disulfide	3.37	76.0	657	.566	UG/L	100
12)	Methylene Chloride	3.70	83.9	23401	51.92	UG/L	97
13)	Vinyl Acetate	5.32	86.0	1698	52.27	UG/L	100
14)	Trans-1,2-Dichloroethene	4.15	96.0	21957	51.48	UG/L	98
15)	Cis-1,2-Dichloroethene	6.23	96.0	19776	50.84	UG/L	95
17)	1,1-Dichloroethane	5.06	63.0	42650	43.03	UG/L	93
18)	Chloroform	6.50	82.9	46685	47.49	UG/L	98
19)	1,1,1-Trichloroethane	7.16	97.0	34171	46.28	UG/L	96
20)	Carbon Tetrachloride	7.55	116.9	33866	47.12	UG/L	88
21)	1,2-Dichloroethane-d4	7.89	65.0	23848	45.21	UG/L	90
22)	*1,4-Difluorobenzene	8.73	114.0	74497	50.00	UG/L	94
23)	Benzene	7.97	78.0	62864	55.84	UG/L	88
24)	1,2-Dichloroethane	8.09	62.0	25074	51.89	UG/L	91
25)	Trichloroethene	9.15	130.0	29010	59.13	UG/L	93
26)	1,2-Dichloropropane	9.57	63.0	28354	51.60	UG/L	94
27)	Bromodichloromethane	10.04	82.9	45690	55.71	UG/L	90
29)	Cis-1,3-Dichloropropene	11.24	75.0	41023	54.32	UG/L	95
31)	Toluene-d8	11.57	98.2	70041	50.22	UG/L	95
32)	Toluene	11.72	91.0	68827	58.06	UG/L	89
33)	*Chlorobenzene-d5	14.68	117.0	66243	50.00	UG/L	98
34)	Trans-1,3-Dichloropropene	12.36	75.0	27292	54.81	UG/L	96
35)	1,1,2-Trichloroethane	12.60	97.0	23167	65.51	UG/L	98
37)	Tetrachloroethene	12.95	163.9	28079	61.19	UG/L	98
38)	Dibromochloromethane	13.53	128.9	43292	63.34	UG/L	97
39)	Chlorobenzene	14.76	112.0	55837	58.95	UG/L	95
40)	Ethylbenzene	14.94	91.0	82576	56.78	UG/L	97
41)	Styrene	16.15	104.0	96	.0927	UG/L	64
42)	M+P-Xylene	15.11	91.0	72619	54.45	UG/L	63
44)	Bromoform	16.83	172.9	33312	69.09	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.42	82.9	40301	71.61	UG/L	98
46)	Bromofluorobenzene	17.41	174.0	40709	52.92	UG/L	96
47)	1,3-Dichlorobenzene	19.79	146.0	55392	61.86	UG/L	93

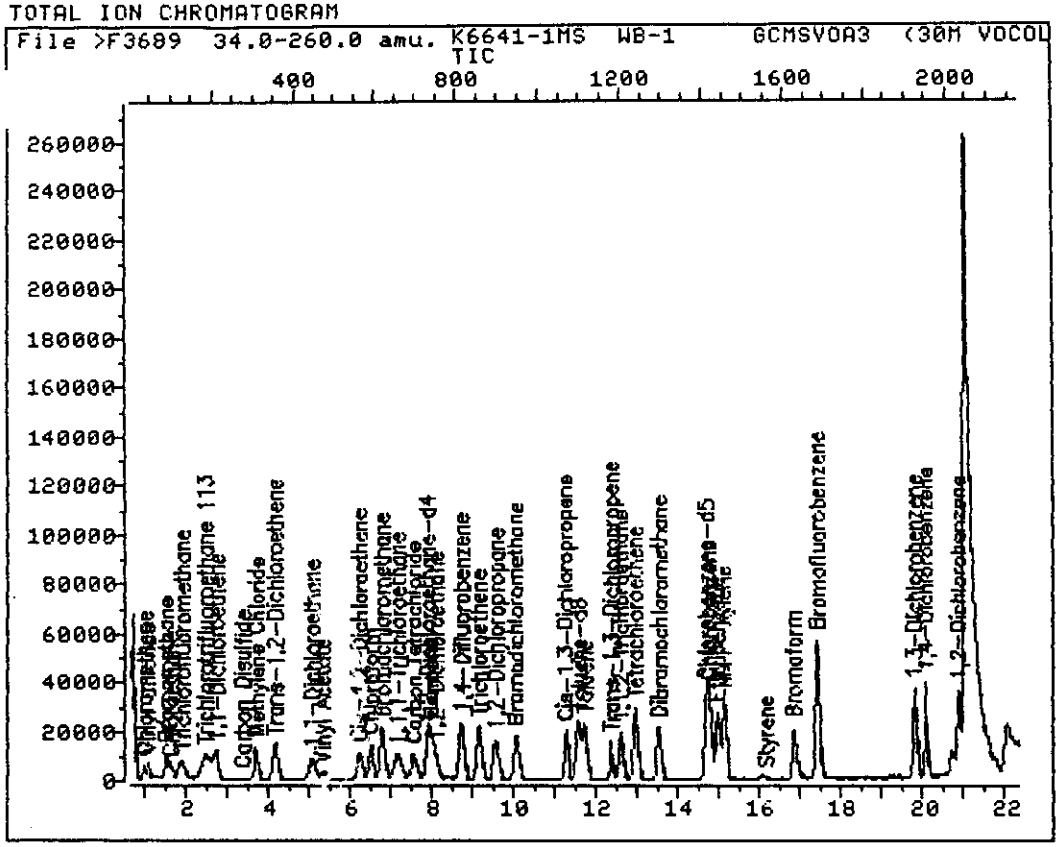
perator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 19:25
Output File: ^F3689::D1 Injected at: 911121 19:02
Data File: >F3689::D5 Dilution Factor: 1.00000
Name: K6641-1MS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
48)	1,4-Dichlorobenzene	20.07	146.0	58103	62.76	UG/L	96
49)	1,2-Dichlorobenzene	20.86	146.0	52809	65.05	UG/L	92

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >F3689::D5 Quant Output File: ^F3689::D1
Name: K6641-1MS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

Operator ID: JEFFG-2
Quant Time : 911121 19:25
Injected at: 911121 19:02

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 19:52
Output File: ^F3690::D1 Injected at: 911121 19:29
Data File: >F3690::D5 Dilution Factor: 1.00000
Name: K6641-1DMS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	20317	50.00	UG/L	92
2)	Chloromethane	.99	50.0	10379	36.49	UG/L	89
3)	Vinyl Chloride	1.08	62.0	13861	37.92	UG/L	97
4)	Bromomethane	1.51	94.0	19114	50.67	UG/L	88
5)	Chloroethane	1.63	64.0	10647	40.61	UG/L	99
6)	Trichlorofluoromethane	1.88	101.0	29349	43.75	UG/L	96
7)	Trichlorotrifluoroethane 113	2.49	101.0	36394	49.35	UG/L	85
8)	1,1-Dichloroethene	2.70	96.0	20095	51.38	UG/L	92
11)	Carbon Disulfide	3.36	76.0	728	.611	UG/L	100
12)	Methylene Chloride	3.71	83.9	23600	51.04	UG/L	93
13)	Vinyl Acetate	5.33	86.0	1560	46.81	UG/L	100
14)	Trans-1,2-Dichloroethene	4.15	96.0	22764	52.02	UG/L	96
15)	Cis-1,2-Dichloroethene	6.22	96.0	20339	50.96	UG/L	95
17)	1,1-Dichloroethane	5.06	63.0	43554	42.83	UG/L	93
18)	Chloroform	6.51	82.9	47972	47.57	UG/L	99
19)	1,1,1-Trichloroethane	7.15	97.0	35376	46.70	UG/L	98
20)	Carbon Tetrachloride	7.56	116.9	34420	46.68	UG/L	90
21)	1,2-Dichloroethane-d4	7.90	65.0	23035	42.57	UG/L	88
22)	*1,4-Difluorobenzene	8.73	114.0	78604	50.00	UG/L	90
23)	Benzene	7.97	78.0	65030	54.74	UG/L	88
24)	1,2-Dichloroethane	8.08	62.0	24858	48.75	UG/L	93
25)	Trichloroethene	9.15	130.0	30392	58.71	UG/L	83
26)	1,2-Dichloropropane	9.57	63.0	29785	51.37	UG/L	95
27)	Bromodichloromethane	10.06	82.9	47529	54.92	UG/L	89
29)	Cis-1,3-Dichloropropene	11.24	75.0	42223	52.99	UG/L	95
31)	Toluene-d8	11.56	98.2	72577	49.32	UG/L	93
32)	Toluene	11.72	91.0	71772	57.38	UG/L	88
33)	*Chlorobenzene-d5	14.67	117.0	67015	50.00	UG/L	98
34)	Trans-1,3-Dichloropropene	12.35	75.0	28561	56.69	UG/L	91
35)	1,1,2-Trichloroethane	12.60	97.0	24067	67.27	UG/L	97
37)	Tetrachloroethene	12.95	163.9	28755	61.94	UG/L	95
38)	Dibromochloromethane	13.53	128.9	44195	63.91	UG/L	96
39)	Chlorobenzene	14.75	112.0	57773	60.29	UG/L	96
40)	Ethylbenzene	14.94	91.0	87737	59.63	UG/L	96
41)	Styrene	16.14	104.0	142	.136	UG/L	83
42)	M+P-Xylene	15.11	91.0	79819	59.15	UG/L	67
43)	O-Xylene	16.02	91.0	962	.656	UG/L	69
44)	Bromoform	16.84	172.9	33508	68.70	UG/L	95
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	40340	70.85	UG/L	99
46)	Bromofluorobenzene	17.41	174.0	41094	52.80	UG/L	98

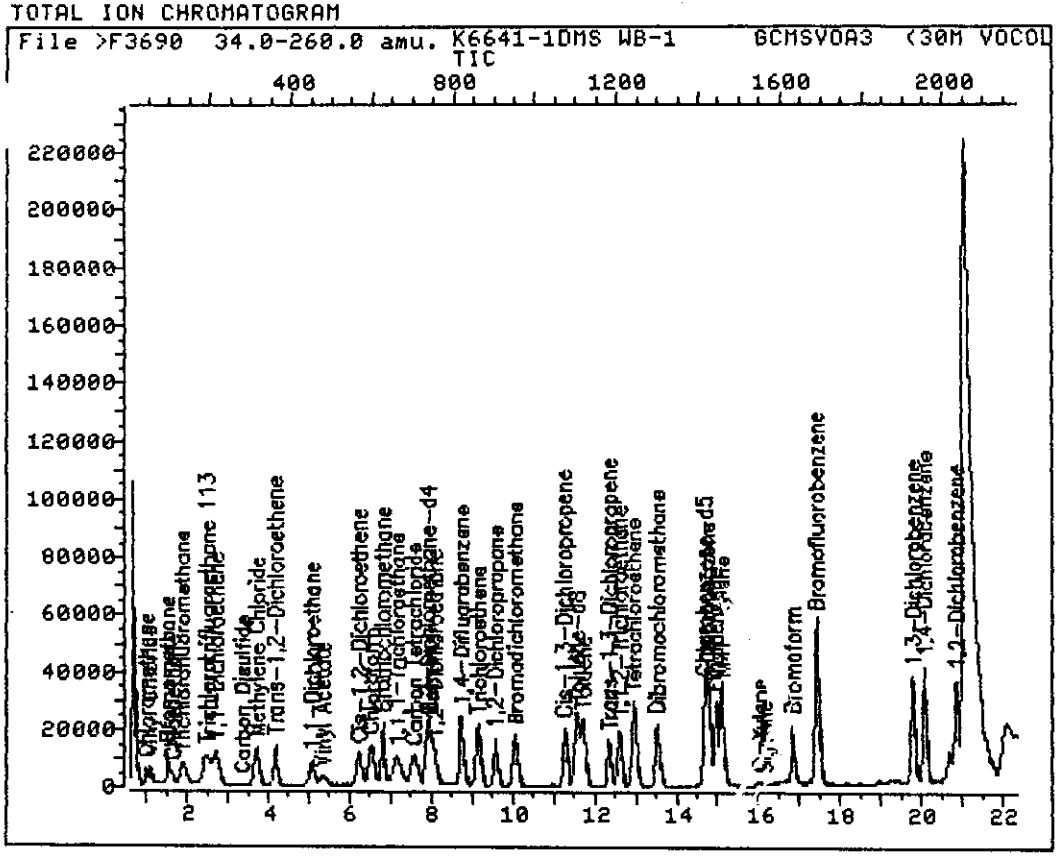
Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 19:52
Output File: ^F3690::D1 Injected at: 911121 19:29
Data File: >F3690::D5 Dilution Factor: 1.00000
Name: K6641-1DMS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
47)	1,3-Dichlorobenzene	19.78	146.0	56330	62.19	UG/L	94
48)	1,4-Dichlorobenzene	20.07	146.0	58851	62.84	UG/L	94
49)	1,2-Dichlorobenzene	20.85	146.0	53484	65.13	UG/L	89

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >F3690::D5 Quant Output File: ^F3690::D1
Name: K6641-1DMS WB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

Operator ID: JEFFG-2
Quant Time : 911121 19:52
Injected at: 911121 19:29

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 18:31
Output File: ^F3687::D1 Injected at: 911121 18:08
Data File: >F3687::D5 Dilution Factor: 1.00000
Name: K6641-2 FB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

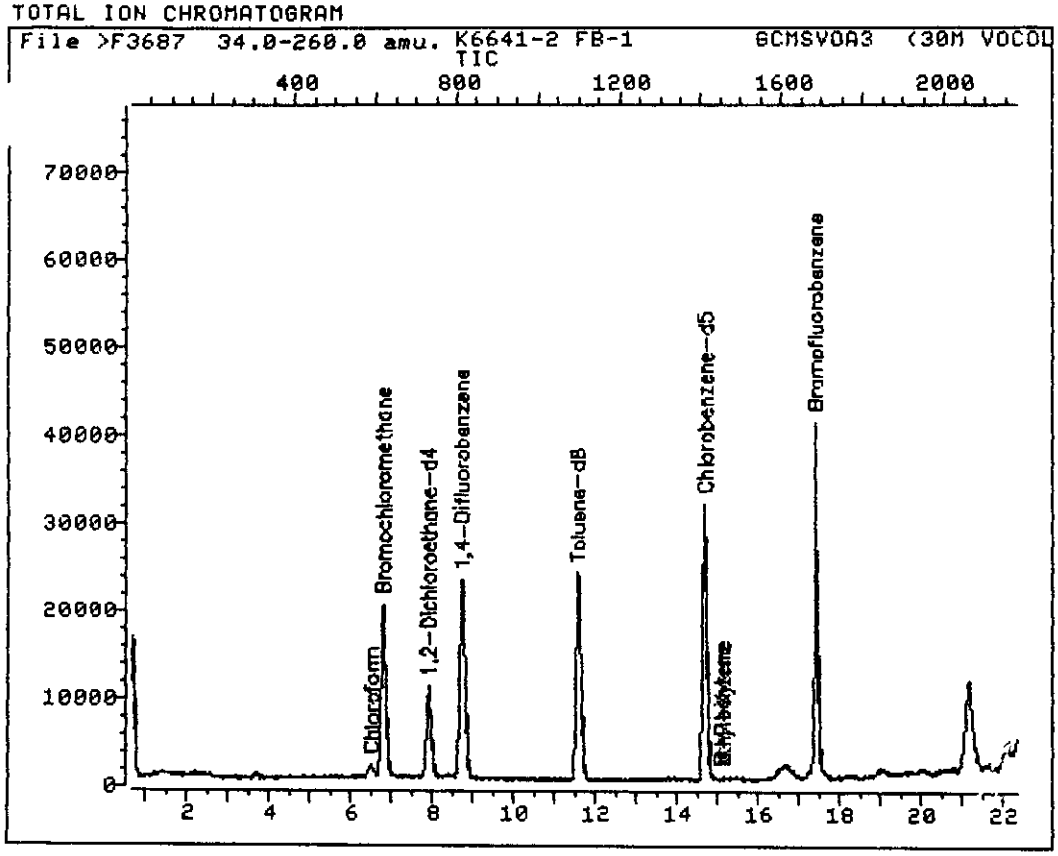
ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Date: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	20083	50.00	UG/L	91
12)	Methylene Chloride	3.70	83.9	845M	1.85	UG/L	
18)	Chloroform	6.31	82.9	5060	5.08	UG/L	94
21)	1,2-Dichloroethane-d4	7.91	65.0	23368	43.69	UG/L	85
22)	*1,4-Difluorobenzene	8.73	114.0	76315	50.00	UG/L	90
31)	Toluene-d8	11.56	98.2	69961	48.96	UG/L	94
33)	*Chlorobenzene-d5	14.69	117.0	65321	50.00	UG/L	96
40)	Ethylbenzene	15.11	91.0	296	.206	UG/L	51
42)	M+P-Xylene	15.11	91.0	296	.225	UG/L	51
46)	Bromofluorobenzene	17.41	174.0	39819	52.49	UG/L	93

* Compound is ISTD

11/26/91

TOTAL ION CHROMATOGRAM



Data File: >F3687::D5 Quant Output File: ^F3687::D1
Name: K6641-2 FB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

Operator ID: JEFFG-2
Quant Time : 911121 18:31
Injected at: 911121 18:08

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 10:17
Output File: ^F3694::D1 Injected at: 911122 09:53
Data File: >F3694::D5 Dilution Factor: 1.00000
Name: METHOD BLANK Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	19794	50.00	UG/L	94
12)	Methylene Chloride	3.70	83.9	1228	2.30	UG/L	84
21)	1,2-Dichloroethane-d4	7.90	65.0	24575	46.46	UG/L	89
22)	*1,4-Difluorobenzene	8.73	114.0	80484	50.00	UG/L	93
31)	Toluene-d8	11.56	98.2	74720	51.69	UG/L	93
33)	*Chlorobenzene-d5	14.69	117.0	67368	50.00	UG/L	89
46)	Bromofluorobenzene	17.42	174.0	38967	51.30	UG/L	95

* Compound is ISTD

92.9 - 103.4 - 102.6

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911121 15:53
Output File: ^F3676::D1 Injected at: 911121 12:37
Data File: >F3676::D5 Dilution Factor: 1.00000
Name: METHOD BLANK Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	18335	50.00	UG/L	95
12)	Methylene Chloride	3.67	83.9	557	1.33	UG/L	89
21)	1,2-Dichloroethane-d4	7.90	65.0	23786	48.71	UG/L	94
22)	*1,4-Difluorobenzene	8.72	114.0	80047	50.00	UG/L	93
31)	Toluene-d8	11.57	98.2	71626	47.79	UG/L	92
33)	*Chlorobenzene-d5	14.69	117.0	64855	50.00	UG/L	92
46)	Bromofluorobenzene	17.41	174.0	38325	50.88	UG/L	91

* Compound is ISTD

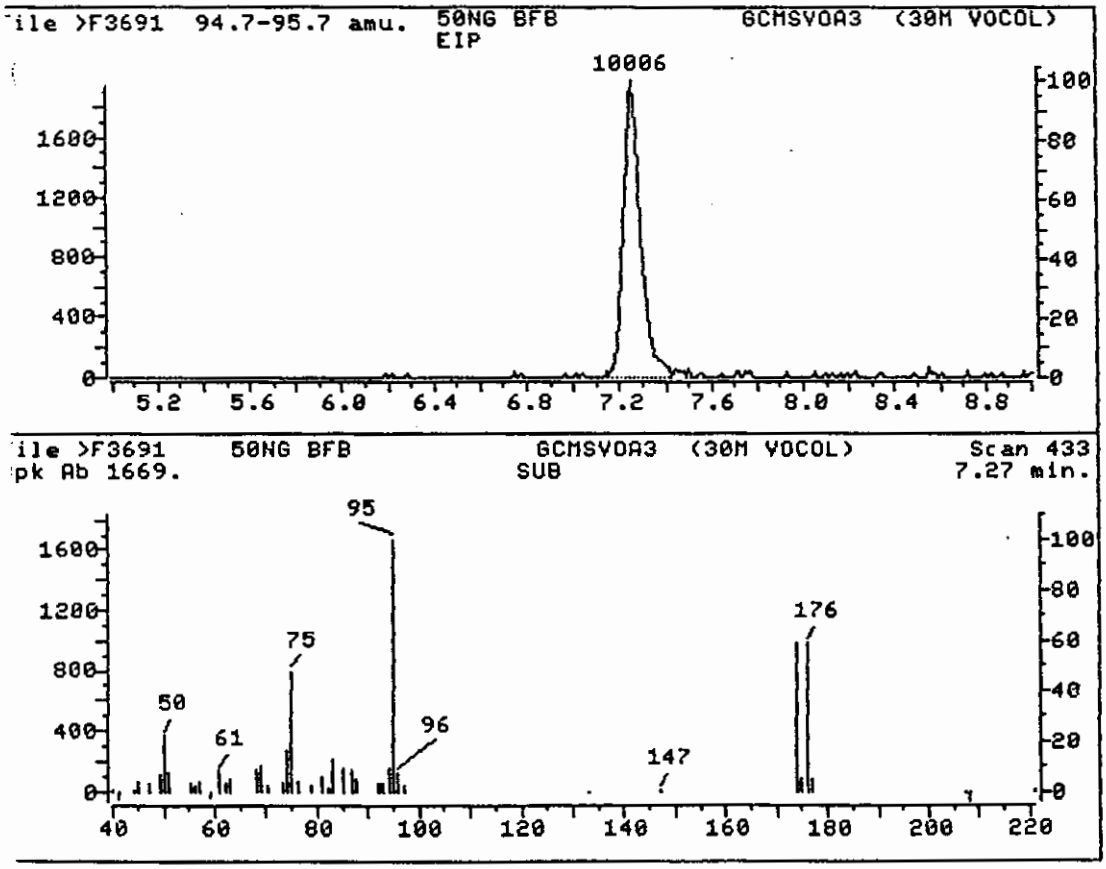
GC/MS PERFORMANCE STANDARD

Move cursor; then press carriage return :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	22.05	22.05	Ok
75	30-60% of mass 95	47.93	47.93	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.37	7.37	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	58.42	58.42	Ok
175	5-9% of mass 174	5.21	8.92	Ok
176	95-101% of mass 174	58.48	100.10	Ok
177	5-9% of mass 176	4.43	7.58	Ok

Injection Date: 11/22/91
Injection Time: 08:16
Data File: >F3691
Scan: 433

FMGR : AL,,3



Work Request # K6641
Tier II
Supervisor LW
Date Reviewed 11-25-91
ANALYSIS 8270

DATA QUALITY REPORT
VOC GC/VOC GC/MS/SOC GC/MS
July 1, 1991

EXPLAIN ANY "NO" RESPONSES TO QUESTIONS BELOW AND ANY CORRECTIVE ACTIONS TAKEN IN THE COMMENTS SECTION BELOW.

1. Is (Are) the method name(s) and method number(s) correct and appropriate? yes/no
2. Holding times met for all analyses and for all samples? yes/no
3. Are calculations correct? yes/no
4. Is the reporting basis correct (e.g. as rec'd basis for samples from CA)? yes/no
5. All quality control criteria met? yes/no
   a. Are GC/MS instrument tuning criteria met? yes/no
   b. Does the initial, multipoint calibration curve meet method criteria? yes/no
   c. Does the continuing calibration check standard result meet method criteria? yes/no
   d. Are CCCs and SPCCs within acceptance limits? yes/no
   e. Method blanks, Dups, MS/DMSs, LCSs analyzed at proper frequency? yes/no
   f. Is (Are) result(s) for method blank(s) (all) ND? yes/no
   g. Is (Are) surrogate percent recovery(ies) within acceptance limits? yes/no
   h. Is (Are) MS/DMS percent recovery(ies) within acceptance limits? FOOTNOTE yes/no
   i. Is (Are) MS/DMS RPDs within acceptance limits? yes/no
   j. Are MRLs adjusted to reflect sample volume changes, dilutions, dry weight? yes/no
   k. Are all exceptions explained/footnoted? yes/no
   l. Is the footnote wording acceptable? yes/no

COMMENTS:

COLUMBIA ANALYTICAL SERVICES, INC.

Work Request #: K91-6641 C

Date Extracted: 11/16/91

Analyst: Jon James

Method: 8270/3510

BNA Water/BNA TCLP/TCLP SVO

Lab ID	Client ID	Sample Vol	SS	pH		Surr		Matrix Spike		Emuls		F Sol	F Vol
				A	B	A	B	A	B	A	B		
K6641-1	WB-1	1000mL	Yes	<2	>12	1.0mL		No	No	Yes	Yes	DCM	1.0mL
-1MS	WB-1 Matrix Spike	460mL	Yes	<2	>12	1.0mL		100µL	200µL	Yes	Yes	DCM	1.0mL
-1DMS	WB-1 Dup Matrix Spike	460mL	Yes	<2	>12	1.0mL		100µL	200µL	Yes	Yes	DCM	1.0mL
1116-BNA LCS	Lab Control Spike	1000mL	NA	<2	>12	1.0mL		100µL	200µL	No	No	DCM	1.0mL
1116-BNA WB	Water Blank	1000mL	NA	<2	>12	1.0mL		No	No	No	No	DCM	1.0mL
									11/16/91			11/17/91	

Comments: Water Blank batched with #s 66675 & 66664

BN Surrogate ID: Combined A/B BNA surr. 50ppm } use 1.0mL via pipette — Solution Concentration: 50ppm

Acid Surrogate ID: 5-14-B 100ppm } — Solution Concentration: 100ppm

BN Spike ID: 5-4-C 200ppm use 200µL via Epp. 2X — Sample Concentration: 40ppm 0.4

Acid Spike ID: 4-99-B 1000ppm use 100µL via Epp. — Sample Concentration: 100ppm 0.1

Vial: 2mL marked meniscus — Extract Storage: BNA Rack

Reviewed by: [signature] 11/18 — Date 11/17/91 — Filename: BNA 041117.91

Operator ID: KEN-1
Output File: ^B3333::D1
Data File: >B3333::D3
File: K6641-1 8270/H20
Misc: WB-1 (EMCON/TIER III)

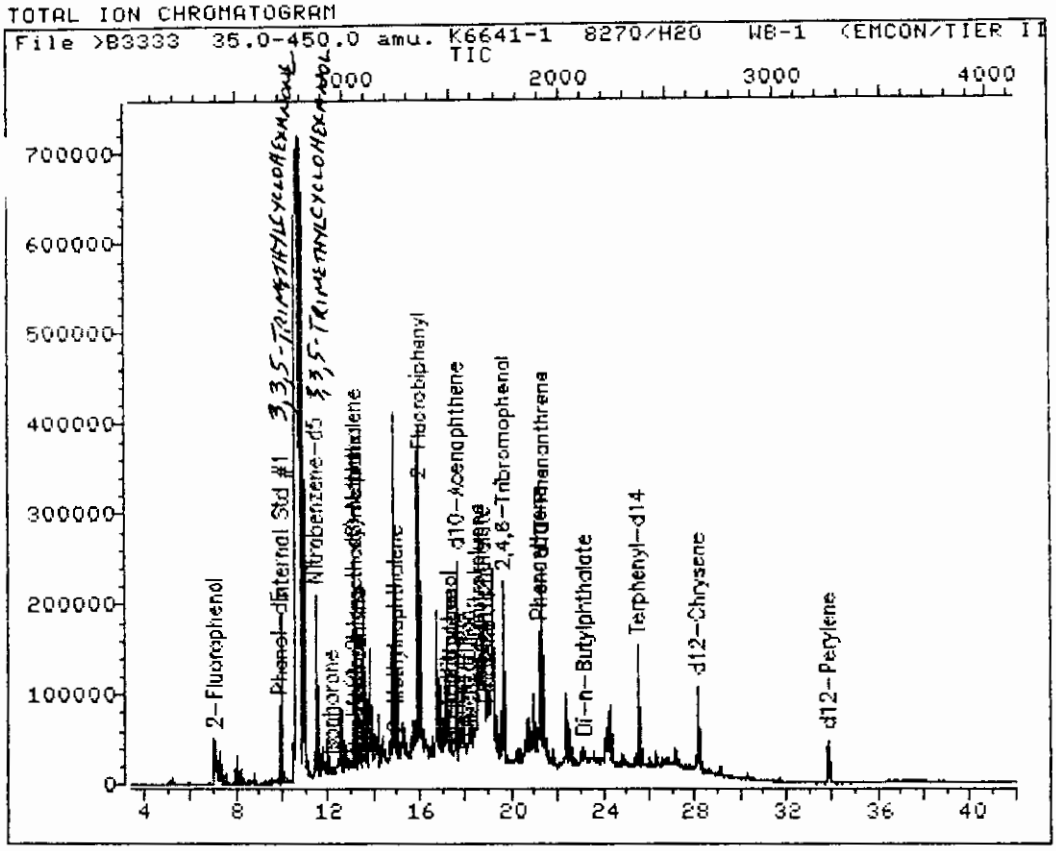
Quant Rev: 7 Quant Time: 911120 14:57
Injected at: 911120 14:13
Dilution Factor: 1.00000
Instrument ID: GCMSBNA1
BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.94	152.0	60905✓	40.00	ug/mL	98
4)	2-Fluorophenol	7.03	112.0	59075	36.15	ug/mL	91
6)	Phenol-d6 SHIFT	9.87✓	99.0	85203	35.05	ug/mL	93
20)	*d8-Naphthalene	13.12	136.0	239038✓	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.44	82.0	97009	38.91	ug/mL	94
~~22)~~	~~Isophorone~~ KY 11/22	~~12.09~~	~~82.0~~	~~8309~~	~~<MRL 1.57~~	~~ug/mL~~	~~91~~
~~26)~~	~~bis(2-Chloroethoxy)methane~~ KY 11/22	~~12.72~~	~~93.0~~	~~880M~~	~~.275~~	~~ug/mL~~	91
~~29)~~	~~Naphthalene~~ KY 11/22	~~13.15~~	~~128.0~~	~~4872~~	~~.773~~	~~ug/mL~~	~~94~~
~~30)~~	~~4-Chloroaniline~~ KY 11/22	~~13.45~~	~~127.0~~	~~60M~~	~~.0216~~	~~ug/mL~~	~~74~~
~~33)~~	~~2-Methylnaphthalene~~ KY 11/22	~~14.91~~	~~142.0~~	~~1287~~	~~.340~~	~~ug/mL~~	~~78~~
34)	*d10-Acenaphthene	17.59	164.0	132104✓	40.00	ug/mL	88
~~38)~~	~~2-Chloronaphthalene~~ KY 11/22	~~16.14~~	~~162.0~~	~~48M~~	~~.0112~~	~~ug/mL~~	
39)	2-Fluorobiphenyl	15.97	172.0	177630	39.30	ug/mL	95
~~42)~~	~~Acenaphthylene~~ KY 11/22	~~17.18~~	~~152.0~~	~~280M~~	~~.0467~~	~~ug/mL~~	~~91~~
	~~Acenaphthene~~ KY 11/22	~~17.66~~	~~154.0~~	~~1230~~	~~.310~~	~~ug/mL~~	~~87~~
	~~4-Nitrophenol~~ KY 11/22	~~18.16~~	~~65.0~~	~~3390M~~	~~<MRL 4.30~~	~~ug/mL~~	~~91~~
~~47)~~	~~Dibenzofuran~~ KY 11/22	~~18.07~~	~~168.0~~	~~607^~~	~~.105~~	~~ug/mL~~	~~73~~
~~48)~~	~~2,4-Dinitrotoluene~~ KY 11/22	~~18.30~~	~~165.0~~	~~538M~~	~~.329~~	~~ug/mL~~	~~54~~
~~52)~~	~~Fluorene~~ KY 11/22	~~18.94~~	~~166.0~~	~~2076~~	~~.458~~	~~ug/mL~~	~~79~~
56)	*d10-Phenanthrene	21.30	188.0	187815✓	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.62	329.8	80158	110.85	ug/mL	96
~~62)~~	~~Phenanthrene~~ KY 11/22	~~21.34~~	~~178.0~~	~~2038M~~	~~.366~~	~~ug/mL~~	~~90~~
~~63)~~	~~Anthracene~~ KY 11/22	~~21.46~~	~~178.0~~	~~822M~~	~~.154~~	~~ug/mL~~	
~~64)~~	~~Di-n-Butylphthalate~~ KY 11/22	~~23.13~~	~~149.0~~	~~18545~~	~~<MRL 2.53~~	~~ug/mL~~	~~97~~
~~65)~~	~~Fluoranthene~~ KY 11/22	~~24.37~~	~~202.0~~	~~327M~~	~~.0680~~	~~ug/mL~~	
66)	*d12-Chrysene	28.11	240.0	100373✓	40.00	ug/mL	94
~~67)~~	~~Pyrene~~ KY 11/22	~~24.92~~	~~202.0~~	~~170M~~	~~.0351~~	~~ug/mL~~	
68)	Terphenyl-d14	25.47	244.0	123184	40.47	ug/mL	86
~~69)~~	~~Butylbenzylphthalate~~ KY 11/22	~~26.90~~	~~149.0~~	~~372M~~	~~.188~~	~~ug/mL~~	
~~72)~~	~~Bis(2-Ethylhexyl)Phthalate~~ KY 11/22	~~28.64~~	~~149.0~~	~~1919M~~	~~.662~~	~~ug/mL~~	
74)	*d12-Perylene	33.79	264.0	86594✓	40.00	ug/mL	92
~~75)~~	~~Di-n-octylphthalate~~ KY 11/22	~~30.92~~	~~149.0~~	~~227M~~	~~.0504~~	~~ug/mL~~	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3333::D3 Quant Output File: ^B3333::D1
Name: K6641-1 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 14:57
Injected at: 911120 14:13

Operator ID: KEN-1
Output File: ^B3334::D1
Data File: >B3334::D3
me: K6641-1MS 8270/H2O
misc: WB-1 (EMCON/TIER III)

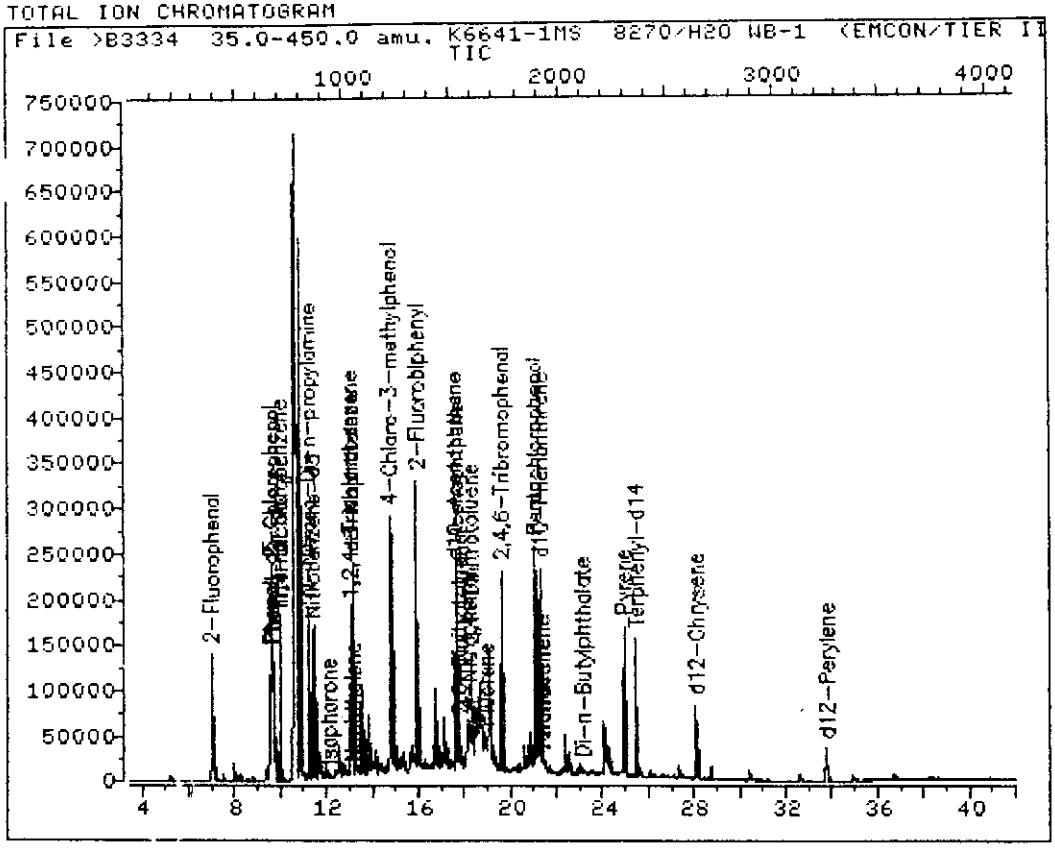
Quant Rev: 7 Quant Time: 911120 15:49
Injected at: 911120 15:05
Dilution Factor: 1.00000
Instrument ID: GCMSBNA1
BTL# 5

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.92	152.0	54724 ✓	40.00	ug/mL	96
4)	2-Fluorophenol	6.99	112.0	85271	58.07	ug/mL	93
6)	Phenol-d6	9.58	99.0	112932	51.71	ug/mL	92
7)	Phenol	9.64	94.0	128509	44.08	ug/mL	92
9)	2-Chlorophenol	9.60	128.0	93355	44.28	ug/mL	99
11)	1,4-Dichlorobenzene	9.96	146.0	79867	36.56	ug/mL	95
17)	N-Nitroso-Di-n-propylamine	11.20	70.0	74156	37.46	ug/mL	90
20)	*d8-Naphthalene	13.10	136.0	217841 ✓	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.41	82.0	94626	41.64	ug/mL	94
~~22)~~	~~Isophorone~~ KY 11/22	~~12.08~~	~~82.0~~	~~3120~~	~~.648~~	~~ug/mL~~	~~92~~
28)	1,2,4-Trichlorobenzene	13.03	180.0	77481	41.90	ug/mL	99
~~29)~~	~~Naphthalene~~ KY 11/22	~~13.14~~	~~128.0~~	~~2021~~	~~.352~~	~~ug/mL~~	~~95~~
32)	4-Chloro-3-methylphenol	14.76	107.0	168705	73.29	ug/mL	90
34)	*d10-Acenaphthene	17.58	164.0	129483 ✓	40.00	ug/mL	86
)	2-Fluorobiphenyl	15.95	172.0	171637	38.74	ug/mL	95
)	Acenaphthene	17.65	154.0	146356	37.66	ug/mL	92
46)	4-Nitrophenol	18.15	65.0	42279M	55.73	ug/mL	85
48)	2,4-Dinitrotoluene	18.26	165.0	60441	37.72	ug/mL	92
~~52)~~	~~Fluorene~~ KY 11/22	~~18.92~~	~~166.0~~	~~548~~	~~.123~~	~~ug/mL~~	~~87~~
56)	*d10-Phenanthrene	21.29	188.0	204034 ✓	40.00	ug/mL	97
58)	2,4,6-Tribromophenol	19.61	329.8	78476	99.89	ug/mL	97
61)	Pentachlorophenol	21.02	266.0	89040	86.75	ug/mL	98
~~62)~~	~~Phenanthrene~~ KY 11/22	~~21.34~~	~~178.0~~	~~844~~	~~.140~~	~~ug/mL~~	~~73~~
~~63)~~	~~Anthracene~~ KY 11/22	~~21.45~~	~~178.0~~	~~136M~~	~~.0234~~	~~ug/mL~~	~~73~~
~~64)~~	~~Di-n-Butylphthalate~~ KY 11/22	~~23.12~~	~~149.0~~	~~1953~~	~~.246~~	~~ug/mL~~	~~79~~
66)	*d12-Chrysene	28.10	240.0	83347 ✓	40.00	ug/mL	96
67)	Pyrene	24.91	202.0	182966	45.53	ug/mL	99
68)	Terphenyl-d14	25.46	244.0	131245	51.92	ug/mL	86
74)	*d12-Perylene	33.77	264.0	63717 ✓	40.00	ug/mL	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3334::D3 Quant Output File: ^B3334::D1
Name: K6641-1MS 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 5

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 15:49
Injected at: 911120 15:05

Operator ID: KEN-1
Output File: ^B3335::D1
Data File: >B3335::D3
...e: K6641-1DMS 8270/H2O
...sc: WB-1 (EMCON/TIER III)

Quant Rev: 7 Quant Time: 911120 16:40
Injected at: 911120 15:57
Dilution Factor: 1.00000
Instrument ID: GCMSBNA1
BTL# 6

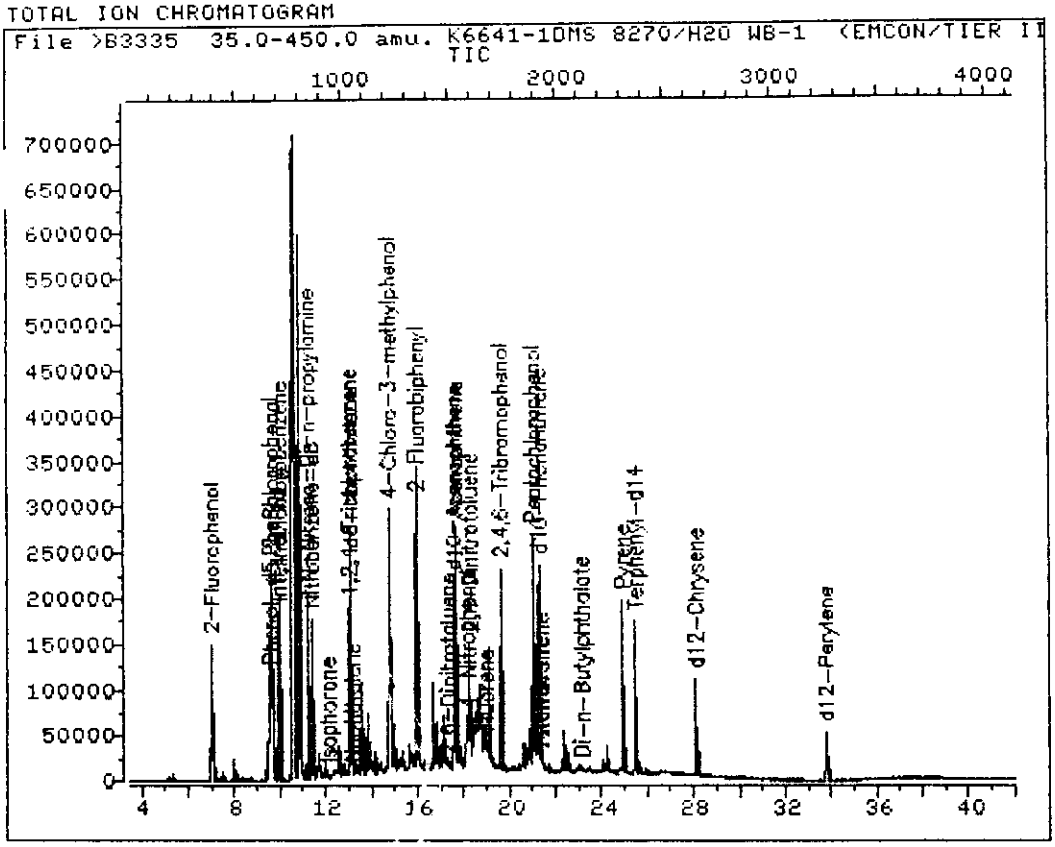
ID File: ID_80A::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.93	152.0	54861 ✓	40.00	ug/mL	96
4)	2-Fluorophenol	6.99	112.0	86428	58.71	ug/mL	91
6)	Phenol-d6	9.57	99.0	116768	53.33	ug/mL	93
7)	Phenol	9.61	94.0	134045	45.86	ug/mL	99
9)	2-Chlorophenol	9.60	128.0	93533	44.25	ug/mL	96
11)	1,4-Dichlorobenzene	9.96	146.0	83108	37.95	ug/mL	95
17)	N-Nitroso-Di-n-propylamine	11.20	70.0	78728 ✓	39.67	ug/mL	91
20)	*d8-Naphthalene	13.10	136.0	215759 ✓	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.41	82.0	95854	42.59	ug/mL	92
~~22)~~	~~Isophorone~~ KY 11/22	~~12.07~~	~~82.0~~	~~3579~~	~~.751~~	~~ug/mL~~	~~82~~
28)	1,2,4-Trichlorobenzene	13.02	180.0	79065	43.17	ug/mL	99
~~29)~~	~~Naphthalene~~ KY 11/22	~~13.15~~	~~128.0~~	~~2118~~	~~.372~~	~~ug/mL~~	~~96~~
32)	4-Chloro-3-methylphenol	14.75	107.0	167430	73.44	ug/mL	96
34)	*d10-Acenaphthene	17.57	164.0	126290 ✓	40.00	ug/mL	88
	2-Fluorobiphenyl	15.95	172.0	173892	40.24	ug/mL	95
	Acenaphthene	17.66	154.0	150723	39.76	ug/mL	94
46)	4-Nitrophenol	18.15	65.0	46684	63.10	ug/mL	80
48)	2,4-Dinitrotoluene	18.27	165.0	64098	41.01	ug/mL	92
~~49)~~	~~2,6-Dinitrotoluene~~ KY 11/22	~~17.29~~	~~165.0~~	~~548~~	~~.459~~	~~ug/mL~~	~~92~~
~~52)~~	~~Fluorene~~ KY 11/22	~~18.93~~	~~166.0~~	~~600~~	~~.138~~	~~ug/mL~~	~~81~~
56)	*d10-Phenanthrene	21.29	188.0	199777 ✓	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.61	329.8	81025	105.34	ug/mL	97
61)	Pentachlorophenol	21.02	266.0	94584	94.12	ug/mL	96
~~62)~~	~~Phenanthrene~~ KY 11/22	~~21.34~~	~~178.0~~	~~790~~	~~.134~~	~~ug/mL~~	~~60~~
~~63)~~	~~Anthracene~~ KY 11/22	~~21.44~~	~~178.0~~	~~221M~~	~~.0388~~	~~ug/mL~~	~~60~~
64)	Di-n-Butylphthalate	23.11	149.0	2561	.329	ug/mL	99
66)	*d12-Chrysene	28.09	240.0	111447 ✓	40.00	ug/mL	96
67)	Pyrene	24.91	202.0	206027	38.34	ug/mL	99
68)	Terphenyl-d14	25.46	244.0	147047	43.51	ug/mL	88
74)	*d12-Perylene	33.77	264.0	95837 ✓	40.00	ug/mL	90

* Compound is ISTD

1.8
3.4
6.5
6.2
7.3
7.8
7.9
18.3

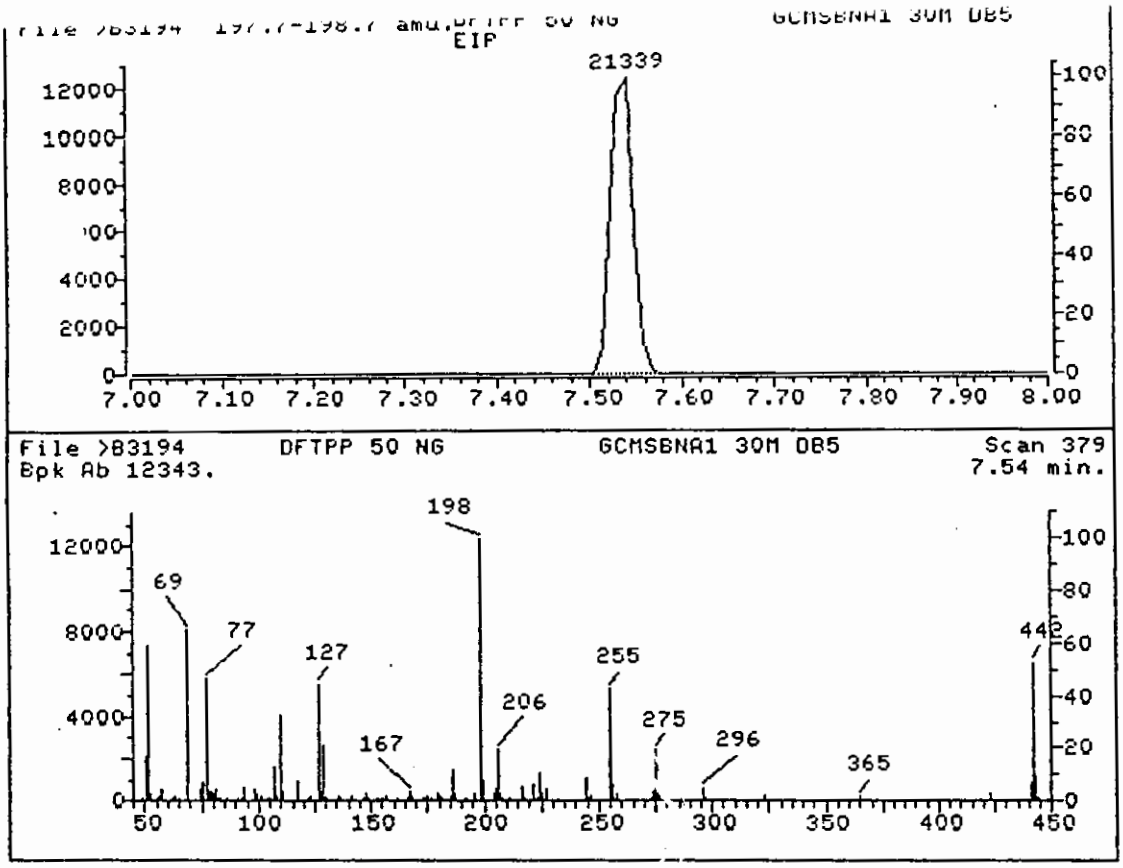
TOTAL ION CHROMATOGRAM



Data File: >B3335::D3 Quant Output File: ^B3335::D1
Name: K6641-1DMS 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 6

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 16:40
Injected at: 911120 15:57

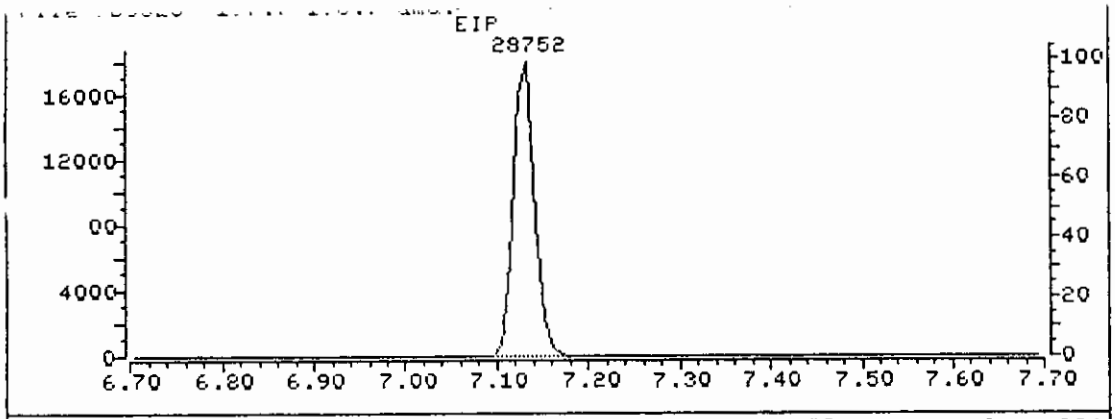


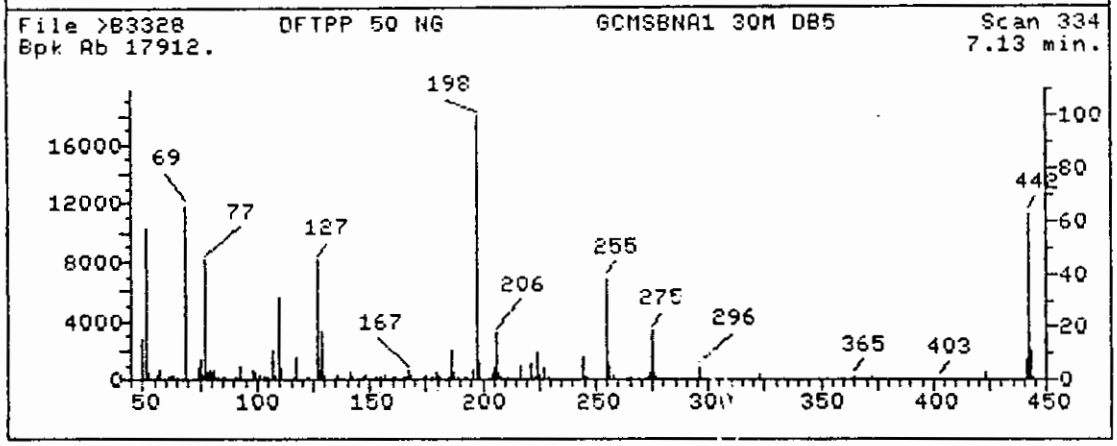
GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	59.43	59.43	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	65.60	65.60	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	44.76	44.76	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.44	7.44	Ok
275	10-30% of mass 198	19.10	19.10	Ok
365	Greater than 1% of mass 198	1.67	1.67	Ok
441	0-100% of mass 443	6.77	69.96	Ok
442	Greater than 40% of mass 198	52.60	52.60	Ok
443	17-23% of mass 442	9.68	18.41	Ok

Injection Date: 11/12/91
Injection Time: 14:17
Data File: >83194
Scan: 379





GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	57.63	57.63	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	65.84	65.84	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	45.27	45.27	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.34	6.34	Ok
275	10-30% of mass 198	18.44	18.44	Ok
365	Greater than 1% of mass 198	1.37	1.37	Ok
441	0-100% of mass 443	8.18	75.45	Ok
442	Greater than 40% of mass 198	62.73	62.73	Ok
443	17-23% of mass 442	10.85	17.29	Ok

Injection Date: 11/20/91
Injection Time: 10:31
Data File: >B3328
Scan: 334

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSBNA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

Contract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID: >B3199 >B3195 >B3198 >B3196 >B3197

Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC	
N-Nitroso-Dimethylamine	1.26158	1.19563	1.10632	1.16948	1.08554	.429	1.16371	6.082			
Pyridine	1.79459	1.83164	1.78906	1.80605	1.79023	.424	1.80232	.983			(Conc=22.0,55.0,88.0,132.
2-Fluorophenol	1.17602	1.13823	1.05138	1.03670	.95074	.724	1.07061	8.298			
Aniline	2.09626	2.09146	1.90892	2.05317	1.87982	.940	2.00593	5.170			
Phenol-d6	1.65271	1.60944	1.47648	1.47741	1.30496	.944	1.50420	9.061			
Phenol	2.20371	2.12722	1.88999	1.81208	1.77869	.947	1.96220	9.778	*	✓	
bis(2-Chloroethyl)ether	1.60488	1.50917	1.26012	1.17454	.99838	.959	1.30942	18.884			
2-Chlorophenol	1.75493	1.58178	1.36464	1.28185	1.16090	.961	1.42882	16.682			
1,3-Dichlorobenzene	1.72478	1.63799	1.47025	1.41891	1.28500	.991	1.50739	11.632			
1,4-Dichlorobenzene	1.76758	1.66418	1.48285	1.42426	1.26207	1.004	1.52019	13.122	*	✓	
Benzyl Alcohol	.79188	.72340	.71130	.81694	.71625	1.049	.75195	6.501			
1,2-Dichlorobenzene	1.98131	1.73887	1.53636	1.52870	1.35750	1.046	1.62855	14.678			
2-Methylphenol	1.43710	1.35168	1.21022	1.19258	1.01805	1.080	1.24193	12.965			
bis(2-Chloroisopropyl)ether	4.00890	4.02670	3.65001	3.68715	3.15651	1.084	3.70585	9.541			
4-Methylphenol	1.92981	1.59425	1.52648	1.44999	1.65342	1.119	1.63079	11.258			
N-Nitroso-Di-n-propylamine	1.50043	1.44104	1.39885	1.42371	1.26654	1.125	1.40611	6.155	**	✓	
Hexachloroethane	.76864	.64676	.57186	.57561	.45729	1.116	.60403	18.930			
Nitrobenzene	1.83119	1.77582	1.66692	1.77742	1.60605	1.145	1.73148	5.318			
Nitrobenzene-d5	.45712	.44855	.40221	.42129	.39625	.876	.42509	6.385			
Isophorone	.92091	.91012	.86500	.91087	.83219	.926	.88782	4.267			
2-Nitrophenol	.32945	.31798	.30399	.28908	.26916	.937	.30193	7.870	*	✓	
2,4-Dimethylphenol	.37414	.36869	.35429	.36480	.35020	.953	.36243	2.751			
Benzoic Acid	.22567	.28164	.26331	.28086	.24816	.990	.25993	9.090			
bis(2-Chloroethoxy)methane	.58339	.53659	.48938	.47554	.44124	.971	.50523	10.984			
2,4-Dichlorophenol	.38758	.35470	.35640	.34266	.34408	.981	.35708	5.074	*	✓	
1,2,4-Trichlorobenzene	.36924	.32681	.32045	.29862	.29454	.994	.32193	9.264			
Naphthalene	1.20790	1.13330	1.00339	.95293	.82925	1.004	1.02536	14.561			
4-Chloroaniline	.44322	.43660	.42762	.42249	.41019	1.023	.42802	2.986			
Hexachlorobutadiene	.25000	.22646	.22199	.20132	.18976	1.041	.21791	10.731	*	✓	
4-Chloro-3-methylphenol	.38076	.36476	.35682	.35719	.33308	1.117	.35852	4.802	*	✓	

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - 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: GCMSBNA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

Contract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Methylnaphthalene	.65705	.62675	.59380	.55042	.50597	1.133	.58680	10.238		
Hexachlorocyclopentadiene	.54333	.54827	.53393	.50500	.50827	.885	.52776	3.789		**
2,4,6-Trichlorophenol	.57911	.55416	.54641	.50284	.49605	.898	.53572	6.594	*	
2,4,5-Trichlorophenol	.56550	.53084	.54648	.50377	.49605	.901	.52853	5.486		
2-Chloronaphthalene	1.48324	1.33879	1.29182	1.17441	1.10607	.920	1.27887	11.485		
2-Fluorobiphenyl	1.58556	1.40948	1.33918	1.21561	1.15833	.909	1.34163	12.561		
2-Nitroaniline	.38482	.45053	.45783	.46103	.42603	.943	.43605	7.282		
Dimethylphthalate	1.66672	1.52634	1.49109	1.21846	1.03754	.976	1.38803	18.333		
Acenaphthylene	2.24089	2.09640	1.92723	1.61400	1.35668	.978	1.84704	19.492		
3-Nitroaniline	.24771	.30702	.33738	.30723	.26178	1.002	.29222	12.563		
Acenaphthene	1.38335	1.28187	1.20257	1.04683	.91805	1.005	1.16654	15.904	*	
2,4-Dinitrophenol	.17900	.29138	.33406	.32674	.30241	1.017	.28672	21.861		**
4-Nitrophenol	.19764	.26335	.28050	.28010	.24917	1.029	.25415	13.445		**
Dibenzofuran	1.78608	1.70375	1.69460	1.53396	1.42643	1.028	1.62896	8.930		
2,4-Dinitrotoluene	.43341	.49431	.52817	.49436	.44327	1.039	.47871	8.253		
-Dinitrotoluene	.34810	.37814	.39936	.38106	.35538	.985	.37241	5.561		
ethylphthalate	1.63076	1.47682	1.38615	1.12486	.86174	1.078	1.29607	23.490		
4-Chlorophenyl-phenylether	.85534	.79774	.79591	.67329	.58904	1.080	.74227	14.600		
Fluorene	1.45389	1.33639	1.25933	1.09423	.97671	1.076	1.22411	15.539		
4-Nitroaniline	.20444	.26651	.30074	.29153	.25462	1.090	.26357	14.383		
4,6-Dinitro-2-methylphenol	.26681	.37986	.40197	.35432	.30846	1.096	.34228	15.974		
N-Nitrosodiphenylamine	.95191	.94932	.98619	.82556	.69484	1.099	.88156	13.717	*	
Azobenzene	.31706	.28958	.27446	.28807	.27676	.913	.28918	5.862		
2,4,6-Tribromophenol	.14652	.15040	.15665	.16243	.16736	.922	.15667	5.433		
4-Bromophenyl-phenylether	.32328	.29567	.29060	.28891	.28600	.951	.29689	5.108		
Hexachlorobenzene	.35620	.33618	.31598	.31851	.31627	.965	.32863	5.341		
Pentachlorophenol	.20480	.24037	.23762	.24127	.23741	.987	.23229	6.656	*	
Phenanthrene	1.30649	1.24641	1.17086	1.14342	1.07176	1.003	1.18779	7.675		
Anthracene	1.22280	1.16628	1.14762	1.08551	1.01133	1.008	1.12671	7.189		
Di-n-Butylphthalate	1.75163	1.73281	1.52180	1.33813	1.13322	1.083	1.49552	17.648		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSBNA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

Contract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Fluoranthene	1.16751	1.22230	1.08394	1.04138	.90082	1.143	1.08319	11.444	*	
Pyrene	2.52497	2.28495	2.19712	1.86689	1.96845	.885	2.16848	12.035		
Terphenyl-d14	1.46097	1.38260	1.38065	1.17490	1.22994	.903	1.32581	8.962		
Butylbenzylphthalate	1.01291	.93708	.86322	.76635	.73906	.952	.86372	13.284		
3,3'-Dichlorobenzidine	.26304	.32237	.35838	.41830	.39917	1.000	.35225	17.644		
Benzo(a)Anthracene	1.29891	1.29813	1.28465	1.32424	1.30259	.998	1.30170	1.100		
Bis(2-Ethylhexyl)Phthalate	1.43615	1.37109	1.25285	1.11010	1.09430	1.018	1.25290	12.176		
Chrysene	1.28149	1.21571	1.25652	1.27919	1.27330	1.003	1.26124	2.161		
Di-n-octylphthalate	2.38608	2.50689	2.21469	1.86961	1.88973	.915	2.17340	13.274	*	
Benzo(b)fluoranthene	1.35099	1.37142	1.44444	1.31394	1.41917	.952	1.37999	3.794		
Benzo(k)fluoranthene	1.32404	1.31203	1.31668	1.21760	1.27083	.955	1.28823	3.461		
Benzo(a)pyrene	1.17181	1.19388	1.22834	1.21876	1.26951	.993	1.21646	3.038	*	
Indeno(1,2,3-cd)pyrene	1.03833	1.09239	1.18150	1.22267	1.28742	1.121	1.16446	8.577		
Dibenz(a,h)anthracene	1.00079	1.04006	1.10369	1.18640	1.22288	1.125	1.11076	8.473		
Benzo(g,h,i)Perylene	1.07276	1.10564	1.20099	1.22647	1.29215	1.153	1.17960	7.607		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Output File: ^B3199::D1 Injected at: 911112 18:17
Data File: >B3199::D4 Dilution Factor: 1.00000
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	50091	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.44	42.0	31597	21.10	ug/mL	83
3)	Pyridine	4.47	79.0	49441M	21.55	ug/mL	92
4)	2-Fluorophenol	7.54	112.0	29454	20.66	ug/mL	91
5)	Aniline	9.77	93.0	52502	20.05	ug/mL	90
6)	Phenol-d6	9.80	99.0	41393	20.54	ug/mL	89
7)	Phenol	9.83	94.0	55193	20.72	ug/mL	83
8)	bis(2-Chloroethyl)ether	9.98	93.0	40195	21.27	ug/mL	82
9)	2-Chlorophenol	10.00	128.0	43953	22.19	ug/mL	99
10)	1,3-Dichlorobenzene	10.32	146.0	43198	21.06	ug/mL	95
11)	1,4-Dichlorobenzene	10.45	146.0	44270	21.24	ug/mL	95
12)	Benzyl Alcohol	10.89	108.0	19833	21.89	ug/mL	96
13)	1,2-Dichlorobenzene	10.90	146.0	49623	22.79	ug/mL	97
14)	2-Methylphenol	11.23	107.0	35993	21.26	ug/mL	95
15)	bis(2-Chloroisopropyl)ether	11.29	45.0	100405	19.91	ug/mL	88
16)	4-Methylphenol	11.61	107.0	48333	24.21	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.65	70.0	37579	20.82	ug/mL	90
18)	Hexachloroethane	11.63	117.0	19251	23.77	ug/mL	94
19)	Nitrobenzene	11.91	77.0	45863	20.62	ug/mL	95
20)	*d8-Naphthalene	13.56	136.0	186038	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.86	82.0	42521	20.38	ug/mL	98
22)	Isophorone	12.53	82.0	85662	20.24	ug/mL	85
23)	2-Nitrophenol	12.71	139.0	30645	20.72	ug/mL	97
24)	2,4-Dimethylphenol	12.90	122.0	34802	20.30	ug/mL	87
25)	Benzoic Acid	13.24	122.0	20992	16.03	ug/mL	95
26)	bis(2-Chloroethoxy)methane	13.15	93.0	54266	21.74	ug/mL	98
27)	2,4-Dichlorophenol	13.28	162.0	36052	21.85	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.48	180.0	34346	22.60	ug/mL	96
29)	Naphthalene	13.61	128.0	112358	21.32	ug/mL	98
30)	4-Chloroaniline	13.87	127.0	41228	20.30	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	23255	22.08	ug/mL	95
32)	4-Chloro-3-methylphenol	15.15	107.0	35418	20.88	ug/mL	95
33)	2-Methylnaphthalene	15.37	142.0	61118	20.97	ug/mL	98
34)	*d10-Acenaphthene	18.05	164.0	95812	40.00	ug/mL	87
35)	Hexachlorocyclopentadiene	15.97	237.0	26029	19.82	ug/mL	96
36)	2,4,6-Trichlorophenol	16.19	196.0	27743	20.90	ug/mL	96
37)	2,4,5-Trichlorophenol	16.27	196.0	27091	21.31	ug/mL	98
38)	2-Chloronaphthalene	16.59	162.0	71056	22.16	ug/mL	97
39)	2-Fluorobiphenyl	16.41	172.0	75958	22.50	ug/mL	94
40)	2-Nitroaniline	17.00	65.0	18435	17.08	ug/mL	78

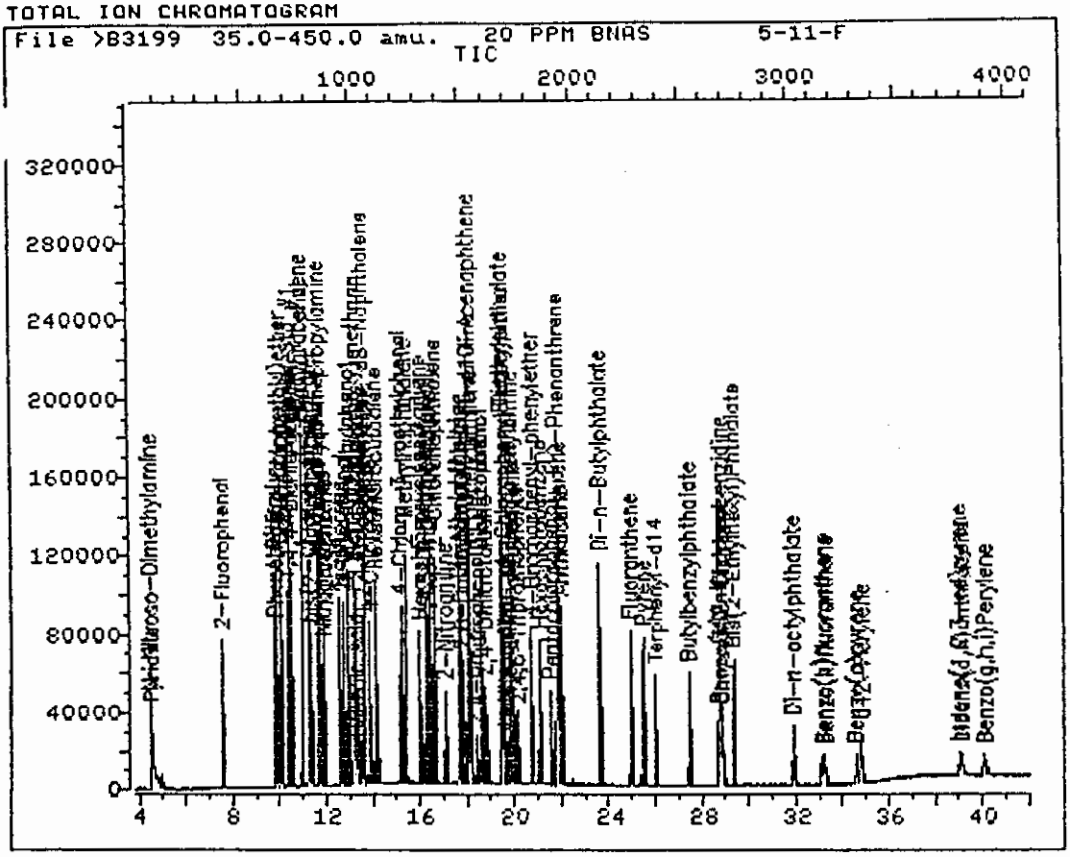
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Output File: ^B3199::D1 Injected at: 911112 18:17
Data File: >B3199::D4 Dilution Factor: 1.00000
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	79846	21.84	ug/mL	74
42)	Acenaphthylene	17.65	152.0	107352	21.38	ug/mL	93
43)	3-Nitroaniline	18.07	138.0	11867	16.14	ug/mL	95
44)	Acenaphthene	18.14	154.0	66271	21.58	ug/mL	93
45)	2,4-Dinitrophenol	18.34	184.0	8575	12.29	ug/mL	97
46)	4-Nitrophenol	18.55	65.0	9468	15.01	ug/mL	40
47)	Dibenzofuran	18.55	168.0	85564	20.97	ug/mL	95
48)	2,4-Dinitrotoluene	18.74	165.0	20763	17.54	ug/mL	93
49)	2,6-Dinitrotoluene	17.77	165.0	16676	18.41	ug/mL	91
50)	Diethylphthalate	19.43	149.0	78123	22.08	ug/mL	96
51)	4-Chlorophenyl-phenylether	19.49	204.0	40976	21.44	ug/mL	93
52)	Fluorene	19.42	166.0	69650	21.76	ug/mL	94
53)	4-Nitroaniline	19.64	138.0	9794	15.34	ug/mL	93
54)	4,6-Dinitro-2-methylphenol	19.75	198.0	12782	14.05	ug/mL	94
55)	N-Nitrosodiphenylamine	19.83	169.0	45602	20.05	ug/mL	96
56)	*d10-Phenanthrene	21.79	188.0	142587	40.00	ug/mL	99
57)	Azobenzene	19.88	182.0	22604	21.90	ug/mL	90
58)	2,4,6-Tribromophenol	20.09	329.8	10446	19.48	ug/mL	93
59)	4-Bromophenyl-phenylether	20.72	248.0	23048	21.87	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	25395	21.19	ug/mL	99
61)	Pentachlorophenol	21.51	266.0	14601	17.04	ug/mL	98
62)	Phenanthrene	21.85	178.0	93144	20.96	ug/mL	99
63)	Anthracene	21.96	178.0	87178	20.97	ug/mL	99
64)	Di-n-Butylphthalate	23.61	149.0	124880	20.22	ug/mL	97
65)	Fluoranthene	24.90	202.0	83236	19.10	ug/mL	94
66)	*d12-Chrysene	28.77	240.0	66468	40.00	ug/mL	98
67)	Pyrene	25.46	202.0	83915	22.10	ug/mL	98
68)	Terphenyl-d14	25.98	244.0	48554	21.13	ug/mL	91
69)	Butylbenzylphthalate	27.41	149.0	33663	21.62	ug/mL	87
70)	3,3'-Dichlorobenzidine	28.78	252.0	8742	16.32	ug/mL	88
71)	Benzo(a)Anthracene	28.73	228.0	43168	20.01	ug/mL	96
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	47729	20.95	ug/mL	90
73)	Chrysene	28.86	228.0	42589	21.08	ug/mL	97
74)	*d12-Perylene	34.81	264.0	46825	40.00	ug/mL	93
75)	Di-n-octylphthalate	31.85	149.0	55864	19.04	ug/mL	87
76)	Benzo(b)fluoranthene	33.10	252.0	31630	19.70	ug/mL	96
77)	Benzo(k)fluoranthene	33.22	252.0	30999	20.18	ug/mL	98
78)	Benzo(a)pyrene	34.54	252.0	27435	19.63	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	38.99	276.0	24310	19.01	ug/mL	96
80)	Dibenz(a,h)anthracene	39.14	278.0	23431	19.24	ug/mL	97
81)	Benzo(g,h,i)Perylene	40.09	276.0	25116	19.41	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3199::D4 Quant Output File: ^B3199::D1
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 19:01
Injected at: 911112 18:17

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
Output File: ^B3195::D1 Injected at: 911112 14:37
Data File: >B3195::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	45924	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	4.46	42.0	68635M	49.90	ug/mL	
3)	Pyridine	4.43	79.0	115660M	74.20	ug/mL	
4)	2-Fluorophenol	7.53	112.0	65340M	63.41	ug/mL	
5)	Aniline	9.77	93.0	120060	55.18	ug/mL	89
6)	Phenol-d6	9.81	99.0	92390	61.88	ug/mL	87
7)	Phenol	9.84	94.0	122113	58.17	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.97	93.0	86634	62.34	ug/mL	77
9)	2-Chlorophenol	9.99	128.0	90802	52.48	ug/mL	96
10)	1,3-Dichlorobenzene	10.31	146.0	94029	52.42	ug/mL	94
11)	1,4-Dichlorobenzene	10.45	146.0	95532	53.79	ug/mL	94
12)	Benzyl Alcohol	10.90	108.0	41527	44.03	ug/mL	96
13)	1,2-Dichlorobenzene	10.89	146.0	99820	47.23	ug/mL	93
14)	2-Methylphenol	11.24	107.0	77593M	49.79	ug/mL	
15)	bis(2-Chloroisopropyl)ether	11.29	45.0	231153	50.41	ug/mL	87
16)	4-Methylphenol	11.62	107.0	91518M	44.19	ug/mL	
17)	N-Nitroso-Di-n-propylamine	11.67	70.0	82723M	47.42	ug/mL	
18)	Hexachloroethane	11.62	117.0	37127	44.64	ug/mL	94
19)	Nitrobenzene	11.91	77.0	101941M	48.89	ug/mL	
20)	*d8-Naphthalene	13.56	136.0	169863	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.87	82.0	95241	58.43	ug/mL	96
22)	Isophorone	12.54	82.0	193245M	52.38	ug/mL	
23)	2-Nitrophenol	12.71	139.0	67516	52.47	ug/mL	95
24)	2,4-Dimethylphenol	12.91	122.0	78284	49.10	ug/mL	89
25)	Benzoic Acid	13.36	122.0	59801M	62.37	ug/mL	97
26)	bis(2-Chloroethoxy)methane	13.16	93.0	113934	51.67	ug/mL	97
27)	2,4-Dichlorophenol	13.29	162.0	75313	45.10	ug/mL	92
28)	1,2,4-Trichlorobenzene	13.49	180.0	69392	44.08	ug/mL	97
29)	Naphthalene	13.62	128.0	240632	53.42	ug/mL	97
30)	4-Chloroaniline	13.87	127.0	92702	47.80	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	48084	43.63	ug/mL	98
32)	4-Chloro-3-methylphenol	15.15	107.0	77449M	55.74	ug/mL	
33)	2-Methylnaphthalene	15.37	142.0	133076M	37.47	ug/mL	98
34)	*d10-Acenaphthene	18.06	164.0	84764	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.97	237.0	58092	50.69	ug/mL	93
36)	2,4,6-Trichlorophenol	16.20	196.0	58716	50.01	ug/mL	98
37)	2,4,5-Trichlorophenol	16.27	196.0	56245M	48.28	ug/mL	93
38)	2-Chloronaphthalene	16.60	162.0	141851	52.94	ug/mL	98
39)	2-Fluorobiphenyl	16.41	172.0	149341	52.78	ug/mL	95
40)	2-Nitroaniline	17.01	65.0	47736	48.81	ug/mL	82

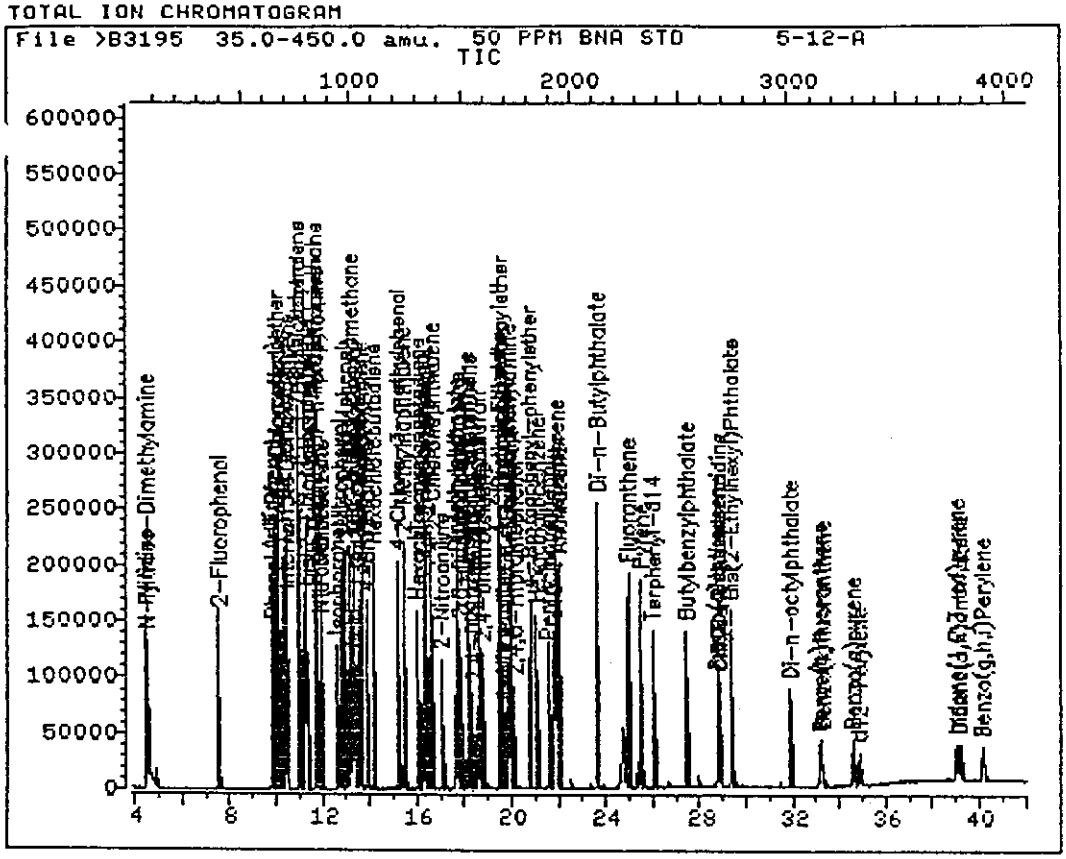
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
Output File: ^B3195::D1 Injected at: 911112 14:37
Data File: >B3195::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	161723	46.79	ug/mL	75
42)	Acenaphthylene	17.66	152.0	222124	50.27	ug/mL	91
43)	3-Nitroaniline	18.08	138.0	32530	49.97	ug/mL	95
44)	Acenaphthene	18.14	154.0	135821	53.54	ug/mL	94
45)	2,4-Dinitrophenol	18.35	184.0	30873	56.03	ug/mL	98
46)	4-Nitrophenol	18.56	65.0	27903	46.40	ug/mL	57
47)	Dibenzofuran	18.55	168.0	180521	47.16	ug/mL	97
48)	2,4-Dinitrotoluene	18.75	165.0	52375	51.89	ug/mL	92
49)	2,6-Dinitrotoluene	17.77	165.0	40066	50.44	ug/mL	93
50)	Diethylphthalate	19.45	149.0	156477	45.15	ug/mL	93
51)	4-Chlorophenyl-phenylether	19.50	204.0	84525	50.42	ug/mL	93
52)	Fluorene	19.43	166.0	141597	47.08	ug/mL	96
53)	4-Nitroaniline	19.65	138.0	28238	48.42	ug/mL	92
4)	4,6-Dinitro-2-methylphenol	19.77	198.0	40248	53.18	ug/mL	90
5)	N-Nitrosodiphenylamine	19.83	169.0	100585	54.08	ug/mL	97
56)	*d10-Phenanthrene	21.80	188.0	135870	40.00	ug/mL	99
57)	Azobenzene	19.89	182.0	49181	55.87	ug/mL	88
58)	2,4,6-Tribromophenol	20.09	329.8	25544	42.09	ug/mL	95
59)	4-Bromophenyl-phenylether	20.72	248.0	50216	46.69	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	57096	47.70	ug/mL	98
61)	Pentachlorophenol	21.51	266.0	40823	55.55	ug/mL	98
62)	Phenanthrene	21.86	178.0	211688	52.69	ug/mL	99
63)	Anthracene	21.98	178.0	198078	51.13	ug/mL	97
64)	Di-n-Butylphthalate	23.61	149.0	294296M	58.38	ug/mL	
65)	Fluoranthene	24.91	202.0	207593M	58.96	ug/mL	
66)	*d12-Chrysene	28.78	240.0	72748	40.00	ug/mL	98
67)	Pyrene	25.47	202.0	207782	52.44	ug/mL	97
68)	Terphenyl-d14	25.98	244.0	125727	51.69	ug/mL	87
69)	Butylbenzylphthalate	27.41	149.0	85213M	66.99	ug/mL	
70)	3,3'-Dichlorobenzidine	28.78	252.0	29315	50.93	ug/mL	95
71)	Benzo(a)Anthracene	28.73	228.0	118045	52.39	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	124680M	73.48	ug/mL	
73)	Chrysene	28.87	228.0	110551	49.04	ug/mL	92
74)	*d12-Perylene	34.81	264.0	48894	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.85	149.0	153215M	76.03	ug/mL	
76)	Benzo(b)fluoranthene	33.12	252.0	83818M	48.40	ug/mL	
77)	Benzo(k)fluoranthene	33.24	252.0	80188M	51.38	ug/mL	
78)	Benzo(a)pyrene	34.56	252.0	72967	51.02	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	39.00	276.0	66764M	55.43	ug/mL	
80)	Dibenz(a,h)anthracene	39.15	278.0	63566M	54.74	ug/mL	
81)	Benzo(g,h,i)Perylene	40.10	276.0	67574M	51.96	ug/mL	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3195::D3 Quant Output File: ^B3195::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 15:33
Injected at: 911112 14:37

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 18:09
tput File: ^B3198::D1 Injected at: 911112 17:25
ta File: >B3198::D4 Dilution Factor: 1.00000
ame: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.43	152.0	46675	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.45	42.0	103275	74.02	ug/mL	94
3)	Pyridine	4.41	79.0	183710M	85.95	ug/mL	92
4)	2-Fluorophenol	7.54	112.0	98146	73.90	ug/mL	91
5)	Aniline	9.79	93.0	178198	73.02	ug/mL	91
6)	Phenol-d6	9.84	99.0	137829	73.39	ug/mL	91
7)	Phenol	9.87	94.0	176431	71.08	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.99	93.0	117632	66.80	ug/mL	85
9)	2-Chlorophenol	10.01	128.0	127389	69.02	ug/mL	98
10)	1,3-Dichlorobenzene	10.32	146.0	137248	71.81	ug/mL	94
11)	1,4-Dichlorobenzene	10.46	146.0	138424	71.28	ug/mL	94
12)	Benzyl Alcohol	10.93	108.0	66400	78.66	ug/mL	94
13)	1,2-Dichlorobenzene	10.90	146.0	143419	70.68	ug/mL	95
)	2-Methylphenol	11.27	107.0	112974	71.63	ug/mL	93
15)	bis(2-Chloroisopropyl)ether	11.30	45.0	340728	72.52	ug/mL	87
16)	4-Methylphenol	11.66	107.0	142497	76.60	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.72	70.0	130583	77.66	ug/mL	88
18)	Hexachloroethane	11.64	117.0	53383	70.74	ug/mL	93
19)	Nitrobenzene	11.94	77.0	155607	75.09	ug/mL	91
20)	*d8-Naphthalene	13.58	136.0	181038	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.89	82.0	145630	71.73	ug/mL	95
22)	Isophorone	12.57	82.0	313196	76.03	ug/mL	88
23)	2-Nitrophenol	12.73	139.0	110069	76.48	ug/mL	96
24)	2,4-Dimethylphenol	12.93	122.0	128280	76.87	ug/mL	90
25)	Benzoic Acid	13.47	122.0	95340M	74.79	ug/mL	92
26)	bis(2-Chloroethoxy)methane	13.19	93.0	177194	72.96	ug/mL	97
27)	2,4-Dichlorophenol	13.32	162.0	129044	80.38	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.50	180.0	116029	78.44	ug/mL	92
29)	Naphthalene	13.63	128.0	363304	70.83	ug/mL	97
30)	4-Chloroaniline	13.89	127.0	154832	78.36	ug/mL	95
31)	Hexachlorobutadiene	14.13	225.0	80379	78.42	ug/mL	97
32)	4-Chloro-3-methylphenol	15.18	107.0	129195	78.26	ug/mL	96
33)	2-Methylnaphthalene	15.39	142.0	215002	75.80	ug/mL	96
34)	*d10-Acenaphthene	18.07	164.0	95855	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.98	237.0	102360	77.91	ug/mL	98
36)	2,4,6-Trichlorophenol	16.21	196.0	104753	78.88	ug/mL	97
37)	2,4,5-Trichlorophenol	16.29	196.0	104765	82.36	ug/mL	90
38)	2-Chloronaphthalene	16.61	162.0	247654	77.19	ug/mL	94
)	2-Fluorobiphenyl	16.43	172.0	256734	76.01	ug/mL	94
40)	2-Nitroaniline	17.03	65.0	87771	81.30	ug/mL	87

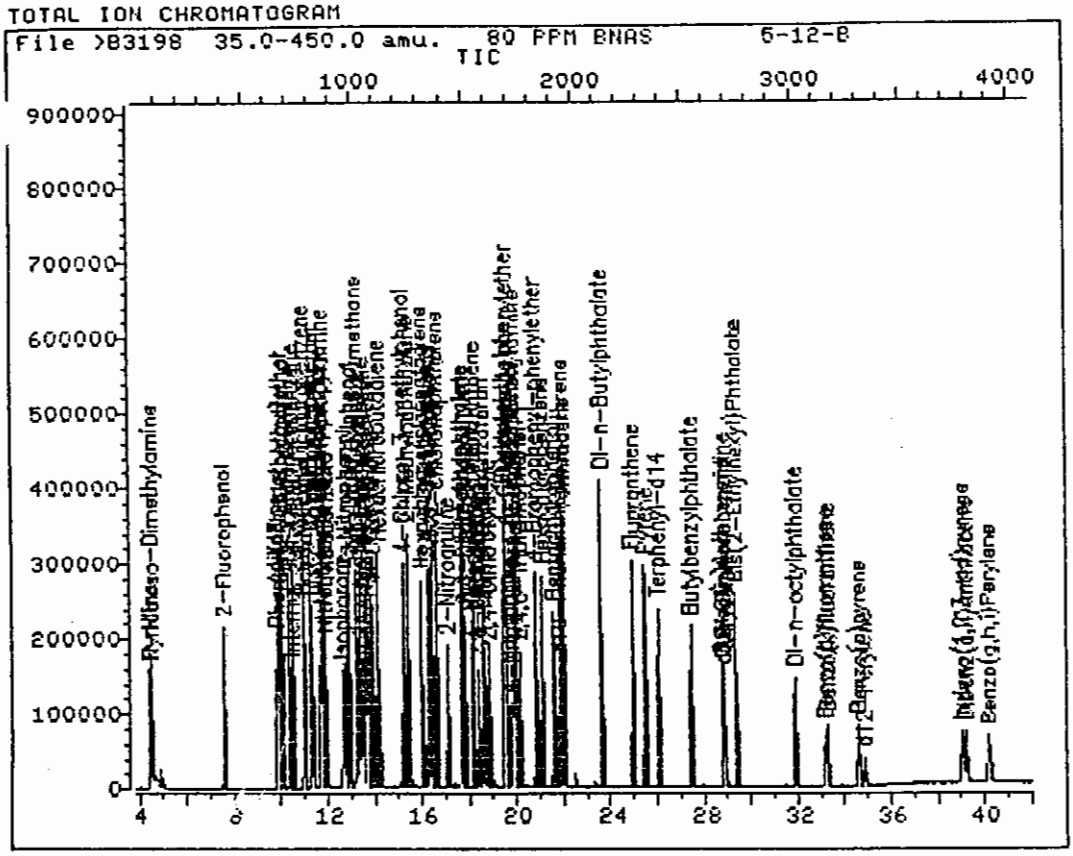
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 18:09
Output File: ^B3198::D1 Injected at: 911112 17:25
Data File: >B3198::D4 Dilution Factor: 1.00000
Name: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.64	163.0	285857	78.15	ug/mL	71
42)	Acenaphthylene	17.68	152.0	369469	73.54	ug/mL	94
43)	3-Nitroaniline	18.10	138.0	64679	87.91	ug/mL	93
44)	Acenaphthene	18.16	154.0	230545	75.05	ug/mL	95
45)	2,4-Dinitrophenol	18.38	184.0	64042	91.72	ug/mL	93
46)	4-Nitrophenol	18.59	65.0	53775	85.21	ug/mL	87
47)	Dibenzofuran	18.57	168.0	324871	79.57	ug/mL	96
48)	2,4-Dinitrotoluene	18.77	165.0	101256	85.48	ug/mL	85
49)	2,6-Dinitrotoluene	17.80	165.0	76562	84.49	ug/mL	91
50)	Diethylphthalate	19.47	149.0	265739	75.09	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.50	204.0	152584	79.82	ug/mL	94
52)	Fluorene	19.44	166.0	241426	75.39	ug/mL	95
53)	4-Nitroaniline	19.69	138.0	57655	90.28	ug/mL	90
4)	4,6-Dinitro-2-methylphenol	19.79	198.0	77061	84.66	ug/mL	88
55)	N-Nitrosodiphenylamine	19.85	169.0	189063	83.11	ug/mL	97
56)	*d10-Phenanthrene	21.81	188.0	168953	40.00	ug/mL	99
57)	Azobenzene	19.90	182.0	92741	75.82	ug/mL	93
58)	2,4,6-Tribromophenol	20.11	329.8	52933	83.32	ug/mL	93
59)	4-Bromophenyl-phenylether	20.73	248.0	98194	78.63	ug/mL	84
60)	Hexachlorobenzene	21.05	284.0	106772	75.19	ug/mL	91
61)	Pentachlorophenol	21.53	266.0	80292	79.09	ug/mL	96
62)	Phenanthrene	21.88	178.0	395640	75.15	ug/mL	99
63)	Anthracene	21.99	178.0	387788	78.72	ug/mL	98
64)	Di-n-Butylphthalate	23.62	149.0	514227	70.26	ug/mL	96
65)	Fluoranthene	24.92	202.0	366270	70.94	ug/mL	92
66)	*d12-Chrysene	28.80	240.0	82567	40.00	ug/mL	97
67)	Pyrene	25.47	202.0	362819	76.92	ug/mL	98
68)	Terphenyl-d14	25.99	244.0	227992	79.89	ug/mL	84
69)	Butylbenzylphthalate	27.41	149.0	142547	73.69	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	59180	88.93	ug/mL	97
71)	Benzo(a)Anthracene	28.74	228.0	212139	79.17	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.32	149.0	206888	73.10	ug/mL	93
73)	Chrysene	28.88	228.0	207494	82.69	ug/mL	93
74)	*d12-Perylene	34.81	264.0	62037	40.00	ug/mL	95
75)	Di-n-octylphthalate	31.87	149.0	274786	70.68	ug/mL	87
76)	Benzo(b)fluoranthene	33.14	252.0	179218	84.26	ug/mL	97
77)	Benzo(k)fluoranthene	33.25	252.0	163366	80.28	ug/mL	97
78)	Benzo(a)pyrene	34.58	252.0	152405	82.31	ug/mL	98
9)	Indeno(1,2,3-cd)pyrene	39.03	276.0	146594	86.53	ug/mL	94
80)	Dibenz(a,h)anthracene	39.18	278.0	136939	84.89	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.15	276.0	149012	86.90	ug/mL	85

* Compound is ISTD

TOTAL ION CHROMATOGRAM



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Misc: 5-12-B BTL# 3

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 18:09
Injected at: 911112 17:25

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
Output File: ^B3196::D1 Injected at: 911112 15:41
ta File: >B3196::D4 Dilution Factor: 1.00000
me: 120 PPM BNAS Instrument ID: GCMSBNA1
isc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.43	152.0	46445	40.00	ug/mL	95
2)	N-Nitroso-Dimethylamine	4.46	42.0	162950	117.38	ug/mL	90
3)	Pyridine	4.39	79.0	276811M	130.16	ug/mL	93
4)	2-Fluorophenol	7.55	112.0	144448	109.30	ug/mL	91
5)	Aniline	9.81	93.0	286078	117.80	ug/mL	91
6)	Phenol-d6	9.86	99.0	205855	110.16	ug/mL	92
7)	Phenol	9.90	94.0	252486	102.22	ug/mL	87
8)	bis(2-Chloroethyl)ether	10.01	93.0	163654	93.39	ug/mL	68
9)	2-Chlorophenol	10.03	128.0	178606	97.25	ug/mL	97
10)	1,3-Dichlorobenzene	10.34	146.0	197704	103.95	ug/mL	97
11)	1,4-Dichlorobenzene	10.48	146.0	198449	102.70	ug/mL	93
12)	Benzyl Alcohol	10.96	108.0	113828	135.52	ug/mL	92
13)	1,2-Dichlorobenzene	10.91	146.0	213001	105.50	ug/mL	96
14)	2-Methylphenol	11.28	107.0	166168	105.88	ug/mL	90
15)	bis(2-Chloroisopropyl)ether	11.31	45.0	513749^	109.88	ug/mL	87
16)	4-Methylphenol	11.69	107.0	202035	109.14	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.76	70.0	198372	118.56	ug/mL	87
18)	Hexachloroethane	11.64	117.0	80203	106.80	ug/mL	95
19)	Nitrobenzene	11.96	77.0	247657	120.11	ug/mL	90
20)	*d8-Naphthalene	13.59	136.0	185377	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.91	82.0	234293	112.71	ug/mL	93
22)	Isophorone	12.61	82.0	506562M	120.10	ug/mL	89
23)	2-Nitrophenol	12.74	139.0	160767	109.09	ug/mL	93
24)	2,4-Dimethylphenol	12.97	122.0	202879	118.73	ug/mL	88
25)	Benzoic Acid	13.56	122.0	156195M	119.67	ug/mL	89
26)	bis(2-Chloroethoxy)methane	13.21	93.0	264462	106.35	ug/mL	96
27)	2,4-Dichlorophenol	13.34	162.0	190566	115.93	ug/mL	91
28)	1,2,4-Trichlorobenzene	13.51	180.0	166074	109.65	ug/mL	96
29)	Naphthalene	13.65	128.0	529956	100.90	ug/mL	97
30)	4-Chloroaniline	13.91	127.0	234960	116.12	ug/mL	99
31)	Hexachlorobutadiene	14.14	225.0	111962	106.68	ug/mL	96
32)	4-Chloro-3-methylphenol	15.19	107.0	198646	117.51	ug/mL	96
33)	2-Methylnaphthalene	15.40	142.0	306104	105.39	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	101728	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.99	237.0	154117	110.53	ug/mL	90
36)	2,4,6-Trichlorophenol	16.23	196.0	153460	108.89	ug/mL	92
37)	2,4,5-Trichlorophenol	16.31	196.0	153742	113.88	ug/mL	96
38)	2-Chloronaphthalene	16.62	162.0	358412	105.27	ug/mL	96
39)	2-Fluorobiphenyl	16.44	172.0	370986	103.49	ug/mL	93
0)	2-Nitroaniline	17.05	65.0	140698	122.80	ug/mL	81

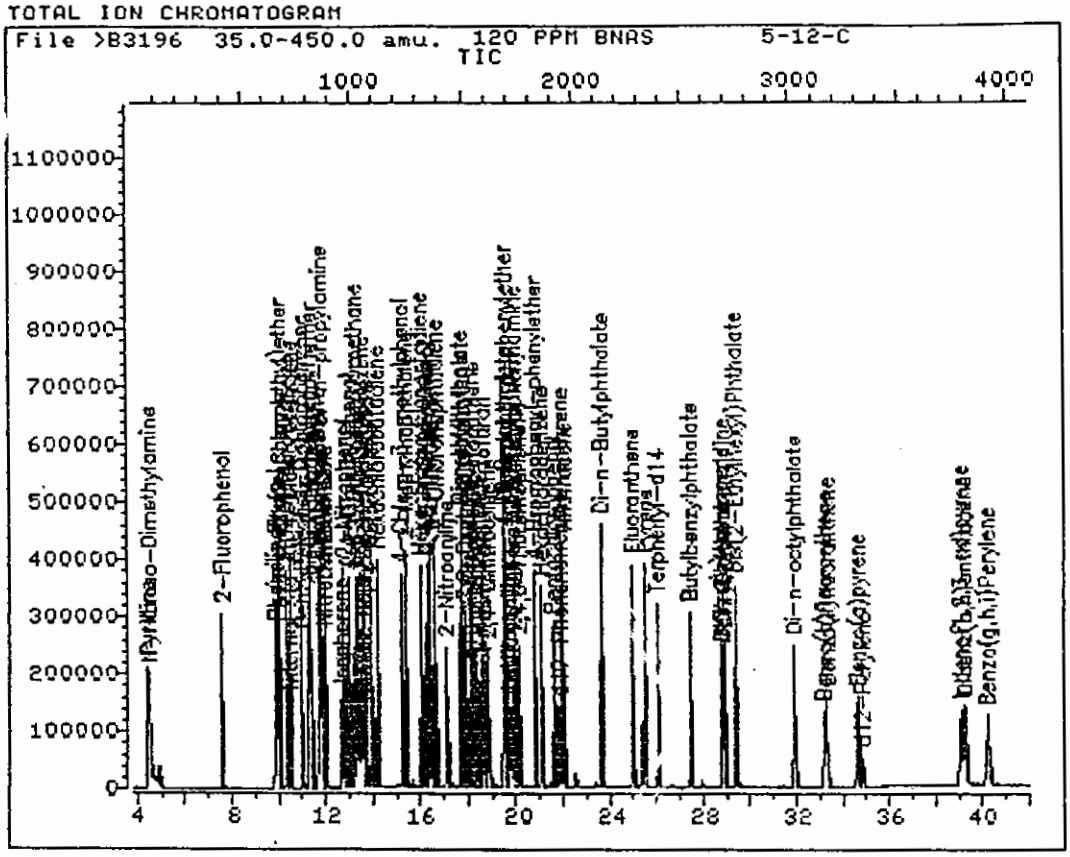
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
tput File: ^B3196::D1 Injected at: 911112 15:41
ata File: >B3196::D4 Dilution Factor: 1.00000
ame: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	371856	95.80	ug/mL	74
42)	Acenaphthylene	17.69	152.0	492566	92.39	ug/mL	93
43)	3-Nitroaniline	18.13	138.0	93762	120.08	ug/mL	93
44)	Acenaphthene	18.17	154.0	319477	98.00	ug/mL	94
45)	2,4-Dinitrophenol	18.40	184.0	99716	134.56	ug/mL	96
46)	4-Nitrophenol	18.61	65.0	85481	127.63	ug/mL	89
47)	Dibenzofuran	18.58	168.0	468139	108.04	ug/mL	98
48)	2,4-Dinitrotoluene	18.79	165.0	150870	120.01	ug/mL	87
49)	2,6-Dinitrotoluene	17.82	165.0	116294	120.93	ug/mL	92
50)	Diethylphthalate	19.48	149.0	343289	91.40	ug/mL	95
51)	4-Chlorophenyl-phenylether	19.52	204.0	205478	101.28	ug/mL	94
52)	Fluorene	19.45	166.0	333941	98.26	ug/mL	97
53)	4-Nitroaniline	19.71	138.0	88970	131.27	ug/mL	93
54)	4,6-Dinitro-2-methylphenol	19.83	198.0	108133	111.93	ug/mL	91
55)	N-Nitrosodiphenylamine	19.87	169.0	251947	104.36	ug/mL	96
56)	*d10-Phenanthrene	21.81	188.0	157138	40.00	ug/mL	99
57)	Azobenzene	19.92	182.0	135798	119.37	ug/mL	89
58)	2,4,6-Tribromophenol	20.13	329.8	76573	129.60	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	136194	117.25	ug/mL	86
60)	Hexachlorobenzene	21.06	284.0	150151	113.69	ug/mL	88
61)	Pentachlorophenol	21.53	266.0	113738	120.45	ug/mL	96
62)	Phenanthrene	21.89	178.0	539022	110.08	ug/mL	97
63)	Anthracene	22.00	178.0	511726	111.69	ug/mL	99
64)	Di-n-Butylphthalate	23.62	149.0	630812	92.67	ug/mL	97
65)	Fluoranthene	24.93	202.0	490923	102.24	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	89220	40.00	ug/mL	96
67)	Pyrene	25.49	202.0	499691	98.04	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	314474	101.97	ug/mL	83
69)	Butylbenzylphthalate	27.42	149.0	205121	98.14	ug/mL	86
70)	3,3'-Dichlorobenzidine	28.79	252.0	111962	155.71	ug/mL	99
71)	Benzo(a)Anthracene	28.75	228.0	354446	122.41	ug/mL	94
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	297130	97.16	ug/mL	91
73)	Chrysene	28.90	228.0	342387	126.27	ug/mL	92
74)	*d12-Perylene	34.82	264.0	84756	40.00	ug/mL	92
75)	Di-n-octylphthalate	31.88	149.0	475383	89.49	ug/mL	86
76)	Benzo(b)fluoranthene	33.16	252.0	334092	114.97	ug/mL	98
77)	Benzo(k)fluoranthene	33.30	252.0	309596	111.36	ug/mL	96
78)	Benzo(a)pyrene	34.61	252.0	309892	122.50	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	39.06	276.0	310885	134.31	ug/mL	93
80)	Dibenz(a,h)anthracene	39.22	278.0	301663	136.88	ug/mL	96
81)	Benzo(g,h,i)Perylene	40.18	276.0	311852	133.11	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



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Misc: 5-12-C BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 16:24
Injected at: 911112 15:41

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
Output File: ^B3197::D1 Injected at: 911112 16:33
Data File: >B3197::D4 Dilution Factor: 1.00000
Name: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.44	152.0	51389	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.52	42.0	223139	145.27	ug/mL	94
3)	Pyridine	4.42	79.0	404792M	172.02	ug/mL	93
4)	2-Fluorophenol	7.58	112.0	195430	133.64	ug/mL	92
5)	Aniline	7.84	93.0	386408	143.81	ug/mL	93
6)	Phenol-d6	9.89	99.0	268243	129.73	ug/mL	94
7)	Phenol	9.93	94.0	365478	133.73	ug/mL	86
8)	bis(2-Chloroethyl)ether	10.04	93.0	205223	105.85	ug/mL	63
9)	2-Chlorophenol	10.06	128.0	238630	117.43	ug/mL	94
10)	1,3-Dichlorobenzene	10.35	146.0	264140	125.52	ug/mL	95
11)	1,4-Dichlorobenzene	10.49	146.0	259427	121.34	ug/mL	95
12)	Benzyl Alcohol	11.01	108.0	147229	158.42	ug/mL	95
13)	1,2-Dichlorobenzene	10.93	146.0	279043	124.91	ug/mL	96
14)	2-Methylphenol	11.30	107.0	209267	120.51	ug/mL	87
15)	bis(2-Chloroisopropyl)ether	11.33	45.0	648840^	125.42	ug/mL	86
16)	4-Methylphenol	11.73	107.0	339870M	165.94	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.80	70.0	260344	140.62	ug/mL	84
18)	Hexachloroethane	11.65	117.0	93998	113.13	ug/mL	90
19)	Nitrobenzene	11.99	77.0	330134	144.70	ug/mL	88
20)	*d8-Naphthalene	13.60	136.0	199594	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.94	82.0	316358	141.34	ug/mL	95
22)	Isophorone	12.65	82.0	664397M	146.30	ug/mL	88
23)	2-Nitrophenol	12.76	139.0	214888	135.43	ug/mL	95
24)	2,4-Dimethylphenol	12.99	122.0	279594	151.98	ug/mL	93
25)	Benzoic Acid	13.56	122.0	198128M	140.98	ug/mL	93
26)	bis(2-Chloroethoxy)methane	13.23	93.0	352279	131.57	ug/mL	98
27)	2,4-Dichlorophenol	13.37	162.0	274704	155.21	ug/mL	88
28)	1,2,4-Trichlorobenzene	13.52	180.0	235151	144.20	ug/mL	96
29)	Naphthalene	13.66	128.0	662054	117.07	ug/mL	96
30)	4-Chloroaniline	13.93	127.0	327483	150.32	ug/mL	98
31)	Hexachlorobutadiene	14.15	225.0	151501	134.07	ug/mL	92
32)	4-Chloro-3-methylphenol	15.21	107.0	265922	146.10	ug/mL	97
33)	2-Methylnaphthalene	15.41	142.0	403951	129.17	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	108797	40.00	ug/mL	88
35)	Hexachlorocyclopentadiene	15.99	237.0	221191	148.33	ug/mL	99
36)	2,4,6-Trichlorophenol	16.24	196.0	215874	143.22	ug/mL	91
37)	2,4,5-Trichlorophenol	16.24	196.0	215874	149.51	ug/mL	86
38)	2-Chloronaphthalene	16.64	162.0	481350	132.19	ug/mL	95
39)	2-Fluorobiphenyl	16.45	172.0	504091	131.49	ug/mL	93
40)	2-Nitroaniline	17.07	65.0	185405	151.30	ug/mL	87

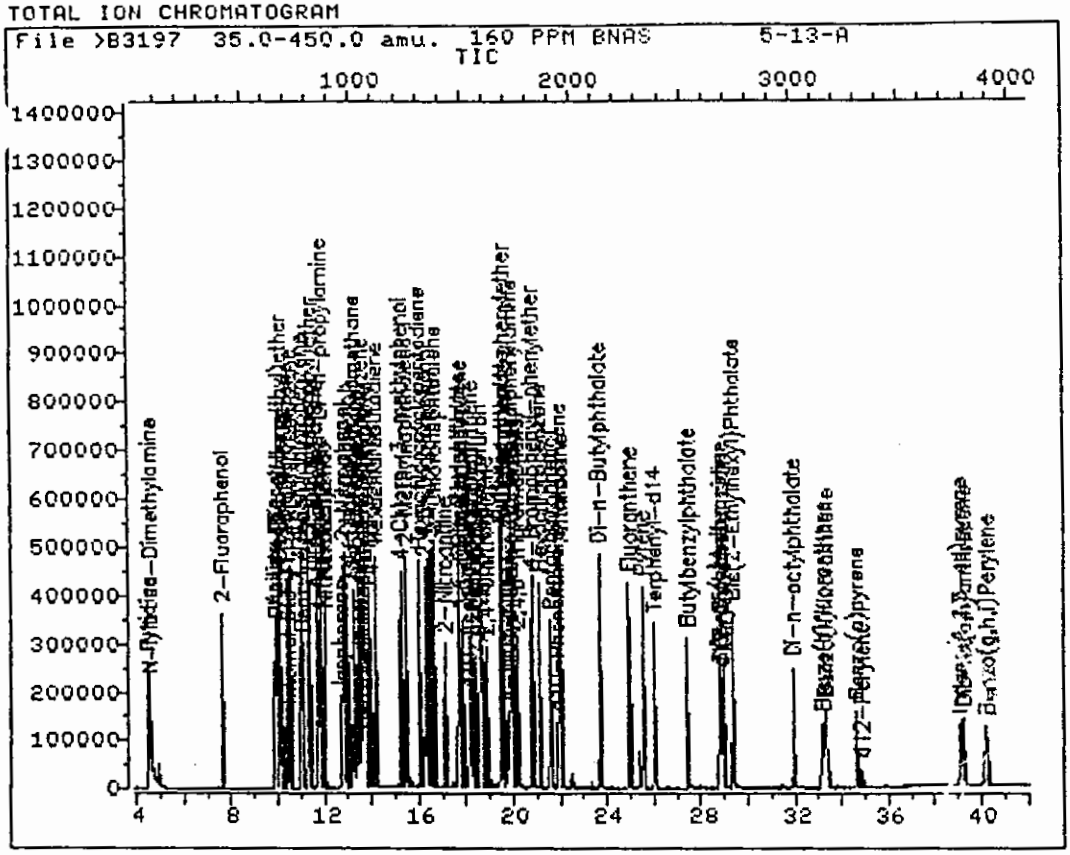
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
tput File: ^B3197::D1 Injected at: 911112 16:33
ta File: >B3197::D4 Dilution Factor: 1.00000
..ame: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	451524	108.76	ug/mL	72
42)	Acenaphthylene	17.70	152.0	590409	103.54	ug/mL	94
43)	3-Nitroaniline	18.14	138.0	113922	136.42	ug/mL	92
44)	Acenaphthene	18.18	154.0	399523	114.59	ug/mL	94
45)	2,4-Dinitrophenol	18.41	184.0	131604	166.06	ug/mL	94
46)	4-Nitrophenol	18.63	65.0	108437	151.39	ug/mL	88
47)	Dibenzofuran	18.59	168.0	620764	133.96	ug/mL	94
48)	2,4-Dinitrotoluene	18.81	165.0	192906	143.48	ug/mL	86
49)	2,6-Dinitrotoluene	17.83	165.0	154657	150.37	ug/mL	90
50)	Diethylphthalate	19.50	149.0	375018	93.36	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.53	204.0	256345	118.14	ug/mL	91
52)	Fluorene	19.46	166.0	425051	116.94	ug/mL	96
53)	4-Nitroaniline	19.74	138.0	110806	152.86	ug/mL	91
)	4,6-Dinitro-2-methylphenol	19.84	198.0	134239	129.93	ug/mL	87
55)	N-Nitrosodiphenylamine	19.89	169.0	302385	117.11	ug/mL	97
56)	*d10-Phenanthrene	21.83	188.0	154383	40.00	ug/mL	97
57)	Azobenzene	19.93	182.0	170908	152.92	ug/mL	92
58)	2,4,6-Tribromophenol	20.14	329.8	103353	178.04	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	176617	154.77	ug/mL	83
60)	Hexachlorobenzene	21.07	284.0	195305	150.52	ug/mL	96
61)	Pentachlorophenol	21.55	266.0	146610	158.03	ug/mL	97
62)	Phenanthrene	21.89	178.0	661848	137.58	ug/mL	99
63)	Anthracene	22.00	178.0	624529	138.74	ug/mL	97
64)	Di-n-Butylphthalate	23.63	149.0	699798	104.64	ug/mL	99
65)	Fluoranthene	24.93	202.0	556287	117.92	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	71019	40.00	ug/mL	95
67)	Pyrene	25.48	202.0	559189	137.84	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	349396	142.33	ug/mL	81
69)	Butylbenzylphthalate	27.42	149.0	209950	126.19	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	113394	198.11	ug/mL	96
71)	Benzo(a)Anthracene	28.75	228.0	370034	160.55	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	310864	127.70	ug/mL	93
73)	Chrysene	28.89	228.0	361715	167.58	ug/mL	91
74)	*d12-Perylene	34.82	264.0	62923	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.88	149.0	475631	120.61	ug/mL	87
76)	Benzo(b)fluoranthene	33.16	252.0	357193	165.57	ug/mL	97
77)	Benzo(k)fluoranthene	33.29	252.0	319857	154.98	ug/mL	96
78)	Benzo(a)pyrene	34.60	252.0	319526	170.14	ug/mL	94
)	Indeno(1,2,3-cd)pyrene	39.06	276.0	324034	188.57	ug/mL	91
80)	Dibenz(a,h)anthracene	39.21	278.0	307788	188.12	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.20	276.0	325225	186.99	ug/mL	84

* Compound is ISTD

TOTAL ION CHROMATOGRAM



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Misc: 5-13-A BTL# 2

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 17:17
Injected at: 911112 16:33

HSL Compounds

Case No: Calibration Date: 11/20/91

Contractor: COLUMBIA ANALYTICAL Time: 10:47

Contract No: Laboratory ID: >B3329

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	1.10837	4.76			
Pyridine	1.80232	1.43574	20.34			(Conc=55.00)
2-Fluorophenol	1.07061	1.07337	.26			
Aniline	2.00593	2.09283	4.33			
Phenol-d6	1.50420	1.59641	6.13			
Phenol	1.96220	2.13093	8.60	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.37557	5.05			
2-Chlorophenol	1.42882	1.54113	7.86			
1,3-Dichlorobenzene	1.50739	1.56672	3.94			
1,4-Dichlorobenzene	1.52019	1.59658	5.03	*	✓	
Benzyl Alcohol	.75195	.78553	4.47			
1,2-Dichlorobenzene	1.62855	1.77770	9.16			
2-Methylphenol	1.24193	1.47439	18.72			
bis(2-Chloroisopropyl)ether	3.70585	3.68241	.63			
4-Methylphenol	1.63079	1.86647	14.45			
N-Nitroso-Di-n-propylamine	1.40611	1.44697	2.91		**	✓
Hexachloroethane	.60403	.70671	17.00			
Nitrobenzene	1.73148	1.88368	8.79			
Nitrobenzene-d5	.42509	.41725	1.84			
Isophorone	.88782	.88399	.43			
2-Nitrophenol	.30193	.30617	1.40	*	✓	
2,4-Dimethylphenol	.36243	.37837	4.40			
Benzoic Acid	.25993	.23143	10.96			
bis(2-Chloroethoxy)methane	.50523	.54001	6.88			
2,4-Dichlorophenol	.35708	.37739	5.69	*	✓	
1,2,4-Trichlorobenzene	.32193	.33955	5.47			
Naphthalene	1.02536	1.05526	2.92			
4-Chloroaniline	.42802	.46459	8.54			
Hexachlorobutadiene	.21791	.21036	3.46	*	✓	
4-Chloro-3-methylphenol	.35852	.42265	17.89	*	✓	
2-Methylnaphthalene	.58680	.63259	7.80			
Hexachlorocyclopentadiene	.52776	.47142	10.68		**	✓

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/20/91

Contractor: COLUMBIA ANALYTICAL Time: 10:47

Contract No: Laboratory ID: >B3329

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.54746	2.19	*	
2,4,5-Trichlorophenol	.52853	.54632	3.37		
2-Chloronaphthalene	1.27887	1.30195	1.81		
2-Fluorobiphenyl	1.34163	1.36857	2.01		
2-Nitroaniline	.43605	.45459	4.25		
Dimethylphthalate	1.38803	1.37858	.68		
Acenaphthylene	1.84704	1.81562	1.70		
3-Nitroaniline	.29222	.30366	3.91		
Acenaphthene	1.16654	1.20069	2.93	*	
2,4-Dinitrophenol	.28672	.22917	20.07		**
4-Nitrophenol	.25415	.23434	7.79		**
Dibenzofuran	1.62896	1.74567	7.16		
2,4-Dinitrotoluene	.47871	.49503	3.41		
2,6-Dinitrotoluene	.37241	.37828	1.58		
Diethylphthalate	1.29607	1.57864	21.80		
4-Chlorophenyl-phenylether	.74227	.76148	2.59		
orene	1.22411	1.37374	12.22		
nitroaniline	.26357	.26532	.66		
4,6-Dinitro-2-methylphenol	.34228	.32061	6.33		
N-Nitrosodiphenylamine	.88156	.95278	8.08	*	
Azobenzene	.28918	.28484	1.50		
2,4,6-Tribromophenol	.15667	.15401	1.70		
4-Bromophenyl-phenylether	.29689	.29010	2.29		
Hexachlorobenzene	.32863	.31698	3.54		
Pentachlorophenol	.23229	.20121	13.38	*	
Phenanthrene	1.18779	1.18462	.27		
Anthracene	1.12671	1.13991	1.17		
Di-n-Butylphthalate	1.49552	1.55956	4.28		
Fluoranthene	1.08319	1.02428	5.44	*	
Pyrene	2.16848	1.92867	11.06		
Terphenyl-d14	1.32581	1.21309	8.50		
Butylbenzylphthalate	.86372	.78736	8.84		

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

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

%Diff - % Difference from original average or curve

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

Case No: Calibration Date: 11/20/91

Contractor: COLUMBIA ANALYTICAL Time: 10:47

Contract No: Laboratory ID: >B3329

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.30435	13.60		
Benzo(a)Anthracene	1.30170	1.17891	9.43		
Bis(2-Ethylhexyl)Phthalate	1.25290	1.15463	7.84		
Chrysene	1.26124	1.15732	8.24		
Di-n-octylphthalate	2.17340	2.07964	4.31	*	✓
Benzo(b)fluoranthene	1.37999	1.28975	6.54		
Benzo(k)fluoranthene	1.28823	1.20772	6.25		
Benzo(a)pyrene	1.21646	1.12833	7.24	*	✓
Indeno(1,2,3-cd)pyrene	1.16446	1.05869	9.08		
Dibenz(a,h)anthracene	1.11076	1.02336	7.87		
Benzo(g,h,i)Perylene	1.17960	1.06524	9.70		

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

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

%Diff - % Difference from original average or curve

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

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 11:30
Output File: ^B3329::D1 Injected at: 911120 10:47
Data File: >B3329::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911119 13:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.93	152.0	65352	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	3.73	42.0	90543	46.96	ug/mL	93
3)	Pyridine	3.66	79.0	129014M	47.43	ug/mL	91
4)	2-Fluorophenol	6.99	112.0	87684	52.40	ug/mL	94
5)	Aniline	9.29	93.0	170963	49.27	ug/mL	92
6)	Phenol-d6	9.38	99.0	130411	50.02	ug/mL	93
7)	Phenol	9.41	94.0	174076	50.45	ug/mL	20
8)	bis(2-Chloroethyl)ether	9.51	93.0	112370	50.21	ug/mL	60
9)	2-Chlorophenol	9.52	128.0	125895	52.84	ug/mL	97
10)	1,3-Dichlorobenzene	9.83	146.0	127985	49.63	ug/mL	98
11)	1,4-Dichlorobenzene	9.97	146.0	130425	50.90	ug/mL	94
12)	Benzyl Alcohol	10.45	108.0	64170	50.60	ug/mL	94
13)	1,2-Dichlorobenzene	10.42	146.0	145220	54.02	ug/mL	95
14)	2-Methylphenol	10.83	107.0	120443	56.51	ug/mL	83
)	bis(2-Chloroisopropyl)ether	10.84	45.0	300816	45.60	ug/mL	84
16)	4-Methylphenol	11.21	107.0	152472	52.90	ug/mL	99
17)	N-Nitroso-Di-n-propylamine	11.23	70.0	118203	46.07	ug/mL	91
18)	Hexachloroethane	11.15	117.0	57731	49.80	ug/mL	93
19)	Nitrobenzene	11.46	77.0	153878	47.97	ug/mL	92
20)	*d8-Naphthalene	13.11	136.0	267910	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.41	82.0	139731	50.13	ug/mL	94
22)	Isophorone	12.09	82.0	296036	47.42	ug/mL	90
23)	2-Nitrophenol	12.26	139.0	102533	50.66	ug/mL	97
24)	2,4-Dimethylphenol	12.50	122.0	126713	50.95	ug/mL	92
25)	Benzoic Acid	13.00	122.0	77504M	42.05	ug/mL	95
26)	bis(2-Chloroethoxy)methane	12.73	93.0	180842	51.25	ug/mL	98
27)	2,4-Dichlorophenol	12.87	162.0	126384	51.07	ug/mL	92
28)	1,2,4-Trichlorobenzene	13.03	180.0	113711	51.81	ug/mL	95
29)	Naphthalene	13.17	128.0	353393	52.99	ug/mL	97
30)	4-Chloroaniline	13.44	127.0	155586	53.26	ug/mL	99
31)	Hexachlorobutadiene	13.68	225.0	70448	48.89	ug/mL	98
32)	4-Chloro-3-methylphenol	14.74	107.0	141539	51.87	ug/mL	92
33)	2-Methylnaphthalene	14.92	142.0	211846	51.83	ug/mL	98
34)	*d10-Acenaphthene	17.59	164.0	151516	40.00	ug/mL	86
35)	Hexachlorocyclopentadiene	15.51	237.0	89284	43.37	ug/mL	97
36)	2,4,6-Trichlorophenol	15.75	196.0	103686	47.37	ug/mL	96
37)	2,4,5-Trichlorophenol	15.83	196.0	103471	49.27	ug/mL	93
38)	2-Chloronaphthalene	16.14	162.0	246583	48.57	ug/mL	98
39)	2-Fluorobiphenyl	15.96	172.0	259200	48.03	ug/mL	92
)	2-Nitroaniline	16.56	65.0	86097	46.71	ug/mL	82

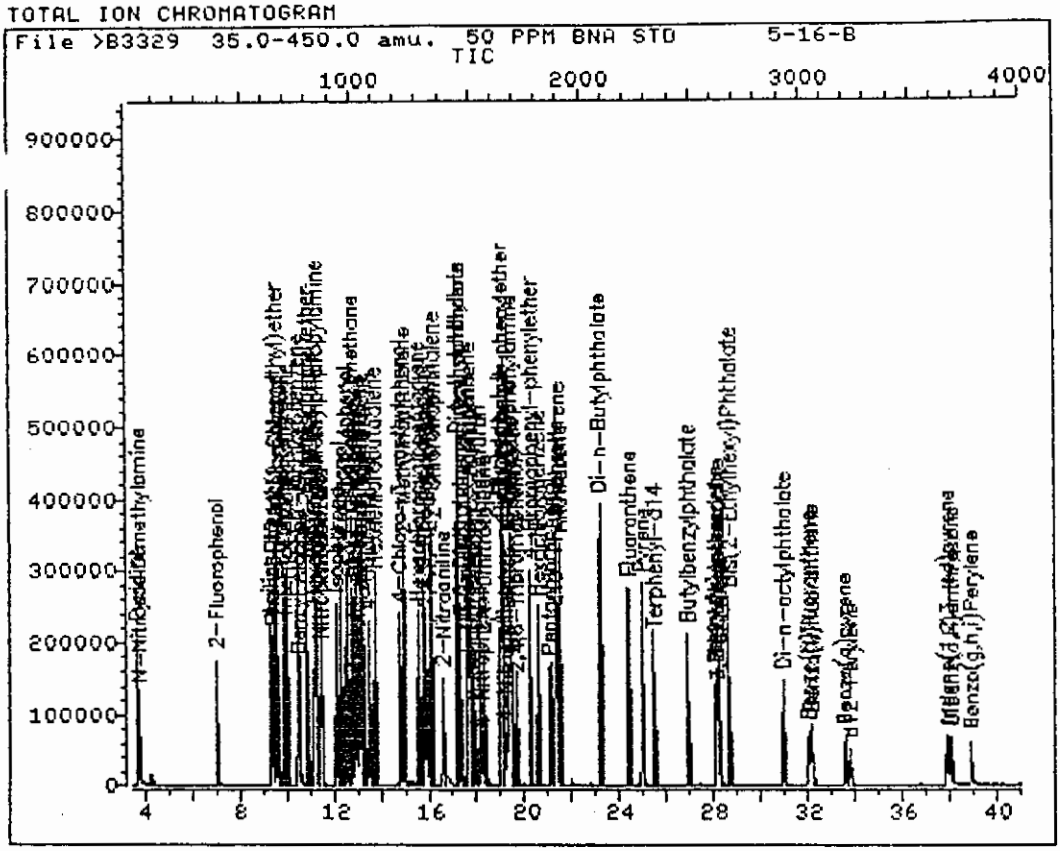
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 11:30
Output File: ^B3329::D1 Injected at: 911120 10:47
Data File: >B3329::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911119 13:05

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.18	163.0	261097	49.10	ug/mL	82
42)	Acenaphthylene	17.19	152.0	343870	50.87	ug/mL	93
43)	3-Nitroaniline	17.63	138.0	57512	47.69	ug/mL	95
44)	Acenaphthene	17.67	154.0	227404	48.47	ug/mL	95
45)	2,4-Dinitrophenol	17.89	184.0	43404	35.49	ug/mL	94
46)	4-Nitrophenol 18.22 - 18.75	18.15	65.0	44383	33.23	ug/mL	78
47)	Dibenzofuran	18.08	168.0	330622	47.86	ug/mL	89
48)	2,4-Dinitrotoluene	18.29	165.0	93756	47.54	ug/mL	91
49)	2,6-Dinitrotoluene	17.32	165.0	71644	48.30	ug/mL	93
50)	Diethylphthalate	19.00	149.0	298986	52.30	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.03	204.0	144221	50.07	ug/mL	96
52)	Fluorene	18.95	166.0	260180	49.89	ug/mL	92
53)	4-Nitroaniline	19.19	138.0	50250	43.93	ug/mL	95
54)	4,6-Dinitro-2-methylphenol	19.31	198.0	60722	42.85	ug/mL	92
55)	N-Nitrosodiphenylamine	19.37	169.0	180452	50.80	ug/mL	95
56)	*d10-Phenanthrene	21.30	188.0	238914	40.00	ug/mL	99
57)	Azobenzene	19.42	182.0	85064	50.44	ug/mL	89
58)	2,4,6-Tribromophenol	19.61	329.8	45995	45.18	ug/mL	95
59)	4-Bromophenyl-phenylether	20.25	248.0	86637	49.24	ug/mL	91
60)	Hexachlorobenzene	20.54	284.0	94665	49.62	ug/mL	93
61)	Pentachlorophenol	21.03	266.0	60090	43.97	ug/mL	98
62)	Phenanthrene	21.37	178.0	353777	51.58	ug/mL	96
63)	Anthracene	21.48	178.0	340426	51.37	ug/mL	98
64)	Di-n-Butylphthalate	23.13	149.0	465752	57.90	ug/mL	96
65)	Fluoranthene	24.38	202.0	305894	55.35	ug/mL	91
66)	*d12-Chrysene	28.12	240.0	125725	40.00	ug/mL	97
67)	Pyrene	24.93	202.0	303103	46.98	ug/mL	99
68)	Terphenyl-d14	25.46	244.0	190645	47.85	ug/mL	85
69)	Butylbenzylphthalate	26.88	149.0	123739	58.48	ug/mL	88
70)	3,3'-Dichlorobenzidine	28.14	252.0	47831	52.33	ug/mL	95
71)	Benzo(a)Anthracene	28.07	228.0	185273	50.81	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	28.64	149.0	181458	66.26	ug/mL	91
73)	Chrysene	28.20	228.0	181880	51.13	ug/mL	94
74)	*d12-Perylene	33.79	264.0	96357	40.00	ug/mL	91
75)	Di-n-octylphthalate	30.93	149.0	250485	68.26	ug/mL	86
76)	Benzo(b)fluoranthene	32.01	252.0	155345	50.79	ug/mL	97
77)	Benzo(k)fluoranthene	32.13	252.0	145465	47.93	ug/mL	98
78)	Benzo(a)pyrene	33.52	252.0	135903	49.02	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	37.89	276.0	127515	49.74	ug/mL	93
80)	Dibenz(a,h)anthracene	38.04	278.0	123260	47.77	ug/mL	96
81)	Benzo(g,h,i)Perylene	38.90	276.0	128304	46.53	ug/mL	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3329::D3 Quant Output File: ^B3329::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911119 13:09

Operator ID: KEN-1
Quant Time : 911120 11:30
Injected at: 911120 10:47

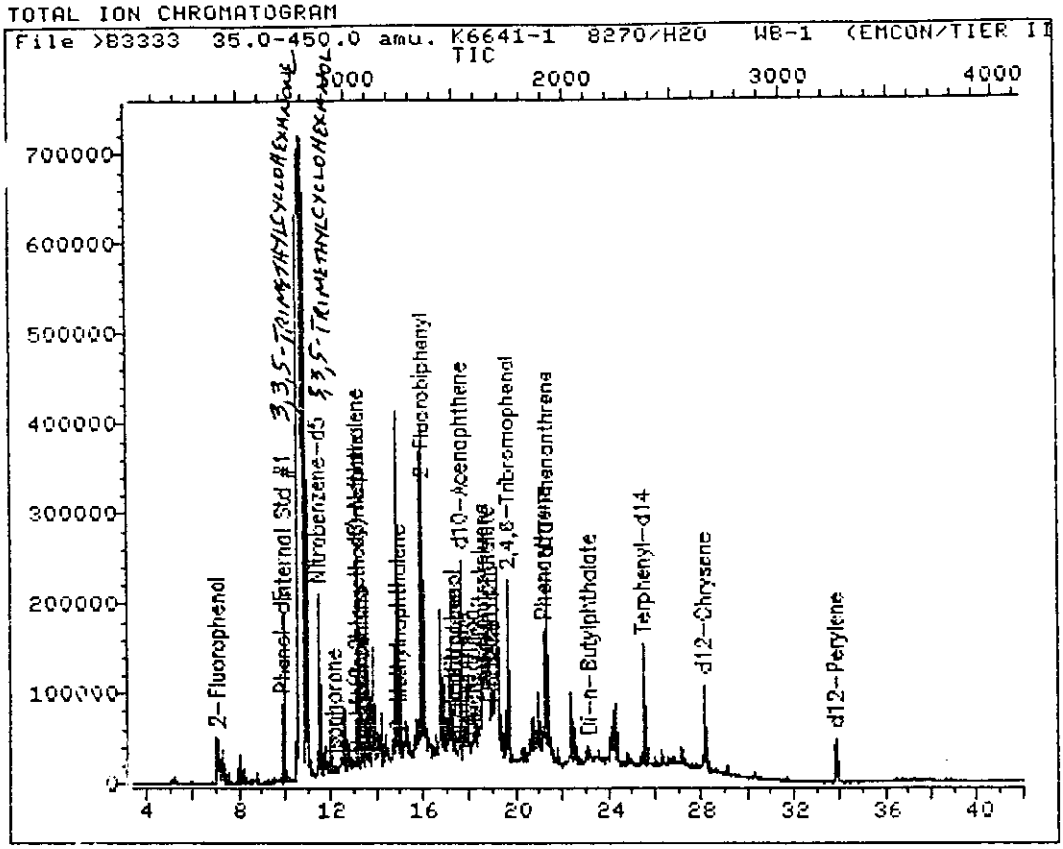
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 14:57
Output File: ^B3333::D1 Injected at: 911120 14:13
Data File: >B3333::D3 Dilution Factor: 1.00000
Name: K6641-1 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.94	152.0	60905	40.00	ug/mL	98
4)	2-Fluorophenol	7.03	112.0	59075	36.15	ug/mL	91
6)	Phenol-d6 SHIFT	9.87	99.0	85203	35.05	ug/mL	93
20)	*d8-Naphthalene	13.12	136.0	239038	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.44	82.0	97009	38.91	ug/mL	94
22)	Isophorone KY 11/22	12.09	82.0	8309	< MRL 1.57	ug/mL	91
24)	Bis(2-Chloroethoxy)methane KY 11/22	12.72	93.0	888M	.275	ug/mL	91
29)	Naphthalene KY 11/22	13.15	128.0	4872	.773	ug/mL	94
30)	4-Chloroaniline KY 11/22	13.45	127.0	60M	.0216	ug/mL	74
33)	2-Methylnaphthalene KY 11/22	14.91	142.0	1287	.340	ug/mL	78
34)	*d10-Acenaphthene	17.59	164.0	132104	40.00	ug/mL	88
38)	2-Chloronaphthalene KY 11/22	16.14	162.0	48M	.0112	ug/mL	
39)	2-Fluorobiphenyl	15.97	172.0	177630	39.30	ug/mL	95
42)	Acenaphthylene KY 11/22	17.18	152.0	280M	.0467	ug/mL	91
)	Acenaphthene KY 11/22	17.66	154.0	1230	.310	ug/mL	87
46)	4-Nitrophenol KY 11/22	18.16	65.0	3390M	< MRL 4.30	ug/mL	91
47)	Dibenzofuran KY 11/22	18.07	168.0	607^	.105	ug/mL	73
48)	2,4-Dinitrotoluene KY 11/22	18.30	165.0	538M	.329	ug/mL	54
52)	Fluorene KY 11/22	18.94	166.0	2076	.458	ug/mL	79
56)	*d10-Phenanthrene	21.30	188.0	187815	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.62	329.8	80158	110.85	ug/mL	96
62)	Phenanthrene KY 11/22	21.34	178.0	2038M	.366	ug/mL	90
63)	Anthracene KY 11/22	21.46	178.0	822M	.154	ug/mL	
64)	Di-n-Butylphthalate KY 11/22	23.13	149.0	18545	< MRL 2.53	ug/mL	97
65)	Fluoranthene KY 11/22	24.37	202.0	327M	.0680	ug/mL	
66)	*d12-Chrysene	28.11	240.0	100373	40.00	ug/mL	94
67)	Pyrene KY 11/22	24.92	202.0	170M	.0351	ug/mL	
68)	Terphenyl-d14	25.47	244.0	123184	40.47	ug/mL	86
69)	Butylbenzylphthalate KY 11/22	26.90	149.0	372M	.188	ug/mL	
72)	Bis(2-Ethylhexyl)Phthalate KY 11/22	28.64	149.0	1919M	.662	ug/mL	
74)	*d12-Perylene	33.79	264.0	86594	40.00	ug/mL	92
75)	Di-n-octylphthalate KY 11/22	30.92	149.0	227M	.0504	ug/mL	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3333::D3 Quant Output File: ^B3333::D1
Name: K6641-1 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 14:57
Injected at: 911120 14:13

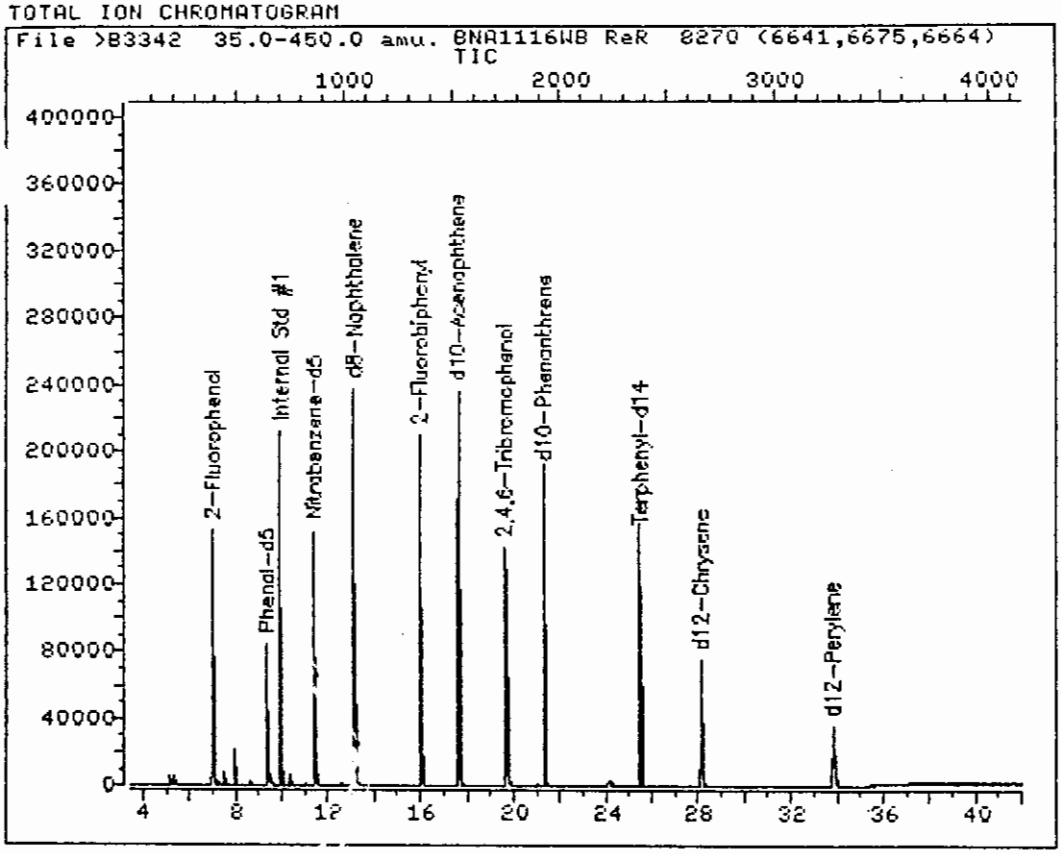
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 22:40
Output File: ^B3342::D1 Injected at: 911120 21:57
Data File: >B3342::D4 Dilution Factor: 1.00000
Name: BNA1116WB ReR 8270 Instrument ID: GCMSBNA1
Misc: (6641,6675,6664) BTL#13

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.91	152.0	60867	40.00	ug/mL	96
4)	2-Fluorophenol	6.98	112.0	77116	47.21	ug/mL	93
6)	Phenol-d6	9.34	99.0	69257	28.51	ug/mL	92
~~8)~~	~~2-Chlorophenol~~	~~9.50~~	~~128.0~~	~~171M~~	~~.0729~~	~~ug/mL~~	
20)	*d8-Naphthalene	13.09	136.0	236140	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.38	82.0	104366	42.37	ug/mL	97
34)	*d10-Acenaphthene	17.57	164.0	132954	40.00	ug/mL	84
39)	2-Fluorobiphenyl	15.94	172.0	188347	41.40	ug/mL	95
56)	*d10-Phenanthrene	21.27	188.0	214286	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.60	329.8	69269	83.95	ug/mL	97
~~64)~~	~~Di-n-Butylphthalate~~	~~23.11~~	~~149.0~~	~~328M~~	~~.0393~~	~~ug/mL~~	
66)	*d12-Chrysene	28.10	240.0	94992	40.00	ug/mL	97
68)	Terphenyl-d14	25.45	244.0	152120	52.80	ug/mL	86
~~72)~~	~~Bis(2-Ethylhexyl)Phthalate~~	~~28.62~~	~~149.0~~	~~29M~~	~~.0106~~	~~ug/mL~~	
	*d12-Perylene	33.77	264.0	74508	40.00	ug/mL	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3342::D4 Quant Output File: ^B3342::D1
Name: BNA1116WB ReR 8270 Instrument ID: GCMSBNA1
Misc: (6641,6675,6664) BTL#13

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 22:40
Injected at: 911120 21:57

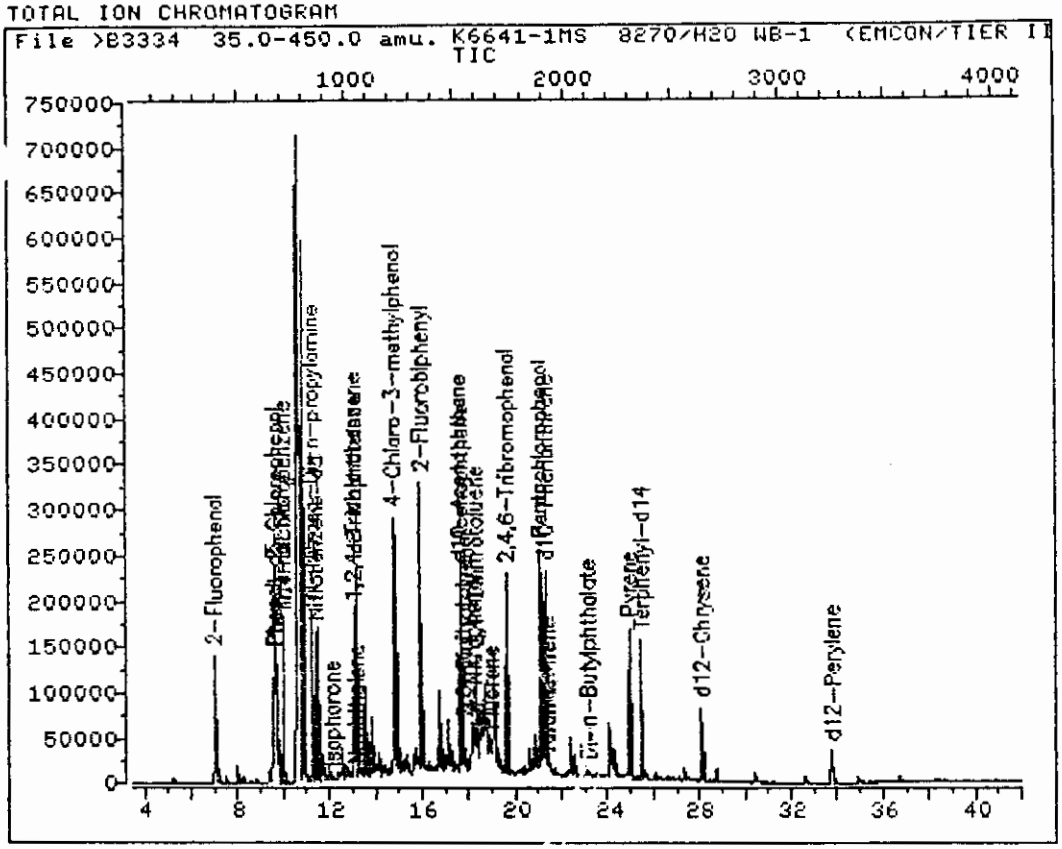
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 15:49
Output File: ^B3334::D1 Injected at: 911120 15:05
Data File: >B3334::D3 Dilution Factor: 1.00000
Name: K6641-1MS 8270/H2O Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 5

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.92	152.0	54724 ✓	40.00	ug/mL	96
4)	2-Fluorophenol	6.99	112.0	85271	58.07	ug/mL	93
6)	Phenol-d6	9.58	99.0	112932	51.71	ug/mL	92
7)	Phenol	9.64	94.0	128509	44.08	ug/mL	92
9)	2-Chlorophenol	9.60	128.0	93355	44.28	ug/mL	99
11)	1,4-Dichlorobenzene	9.96	146.0	79867	36.56	ug/mL	95
17)	N-Nitroso-Di-n-propylamine	11.20	70.0	74156	37.46	ug/mL	90
20)	*d8-Naphthalene	13.10	136.0	217841 ✓	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.41	82.0	94626	41.64	ug/mL	94
~~22)~~	~~Isophorone~~ KY 11/22	~~12.08~~	~~82.0~~	~~3120~~	~~.648~~	~~ug/mL~~	~~92~~
28)	1,2,4-Trichlorobenzene	13.03	180.0	77481	41.90	ug/mL	99
~~29)~~	~~Naphthalene~~ KY 11/22	~~13.14~~	~~128.0~~	~~2021~~	~~.352~~	~~ug/mL~~	~~95~~
32)	4-Chloro-3-methylphenol	14.76	107.0	168705	73.29	ug/mL	90
34)	*d10-Acenaphthene	17.58	164.0	129483 ✓	40.00	ug/mL	86
	2-Fluorobiphenyl	15.95	172.0	171637	38.74	ug/mL	95
~~44)~~	Acenaphthene	17.65	154.0	146356	37.66	ug/mL	92
46)	4-Nitrophenol	18.15	65.0	42279M	55.73	ug/mL	85
48)	2,4-Dinitrotoluene	18.26	165.0	60441	37.72	ug/mL	92
~~52)~~	~~Fluorene~~ KY 11/22	~~18.92~~	~~166.0~~	~~548~~	~~.123~~	~~ug/mL~~	~~87~~
56)	*d10-Phenanthrene	21.29	188.0	204034 ✓	40.00	ug/mL	97
58)	2,4,6-Tribromophenol	19.61	329.8	78476	99.89	ug/mL	97
61)	Pentachlorophenol	21.02	266.0	89040	86.75	ug/mL	98
~~62)~~	~~Phenanthrene~~ KY 11/22	~~21.34~~	~~178.0~~	~~844~~	~~.140~~	~~ug/mL~~	~~73~~
~~63)~~	~~Anthracene~~ KY 11/22	~~21.45~~	~~178.0~~	~~136M~~	~~.0234~~	~~ug/mL~~	~~73~~
~~64)~~	~~Di-n-Butylphthalate~~ KY 11/22	~~23.12~~	~~149.0~~	~~1953~~	~~.246~~	~~ug/mL~~	~~79~~
66)	*d12-Chrysene	28.10	240.0	83347 ✓	40.00	ug/mL	96
67)	Pyrene	24.91	202.0	182966	45.53	ug/mL	99
68)	Terphenyl-d14	25.46	244.0	131245	51.92	ug/mL	86
74)	*d12-Perylene	33.77	264.0	63717 ✓	40.00	ug/mL	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3334::D3 Quant Output File: ^B3334::D1
Name: K6641-1MS 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 5

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 15:49
Injected at: 911120 15:05

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 16:40
Output File: ^B3335::D1 Injected at: 911120 15:57
Data File: >B3335::D3 Dilution Factor: 1.00000
me: K6641-1DMS 8270/H2O Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 6

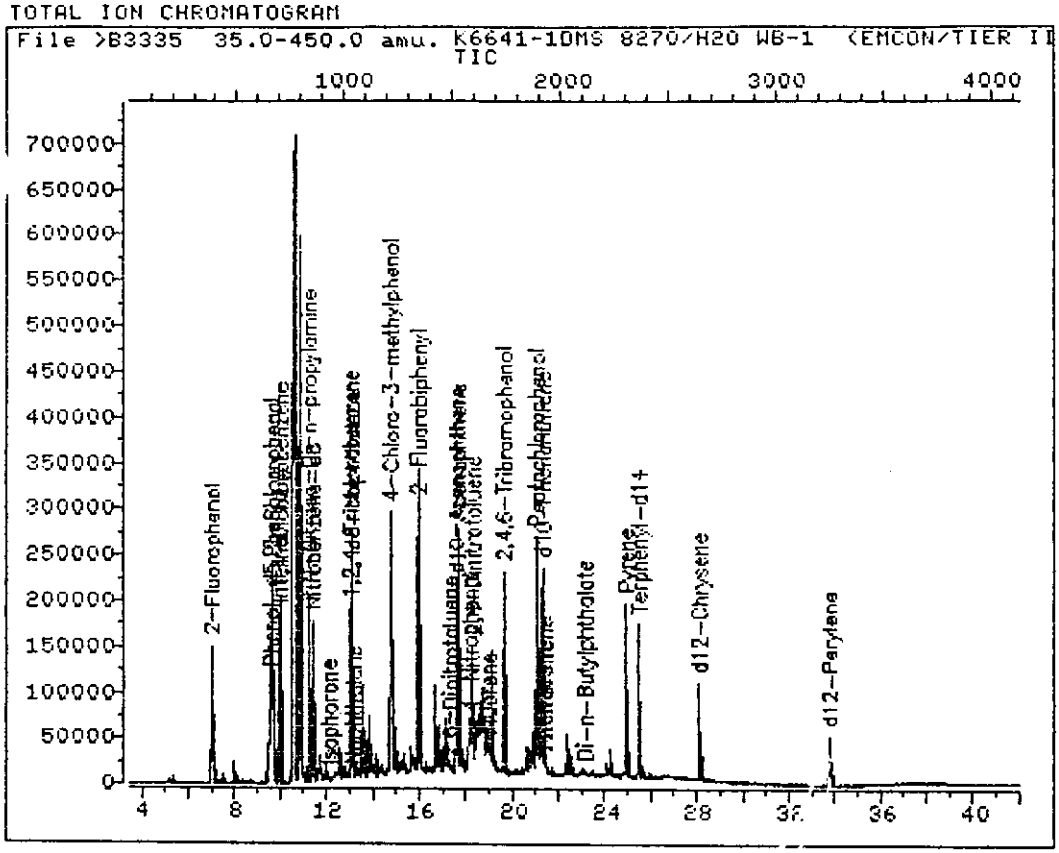
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.93	152.0	54861	40.00	ug/mL	96
4)	2-Fluorophenol	6.99	112.0	86428	58.71	ug/mL	91
6)	Phenol-d6	9.57	99.0	116768	53.33	ug/mL	93
7)	Phenol	9.61	94.0	134045	45.86	ug/mL	99
9)	2-Chlorophenol	9.60	128.0	93533	44.25	ug/mL	96
11)	1,4-Dichlorobenzene	9.86	146.0	83108	37.95	ug/mL	95
17)	N-Nitroso-Di-n-propylamine	11.20	70.0	78728	39.67	ug/mL	91
20)	*d8-Naphthalene	13.10	136.0	215759	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.41	82.0	95854	42.59	ug/mL	92
~~22)~~	~~Isophorone~~ KY 11/22	~~12.07~~	~~82.0~~	~~3579~~	~~.751~~	~~ug/mL~~	~~82~~
28)	1,2,4-Trichlorobenzene	13.02	180.0	79065	43.17	ug/mL	99
~~29)~~	~~Naphthalene~~ KY 11/22	~~13.15~~	~~128.0~~	~~2118~~	~~.372~~	~~ug/mL~~	~~96~~
32)	4-Chloro-3-methylphenol	14.75	107.0	167430	73.44	ug/mL	96
34)	*d10-Acenaphthene	17.57	164.0	126290	40.00	ug/mL	88
)	2-Fluorobiphenyl	15.95	172.0	173892	40.24	ug/mL	95
+)	Acenaphthene	17.66	154.0	150723	39.76	ug/mL	94
46)	4-Nitrophenol	18.15	65.0	46684	63.10	ug/mL	80
48)	2,4-Dinitrotoluene	18.27	165.0	64098	41.01	ug/mL	92
~~49)~~	~~2,6-Dinitrotoluene~~ KY 11/22	~~17.29~~	~~165.0~~	~~548~~	~~.459~~	~~ug/mL~~	~~92~~
~~52)~~	~~Fluorene~~ KY 11/22	~~18.93~~	~~166.0~~	~~600~~	~~.138~~	~~ug/mL~~	~~81~~
56)	*d10-Phenanthrene	21.29	188.0	199777	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.61	329.8	81025	105.34	ug/mL	97
61)	Pentachlorophenol	21.02	266.0	94584	94.12	ug/mL	96
~~62)~~	~~Phenanthrene~~ KY 11/22	~~21.34~~	~~178.0~~	~~790~~	~~.134~~	~~ug/mL~~	~~60~~
~~63)~~	~~Anthracene~~ KY 11/22	~~21.44~~	~~178.0~~	~~221M~~	~~.0388~~	~~ug/mL~~	~~60~~
64)	Di-n-Butylphthalate	23.11	149.0	2561	.329	ug/mL	99
66)	*d12-Chrysene	28.09	240.0	111447	40.00	ug/mL	96
67)	Pyrene	24.91	202.0	206027	38.34	ug/mL	99
68)	Terphenyl-d14	25.46	244.0	147047	43.51	ug/mL	88
74)	*d12-Perylene	33.77	264.0	95837	40.00	ug/mL	90

* Compound is ISTD

1.8
3.4
5.5
6.2
7.3
7.8
7.9
18.3

TOTAL ION CHROMATOGRAM



Data File: >B3335::D3 Quant Output File: ^B3335::D1
Name: K6641-1DMS 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-1 (EMCON/TIER III) BTL# 6

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 16:40
Injected at: 911120 15:57

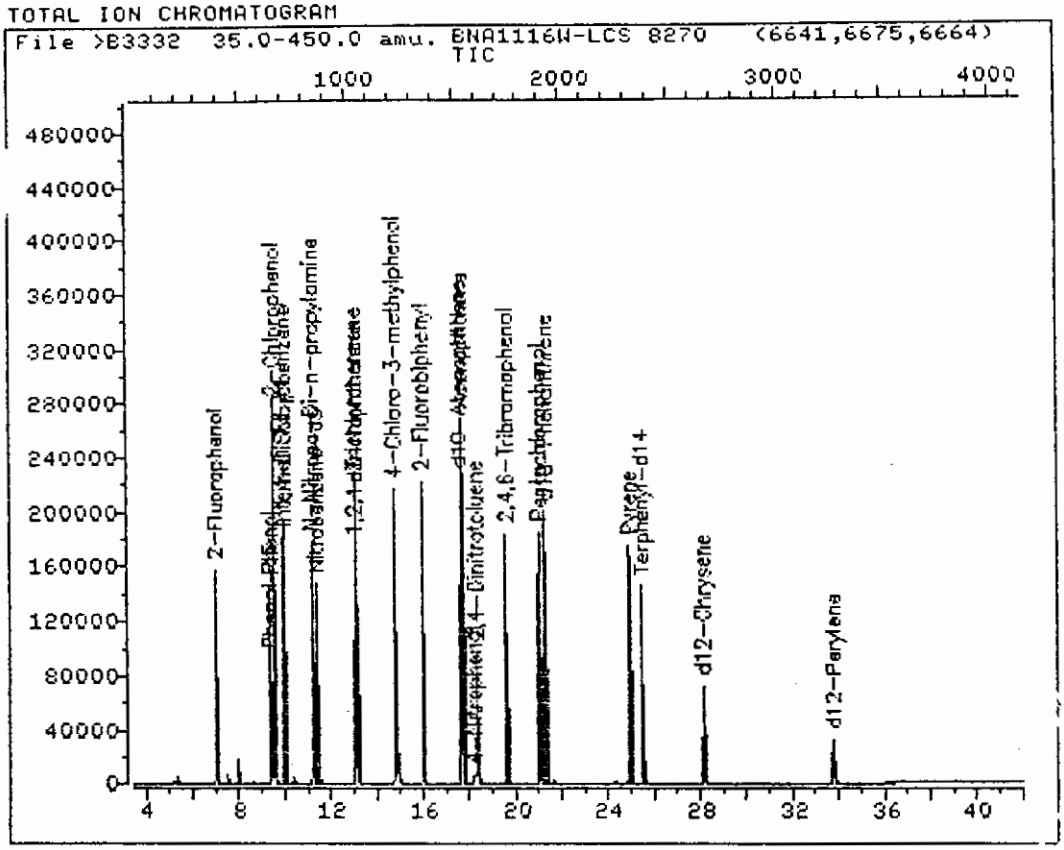
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911120 14:06
Output File: ^B3332::D1 Injected at: 911120 13:22
Data File: >B3332::D3 Dilution Factor: 1.00000
Name: BNA1116W-LCS 8270 Instrument ID: GCMSBNA1
Misc: (6641,6675,6664) BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911120 10:47

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.93	152.0	52830 ✓	40.00	ug/mL	97
4)	2-Fluorophenol	6.99	112.0	71374	50.35	ug/mL	93
6)	Phenol-d6	9.34	99.0	64508	30.59	ug/mL	95
7)	Phenol	9.37	94.0	77850	27.66	ug/mL	86
9)	2-Chlorophenol	9.50	128.0	147365	72.40	ug/mL	98
11)	1,4-Dichlorobenzene	9.97	146.0	78414	37.19	ug/mL	95
17)	N-Nitroso-Di-n-propylamine	11.18	70.0	71021	37.16	ug/mL	90
20)	*d8-Naphthalene	13.09	136.0	214372 ✓	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.40	82.0	88030	39.37	ug/mL	91
28)	1,2,4-Trichlorobenzene	13.03	180.0	73363	40.31	ug/mL	96
32)	4-Chloro-3-methylphenol	14.74	107.0	147879	65.29	ug/mL	94
34)	*d10-Acenaphthene	17.58	164.0	116799 ✓	40.00	ug/mL	86
39)	2-Fluorobiphenyl	15.95	172.0	148766	37.23	ug/mL	94
44)	Acenaphthene	17.66	154.0	141658	40.40	ug/mL	90
	4-Nitrophenol	18.27	65.0	15214M	22.23	ug/mL	80
	2,4-Dinitrotoluene	18.26	165.0	47924	33.15	ug/mL	92
56)	*d10-Phenanthrene	21.29	188.0	181920 ✓	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.60	329.8	65132	92.99	ug/mL	95
61)	Pentachlorophenol	21.02	266.0	69262	75.69	ug/mL	95
66)	*d12-Chrysene	28.11	240.0	83018 ✓	40.00	ug/mL	95
67)	Pyrene	24.92	202.0	190139	47.50	ug/mL	98
68)	Terphenyl-d14	25.46	244.0	135972	54.01	ug/mL	87
74)	*d12-Perylene	33.78	264.0	63128 ✓	40.00	ug/mL	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3332::D3 Quant Output File: ^B3332::D1
Name: BNA1116W-LCS 8270 Instrument ID: GCMSBNA1
Misc: (6641,6675,6664) BTL# 3

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911120 10:47

Operator ID: KEN-1
Quant Time : 911120 14:06
Injected at: 911120 13:22

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/14/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916670C
Sample Matrix:	Water		

CASE NARRATIVE SUMMARY

These samples were analyzed in accordance with the quality assurance program of Columbia Analytical Services, Inc. Sample FB-2 has a value for chloroform five times the method reporting limit. Sample WB-4 has values just above the method reporting limit for arsenic and copper. Sample WB-5 has a value reported for lead at twice the method reporting limit. All quality assurance data met CAS acceptance criteria.

Approved by Jim Hollak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	11/14/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916670C
Sample Matrix:	Water		

Dissolved Priority Pollutant Metals
µg/L (ppb)

	Sample Name:		WB-4	WB-5	Method Blank
	Lab Code:		K6670-2	K6670-3	K6670-MB
Analyte	**Method**	**MRL**			
Antimony	6010	50	ND	ND	ND
Arsenic	7060	5	6	ND	ND
Beryllium	6010	5	ND	ND	ND
Cadmium	6010	3	ND	ND	ND
Chromium	6010	5	ND	ND	ND
Copper	6010	10	12	ND	ND
Lead	7421	2	ND	4	ND
Mercury	7470	0.5	ND	ND	ND
Nickel	6010	20	ND	ND	ND
Selenium	7740	5	ND	ND	ND
Silver	6010	10	ND	ND	ND
Thallium	7841	5	ND	ND	ND
Zinc	6010	10	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by JMSidlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/14/91
Work Order #: K916670C

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		FB-2	Method Blank
Lab Code:		K6670-1	K6670-MB
Date Analyzed:		11/21/91	11/21/91
Analyte	**MRL**		
Chloromethane	1	ND	ND
Vinyl Chloride	1	ND	ND
Bromomethane	1	ND	ND
Chloroethane	1	ND	ND
Trichlorofluoromethane (Freon 11)	1	ND	ND
Trichlorotrifluoroethane (Freon 113)	10	ND	ND
1,1-Dichloroethene	1	ND	ND
Acetone	20	ND	ND
Carbon Disulfide	1	ND	ND
Methylene Chloride	10	ND	ND
trans-1,2-Dichloroethene	1	ND	ND
cis-1,2-Dichloroethene	1	ND	ND
2-Butanone (MEK)	10	ND	ND
1,1-Dichloroethane	1	ND	ND
Chloroform	1	5	ND
1,1,1-Trichloroethane (TCA)	1	ND	ND
Carbon Tetrachloride	1	ND	ND
Benzene	1	ND	ND
1,2-Dichloroethane	1	ND	ND
Vinyl Acetate	10	ND	ND
Trichloroethene (TCE)	1	ND	ND
1,2-Dichloropropane	1	ND	ND
Bromodichloromethane	1	ND	ND
2-Chloroethyl Vinyl Ether	10	ND	ND
trans-1,3-Dichloropropene	1	ND	ND
2-Hexanone	10	ND	ND
4-Methyl-2-pentanone (MIBK)	10	ND	ND
Toluene	1	ND	ND
cis-1,3-Dichloropropene	1	ND	ND
1,1,2-Trichloroethane	1	ND	ND
Tetrachloroethene (PCE)	1	ND	ND
Dibromochloromethane	1	ND	ND
Chlorobenzene	1	ND	ND
Ethylbenzene	1	ND	ND
Styrene	1	ND	ND
Total Xylenes	1	ND	ND
Bromoform	1	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND
1,3-Dichlorobenzene	1	ND	ND
1,4-Dichlorobenzene	1	ND	ND
1,2-Dichlorobenzene	1	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Laboratory Chronicle

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Received: 11/14/91
Work Order #: K916670C

Inorganic Parameters

Analyte	Method	Date Analyzed
Mercury	7470	11/21/91

Approved by _____ Date 12/12/91

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Work Order #: K916670C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Priority Pollutant Metals
µg/L (ppb)

Sample Name: Batch QC
Lab Code: K6641-1

						Percent Recovery			
Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Duplicate Spiked Sample Result	Spiked Sample	Duplicate Spiked Sample	CAS Acceptance Criteria	Relative Percent Difference
Antimony	50	1,000	ND	970	1,010	97	101	75-125	4
Arsenic	5	80	6	83	87	96	101	75-125	5
Beryllium	5	100	ND	98	99	98	99	75-125	1
Cadmium	3	100	ND	91	97	91	97	75-125	6
Chromium	5	400	ND	378	395	94	99	75-125	4
Copper	10	500	ND	492	491	98	98	75-125	<1
Lead	2	40	ND	46	43	115	108	75-125	7
Mercury	0.5	1	ND	0.9	0.9	90	90	60-140	<1
Nickel	20	1,000	ND	937	976	94	98	75-125	4
Selenium	5	20	ND	22	23	110	115	60-125	4
Silver	10	100	ND	90	94	90	94	75-125	4
Thallium	5	100	ND	91	88	91	88	75-125	3
Zinc	10	1,000	21	936	975	92	95	75-125	4

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB1	CCB2	CCB3	CCB4
Antimony	6010	50	ND	ND	ND	ND
Arsenic	7060	5	ND	ND	ND	ND
Beryllium	6010	5	ND	ND	ND	ND
Cadmium	6010	3	ND	ND	ND	ND
Chromium	6010	5	ND	ND	ND	ND
Copper	6010	10	ND	ND	ND	ND
Lead	7421	2	ND	ND	ND	ND
Mercury	7470	0.5	ND	ND	--	--
Nickel	6010	20	ND	ND	ND	ND
Selenium	7740	5	ND	ND	ND	ND
Silver	6010	10	ND	ND	ND	ND
Thallium	7841	5	ND	ND	ND	ND
Zinc	6010	10	ND	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB5	CCB6
Antimony	6010	50	ND	--
Arsenic	7060	5	ND	--
Beryllium	6010	5	ND	--
Cadmium	6010	3	ND	--
Chromium	6010	5	ND	--
Copper	6010	10	ND	--
Nickel	6010	20	ND	--
Silver	6010	10	ND	--
Thallium	7841	5	ND	ND
Zinc	6010	10	ND	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by TM Siddak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Initial Calibration Verification (ICV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Antimony	6010	980	1,040	106
Arsenic	7060	50	53	106
Beryllium	6010	508	486	96
Cadmium	6010	516	530	103
Chromium	6010	514	518	101
Copper	6010	525	519	99
Lead	7421	98	107	109
Mercury	7470	5.0	5.4	108
Nickel	6010	504	514	102
Selenium	7740	50	54	108
Silver	6010	517	492	95
Thallium	7841	101	101	100
Zinc	6010	3,050	3,050	100

ICV Source: EPA ICV

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV1 Result	Percent Recovery	CCV2 Result	Percent Recovery	CCV3 Result	Percent Recovery
Antimony	6010	5,000	4,900	98	4,920	98	5,030	101
Arsenic	7060	40	40	100	39	98	40	100
Beryllium	6010	500	482	96	499	100	523	105
Cadmium	6010	500	501	100	517	104	533	107
Chromium	6010	5,000	4,960	99	5,130	103	5,280	106
Copper	6010	500	489	98	490	98	510	102
Lead	7421	40	41	102	40	100	38	95
Mercury	7470	3.0	3.1	103	3.0	100	--	--
Nickel	6010	500	490	98	514	103	524	105
Selenium	7740	40	40	100	42	105	41	102
Silver	6010	500	497	99	508	102	524	105
Thallium	7841	40	39	98	38	95	39	98
Zinc	6010	2,500	2,450	98	2,510	100	2,600	104

Approved by Jim Stallak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV4 Result	Percent Recovery	CCV5 Result	Percent Recovery	CCV6 Result	Percent Recovery
Antimony	6010	5,000	5,030	101	5,070	101	--	--
rsenic	7060	40	38	95	39	98	--	--
eryllium	6010	500	508	102	511	102	--	--
Cadmium	6010	500	495	99	498	100	--	--
Chromium	6010	5,000	5,010	100	5,050	101	--	--
Copper	6010	500	511	102	511	102	--	--
Lead	7421	40	38	95	--	--	--	--
Nickel	6010	500	505	101	508	102	--	--
Selenium	7740	40	44	110	--	--	--	--
Silver	6010	500	499	100	504	101	--	--
Thallium	7841	40	37	92	37	92	37	92
Zinc	6010	2,500	2,500	100	2,520	101	--	--

pproved by JWSollak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Analyzed: 11/22/91
Work Order #: K916670C

QA/QC Report
Laboratory Control Sample Summary
Dissolved Priority Pollutant Metals
EPA Method 6010
µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Antimony	980	1,040	106	75-125
Arsenic	50	49	98	75-125
Beryllium	508	512	101	75-125
Cadmium	516	526	102	75-125
Chromium	514	519	101	75-125
Copper	525	520	101	75-125
Lead	98	94	96	75-125
Mercury	5.0	5.4	108	75-125
Nickel	504	523	104	75-125
Selenium	50	48	96	75-125
Silver	517	491	95	75-125
Thallium	101	98	97	75-125
Zinc	3,050	2,990	98	75-125

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/14/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/21/91
Sample Matrix:	Water	**Work Order #:**	K916670C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
FB-2	K6670-1	103	101	100
ethod Blank	K6670-MB	104	104	102
EPA Acceptance Criteria		76-114	88-110	86-115

pproved by [signature] Date 12/12/91

APPENDIX B

CHAIN OF CUSTODY INFORMATION

K66700

Columbia Analytical Services inc.

1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

CHAI[illegible] OF CUSTODY/LABORATORY ANALYSIS RE[illegible]EST FORM

DATE 11/12/91 PAGE 1 OF 1

PROJECT NAME THE O'BRIEN CORP. # E50-01-06

PROJECT MNGR. MARK WHEELER

COMPANY/ADDRESS 450 EAST GRAND AVE.

SOUTH SAN FRANCISCO

PHONE 415 761-2300

SAMPLERS SIGNATURE Jim Butera / Jan Brathwaite

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO_4, F, NO_2, Alk, TDS, TSS (circle)	NH_3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols					REMARKS
WB-2	11/12/91	17:10	1-2	H_2O	2				✓													
FB-2	11/12/91	—		H_2O	2		✓															
WB-4	11/12/91	11:00	3-4	H_2O	3								✓									
WB-5	11/12/91	15:10	5-6	H_2O	3								✓									

RELINQUISHED BY:	RECEIVED BY:
Signature J Butera	Signature H.F.
Printed Name J Butera	Printed Name Howard Friedman
Firm EMCON SJ	Firm CAS - SJ
Date/Time 11/12/91 1745	Date/Time 11-12-91 1745

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature Ruth Allison
Printed Name	Printed Name Ruth Allison
Firm	Firm CAS
Date/Time	Date/Time 11/14/91 1330

TURNAROUND REQUIREMENTS:

___ 24 hr ___ 48 hr ___ 5 day

___ Standard (~ 10-15 working days)

___ Provide Verbal Preliminary Results

___ Provide FAX Preliminary Results

Requested Report Date ___

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)

___ III. Data Validation Report (includes All Raw Data)

___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O. # ___

Bill to: ___

SAMPLE RECEIPT:

Shipping VIA: sampler

Shipping #: ___

Condition: Bubbles in WB-2

Lab No.: SJ91-1428

SPECIAL INSTRUCTIONS/COMMENTS:

SAR#1968

metals 8240 } TO Kelso

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

APPENDIX C

RAW DATA

916642

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729

SAMPLE NUMBER(S) See Below	SERVICE REQUEST NUMBER 916641C; 916670
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP-Red-Water-GFAA

DATA

SAMPLE 6642 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (6641C; 6670C; 6712C)				50 ml		50 ml	
LCSW 6641C			X	↓		↓	
6641C-1			X				
1DS*			↓				
1S*							
6670C-2							
3							
6712C-2							
3							
6729-1							
2							
3							
6642-1			↓	↓		↓	
	1.0	DA	12/4/91				

COMMENTS: * Spike = ~~0.5~~ ml SSS #4
LCSW = ICV-2 = Lot# 1290
ICV-4 = " 1290

ANALYST Kurtz	DATE 11/18/91	PAGE Number
REVIEWER	DATE	

[DIGEST2.FRM]

00176

4/0672 , 4/6661

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C ; 916729C

SAMPLE NUMBER(S) See Below	SERVICE REQUEST NUMBER 916641C ; 916670C
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP - Blue - Water - ICP

DATA

SAMPLE (6661 6729C)	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (6641C ; 6670C ; 6712C ; 6642)				50 ml		50 ml	
ACSW 6641C			X				
6641C - 1			X				
1DS*							
1S*							
6670C - 2							
3							
6712C - 2							
3							
6729C - 1							
2							
3							
6642 - 1							
6661 - 1							
2							
3							
4							
5			↓	↓		↓	
	1.0	DA	12/4/91				

COMMENTS: * Spike = 0.5 mL of SSS #1, 2, 3 + 100 ppm Mo + B
ACSW - ICV-1 = Lot # 0691
ICV-3 = " 1190

ANALYST Ortiz	DATE 11/18/91	PAGE Number
REVIEWER	DATE	

{DIGEST2.FRM}

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

Service Request Number : 916641C ; 916670C ; 916712C ; 916729C ; 916642

Q.C. Sample Number : 641C-L Initials / Date : ASO / 11/18/91

Circle type of Digest: (Red) (GFAA) BLUE (ICP)
Circle type of sample : Soil (Water) EPA Digest Method # 3020

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
1	Be	1.25	✓	D37622	9/92	Baker	5	
for	Cd	1.25	✓	D22642	6/92	Baker	5	
ICP	Co	12.50	✓	2-4C0	6/92	SPEX	50	
only	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

	HCl	25.00	✓	E28834		Baker	--	
2	Sb	12.50	✓	903464-24	4/92	Fisher	50	
ICP	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by PN Date Analyzed _____ by _____

	HNO3	2.50	✓	E17065		Baker	--	
3	Ag	1.25	✓	E16618	4/93	Baker	5	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

	HNO3	2.50	✓	E08045		Baker	--	1.0
4	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	0.5
GFAA	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	EA 12/4/91

Date Prepared 9/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW Date Analyzed _____ by _____

5	HCL	25.00	✓	E28834		Baker	--	
ICP	As	50.00	✓	D22643	6/92	Baker	200	
ONLY	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by PN Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$ug/L = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

916712C; 916729C; 916642; 916661

Service Request Number : 916641C; 916670C

Q.C. Sample Number : 641C-1 * Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water

EPA Digest Method # 3010

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
1 for ICP only	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
	Be	1.25	✓	D37622	9/92	Baker	5	
	Cd	1.25	✓	D22642	6/92	Baker	5	
	Co	12.50	✓	2-4CO	6/92	SPEX	50	
	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	0.5
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	EA 12/4/91
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

2 ICP	HCl	25.00	✓	E28834		Baker	--	
	Sb	12.50	✓	903464-24	4/92	Fisher	50	0.5
	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by EN — Date Analyzed _____ by _____

3	HNO3	2.50	✓	E17065		Baker	--	
	Ag	1.25	✓	E16618	4/93	Baker	5	0.5

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

4 GFAA	HNO3	2.50	✓	E08045		Baker	--	
	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW — Date Analyzed _____ by _____

5 ICP ONLY	HCL	25.00	✓	E28834		Baker	--	
	As	50.00	✓	D22643	6/92	Baker	200	
	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by EN — Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

* Spike = 0.5 ml of 100 ppm Mo & B

DIG1101

00179

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729, 6670C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

No ICB Read' qual 4th

Sample Pos.	Lab Code	Initial Sample (g)	Initial Sample (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	ICV (50.4)	—	—	—	—	—	52.6	104%
2	CCV (49	—	—	—	—	—	39.5	99%
3	CCB	—	—	—	—	—	<1	<0.001
4	PBW 6641, 6712,	6729, 6642 6670		50	—	—	<1	<0.001
5	LCSW (50.4)	50			1	2	24.6 (49.2)	98%
6	6641C-1				—	—	6.0	0.006
7	C-1A						26.8	104%
8	C-1AS						>	—
9	C-1S						>	—
10	6712-C-2	50		50			12.3	0.012
11	C-2A						32.4	100%
12	6712C-3	50		50			9.3	0.009
13	CCV2 (49	—		—	—	—	39.0	98%
14	CCB	—		—	—	—	<1	<0.001
15	6729C-1	50		50			6.2	0.006
16	C-1A						26.4	102%
17	C-2						21.0	0.021
18	C-3						21.4	0.021
19	6642-1	50		50			>	—
20	1A						>	—
21	6670C-2	50		50			6.3	0.006
22	C-3						4.3	0.004
23	C-3A						25.3	105%
24	CCV3 (40	—		—	—	—	39.6	99%
25	CCB	—		—	—	—	<1	<0.001

COMMENTS:

SPIKE LEVEL: A: 20 ug/L

ANALYST: CJ Bruno	DATE: 11/19/91	PAGE NUMBER: 1
REVIEWER	DATE:	

CAMCSGFA1.FRM

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:	SERVICE REQUEST # : 91-6631C, 6641C (K91-6670C)
ANALYSIS FOR: As / METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	PBW 66310	50	50			<1	<0.001
27	6631C-1					<1	<0.001
28	C-1A					17.8	89%
29	C-1B5					>	—
30	C-15					>	—
31	C-2					<1	<0.001
32	C-3					26	0.003
33	C-4					>B	—
34	C-5					2.1	0.002
35	C-6	↓	↓			>B	—
36	CCV 1 (40)	—	—			38.1	95%
37	CCB	—	—			<1	<0.001
38	6631C7	50	50			>B	—
39	C-8	↓	↓			>B	—
40	C-9	↓	↓	↓	↓	17.7	0.018
41	6641C-15	50	50	1	2	41.6	0.083 / 96%
42	C-1B5	↓	↓	↓	↓	43.4	0.087 / 101%
43	CCV (40)	—	—	—	—	39.2	98%
44	CCB	—	—	—	—	<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6641C-15 @ 80 ug/l A: 20 ug/l

ANALYST: J. Bruno	DATE: 11/19/91	PAGE Number: 2
REVIEWER	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso, WA 98626 (206) 577-7222

K91-6670C

OPERATOR CJ Burro
DATE 11/19/91 08:00
BATCH As

PROGRAM 6 As EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.004
STANDARD 1	10.0	4.7	0.031	0.030	0.032
STANDARD 2	20.0	2.5	0.062	0.061	0.064
STANDARD 3	40.0	0.3	0.115	0.116	0.115
STANDARD 4	60.0	2.5	0.174	0.177	0.171
SAMPLE 1 ICV	52.6	2.6	0.152	0.149	0.155
SAMPLE 2 CCV1	39.5	0.7	0.114	0.114	0.115
SAMPLE 3 CCB1	-0.2	99.9	-0.001	-0.001	0.000
SAMPLE 4 PB	-0.3	66.9	-0.001	-0.000	-0.001
SAMPLE 5 LCS	24.6	2.2	0.076	0.077	0.075
SAMPLE 6 66	6.0	2.4	0.019	0.018	0.019
SAMPLE 7	26.8	0.3	0.082	0.082	0.082
SAMPLE 8	OVER	1.5	0.253	0.250	0.256
SAMPLE 9	OVER	0.9	0.247	0.245	0.248
SAMPLE 10	12.3	1.6	0.038	0.039	0.038
SAMPLE 11	32.4	0.0	0.097	0.097	0.097
SAMPLE 12	9.3	2.1	0.029	0.029	0.029
SAMPLE 13 CCV2	39.0	0.9	0.113	0.112	0.114
SAMPLE 14 CCB2	-0.6	30.8	-0.002	-0.002	-0.002
SAMPLE 15	6.2	2.8	0.019	0.019	0.020
SAMPLE 16	26.6	0.4	0.082	0.081	0.082
SAMPLE 17	21.0	2.2	0.066	0.065	0.067
SAMPLE 18	21.4	1.7	0.066	0.067	0.066
SAMPLE 19	OVER	1.1	0.667*	0.673*	0.662*
SAMPLE 20	OVER	99.9	0.339*	0.677*	0.001
SAMPLE 21 6670-2	6.3	2.8	0.020	0.020	0.019
SAMPLE 22 6670-3	4.3	3.4	0.013	0.014	0.013
SAMPLE 23	25.3	1.5	0.078	0.079	0.077
SAMPLE 24 CCV3	39.6	0.4	0.115	0.114	0.115
SAMPLE 25 CCB3	-0.1	99.9	-0.000	-0.001	0.001
SAMPLE 26	-0.3	62.3	-0.001	-0.001	-0.001
SAMPLE 27	0.2	0.0	0.000	0.001	0.000
SAMPLE 28	17.8	0.8	0.056	0.055	0.056
SAMPLE 29	OVER	0.2	0.202	0.203	0.202
SAMPLE 30	OVER	1.0	0.202	0.201	0.204
SAMPLE 31	0.5	75.1	0.001	0.001	0.002
SAMPLE 32	2.6	12.2	0.008	0.009	0.007
SAMPLE 33	OVER	17.6	0.257B	0.225B	0.289B
SAMPLE 34	2.1	10.6	0.006	0.006	0.007
SAMPLE 35	49.1B	38.9	0.142B	0.103B	0.181B
SAMPLE 36	38.1	2.9	0.111	0.113	0.109
SAMPLE 37	-0.5	63.8	-0.001	-0.001	-0.002
SAMPLE 38	OVER	2.4	0.335B	0.341B	0.330B

CJ Bro
11/19/91
A5

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	OVER	25.7	0.594B	0.702B	0.486B
SAMPLE 40	17.7	10.3	0.055	0.059	0.051
SAMPLE 41	41.6	1.9	0.120	0.121	0.118
SAMPLE 42	43.4	0.0	0.125	0.125	0.125
SAMPLE 43	39.2	0.4	0.114	0.113	0.114
SAMPLE 44	-0.3	7.8	-0.001	-0.001	-0.001
SAMPLE 45	-0.3	44.4	-0.001	-0.001	-0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.007	0.007
SAMPLE 1	40.5	0.2	0.117	0.117	0.117
SAMPLE 2	-0.3	51.1	-0.001	-0.001	-0.001
SAMPLE 3	OVER	0.9	0.275	0.277	0.273
SAMPLE 4	55.2	99.9	0.160	0.321	-0.002
SAMPLE 5	35.6	1.6	0.105	0.104	0.106
SAMPLE 6	35.3	1.9	0.105	0.103	0.106
SAMPLE 7	10.1	3.7	0.031	0.032	0.031
SAMPLE 8	-0.1	99.9	-0.000	0.000	-0.001
SAMPLE 9	45.2	0.9	0.130	0.131	0.130
SAMPLE 10	OVER	14.4	0.201B	0.222B	0.181B
SAMPLE 11	8.3	3.0	0.026	0.025	0.026
SAMPLE 12	30.4	2.0	0.092	0.091	0.093
SAMPLE 13	36.6	0.9	0.112	0.113	0.112
SAMPLE 14	-0.2	0.0	-0.001	-0.001	-0.001
SAMPLE 15	6.3	3.1	0.020	0.019	0.020
SAMPLE 16	39.6	0.5	0.114	0.115	0.114
SAMPLE 17	-0.3	14.0	-0.001	-0.001	-0.001

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6631

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: Pb	METHOD: GFAA	91-6641C, 6712C, 6729C, 6670C 6631C

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	PBW 6641, 6670, 6712, 6729, 6642	50		—	—	<2	<0.002
2	LCSW (984)	50		1	5	18.7	95%
3	6641C-1			—	—	<2	<0.002
4	C-1A					22.2	111%
5	C-1DS					458	0.046 / 115% (1)
6	C-5					430	0.043 / 108%
7	6712C-2					17.4	0.017
8	C-2A					40.3	114%
9	C-3					<2	<0.002
10	CCV (40)	—	—			38.3	96%
11	CCB	—	—			<2	<0.002
12	6729C-1	50	50			17.6	0.018
13	C-1A					406	115%
14	C-2					6.9	0.007
15	C-3					9.7	0.010
16	6670C-2	50	50			<2	<0.002
17	C-3					4 3.8	0.004
18	C-3A					235	98%
19	6642-1	50	50			<2	<0—
20	6642-1					<1	—
21	1A					24.5	—
22	CCV (40)	—	—			38.1	95%
23	CCB	—	—			<1	<0.001
24	PBW 6631C	50	50			<1	<0.001
25	6631C-1					<1	<0.001

COMMENTS: (1) Spiked at 40 ug/l

SPIKE LEVEL: At 20 ug/l

ANALYST	DATE:	PAGE NUMBER:
J. Burns	11/19/91	3
REVIEWER	DATE:	
—		

CAMCSGFAT.FRM

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2

1317 South 13th Street P.O. Box 479

Kelso, WA 98626 (206) 577-7222

K91-6670C

OPERATOR CJ Bruna

DATE 11/19/91 Time 09:00

BATCH Pb

PROGRAM 19 Pb EPA/PTI PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.003	0.002	0.004
STANDARD 1	5.0	5.0	0.009	0.009	0.009
STANDARD 2	30.0	0.8	0.053	0.053	0.054
STANDARD 3	40.0	1.7	0.070	0.069	0.070
STANDARD 4	50.0	0.3	0.087	0.087	0.087
SAMPLE 1 - ICV → 1:5	21.4	0.2	0.038	0.038	0.038
SAMPLE 2 CCV1	41.1	1.0	0.071	0.071	0.072
SAMPLE 3 (CCB1)	0.8	18.9	0.001	0.002	0.001
SAMPLE 4	1.0	17.6	0.002	0.002	-0.002
S LE 5	2.4	89.3	0.004	0.007	0.002
SAMPLE 6	25.6	2.0	0.046	0.046	0.045
SAMPLE 7	6.4	2.2	0.012	0.011	0.012

						0.005
[redacted]	10	0.9	24.1	0.002	0.002	0.001
[redacted]PLE	11	0.8	11.6	0.001	0.002	0.001
SAMPLE	12	0.9	0.0	0.002	0.002	0.002
[redacted]PLE	13	1.1	8.1	0.002	0.002	0.002
SAMPLE	14	39.7	3.3	0.069	0.067	0.071
SAMPLE	15	0.5	40.2	0.001	0.001	0.001
SAMPLE	16	0.9	7.6	0.002	0.002	0.002
SAMPLE	17	1.3	5.2	0.002	0.002	0.002
SAMPLE	18	1.8	16.6	0.003	0.003	0.004
SAMPLE	19	1.0	11.1	0.002	0.002	0.002
AMPLE	20	1.0	8.9	0.002	0.002	0.002
AMPLE	21	23.0	0.0	0.041	0.041	0.041
AMPLE	22	0.8	47.0	0.001	0.001	0.002
AMPLE	23	1.1	28.9	0.002	0.002	0.002
MPLE	24	1.4	11.5	0.002	0.003	0.002
MPLE	25	1.4	3.4	0.003	0.003	0.002
MI	26	40.8	1.8	0.071	0.070	0.072
MPLE	27	1.2	15.0	0.002	0.002	0.002
PLE	28	1.7	2.0	0.003	0.003	0.003
PLE	29	1.2	46.2	0.002	0.002	0.003
PLE	30	2.2	1.5	0.004	0.004	0.004
PLE	31	1.2	42.1	0.002	0.003	0.002
LE	32	1.0	39.1	0.002	0.002	0.001
LE	33	1.1	20.1	0.002	0.002	0.002
LE	34 CCV2	40.4	1.5	0.070	0.069	0.071
LE	35 CCB2	1.3	15.4	0.002	0.003	0.002

J Bruno
11/19/91
Pb

K91-6670C

cf Bruno
11/19/91
Pb

K91-6670C

BLANK	0.0		-0.001	-0.000	-0.002
SAMPLE 1 PB	-0.0	99.9	-0.000	0.000	-0.000
SAMPLE 2 LCS	18.7	0.8	0.034	0.033	0.034
SAMPLE 3	0.0	99.9	0.000	0.001	-0.001
SAMPLE 4	22.2	1.9	0.040	0.039	0.040
SAMPLE 5	45.8	1.0	0.080	0.080	0.079
SAMPLE 6	43.0	0.8	0.075	0.074	0.075
SAMPLE 7	17.4	1.3	0.031	0.031	0.032
SAMPLE 8	40.3	1.5	0.070	0.071	0.069
SAMPLE 9	-0.6	11.6	-0.001	-0.001	-0.001
SAMPLE 10 CCV3	38.3	2.5	0.067	0.068	0.066
SAMPLE 11 CCB3	-1.4	12.6	-0.003	-0.002	-0.003
SAMPLE 12	17.6	2.7	0.032	0.031	0.032
SAMPLE 13	40.6	0.9	0.071	0.070	0.071
SAMPLE 14	6.9	2.6	0.013	0.013	0.012
SAMPLE 15	9.7	0.0	0.018	0.018	0.018
SAMPLE 16 6670-2	-0.9	9.9	-0.002	-0.002	-0.002
SAMPLE 17 6670-3	3.8	6.6	0.007	0.007	0.007
SAMPLE 18	23.5	0.8	0.042	0.042	0.042
SAMPLE 19	-1.1	0.0	-0.002	-0.002	-0.002
SAMPLE 20	0.0	0.0	0.000	0.000	0.000
SAMPLE 21	24.5	0.4	0.044	0.044	0.044
SAMPLE 22 CCV4	38.1	4.0	0.067	0.065	0.068
SAMPLE 23 CCB4	-1.0	4.5	-0.002	-0.002	-0.002
BLANK	0.0		-0.001	-0.000	-0.001
SAMPLE 24	-0.4	16.7	-0.001	-0.001	-0.001
SAMPLE 25	0.3	76.7	0.001	0.000	0.001
SAMPLE 26	21.1	0.2	0.038	0.038	0.038
SAMPLE 27	39.6	1.4	0.069	0.068	0.070

[redacted]PLE 31	8.6	0.4	0.016	0.016	0.016
SAMPLE 32	0.4	81.2	0.001	0.000	0.001
SAMPLE 33	0.6	99.9	0.001	0.003	-0.001
SAMPLE 34	36.0	3.4	0.063	0.065	0.062
SAMPLE 35	-0.3	51.4	-0.001	-0.000	-0.001
BLANK	0.0		0.000	0.001	-0.000
RESLOPE 3	40.0	5.5	0.062	0.060	0.065
SAMPLE 36	1.0	99.9	0.002	0.003	0.000
SAMPLE 37	OVER	8.6	0.262B	0.277B	0.246B
SAMPLE 38	1.0	38.1	0.002	0.001	0.002
SAMPLE 39	0.8	24.3	0.001	0.001	0.002
SAMPLE 40	OVER	1.0	0.118	0.119	0.117
SAMPLE 41	0.4	99.9	0.001	0.000	0.001
SAMPLE 42	41.0	1.0	0.064	0.064	0.063
SAMPLE 43	0.4	50.4	0.001	0.001	0.000

J Bruno
11/19/91
Pb

K91-667OC

5

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 9166641

SAMPLE NUMBER: As Listed		SERVICE REQUEST #: 9166641 9166670 9166712 9166729 9166681 9166731
ANALYSIS FOR: Hg	METHOD: CVAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/l) measured	(mg/L or mg/Kg) Sample (actual)
1	ICV	5.0 ppb				5.43	108%
2	CCV-1	3.0 ppb				3.07	102%
3	CCB-1					<.2	<.0002
4	6641 6670 6712 6729 6681 6731 PBW	20ml	20ml				
5	6641-1						
6	-10S			⊛		0.88	.0009 90%
7	-15S			⊛		0.89	.0009 90%
8	6670-2					<.2	<.0002
9	-3						
10	6712-2						
11	6729-1						
12	-1S			⊛		0.92	.0009 90%
13	-1SD	✓	✓	⊛		0.86	.0009 90%
14	CCV-2	3.0 ppb				3.01	100%
15	CCB-2					<.2	<.0002
16	6729-2	20ml	20ml				
17	-3						
18	6681-1						
19	-1D						
20	-1S			⊛		0.95	.0010 100%
21	6731-1					<.2	<.0002
22	-3						
23	-3S			⊛		1.01	.0010 100%
24	-3SD			⊛		0.98	.0010 100%
25	-4	✓	✓			<.2	<.0002

11/21/91

COMMENTS:

SPIKE LEVEL: ⊛ 1.0 ppb

ANALYST: Sandy Brush	DATE: 11/21/91	PAGE NUMBER:
REVIEWER:	DATE:	

CASKSGFA1.FRM

Varian SpectrAA 10/20 System Report

.umbia Analytical Services
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11 21 91
BATCH NO.

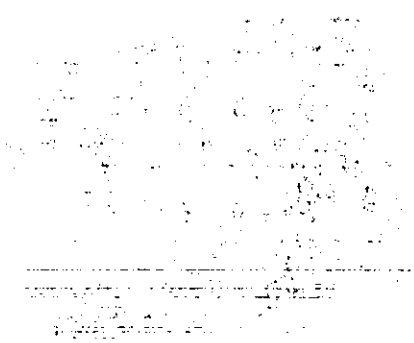
PROGRAM 23 Hg

Sandy Brush

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		0.001	0.001	0.001	0.001
STANDARD 1	1.00	1.2	0.018	0.018	0.018	0.018
STANDARD 2	3.00	1.4	0.051	0.051	0.051	0.052
STANDARD 3	5.00	0.5	0.083	0.084	0.083	0.083
STANDARD 4	10.00	0.5	0.177	0.177	0.177	0.178
SAMPLE 1 ICV, LCS	5.43	1.4	0.091	0.090	0.092	0.092
SAMPLE 2 CCV1	3.07	1.0	0.052	0.053	0.052	0.052
SAMPLE 3 CCB1	-0.00	99.9	-0.000	0.000	-0.000	-0.000
SAMPLE 4 PB	-0.01	99.9	-0.000	-0.000	0.000	-0.000
SAMPLE 5	-0.00	99.9	-0.000	0.001	-0.001	-0.000
SAMPLE 6	0.88	2.0	0.016	0.016	0.016	0.015
PLE 7	0.89	3.7	0.016	0.016	0.015	0.016
SAMPLE 8 6670-2	0.04	50.5	0.001	0.001	0.000	0.001
SAMPLE 9 6670-3	0.02	60.6	0.000	0.000	0.000	0.000
SAMPLE 10	0.04	66.8	0.001	0.000	0.001	0.000
SAMPLE 11	0.01	57.7	0.000	0.000	0.000	0.000
SAMPLE 12	0.92	1.5	0.016	0.016	0.017	0.016
SAMPLE 13	0.86	1.1	0.015	0.015	0.015	0.016
SAMPLE 14 CCV2	3.01	1.3	0.051	0.051	0.052	0.052
SAMPLE 15 CCB2	0.01	73.9	0.000	0.000	0.000	0.000
SAMPLE 16	0.02	56.9	0.000	0.000	0.001	0.000
SAMPLE 17	0.03	69.7	0.001	0.000	0.001	0.000
SAMPLE 18	0.02	30.8	0.000	0.000	0.000	0.000
SAMPLE 19	0.02	99.9	0.000	0.001	-0.000	0.000
SAMPLE 20	0.95	1.5	0.017	0.017	0.016	0.017
SAMPLE 21	0.02	68.3	0.000	0.000	0.000	0.001
SAMPLE 22	0.03	95.9	0.001	0.000	0.000	0.001
SAMPLE 23	1.01	1.5	0.018	0.018	0.018	0.018
SAMPLE 24	0.98	1.2	0.017	0.017	0.017	0.018
SAMPLE 25	0.03	28.3	0.001	0.001	0.000	0.001
SAMPLE 26	3.22	0.7	0.055	0.055	0.054	0.055
SAMPLE 27	0.02	90.1	0.000	0.000	0.000	0.001
SAMPLE 28	0.05	7.5	0.001	0.001	0.001	0.001
SAMPLE 29	0.04	27.1	0.001	0.001	0.001	0.001
SAMPLE 30	0.04	14.1	0.001	0.001	0.001	0.001
SAMPLE 31	0.02	69.4	0.000	0.000	0.000	0.001
SAMPLE 32	0.03	68.8	0.000	0.000	0.001	0.000
PLE 33	0.04	47.2	0.001	0.001	0.001	0.000
SAMPLE 34	0.03	99.9	0.001	0.001	-0.000	0.001
SAMPLE 35	-0.02	73.7	-0.000	-0.000	-0.000	-0.000
SAMPLE 36	9.58	0.2	0.169	0.169	0.169	0.169
SAMPLE 37	-0.04	9.2	-0.001	-0.001	-0.001	-0.001
SAMPLE 38	3.18	0.2	0.054	0.055	0.054	0.054

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
MPLE 39	-0.03	13.2	-0.000	-0.000	-0.000	-0.001
ANK	0.00		-0.001	-0.001	-0.001	-0.001
SAMPLE 40	-0.01	54.6	-0.000	-0.000	-0.000	-0.000
SAMPLE 41	0.01	99.9	0.000	0.000	0.001	-0.001
SAMPLE 42	10.37	1.0	0.185	0.183	0.185	0.187
SAMPLE 43	0.01	99.9	0.000	0.000	-0.000	0.000
SAMPLE 44	0.06	42.9	0.001	0.001	0.001	0.001
SAMPLE 45	0.05	27.8	0.001	0.001	0.001	0.001
SAMPLE 46	0.10	21.4	0.002	0.002	0.001	0.002
SAMPLE 47	0.09	3.6	0.002	0.002	0.002	0.002
SAMPLE 48	0.08	21.0	0.001	0.002	0.001	0.001
SAMPLE 49	3.29	1.1	0.056	0.055	0.056	0.056
SAMPLE 50	3.17	0.5	0.054	0.054	0.054	0.054
SAMPLE 51	0.03	65.7	0.001	0.001	0.000	0.000
SAMPLE 52	10.61	0.4	0.190	0.189	0.190	0.190
SAMPLE 53	3.13	0.5	0.053	0.053	0.054	0.054
SAMPLE 54	0.02	99.9	0.000	0.000	0.001	-0.000

Sandy Brush 11/21/91



COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6694/6641/6670/6712
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6694-PBS		100	—	—	<1	<2.0
2	-1	0.096g Dry		1	2	3.8	7.9
3	-1A					15.6	RERUN
4	-1D					3.5	7.3
5	-1A					14.2	104%
6	-1S					14.5	30/105%
7	-2	0.074g				3.0	8.1
8	-3	0.078g				2.9	7.4
9	-4	0.070g				2.7	7.7
10	CCV (40)					42.0	105%
11	CCB					<1	<0.001
12	6694-PBW		50	—	—	<1	<0.001
13	-5	50		—	—	<2	<0.002
14	-5A			—	—	23.2	116% *
15	-5D			—	—	<1	<0.001
16	-5S			—	—	12.4	0.012/120%
17	6641/6670/6712 PBW		50			<1	<0.001
18	LCSW			1	2	24.1	96%
19	6641-1	50		—	—	<1	<0.001
20	-1A			—	—	12.0	120%
21	CCV (40)					41.0	105%
22	CCB					<1	<0.001
23	6641-1S	50	50	—	—	22.4	0.022/110%
24	-1SD			—	—	22.9	0.023/115%
25	6670-2			—	—	<1	<0.001

what is LCSW value?

50.3

COMMENTS: * post spiked w/ 20 µg/l

SPIKE LEVEL: 20 µg/l (21 µg/kg Dry) A: +10 µg/l

ANALYST	Ivan Unicoff	DATE: 11/22/91	PAGE Number: 3
REVIEWER	G Brown	DATE: 11-24-91	

[AWKSGFA1.FRM]

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6670/6712/6710
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6670-2A	50	50	—	—	11.9	~~119%~~
27	-3			—	—	<1	<0.001
28	6712-2			—	—	<1	<0.001
29	-2A			—	—	13.5	135%
30	CCV					43.7	109%
31	CCB					<1	<0.001
32	6670-2A			—	—	11.5	115%
33	6710-PBW		50	—	—	<1	<0.001
34	-1 DISS	50		—	—	<1	<0.001
35	-1A			—	—	12.0	120%
36	-1S			—	—	11.6	0.012/120%
37	-1SD			—	—	11.9	0.012/120%
38	-2			—	—	<1	<0.001
39	-3			—	—	<1	<0.001
40	-4			—	—	<1	<0.001
41	-5			—	—	<1	<0.001
42	-6 TOTAL			—	—	<1	<0.001
43	CCV (40)					40.1	100%
44	CCB					<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 10 ug/l A: +10 ug/l

ANALYST Ivan Chicatun	DATE: 11/22/91	PAGE Number: 4
VIEWER	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso. WA 98626 (206) 577-7222

K91-6670C

OPERATOR Ivan Unsecker
DATE 11/22/91 08:00
BATCH

PROGRAM 12 Se EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.003	0.004	0.002
STANDARD 1	5.0	7.3	0.008	0.008	0.008
STANDARD 2	30.0	1.0	0.054	0.053	0.054
STANDARD 3	40.0	2.2	0.072	0.074	0.071
STANDARD 4	50.0	0.3	0.092	0.091	0.092
SAMPLE 1 ICV	26.8	2.6	0.047	0.048	0.047
SAMPLE 2 CCV1	40.4	3.0	0.073	0.072	0.075
SAMPLE 3 CCB1	-0.3	99.9	-0.000	0.000	-0.001
SAMPLE 4	0.5	47.0	0.001	0.001	0.001
SAMPLE 5	0.2	71.7	0.000	0.000	0.000
SAMPLE 6	11.5	3.1	0.019	0.019	0.019
SAMPLE 7	-1.9	11.3	-0.003	-0.003	-0.003
SAMPLE 8	7.0	1.5	0.011	0.011	0.011
SAMPLE 9	39.2	0.6	0.071	0.071	0.071
SAMPLE 10	-0.4	99.9	-0.001	0.000	-0.002
SAMPLE 11	-10.0	1.3	-0.016	-0.016	-0.016
SAMPLE 12	-3.3	10.3	-0.005	-0.006	-0.005
SAMPLE 13	6.6	1.0	0.011	0.011	0.011
SAMPLE 14	-1.7	25.7	-0.003	-0.003	-0.002
SAMPLE 15	9.7	7.5	0.016	0.015	0.017
SAMPLE 16	41.1	0.1	0.075	0.075	0.074
SAMPLE 17	0.6	75.4	0.001	0.000	0.001
SAMPLE 18	-0.3	96.2	-0.000	-0.000	-0.001
SAMPLE 19	20.8	3.2	0.036	0.035	0.037
SAMPLE 20	28.8	1.9	0.051	0.052	0.051
SAMPLE 21	-0.4	0.0	-0.001	-0.001	-0.001
SAMPLE 22	-0.5	99.9	-0.001	-0.000	-0.002
SAMPLE 23	10.8	4.7	0.018	0.017	0.018
SAMPLE 24	9.8	6.3	0.016	0.015	0.017
SAMPLE 25	9.5	3.3	0.016	0.015	0.016
SAMPLE 26	-0.1	0.0	-0.000	-0.000	-0.000
SAMPLE 27	-0.2	16.0	-0.000	-0.000	-0.000
SAMPLE 28	-0.3	51.6	-0.000	-0.001	-0.000
SAMPLE 29	0.2	0.0	0.000	0.000	0.000
SAMPLE 30	38.6	1.4	0.070	0.069	0.071
SAMPLE 31	0.5	14.8	0.001	0.001	0.001
SAMPLE 32	OVER	0.2	0.650*	0.651*	0.649*
SAMPLE 33	OVER	1.8	0.666*	0.658*	0.675*

Ivan Wrecker
11/22/91

K91-6670 C

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
1PLE 34	OVER	2.9	0.248	0.253	0.243
1PLE 35	30.8	3.8	0.055	0.057	0.054
SAMPLE 36	39.6	1.1	0.072	0.072	0.071
SAMPLE 37	23.0	0.9	0.040	0.040	0.040
SAMPLE 38	31.3	2.8	0.056	0.057	0.055
SAMPLE 39	38.0	2.5	0.069	0.067	0.070
SAMPLE 40	-0.1	99.9	-0.000	0.000	-0.001
BLANK	0.0		-0.003	-0.004	-0.003
SAMPLE 1	-0.7	5.2	-0.001	-0.001	-0.001
SAMPLE 2	3.8	2.2	0.006	0.006	0.006
SAMPLE 3	15.6	5.1	0.026	0.027	0.025
SAMPLE 4	3.5	2.4	0.006	0.006	0.006
SAMPLE 5	14.2	4.1	0.024	0.024	0.023
SAMPLE 6	14.5	2.3	0.024	0.025	0.024
SAMPLE 7	3.0	0.0	0.005	0.005	0.005
SAMPLE 8	2.9	1.3	0.005	0.005	0.005
SAMPLE 9	2.7	59.8	0.004	0.003	0.006
SAMPLE 10 CCV2	42.0	1.6	0.076	0.075	0.077
SAMPLE 11 CCB2	-0.7	41.5	-0.001	-0.002	-0.001
SAMPLE 12	-0.3	99.9	-0.000	-0.001	0.000
SAMPLE 13	1.0	25.3	0.002	0.001	0.002
SAMPLE 14	23.2	2.7	0.040	0.039	0.041
SAMPLE 15	0.6	95.9	0.001	0.002	0.000
SAMPLE 16	12.4	3.4	0.020	0.021	0.020
SAMPLE 17 PB	-0.2	99.9	-0.000	0.000	-0.001
SAMPLE 18 LCS	24.1 1:2	2.1	0.042	0.041	0.043
SAMPLE 19	-0.1	99.9	-0.000	0.001	-0.002
SAMPLE 20	12.0	2.1	0.020	0.019	0.020
SAMPLE 21 CCV3	41.0	1.0	0.074	0.075	0.074
SAMPLE 22 CCB3	0.1	99.9	0.000	0.001	-0.001
SAMPLE 23	22.4	0.3	0.039	0.039	0.039
SAMPLE 24	22.9	0.5	0.040	0.040	0.039
SAMPLE 25 6670-2	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 26	11.9	0.0	0.020	0.020	0.019
SAMPLE 27 6670-3	0.4	99.9	0.001	-0.001	0.002
SAMPLE 28	0.7	16.6	0.001	0.001	0.001
SAMPLE 29	13.5	1.7	0.022	0.022	0.023
SAMPLE 30 CCV4	43.7	0.0	0.079	0.079	0.079
SAMPLE 31 CCB4	0.6	66.4	0.001	0.001	0.000
SAMPLE 32	11.5	20.3	0.019	0.022	0.016
SAMPLE 33	-0.2	66.5	-0.000	-0.000	-0.000
SAMPLE 34	0.5	0.0	0.001	0.001	0.001
SAMPLE 35	12.0	2.3	0.020	0.020	0.019
SAMPLE 36	11.6	5.2	0.019	0.018	0.020
SAMPLE 37	11.9	0.0	0.020	0.020	0.020
SAMPLE 38	-0.2	0.0	-0.000	-0.000	-0.000
SAMPLE 39	-0.2	24.1	-0.000	-0.000	-0.000
SAMPLE 40	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 41	-0.6	82.8	-0.001	-0.000	-0.001
SAMPLE 42	-0.5	65.3	-0.001	-0.000	-0.001
SAMPLE 43	40.1	3.1	0.073	0.071	0.074

K6670C

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # : 6633
ANALYSIS FOR: Tl	METHOD: GFAA	6593, 6516, 6631, 6641, 6694

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(ug/L or mg/Kg) Sample (actual)
1	ICV (100.7)			1	2	50.6	100%
2	CCV1 (40)	—	—	—	—	39.2	98%
3	CCB1	—	—	—	-	<1	<0.001
4	6593-PBS	—	50	1	1	<1	<0.2
5	1	0.25	50	1	2	1.1	0.4
6	1A	+	50	1	2	19.8	94%
7	6633 6516-PBS	—	100	1	1	<1	<0.2
8	6	.50	100	1	2	3.6	1.4
9	6A	.50	100	1	2	23.4	99%
10	6631-PBW	50	50	—	—	<1	<0.001
11	CCV 2	—	—	—	—	38.5	96%
12	CCB 2	—	—	—	—	<1	<0.001
13	2	50	50	1	1	~~1.5~~ <2	<0.002
14	2A	50	50	1	1	19.5	98%
15	6641-PBW	50	50	1	1	<1	<0.001
16	LCSW (100.9)	↓	↓	1	5	19.5	97%
17	1			1	1	<1	<0.001
18	1A			1	1	20.4	102%
19	1S			1	1	over Highest ABS	—
20	1SD	↓	↓	1	1	over ↓ ↓	—
21	6694-PBS		100	1	1	<1	<1.0
22	1	.096	100	1	2	1.4	2.9
23	ICV 3	—	—	—	—	38.7	97%
24	CCB 3	—	—	—	—	<1	<0.001
25	1A	.096	100	1	2	20.1	94%

COMMENTS:

SPIKE LEVEL: 6641 @ 100ug/L or 0.10 mg/L A: +20 —

ANALYST	DATE: 11-22-91	PAGE NUMBER: 1
REVIEWER	DATE:	

CASWORKSHEET.FRM

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: Tl	METHOD: GFAA	6694 6685 6670

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6694-1d	.096	100	1	2	<1	<2.1
27	~~1d~~ 1S	.096	100	1	2	48.1	100.2 | 93%
28	~~1S~~ 2	.074	100	1	2	<1	<3.0
29	3	.078	100	1	2	<1	<3.0
30	4	.070	100	1	2	<1	<3.0
31	PBW-6694	50	50	1	1	<1	~~<3.0~~ 0.001
32	5	50	50	1	1	<1	<0.001
33	5D	↓	↓	1	1	<1	<0.001
34	5S	↓	↓	1	1	48.5	0.048 | 96%
35	CCV 4	—	—	—	—	37.2	93%
36	CCB 4	—	—	—	—	<1	<0.001
37	6685-PBS	1.0 As Rec'd	100	—	—	<1	<0.1
38	1	↓	100	1	2	<1	<0.2
39	1A	↓	100	1	2	19.1	96%
40	6670-PBW	50	50	1	1	<1	<0.001
41	2	↓	↓	↓	↓	<1	<0.001
42	2A	↓	↓	↓	↓	19.4	97%
43	3	↓	↓	↓	↓	<1	<0.001
44	CCV 5	—	—	—	—	37.1	93%
45	CCB 5	—	—	—	—	<1	<0.001
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6694 @ ~~100mg/L~~ 50mg/L or ~~104.2mg/Kg~~ .050mg/L A: +20

ANALYST: [signature]	DATE: 11-22-91	PAGE NUMBER: 2
REVIEWER: [signature]	DATE: 11-24-91	

[AWKSGFAZ.FRM]

A6670C

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: TI	METHOD: GFAA	6712, 6641 6748, 6633

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6712-PBW	50	50	1	1	<1	<0.001
2	2	50	50	↓	↓	<1	<0.001
3	2A	50	50	↓	↓	18.4	92%
4	6641-~~55~~ 1S	50	50	1	2	43.8	0.088 | 88%
5	~~5d~~ 1Sd	↓	↓	1	2	45.5	0.091 | 91%
6	6748-PB		10	1	1	<1	<0.1
7	1	.123 As Rec'd	10	1	2	<1	<0.2
8	1A	.121	↓	1	2	18.1	90%
9	1S	.125	↓	1	2	20.8	3.3 | 82%
10	CCV6	—	—	—	—	37.2	93%
11	CCB6	—	—	—	—	<1	<0.001
12	6633-PBS	- with 6516 -		1	1	- w/6516 -	—
13	4	1.0 As Rec'd	100	1	2	2.9	0.6
14	4A	↓	↓	↓	↓	22.1	96%
15	4S	↓	↓	↓	↓	46.9	9.38 | 94%
16	4Sd	↓	↓	↓	↓	47.5	9.5 | 95%
17	8	↓	↓	↓	↓	2.8	0.6
18	12	↓	↓	↓	↓	3.0	0.6
19	16	↓	↓	↓	↓	2.7	0.6
20	20	↓	↓	↓	↓	2.1	0.4
21	CCV7	—	—	—	—	38.2	96%
22	CCB7	—	—	—	—	<1	<0.001
23							
24							
25							

COMMENTS: 6748 @ 50mg/L or → 4mg/kg → 0.10mg/L 6633 @ ~~50mg/L~~ 100mg/L or ~~5mg/kg~~ 10mg/Kg

SPIKE LEVEL: 6641 @ 100mg/L OR ~~0.010mg/L~~ A: +20

ANALYST	DATE: 11-22-91	PAGE NUMBER:
REVIEWER	DATE:	3

(AWCSGFAT.FRM)

00198

E91-66720C

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso. WA 98626 (206) 577-7222

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.002	0.001	0.003
STANDARD 1	10.0	5.4	0.019	0.018	0.020
STANDARD 2	20.0	3.3	0.037	0.038	0.036
STANDARD 3	40.0	0.5	0.070	0.070	0.070
STANDARD 4	60.0	0.7	0.099	0.098	0.099
SAMPLE 1 ICV	50.6 1:2	0.8	0.086	0.085	0.086
SAMPLE 2 CCV1	39.2	1.0	0.069	0.068	0.069
SAMPLE 3 CCB1	0.4	99.9	0.001	0.003	-0.001
SAMPLE 4	0.9	35.3	0.002	0.001	0.002
SAMPLE 5	1.1	17.1	0.002	0.002	0.002
SAMPLE 6	19.8	0.2	0.036	0.036	0.036
SAMPLE 7	0.4	40.3	0.001	0.001	0.001
SAMPLE 8	3.6	6.5	0.007	0.007	0.007
SAMPLE 9	23.4	1.4	0.043	0.042	0.043
SAMPLE 10	0.3	99.9	0.001	0.000	0.001
SAMPLE 11 CCV2	38.5	1.4	0.067	0.068	0.067
SAMPLE 12 CCB2	0.7	28.3	0.001	0.002	0.001
SAMPLE 13	1.5	28.7	0.003	0.003	0.002
SAMPLE 14	19.5	2.2	0.036	0.037	0.035
SAMPLE 15 PB	-0.5	99.9	-0.001	0.001	-0.003
SAMPLE 16 LCS	19.5 1:5	3.6	0.036	0.035	0.037
SAMPLE 17	0.2	99.9	0.000	-0.000	0.001
SAMPLE 18	20.4	0.4	0.038	0.038	0.037
SAMPLE 19	OVER	0.5	0.148	0.148	0.147
SAMPLE 20	OVER	1.3	0.147	0.145	0.148
SAMPLE 21	0.9	0.0	0.002	0.002	0.002
SAMPLE 22	1.4	26.8	0.003	0.003	0.002
SAMPLE 23 CCV3	38.7	1.4	0.068	0.067	0.069
SAMPLE 24 CCB3	0.4	19.1	0.001	0.001	0.001
SAMPLE 25	20.9	5.2	0.038	0.037	0.040
SAMPLE 26	0.2	64.1	0.000	0.001	0.000
SAMPLE 27	48.1	0.8	0.082	0.082	0.083
SAMPLE 28	0.6	19.6	0.001	0.001	0.001
SAMPLE 29	-0.3	99.9	-0.001	0.000	-0.001
SAMPLE 30	0.2	99.9	0.000	0.001	-0.001
SAMPLE 31	0.1	99.9	0.000	0.001	-0.001
SAMPLE 32	-0.7	75.7	-0.001	-0.002	-0.001
SAMPLE 33 dup	0.0	99.9	0.000	0.001	-0.001
SAMPLE 34	48.5	0.0	0.083	0.083	0.083
SAMPLE 35 CCV4	37.2	1.1	0.065	0.066	0.065
SAMPLE 36 CCB4	0.1	99.9	0.000	0.000	0.001

K91-6670C

	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	19.1	0.0	0.035	0.035	0.035
SAMPLE 40	0.3	50.0	0.001	0.000	0.001
SAMPLE 41 6670-2	-0.1	99.9	-0.000	0.000	-0.000
SAMPLE 42	19.4	0.5	0.036	0.036	0.036
SAMPLE 43 6670-3	-0.3	99.9	-0.001	-0.000	-0.001
SAMPLE 44 CCV5	37.1	2.3	0.065	0.066	0.064
SAMPLE 45 CCB5	0.1	99.9	0.000	-0.002	0.002

11-22-91

11/22/91
11/22/91

00200

Varian SpectrAA 300/400 Zeeman Report

umbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

K91-666-10C

11-22-91

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.002
SAMPLE 1	-1.2	7.0	-0.002	-0.002	-0.002
SAMPLE 2	-0.4	99.9	-0.001	-0.002	0.001
SAMPLE 3	18.4	1.2	0.034	0.034	0.034
SAMPLE 4	43.8	1.9	0.076	0.075	0.077
SAMPLE 5	45.5	1.6	0.078	0.077	0.079
SAMPLE 6	-0.8	79.0	-0.002	-0.002	-0.001
SAMPLE 7	-0.3	99.9	-0.001	-0.002	0.001
SAMPLE 8	18.1	0.5	0.034	0.034	0.034
SAMPLE 9	20.8	6.1	0.038	0.040	0.037
SAMPLE 10	37.2	1.7	0.065	0.066	0.065
1PLE 11	-0.5	0.0	-0.001	-0.001	-0.001

thod: EPACLP1 Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Avge	.0168	-.0009	.0011	.0042	.0009	.0051	.0000
#1	.0167	-.0006	.0016	.0043	.0009	.0051	.0000
#2	.0169	-.0011	.0007	.0041	.0010	.0050	.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Avge	.0834	.0008	-.0001	.0011	.0316	.0010	.0004
#1	.0831	.0010	-.0004	.0011	.0317	.0010	.0003
#2	.0836	.0006	.0001	.0010	.0314	.0010	.0004

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Avge	.0003	.0001	.0004	.0004	.3536	-.0013	-.0001
#1	.0005	.0001	.0003	.0010	.3536	-.0006	.0000
#2	.0001	.0000	.0004	-.0003	.3537	-.0020	-.0003

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Avge	.1083	-.0026	.0002	.0002	.0483	.0104	.0009
#1	.1074	-.0051	.0001	.0003	.0487	.0101	.0009
#2	.1091	-.0001	.0003	.0001	.0479	.0106	.0009

lem	Tl1908	Li6707	Sr4215
Avge	.0030	.0270	.0000
#1	.0027	.0271	.0000
#2	.0032	.0269	.0000

'thod: EPACLP1 Standard: STD3

Elem	Al3082	As1936	Be3130	Ca3179	Co2286	Cu3247	Fe2599
Avge	2.657	.4219	.4640	3.312	.2443	.4153	4.623
#1	2.657	.4209	.4640	3.311	.2441	.4157	4.621
#2	2.657	.4230	.4640	3.312	.2444	.4149	4.626

Elem	Pb2203	Mg2795	Mg3832	Mn2576	Mo2020	Se1960	V_2924
Avge	2.229	4.598	.4723	.3831	.2353	.3471	.3647
#1	2.227	4.595	.4725	.3830	.2357	.3496	.3646
#2	2.231	4.601	.4721	.3831	.2349	.3446	.3649

Elem	Zn2138	Ti3349
Avge	1.091	.4371
#1	1.091	.4369
#2	1.092	.4374

thod: EPACLP1 Standard: STD2

Elem	Sb2068	Ba4934	Cd2288	Cr2677	Ni2316	K_7665	Ag3280
Avge	1.871	.2859	.2059	4.980	.2230	1.521	.3273
#1	1.875	.2864	.2063	4.982	.2230	1.521	.3274
#2	1.867	.2854	.2056	4.979	.2230	1.520	.3271

Elem	Na5889
Avge	13.71
#1	13.71
#2	13.72

thod: EPACLP1 Standard: STD4

Elem	B_2496	Sn1899	P_2149	Si2881	T11908	Li6707
Avge	.8214	11.96	4.061	8.117	.7862	2.785
#1	.8233	11.96	4.062	8.131	.7847	2.803
#2	.8196	11.96	4.061	8.103	.7878	2.767

thod: EPACLP1 Sample Name: ICV Operator: WGM
un Time: 11/22/91 10:42:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.973	1.040	-.0082	2.057	.4862	.0324	.5304
#1	2.007	1.057	.0072	2.064	.4874	.0341	.5298
#2	1.939	1.023	-.0237	2.050	.4849	.0306	.5309

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.76	.5181	.4895	.5189	2.005	5.142	24.83
#1	49.78	.5216	.4977	.5242	2.011	5.166	24.87
#2	49.74	.5147	.4813	.5135	1.999	5.117	24.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.71	.5064	-.0009	.5136	52.28	.0048	.4917
#1	25.84	.5085	-.0003	.5188	52.41	.0085	.4980
#2	25.58	.5043	-.0015	.5085	52.16	.0011	.4853

lem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	52.64	-.0078	.5316	3.054	.1851	.0194	.0007
#1	52.83	-.0058	.5324	3.058	.1780	.0474	.0007
#2	52.45	-.0097	.5308	3.051	.1922	-.0086	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0482	.0197	.0159
#1	.0249	.0207	.0163
#2	.0715	.0186	.0155

hod: EPACLP1 Sample Name: ICV-AS,SE Operator: WGM
Run Time: 11/22/91 10:45:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	.0068	4.699	.0008	-.0000	.0044	.0033
#1	.0117	.0038	4.674	.0008	-.0002	.0044	.0030
#2	.0030	.0099	4.723	.0008	.0002	.0044	.0035

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0144	.0024	.0012	.0009	.0042	.0042	.0104
#1	.0170	.0010	.0018	.0009	.0044	-.0006	.0120
#2	.0117	.0039	.0006	.0009	.0040	.0090	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.0009	-.0015	-.0016	.0643	5.133	.0011
#1	-.0004	.0009	-.0033	-.0061	.0092	5.148	.0009
#2	.0240	.0009	.0003	.0029	.1194	5.117	.0013

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0333	.0051	.0004	.0010	.0285	.0154	.0000
#1	.0362	.0037	-.0006	.0016	.0249	.0152	.0000
#2	.0304	.0064	.0014	.0003	.0320	.0156	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0009	.0018	.0000
#1	-.0023	.0021	.0000
#2	.0041	.0016	.0000

Method: EPACLP1 Sample Name: CCV1 Operator: WGM
Run Time: 11/22/91 10:52:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.897	4.898	.9883	.4952	.4819	.0122	.5010
#1	4.893	4.906	.9782	.4952	.4819	.0149	.5026
#2	4.900	4.889	.9985	.4952	.4819	.0096	.4994

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.849	4.955	.4823	.4886	4.935	4.862	4.888
#1	4.852	4.953	.4829	.4893	4.935	4.857	4.886
#2	4.846	4.957	.4817	.4879	4.934	4.867	4.889

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.873	.4866	.4877	.4902	24.74	.9780	.4967
#1	4.875	.4862	.4868	.4861	24.69	.9956	.4984
#2	4.871	.4870	.4886	.4944	24.79	.9603	.4949

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.86	-.0508	.4941	2.446	.1104	.0170	.4908
#1	24.87	-.0524	.4945	2.447	.1068	.0161	.4905
#2	24.85	-.0491	.4937	2.446	.1139	.0178	.4912

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2771	.0003	.0023
#1	-.2748	.0000	.0023
#2	-.2793	.0005	.0023

Method: EPACLP1 Sample Name: CCB1 Operator: WGM
Run Time: 11/22/91 10:55:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0035	L.0049	L-.0010	L.0003	L.0002	.0009	L.0004
#1	L.0014	L.0053	L-.0041	L.0003	L.0002	.0009	L.0008
#2	L-.0084	L.0045	L.0021	L.0003	L.0002	.0009	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	.0020	L-.0012	L-.0002	L.0006	L.0054	.0023
#1	L.0002	.0022	L.0006	L.0002	L.0012	L.0039	.0030
#2	L-.0011	L.0019	L-.0029	L-.0005	L.0000	L.0070	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	L.0000	L-.0015	L-.0013	L-.1775	L.0008	L-.0002
#1	L-.0050	L.0002	L-.0003	L-.0029	L-.2663	L.0008	L.0009
#2	L.0042	L-.0002	L-.0027	L.0003	L-.0887	L.0008	L-.0013

lem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0021	.0078	L.0002	L.0007	-.0018	-.0009	.0003
#1	L-.0005	.0037	L.0006	L.0010	.0036	.0059	.0000
#2	L.0047	.0118	L-.0002	L.0003	-.0071	-.0077	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0014	-.0013	.0001
#1	L-.0059	-.0005	.0002
#2	L.0032	-.0021	.0000

thod: EPACLP1 Sample Name: ICSAB Operator: WGM
. .n Time: 11/22/91 10:58:44
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	526.4	.0095	4.898	.4871	.4554	.2502	.9042
#1	526.9	.0297	4.911	.4876	.4560	.2494	.9036
#2	525.9	-.0107	4.885	.4866	.4548	.2511	.9048

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	465.2	.4773	.4168	.5361	176.7	4.431	241.4
#1	465.0	.4783	.4159	.5361	176.7	4.414	241.3
#2	465.4	.4763	.4176	.5361	176.8	4.448	241.6

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	484.1	.4686	-.0189	.8439	-1.325	4.498	.8871
#1	484.2	.4682	-.0155	.8461	-1.337	4.528	.8851
#2	483.9	.4690	-.0222	.8416	-1.313	4.468	.8890

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.779	-.0484	.4703	1.143	3.700	.1654	.0072
#1	1.779	-.0518	.4711	1.143	3.741	.1641	.0072
#2	1.779	-.0449	.4695	1.143	3.658	.1667	.0072

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0214	.0849	.4341
#1	-.0075	.0844	.4349
#2	.0502	.0855	.4332

Method: EPACLP1 Sample Name: CCV2 Operator: PN
Run Time: 11/22/91 14:26:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.928	4.918	.9995	.5129	.4993	.0096	.5172
#1	4.937	4.926	.9906	.5165	.5038	.0079	.5191
#2	4.919	4.910	1.008	.5094	.4948	.0114	.5153

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.066	5.129	.4989	.4898	5.123	4.983	5.071
#1	5.098	5.161	.5015	.4920	5.154	5.011	5.099
#2	5.034	5.096	.4963	.4876	5.092	4.955	5.043

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.115	.5061	.5026	.5143	24.73	1.007	.5081
#1	5.125	.5091	.5068	.5104	24.86	1.036	.5103
#2	5.105	.5031	.4983	.5181	24.61	.9772	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	22.61	-.0485	.4979	2.512	.1468	.0181	.5039
#1	Q22.46	-.0479	.4996	2.527	.1495	.0165	.5069
#2	22.77	-.0491	.4962	2.498	.1442	.0196	.5010

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2501	.0070	.0025
#1	-.2680	.0067	.0027
#2	-.2323	.0073	.0023

Method: EPACLP1 Sample Name: CCB 2 Operator: WGM
Run Time: 11/22/91 14:44:49
Comment:
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0128	L.0065	L-.0055	L.0005	L.0002	.0061	L.0001
#1	.0128	L.0077	L.0007	L.0005	L.0002	.0061	L.0007
#2	.0127	L.0053	L-.0117	L.0005	L.0002	.0061	L-.0005

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0031	L.0003	L.0004	L.0003	L.0001	.0039
#1	.0097	.0032	L.0012	L.0006	L.0008	L.0021	.0042
#2	.0084	.0030	L-.0006	L.0002	L-.0002	L-.0019	.0036

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0001	L.0000	L-.0006	L-.0003	L.3026	L-.0021	L.0009
#1	L.0068	L.0002	L-.0009	L-.0029	L.3770	L-.0074	L.0013
#2	L-.0069	L-.0002	L-.0003	L.0022	L.2283	L.0033	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0944	.0043	L-.0004	L.0010	.0249	.0093	.0000
#1	.0883	.0007	L-.0006	L.0010	.0249	.0099	.0000
#2	.1005	.0079	L-.0002	L.0010	.0249	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0055	.0060	.0000
#1	L-.0078	.0062	.0000
#2	L-.0032	.0057	.0000

Cont from 6480

Analysis Report Fri 11-22-91 03:27:31 PM page 1

Method: EPACLP1 Sample Name: PBW 6641... Operator: WGM
Run Time: 11/22/91 15:25:52
Comment: 6670, 6712, 6729, 6642, 6661. WATER, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0098	L.0046	L-.0106	L-.0000	L.0002	.0079	L.0009
#1	L.0041	L.0015	L-.0095	L.0003	L.0002	.0096	L.0016
#2	.0154	L.0076	L-.0116	L-.0003	L.0002	.0061	L.0002

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0042	L-.0001	L.0006	L-.0002	L-.0011	L.0029	L.0019
#1	L.0046	L-.0010	L-.0000	L-.0005	L-.0012	L-.0019	.0020
#2	L.0038	L.0007	L.0012	L.0002	L-.0009	L.0077	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0007	L-.0000	L-.0009	L.0003	L-.0704	L.0029	L-.0007
#1	L-.0265	L-.0002	L-.0009	L-.0003	L-.1622	L.0033	L-.0013
#2	L.0279	L.0002	L-.0009	L.0010	L.0214	L.0025	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	L.0399	.0040	L.0008	L.0000	.0071	.0542	.0003
#1	L.0378	.0067	L.0002	L.0003	.0214	.0535	.0007
#2	L.0420	.0013	L.0014	L-.0003	-.0071	.0548	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0191	.0052	.0000
#1	L-.0333	.0052	.0000
#2	L-.0050	.0052	.0000

Method: EPACLP1 Sample Name: LCSW 6641 Operator: WGM
Run Time: 11/22/91 15:28:40
Comment: WATER 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.010	1.039	Q.0060	2.134	.5122	.0315	.5263
#1	2.003	1.041	Q.0087	2.126	.5109	.0324	.5256
#2	2.016	1.037	Q.0032	2.142	.5136	.0306	.5271

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.20	.5187	.4948	.5196	2.039	5.044	25.21
#1	50.18	.5181	.4954	.5180	2.037	5.061	25.20
#2	50.22	.5193	.4942	.5211	2.040	5.028	25.22

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.96	.5150	-.0018	.5233	51.16	Q.0057	.4914
#1	26.86	.5148	-.0015	.5226	51.05	Q.0266	.4910
#2	27.06	.5152	-.0021	.5239	51.28	Q-.0152	.4919

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	47.57	-.0200	.5296	2.993	.1798	.0908	.0003
#1	47.37	-.0187	.5281	2.997	.1869	.0901	.0000
#2	47.77	-.0213	.5312	2.989	.1727	.0914	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.0219	.0212	.0169
#1	-.0200	.0207	.0168
#2	-.0237	.0218	.0170

Method: EPACLP1 Sample Name: 6641-1 Operator: WGM
Run Time: 11/22/91 15:31:46
Comment: WATER, 50/50, DISSOLVED
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0349	L.0046	L.0030	1.098	L-.0002	.3894	L-.0000
#1	.0360	L-.0007	L.0050	1.097	L-.0002	.3841	L-.0001
#2	.0339	L.0100	L.0010	1.098	L-.0002	.3946	L.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.72	L-.0017	L.0018	L.0000	.0352	L.0093	H77.30
#1	27.82	L-.0017	L.0012	L.0002	.0365	L.0019	H77.50
#2	27.62	L-.0017	.0023	L-.0002	.0340	L.0167	H77.10

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.15	.5036	.0030	L.0093	2.268	L-.0032	L-.0006
#1	89.18	.5045	L.0027	.0151	2.451	L.0017	L.0000
#2	89.12	.5026	.0033	L.0035	2.084	L-.0082	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	132.5	.0115	.0021	.0209	.3435	15.53	.0003
#1	132.2	.0109	L.0018	.0206	.3524	15.56	.0007
#2	132.8	.0121	.0025	.0213	.3346	15.50	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L.0169	.0243	.4510
#1	L-.0392	.0249	.4506
#2	.0729	.0238	.4515

Method: EPACLP1 Sample Name: CCV 3 Operator: WGM
Run Time: 11/22/91 15:34:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.152	5.033	1.044	.5335	.5234	.0122	.5328
#1	5.166	5.061	1.043	.5322	.5229	.0096	.5370
#2	5.138	5.006	1.045	.5347	.5238	.0149	.5286

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.258	5.277	.5137	.5103	5.316	5.116	5.310
#1	5.281	5.293	.5160	.5107	5.323	5.138	5.322
#2	5.235	5.260	.5113	.5100	5.308	5.094	5.297

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.415	.5250	.5211	.5236	25.55	1.051	.5235
#1	5.421	.5255	.5220	.5264	25.61	1.057	.5270
#2	5.409	.5244	.5202	.5207	25.49	1.044	.5200

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	23.34	-.0439	.5149	2.598	.1379	.0262	.5275
#1	23.31	-.0422	.5154	2.608	.1246	.0289	.5282
#2	23.37	-.0455	.5144	2.589	.1513	.0236	.5269

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2593	.0080	.0028
#1	-.2711	.0088	.0029
#2	-.2474	.0073	.0027

Method: EPACLP1 Sample Name: CCB 3 Operator: WGM
Run Time: 11/22/91 15:37:27
Comment:
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0027	L-.0015	L-.0068	L.0005	L.0002	.0026	L-.0006
#1	L-.0035	L.0015	L-.0088	L.0008	L.0002	.0009	L-.0019
#2	L-.0019	L-.0046	L-.0047	L.0003	L.0002	.0044	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0029	L-.0004	L-.0003	L-.0003	L-.0009	L-.0055	.0107
#1	.0069	L.0007	L-.0006	L-.0005	L.0000	L-.0064	.0126
#2	L-.0011	L-.0016	L.0000	L-.0002	L-.0019	L-.0045	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0274	L-.0000	L-.0009	L-.0019	L-.1928	L.0016	L-.0009
#1	L-.0207	L.0002	L-.0009	L-.0016	L.0031	L-.0033	L-.0013
#2	L-.0342	L-.0002	L-.0009	L-.0022	L-.3887	L.0066	L-.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0257	.0012	L-.0018	L.0013	.0142	.0031	-.0003
#1	L.0310	.0001	L-.0022	L.0016	.0107	.0055	-.0007
#2	L.0205	.0022	L-.0014	L.0010	.0178	.0007	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0155	.0044	.0000
#1	L-.0169	.0052	.0000
#2	L-.0141	.0036	.0000

Method: EPACLP1 Sample Name: CCV 4 Operator: WGM
Run Time: 11/22/91 15:45:27
Comment:
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.072	5.029	1.012	.5130	.5085	.0096	.4950
#1	5.048	4.988	1.017	.5090	.5048	.0131	.4925
#2	5.096	5.070	1.008	.5170	.5122	.0061	.4975

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.968	5.010	.4988	.5106	5.036	4.979	5.012
#1	4.960	4.991	.4973	.5061	5.017	4.951	4.996
#2	4.977	5.030	.5003	.5151	5.055	5.008	5.027

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.049	.5015	.5063	.5051	25.03	1.003	.4992
#1	5.034	.4993	.5056	.5038	24.88	.9887	.4972
#2	5.065	.5038	.5069	.5063	25.18	1.018	.5011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.63	-.0533	.5041	2.500	.1130	.0216	.5090
#1	25.41	-.0509	.5027	2.496	.1175	.0187	.5056
#2	25.85	-.0557	.5055	2.503	.1086	.0244	.5124

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2978	.0060	.0026
#1	-.2977	.0062	.0025
#2	-.2978	.0057	.0027

Method: EPACLP1 Sample Name: CCB 4 Operator: WGM
Run Time: 11/22/91 15:48:55
Comment:
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0048	L.0096	L.0070	L-.0002	L.0002	.0009	L.0006
#1	L.0027	L.0084	L-.0021	L.0001	L.0002	-.0026	L.0014
#2	L.0070	.0108	L.0162	L-.0004	L.0002	.0044	L-.0003

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0052	.0023	L-.0003	L.0009	L-.0027	L.0057	.0025
#1	L-.0045	.0030	L-.0000	L.0009	L-.0022	L.0087	.0026
#2	L-.0058	L.0016	L-.0006	L.0009	L-.0032	L.0027	.0023

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0162	L.0002	L-.0003	L-.0010	L-.4536	L.0091	L.0004
#1	L.0235	L.0002	L-.0003	L-.0022	L-.4072	L.0216	L.0004
#2	L.0089	L.0002	L-.0003	L.0003	L-.5000	L-.0035	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0051	.0072	L.0000	L.0010	-.0018	.0099	.0000
#1	L.0073	.0055	L.0002	L.0010	.0018	.0112	.0000
#2	L.0030	.0088	L-.0002	L.0010	-.0053	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0392	.0034	.0000
#1	L-.0196	.0036	.0000
#2	L-.0588	.0031	.0000

Method: EPACLP1 Sample Name: 6641-1-SD Operator: WGM
Run Time: 11/22/91 15:52:09
Comment: DISSOLVED, 50/50
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.938	.9703	L.0064	5.065	.0977	2.313	.0914
#1	3.946	.9727	L.0040	5.072	.0980	2.325	.0921
#2	3.929	.9680	L.0088	5.057	.0974	2.302	.0906

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.74	.3781	.9333	.4916	1.960	.9366	H74.63
#1	26.73	.3774	.9345	.4927	1.962	.9280	H74.66
#2	26.75	.3788	.9321	.4906	1.958	.9451	H74.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.15	1.434	1.876	.9370	1.300	L-.0068	.0902
#1	86.24	1.435	1.876	.9421	1.250	L-.0135	.0900
#2	86.06	1.433	1.875	.9319	1.349	L-.0001	.0904

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	152.1	.0046	.9305	.9335	.3631	15.58	.0000
#1	151.9	.0076	.9328	.9345	.3631	15.60	.0000
#2	152.3	.0016	.9282	.9325	.3631	15.57	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0110	.0215	.4618
#1	L.0018	.0218	.4624
#2	L-.0237	.0212	.4613

Method: EPACLP1 Sample Name: 6641-1-S Operator: WGM
Run Time: 11/22/91 15:57:11
Comment: DISSOLVED, 50/50
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.991	1.015	L.0103	5.058	.0988	2.366	.0966
#1	3.981	1.020	L-.0032	5.033	.0983	2.348	.0965
#2	4.001	1.011	L.0238	5.084	.0993	2.384	.0967

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.77	.3954	.9655	.4914	2.009	.9820	H76.41
#1	27.69	.3944	.9646	.4888	2.004	.9837	H76.22
#2	27.85	.3964	.9664	.4940	2.014	.9804	H76.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.22	1.475	1.944	.9760	2.249	L.0085	.0943
#1	85.76	1.471	1.937	.9769	2.333	L.0030	.0936
#2	86.67	1.479	1.950	.9750	2.166	L.0140	.0950

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	148.7	.0046	.9540	.9751	.3960	15.85	.0000
#1	147.6	.0019	.9503	.9725	.4147	15.80	.0000
#2	149.7	.0073	.9577	.9778	.3773	15.89	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0313	.0243	.4575
#1	L-.0180	.0243	.4557
#2	L-.0446	.0243	.4594

cont from 6641

Analysis Report Fri 11-22-91 04:01:13 PM page 1

Method: EPACLP1 Sample Name: 6670-2 Operator: WGM
Run Time: 11/22/91 15:59:35
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB of 6641 = KP WGM 11/22/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0551	L.0058	L.0057	.2691	L-.0003	.2109	L.0003
#1	.0583	L.0046	L.0013	.2681	L-.0005	.2109	L.0014
#2	.0519	L.0069	L.0101	.2701	L-.0002	.2109	L-.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	33.48	L-.0019	L.0015	.0122	.9342	L-.0010	49.59
#1	33.61	L-.0016	.0030	.0127	.9337	L.0026	49.58
#2	33.35	L-.0022	L-.0000	.0117	.9348	L-.0047	49.59

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.01	.0571	L.0010	.0111	.5638	L-.0122	L-.0004
#1	53.73	.0573	L.0010	L.0092	.7494	L-.0017	L.0002
#2	54.29	.0569	L.0010	.0130	L.3783	L-.0226	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	262.6	-.0006	L.0013	.0083	.4014	11.55	.0013
#1	260.4	-.0055	L.0013	.0089	.4325	11.52	.0007
#2	264.8	.0043	L.0013	.0076	.3702	11.57	.0020

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0462	.0181	.3921
#1	L-.0543	.0192	.3898
#2	L-.0380	.0171	.3945

Method: EPACLP1 Sample Name: 6670-3 Operator: WGM
Run Time: 11/22/91 16:01:45
Comment: DISSOLVED, 50/50
'e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5086	L.0053	L-.0053	.1792	L-.0000	.3062	L.0016
#1	.5377	L.0084	L-.0098	.1809	L.0002	.3124	L.0023
#2	.4795	L.0022	L-.0008	.1774	L-.0002	.3001	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.05	L.0018	.0023	.0057	1.552	L.0081	33.82
#1	25.99	.0023	L.0011	.0052	1.570	L.0061	33.85
#2	26.11	L.0014	.0035	.0062	1.534	L.0101	33.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.64	.9948	L.0004	.0155	3.251	L.0164	L-.0007
#1	35.81	.9957	L.0016	.0130	3.062	L.0072	L-.0014
#2	35.47	.9938	L-.0009	.0181	3.440	L.0257	L-.0001

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
'ge	126.2	.0110	.0029	.0092	.2385	13.00	.0252
#1	127.6	.0070	.0021	.0089	.2385	13.14	.0262
#2	124.8	.0151	.0037	.0095	.2385	12.86	.0242

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0210	.0166	.3050
#1	L-.0247	.0161	.3073
#2	L-.0173	.0171	.3027

Cont From 6610

Analysis Report Fri 11-22-91 04:06:06 PM page 1

Method: EPACLP1 Sample Name: 6712-2 Operator: WGM
Run Time: 11/22/91 16:04:27
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB ~ 6641 = N.D. WGM 11/23/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2673	.0127	L-.0006	.1213	L-.0002	.5959	L.0004
#1	.2774	.0115	L-.0094	.1218	L-.0002	.6011	L.0009
#2	.2571	.0138	L.0082	.1208	L-.0002	.5906	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.11	.0088	L-.0000	.0094	.5713	.0229	33.83
#1	14.15	.0076	L-.0006	.0092	.5727	.0209	33.89
#2	14.08	.0099	L.0006	.0096	.5700	.0249	33.77

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.54	.1250	.0079	.0301	5.332	L.0008	L-.0014
#1	35.55	.1256	.0072	.0263	5.314	L-.0050	L-.0016
#2	35.53	.1245	.0085	.0339	5.351	L.0067	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	90.89	.0078	.0060	.0093	.2705	14.55	.0147
#1	90.86	.0082	.0060	.0090	.2723	14.60	.0138
#2	90.93	.0073	.0060	.0096	.2688	14.49	.0157

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0868	.0168	.4130
#1	L-.1178	.0166	.4135
#2	L-.0558	.0171	.4125

cont From 6712

Analysis Report Fri 11-22-91 04:09:53 PM page 1

Method: EPACLP1 Sample Name: 6729-1 Operator: WGM
Run Time: 11/22/91 16:08:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB w/ 6641 = N.D. WGM 11/4/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0437	.0248	L.0056	1.858	L-.0002	1.103	L.0021
#1	.0440	.0233	L-.0026	1.858	L-.0002	1.107	L.0015
#2	.0434	.0264	L.0137	1.859	L-.0002	1.100	L.0026

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.05	.0027	.0051	L.0005	1.454	.0368	H104.0
#1	92.16	.0023	.0054	L.0006	1.455	.0322	H104.1
#2	91.95	.0031	.0048	L.0003	1.453	.0414	H104.0

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.6	.8637	.0075	.0130	16.09	L.0029	L-.0007
#1	126.6	.8641	.0066	L.0085	16.11	L.0159	L-.0005
#2	126.7	.8633	.0085	.0174	16.08	L-.0100	L-.0009

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	149.4	.0090	.0068	.0082	.5331	23.74	.0036
#1	149.5	.0130	.0068	.0082	.5268	23.75	.0033
#2	149.4	.0049	.0068	.0082	.5393	23.73	.0039

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0500	.0546	1.409
#1	L-.0706	.0549	1.408
#2	L-.0295	.0544	1.410

Method: EPACLP1 Sample Name: 6729-2 Operator: WGM
Run Time: 11/22/91 16:10:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0532	.0167	L.0261	.6563	L.0002	.9423	L.0020
#1	.0535	.0194	L.0291	.6548	L.0002	.9458	.0030
#2	.0530	.0139	L.0231	.6578	L.0002	.9388	L.0011

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.12	L-.0004	.0021	.0227	1.674	.0219	H85.99
#1	54.04	L.0006	.0030	.0228	1.674	.0255	H85.91
#2	54.20	L-.0014	L.0012	.0225	1.675	L.0183	H86.07

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.5	.6898	.0160	L.0070	18.44	L-.0072	L-.0000
#1	100.2	.6889	.0147	L.0079	18.43	L-.0114	L.0004
#2	100.8	.6907	.0172	L.0060	18.44	L-.0030	L-.0005

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	129.1	.0072	L.0019	.0065	.8285	16.70	.0013
#1	129.0	.0082	.0021	.0069	.8241	16.69	.0013
#2	129.2	.0061	L.0017	.0062	.8330	16.71	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0417	.0394	1.134
#1	L-.0513	.0394	1.132
#2	L-.0322	.0394	1.136

Method: EPACLP1 Sample Name: 6729-3 Operator: WGM
Run Time: 11/22/91 16:12:42
Comment: DISSOLVED, 50/50
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0326	L-.0001	L.0072	.6681	L-.0000	.9677	L.0013
#1	.0669	.0202	L.0238	.6643	L-.0002	.9703	L.0017
#2	L-.0017	L-.0203	L-.0095	.6718	L.0002	.9651	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.32	L-.0026	L-.0027	.0161	1.708	L.0182	H86.27
#1	54.23	L-.0017	.0036	.0197	1.701	L.0117	H86.09
#2	54.40	L-.0034	L-.0090	.0124	1.716	.0247	H86.44

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	101.8	.6956	.0160	L.0085	18.43	L-.0088	L-.0059
#1	101.5	.6945	.0160	L.0047	18.25	L-.0172	L.0008
#2	102.2	.6967	.0160	.0124	18.62	L-.0003	L-.0127

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	131.5	.0021	L.0008	.0072	.8036	16.99	.0013
#1	130.8	.0040	L.0017	.0089	.7867	16.97	.0013
#2	132.3	.0001	L-.0002	.0055	.8205	17.00	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0815	.0383	1.152
#1	L-.0415	.0378	1.146
#2	.2045	.0388	1.158

cont to 6642

Analysis Report QC Standard Fri 11-22-91 04:22:46 PM page 1

thod: EPACLP1 Sample Name: CCV 5 Operator: WGM
Run Time: 11/22/91 16:21:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.098	5.071	1.009	.5175	.5114	.0122	.4982
#1	5.089	5.046	1.010	.5175	.5106	.0131	.4954
#2	5.107	5.095	1.009	.5175	.5122	.0114	.5009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.027	5.052	.5042	.5114	5.076	5.042	5.047
#1	5.021	5.043	.5015	.5099	5.069	5.027	5.045
#2	5.034	5.061	.5069	.5130	5.083	5.058	5.050

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.100	.5071	.5100	.5079	25.03	.9923	.5044
#1	5.098	.5071	.5106	.5063	24.89	.9953	.5029
#2	5.101	.5071	.5094	.5095	25.17	.9894	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.40	-.0449	.5058	2.516	.0988	.0240	.5131
#1	25.41	-.0416	.5048	2.514	.0961	.0236	.5128
#2	25.39	-.0482	.5068	2.517	.1015	.0244	.5134

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2896	.0065	.0026
#1	-.3024	.0062	.0025
#2	-.2769	.0067	.0027

Method: EPACLP1 Sample Name: CCB 5 Operator: WGM
Run Time: 11/22/91 16:35:32
ment:
Je: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0016	L.0003	L-.0169	L-.0007	L-.0002	.0009	L.0017
#1	L-.0016	L-.0048	L-.0216	L-.0009	L-.0002	-.0009	L.0024
#2	L.0048	L.0053	L-.0122	L-.0004	L-.0002	.0026	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0096	L.0009	L-.0012	L.0000	L-.0052	L.0014	L.0017
#1	L-.0112	L-.0004	L-.0012	L-.0002	L-.0056	L.0034	L.0014
#2	L-.0081	.0022	L-.0012	L.0002	L-.0047	L-.0006	L.0020

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0056	L-.0000	L-.0012	L-.0026	L-.8123	L.0049	L.0000
#1	L.0007	L-.0002	L-.0015	L-.0029	L-.8216	L-.0102	L-.0000
#2	L.0105	L.0002	L-.0009	L-.0022	L-.8030	L.0200	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
ge	L-.0076	.0064	L.0002	L-.0003	-.0080	.0068	-.0003
#1	L-.0060	.0067	L-.0006	L-.0003	-.0107	.0055	.0000
#2	L-.0092	.0061	L.0010	L-.0003	-.0053	.0081	-.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0041	.0039	.0001
#1	L-.0077	.0036	.0000
#2	L-.0004	.0041	.0002

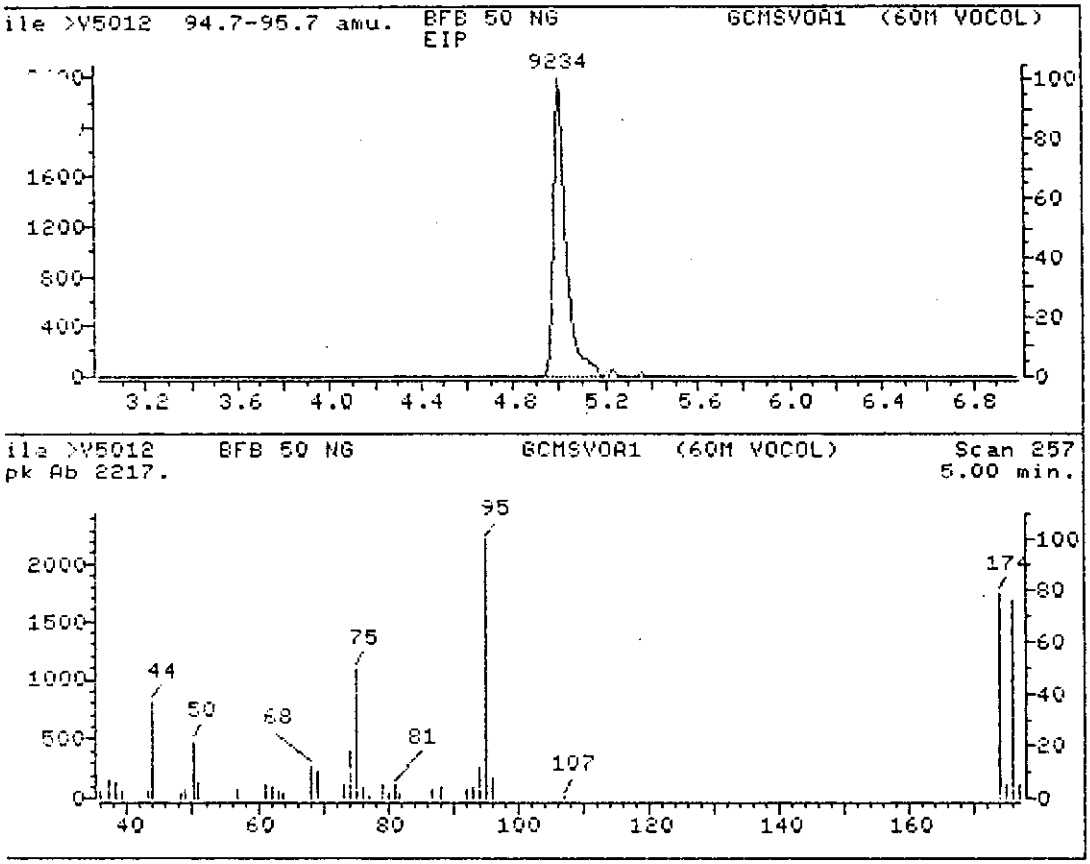
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	21.43	21.43	Ok
75	30-60% of mass 95	49.21	49.21	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.76	7.76	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	78.39	78.39	Ok
175	5-9% of mass 174	5.55	7.08	Ok
176	95-101% of mass 174	75.42	96.20	Ok
177	5-9% of mass 176	5.14	6.82	Ok

Injection Date: 11/21/91
Injection Time: 08:52
Data File: >V5012
Scan: 257

1GR : AL, Move cursor; then press carriage return :



Quant ID File: ID_DVO::D1

Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1

Last EDIT Date: 911004 09:00 Last Calib Date: 911025 12:55
Last Qcal Date: 911121 10:00 Calib File: CA_VOL::QT
Qcal File: ^V5014:14906:D1

RT Window (+min -%)	: .5000	Subtraction Method	: 2
Max Hits/Compound	: 1	Ignore max check	: YES
Minimum Area	: 50	Auto Qdel Method	: 5
Peak/Base Peak Ratio	: 30.00 %	Quantitate Using	: AREA
Up Slope Sensitivity	: -.200000	Units of Conc	: UG/L
Down Slope Sensitivity	: .0000000	Bunching	: 1

Number of Compounds: 49

Comp No.	Compound Name	(Type)	Retention Time Min. (Rel)	R.F.	Conc.	
1)	*Bromochloromethane	(I)	8.90(1.000)	1.00000	50.00	**
2)	Chloromethane	(T)	2.66(.299)	.42578	50.00	
3)	Vinyl Chloride	(T)	2.79(.314)	.54709	50.00	**
4)	Bromomethane	(T)	3.37(.379)	.75539	50.00	
5)	Chloroethane	(T)	3.52(.396)	.40205	50.00	**
6)	Trichlorofluoromethane	(T)	3.87(.435)	2.20697	50.00	**
7)	Trichlorotrifluoroethane 113	(T)	4.63(.520)	1.95622	50.00	**
8)	1,1-Dichloroethene	(M)	4.90(.551)	.87000	50.00	
9)	Acetone	(T)	5.00(.562)	.10665	50.00	**
10)	Dimethyl Ketone	(T)	5.02(.564)	.02174	50.00	
11)	Carbon Disulfide	(T)	5.58(.627)	1.56376	50.00	
12)	Methylene Chloride	(T)	5.88(.660)	.95788	50.00	
13)	Vinyl Acetate	(T)	7.39(.831)	.07012	50.00	
14)	Trans-1,2-Dichloroethene	(T)	6.31(.710)	.91646	50.00	
15)	Cis-1,2-Dichloroethene	(T)	8.31(.934)	.86514	50.00	
16)	2-Butanone	(T)	8.24(.926)	.03864	50.00	
17)	1,1-Dichloroethane	(T)	7.18(.807)	1.77265	50.00	
18)	Chloroform	(T)	8.59(.965)	2.53655	50.00	
19)	1,1,1-Trichloroethane	(T)	9.23(1.038)	2.24333	50.00	
20)	Carbon Tetrachloride	(T)	9.63(1.083)	2.25251	50.00	
21)	1,2-Dichloroethane-d4	(S)	10.00(1.124)	1.35873	50.00	
22)	*1,4-Difluorobenzene	(I)	10.80(1.000)	1.00000	50.00	
23)	Benzene	(M)	10.07(.933)	.64659	50.00	
24)	1,2-Dichloroethane	(T)	10.18(.943)	.39411	50.00	
25)	Trichloroethene	(M)	11.24(1.041)	.42337	50.00	**
26)	1,2-Dichloropropane	(T)	11.68(1.081)	.27271	50.00	
27)	Bromodichloromethane	(T)	12.15(1.125)	.66657	50.00	
28)	2-Chloroethylvinyl ether	(T)	13.04(1.208)	.05677	50.00	
29)	Cis-1,3-Dichloropropene	(T)	13.37(1.238)	.46017	50.00	
30)	4-Methyl-2-pentanone	(T)	13.08(1.211)	.05954	50.00	
31)	Toluene-d8	(S)	13.71(1.269)	.86301	50.00	
32)	Toluene	(M)	13.88(1.286)	.81319	50.00	
33)	*Chlorobenzene-d5	(I)	16.94(1.000)	1.00000	50.00	
34)	Trans-1,3-Dichloropropene	(T)	14.49(.855)	.41316	50.00	
35)	1,1,2-Trichloroethane	(T)	14.75(.871)	.32299	50.00	
36)	2-Hexanone	(T)	14.96(.884)	.06085	50.00	
37)	Tetrachloroethene	(T)	15.13(.894)	.54721	50.00	
38)	Dibromochloromethane	(T)	15.73(.929)	.77940	50.00	
39)	Chlorobenzene	(M)	17.02(1.005)	.87917	50.00	
40)	Ethylbenzene	(T)	17.20(1.015)	1.24528	50.00	

44)	Bromoform	(T)	19.14(1.130)	.56554	50.00	
45)	1,1,2,2-Tetrachloroethane	(T)	19.72(1.165)	.48407	50.00	
46)	Bromofluorobenzene	(S)	19.72(1.164)	.68625	50.00	**
47)	1,3-Dichlorobenzene	(T)	22.13(1.307)	.97625	50.00	**
48)	1,4-Dichlorobenzene	(T)	22.41(1.323)	1.00277	50.00	**
49)	1,2-Dichlorobenzene	(T)	23.22(1.371)	.90304	50.00	

* Compound is ISTD
** Compound uses different Quant parameters

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 11/21/91

Contractor: COLUMBIA ANALYTICAL Time: 10:00

Co. .act No: Laboratory ID: >V5014

Instrument ID: GCMSV0A1 Initial Calibration Date: 10/25/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Chloromethane	.63677	.42578	33.13		**	
Vinyl Chloride	.71680	.54709	23.68	*		
Bromomethane	.88952	.75539	15.08			
Chloroethane	.51716	.40205	22.26			
Trichlorofluoromethane	2.62807	2.20697	16.02			
Trichlorotrifluoroethane 113	2.05184	1.95622	4.66			
1,1-Dichloroethene	.93172	.87000	6.62	*		
Acetone	.13663	.10665	21.94			
Carbon Disulfide	2.48333	1.56376	37.03			
Methylene Chloride	1.19517	.95788	19.85			
Vinyl Acetate	.10209	.07012	31.32			
Trans-1,2-Dichloroethene	.96491	.91646	5.02			
Cis-1,2-Dichloroethene	1.00046	.86514	13.53			
2-Butanone	.04445	.03864	13.07			
1,1-Dichloroethane	1.75003	1.77265	1.29		**	
Ch' 'orm	2.51802	2.53655	.74	*		
1 .richloroethane	2.45834	2.24333	8.75			
Carbon Tetrachloride	2.54377	2.25251	11.45			
1,2-Dichloroethane-d4	1.34927	1.35873	.70			(Conc=50.00)
Benzene	.61752	.64659	4.71			
1,2-Dichloroethane	.38747	.39411	1.71			
Trichloroethene	.40575	.42337	4.34			
1,2-Dichloropropane	.26447	.27271	3.11	*		
Bromodichloromethane	.63481	.66657	5.00			
2-Chloroethylvinyl ether	.09051	.05677	37.27			
Cis-1,3-Dichloropropene	.43966	.46017	4.67			
4-Methyl-2-pentanone	.05782	.05954	2.99			
Toluene-d8	.85714	.86301	.69			(Conc=50.00)
Toluene	.83169	.81319	2.23	*		
Trans-1,3-Dichloropropene	.37654	.41316	9.73			
1,1,2-Trichloroethane	.26371	.32299	22.48			
2-Hexanone	.06036	.06085	.81			

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

$\overline{RF}$ - 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: Calibration Date: 11/21/91

Contractor: COLUMBIA ANALYTICAL Time: 10:00

Cl ..ct No: Laboratory ID: >V5014

Instrument ID: GCMSV0A1 Initial Calibration Date: 10/25/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
Tetrachloroethene	.50033	.54721	9.37			
Dibromochloromethane	.67198	.77940	15.99			
Chlorobenzene	.85287	.87917	3.08		**	
Ethylbenzene	1.34379	1.31528	2.12	*		
Styrene	.82263	.75869	7.77			
M+P-Xylene	1.20525	1.25081	3.78			
O-Xylene	1.24776	1.10052	11.80			
Bromoform	.50038	.56554	13.02		**	
1,1,2,2-Tetrachloroethane	.39640	.48407	22.12		**	
Bromofluorobenzene	.66012	.68626	3.96			(Conc=50.00)
1,3-Dichlorobenzene	.94975	.97625	2.79			
1,4-Dichlorobenzene	.96982	1.00277	3.40			
1,2-Dichlorobenzene	.95683	.90304	5.39			

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

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

%Diff - % Difference from original average or curve

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

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911121 09:55
Output File: ^V5013::D1 Injected at: 911121 09:23
Da File: >V5013::D5 Dilution Factor: 1.00000
Na : 50 PPB 8240 H20 STD Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Time: 911120 15:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.89	127.9	39107	50.00	UG/L	96
2)	Chloromethane	2.66	50.0	16651	46.24	UG/L	94
3)	Vinyl Chloride	2.79	62.0	21395	47.37	UG/L	97
4)	Bromomethane	3.37	94.0	29541	46.93	UG/L	96
5)	Chloroethane	3.52	64.0	15723	47.68	UG/L	99
6)	Trichlorofluoromethane	3.87	101.0	86308	48.66	UG/L	93
7)	Trichlorotrifluoroethane 113	4.63	101.0	76502	37.99	UG/L	99
8)	1,1-Dichloroethene	4.90	96.0	34023	48.06	UG/L	96
12)	Methylene Chloride	5.87	83.9	37460	46.39	UG/L	87
13)	Vinyl Acetate	7.39	86.0	2742	71.09	UG/L	100
14)	Trans-1,2-Dichloroethene	6.31	96.0	35840	48.53	UG/L	93
15)	Cis-1,2-Dichloroethene	8.30	96.0	33833	48.42	UG/L	98
17)	1,1-Dichloroethane	7.18	63.0	69323	55.74	UG/L	93
18)	Chloroform	8.58	82.9	99197	49.44	UG/L	89
19)	1,1,1-Trichloroethane	9.23	97.0	87730	48.05	UG/L	98
20)	Carbon Tetrachloride	9.63	116.9	88089	49.09	UG/L	85
21)	1,2-Dichloroethane-d4	9.99	65.0	54348	50.02	UG/L	98
22)	*1,4-Difluorobenzene	10.79	114.0	151482	50.00	UG/L	91
23)	Benzene	10.06	78.0	97946	48.47	UG/L	86
24)	1,2-Dichloroethane	10.17	62.0	59700	50.48	UG/L	96
25)	Trichloroethene	11.23	130.0	64133	48.98	UG/L	89
26)	1,2-Dichloropropane	11.67	63.0	41310	51.24	UG/L	87
27)	Bromodichloromethane	12.13	82.9	100973	51.51	UG/L	92
28)	2-Chloroethylvinyl ether	13.03	63.0	8600	59.22	UG/L	98
29)	Cis-1,3-Dichloropropene	13.36	75.0	69708	52.75	UG/L	96
31)	Toluene-d8	13.71	98.2	130570	50.60	UG/L	98
32)	Toluene	13.87	91.0	123183	48.32	UG/L	86
33)	*Chlorobenzene-d5	16.95	117.0	122665	50.00	UG/L	95
34)	Trans-1,3-Dichloropropene	14.50	75.0	50680	53.68	UG/L	89
35)	1,1,2-Trichloroethane	14.77	97.0	39620	51.88	UG/L	90
37)	Tetrachloroethene	15.15	164.0	67123	49.17	UG/L	97
38)	Dibromochloromethane	15.75	129.0	95605	54.38	UG/L	99
39)	Chlorobenzene	17.03	112.0	107844	49.18	UG/L	93
40)	Ethylbenzene	17.21	91.0	161339	47.94	UG/L	99
42)	M+P-Xylene	17.36	91.0	153431	48.90	UG/L	96
44)	Bromoform	19.15	172.9	69372	57.31	UG/L	88
45)	1,1,2,2-Tetrachloroethane	19.74	82.9	59379	57.56	UG/L	99
46)	Bromofluorobenzene	19.73	174.0	85185	52.79	UG/L	84
47)	1,3-Dichlorobenzene	22.15	146.0	119752	49.22	UG/L	90
49)	1,4-Dichlorobenzene	22.43	146.0	123005	48.41	UG/L	96

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911121 09:55
Output File: ^V5013::D1 Injected at: 911121 09:23
Da File: >V5013::D5 Dilution Factor: 1.00000
N. .: 50 PPB 8240 H20 STD Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Time: 911120 15:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
49)	1,2-Dichlorobenzene	23.24	146.0	110772	48.33	UG/L	99

* Compound is ISTD

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911121 10:31
Output File: ^V5014::D1 Injected at: 911121 10:00
Data File: >V5014::D5 Dilution Factor: 1.00000
Name: 50 PPB HSL H20 STD Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Time: 911120 15:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.90	127.9	37346	50.00	UG/L	97
9)	Acetone	5.00	43.0	3983M	54.30	UG/L	89
10)	Dimethyl Ketone	5.02	58.0	812M	58.03	UG/L	
11)	Carbon Disulfide	5.58	76.0	58400	43.24	UG/L	100
16)	2-Butanone	8.24	72.0	1443M	54.28	UG/L	
21)	1,2-Dichloroethane-d4	10.00	65.0	50743	48.90	UG/L	97
22)	*1,4-Difluorobenzene	10.80	114.0	141985	50.00	UG/L	93
30)	4-Methyl-2-pentanone	13.08	58.0	8454M	49.46	UG/L	96
31)	Toluene-d8	13.71	98.2	122535	50.66	UG/L	98
33)	*Chlorobenzene-d5	16.94	117.0	120786	50.00	UG/L	98
36)	2-Hexanone	14.96	58.0	7350	48.49	UG/L	85
41)	Styrene	18.45	104.0	91639	50.50	UG/L	90
43)	O-Xylene	18.30	91.0	132927	51.41	UG/L	84
47)	Bromofluorobenzene	19.72	174.0	82890	52.17	UG/L	71

* Compound is ISTD

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911121 11:18
Output File: ^V5015::D1 Injected at: 911121 10:47
Data File: >V5015::D5 Dilution Factor: 1.00000
N : METHOD BLANK Instrument ID: GCMSVOA1
M. .: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Date: 911121 10:00

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.88	127.9	32883	50.00	UG/L	99
7)	Trichlorotrifluoroethane 113	4.63	101.0	5268	4.09	UG/L	98
9)	Acetone	5.05	43.0	360M	5.13	UG/L	97
11)	Carbon Disulfide	5.56	76.0	878	.854	UG/L	100
12)	Methylene Chloride	5.88	83.9	3202	5.08	UG/L	75
21)	1,2-Dichloroethane-d4	9.98	65.0	46538	52.08	UG/L	97
22)	*1,4-Difluorobenzene	10.78	114.0	128870	50.00	UG/L	87
31)	Toluene-d8	13.69	98.2	115406	51.88	UG/L	92
33)	*Chlorobenzene-d5	16.94	117.0	114544	50.00	UG/L	99
46)	Bromofluorobenzene	19.73	174.0	80052	50.92	UG/L	81

* Compound is ISTD

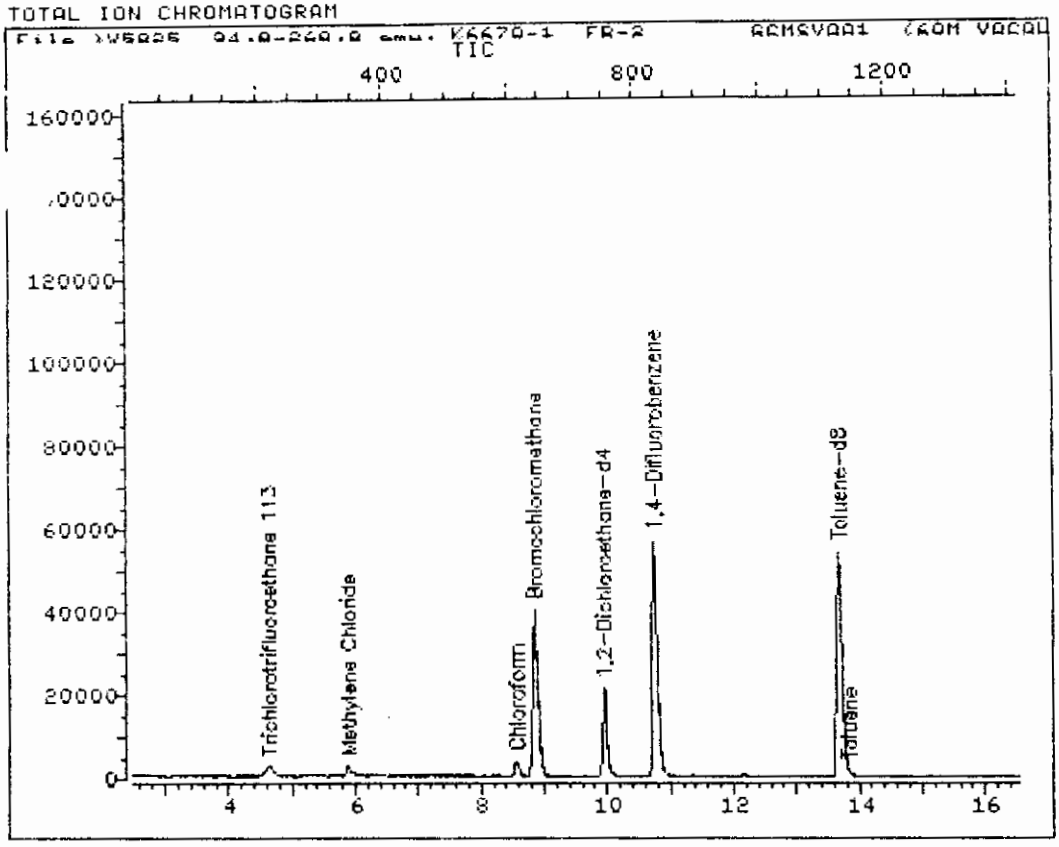
Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911121 17:35
Output File: ^V5025::D1 Injected at: 911121 17:04
Data File: >V5025::D5 Dilution Factor: 1.00000
Name: K6670-1 FB-2 Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Date: 911121 10:00

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.85	127.9	28882	50.00	UG/L	99
7)	Trichlorotrifluoroethane 113	4.62	101.0	5100	4.51	UG/L	91
12)	Methylene Chloride	5.89	83.9	3695	6.68	UG/L	79
18)	Chloroform	8.56	82.9	7803	5.33	UG/L	84
21)	1,2-Dichloroethane-d4	9.94	65.0	40628	51.76	UG/L	93
22)	*1,4-Difluorobenzene	10.75	114.0	119887	50.00	UG/L	92
31)	Toluene-d8	13.68	98.2	104552	50.53	UG/L	97
32)	Toluene	13.83	91.0	851	.436	UG/L	99
33)	*Chlorobenzene-d5	16.91	117.0	103317	50.00	UG/L	91
40)	Ethylbenzene	17.16	91.0	219M	.0806	UG/L	89
42)	M+P-Xylene	17.34	91.0	707	.274	UG/L	82
46)	Bromofluorobenzene	19.70	174.0	71059	50.11	UG/L	76

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >V5025::D5 Quant Output File: ^V5025::D1
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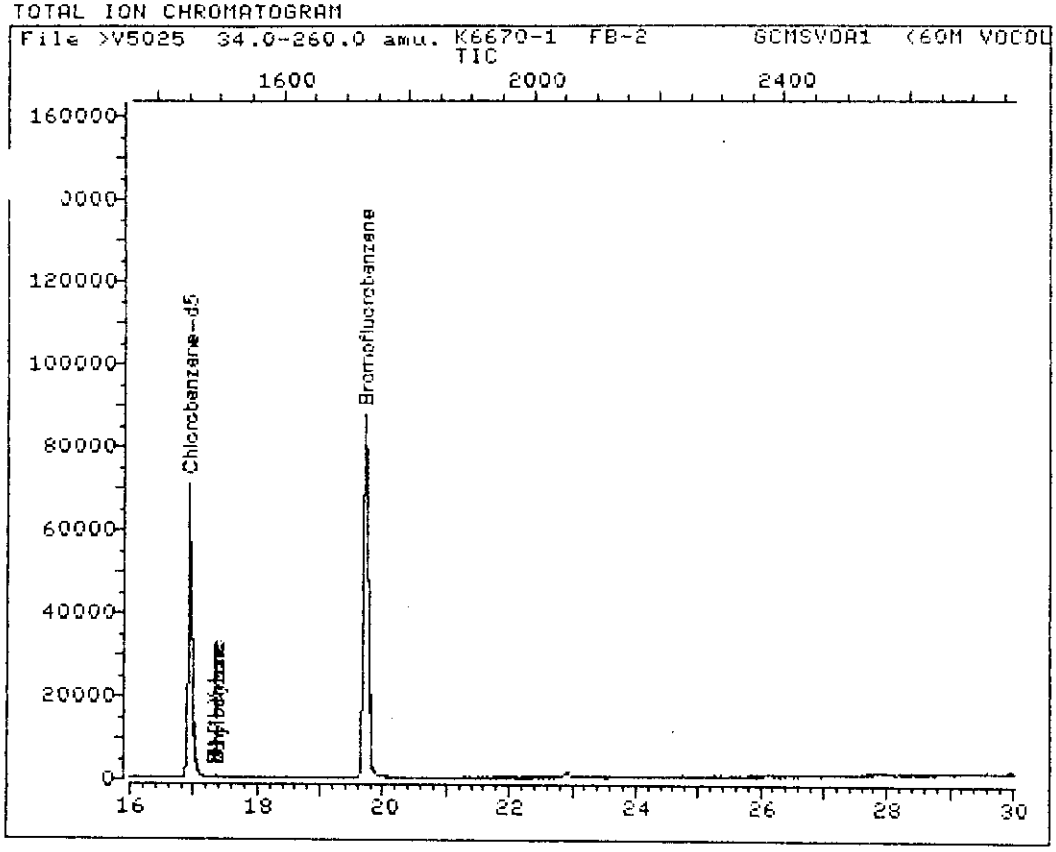
Misc: GCMSVOA1 (60M VOCOL)

Id File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Time: 911121 10:00

Operator ID: JEFF-1
Quant Time : 911121 17:35
Injected at: 911121 17:04

Page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >V5025::D5 Quant Output File: ^V5025::D1
Name: K6670-1 FB-2 Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

Id File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911025 12:55 Last Qcal Time: 911121 10:00

Operator ID: JEFF-1
Quant Time : 911121 17:35
Injected at: 911121 17:04

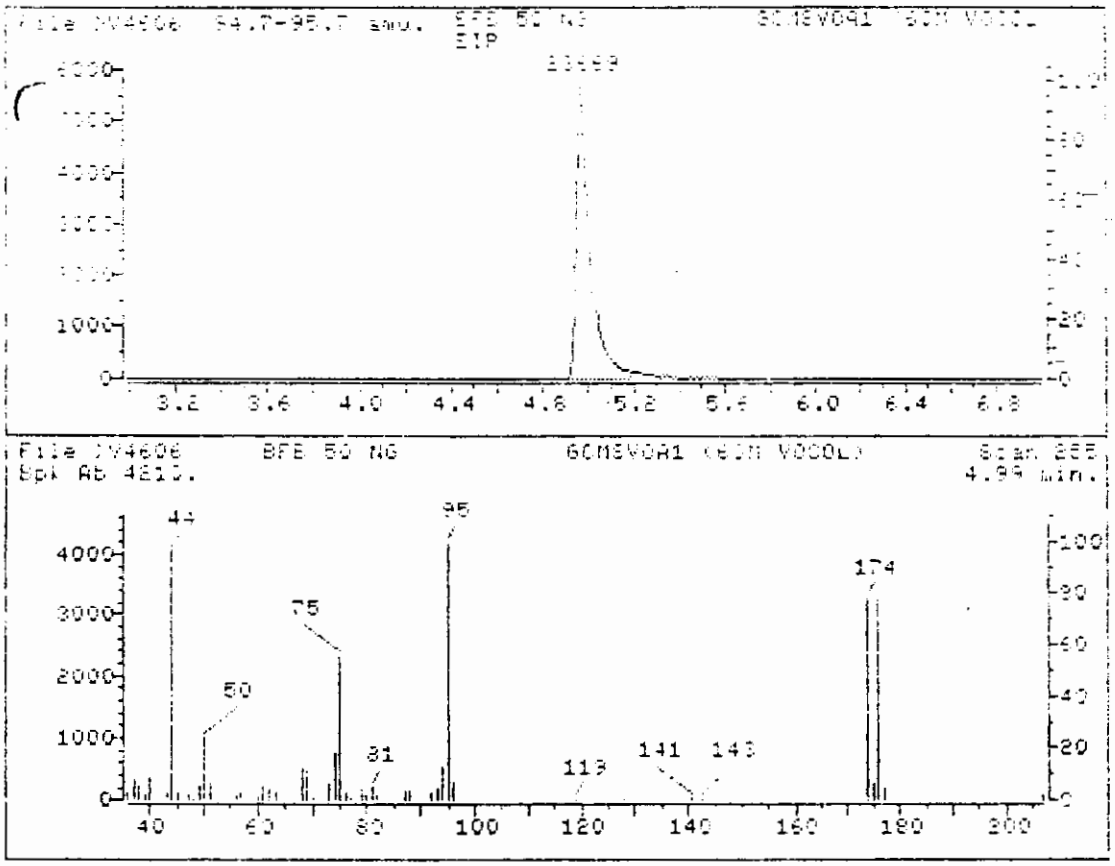
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	23.30	23.30	Ok
75	30-60% of mass 95	54.99	54.99	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.05	7.05	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	77.62	77.62	Ok
175	5-9% of mass 174	6.01	7.74	Ok
176	95-101% of mass 174	77.22	99.48	Ok
177	5-9% of mass 176	4.70	6.09	Ok

Injection Date: 10/25/91
Injection Time: 08:14
Data File: >V4606
Scan: 255

FMGR : AL, Move cursor; then press carriage return :



CA_VOL
ID_DVD

Case No: ----------

Instrument ID: GCMSVOA1 ----------

Contractor: COLUMBIA ANALYTICAL ----------

Calibration Date: 10/25/91 ----------

Contract No: ----------

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	V4608	V4607	V4609	V4610	V4611				
	RF	RF	RF	RF	RF				
Compound	20.00	50.00	100.00	150.00	200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.67099	.76287	.60414	.57375	.57215	.63677	12.728		**
Vinyl Chloride	.76104	.86723	.70081	.62983	.62508	.71680	14.093	*	
Bromomethane	1.00429	1.15347	.89611	.71579	.67795	.88952	22.331		
Chloroethane	.53052	.66010	.50647	.45515	.43357	.51716	17.175		
Trichlorofluoromethane	2.69457	2.89636	2.57540	2.51883	2.45517	2.62807	6.618		
Trichlorotrifluoroethane 113	2.22127	2.18035	2.04286	1.96757	1.84714	2.05184	7.483		
1,1-Dichloroethene	.96135	1.01693	.93480	.88960	.85591	.93172	6.717	*	
Acetone	.22073	.13267	.10563	.12575	.09834	.13663	35.921		
Carbon Disulfide	2.60637	2.57404	2.38311	2.55445	2.29872	2.48333	5.423		
Methylene Chloride	1.51218	1.45729	1.02055	.98285	1.00300	1.19517	22.204		
Vinyl Acetate	.09600	.10715	.09834	.10708	.10189	.10209	4.941		
Trans-1,2-Dichloroethene	.92998	1.00435	.96557	.98062	.94374	.96491	3.053		
Cis-1,2-Dichloroethene	.92330	1.11196	.96214	1.05232	.95258	1.00046	7.876		
2-Butanone	.03526	.04818	.04217	.03140	.04522	.04445	13.892		
1,1-Dichloroethane	1.74881	1.84983	1.78476	1.71478	1.65196	1.75005	4.240		**
Chloroform	2.33458	2.63540	2.49015	2.61766	2.51232	2.51802	4.789	*	
1,1-Trichloroethane	2.31374	2.51609	2.51477	2.50220	2.44489	2.45834	3.495		
Carbon Tetrachloride	2.33842	2.66615	2.58955	2.61835	2.50637	2.54377	5.057		
1,2-Dichloroethane-d4	1.35118	1.29418	1.29786	1.46237	1.34077	1.34927	5.046		
Benzene	.61785	.65322	.60942	.60186	.59526	.61752	3.499		
1,2-Dichloroethane	.37436	.37585	.37478	.40793	.40444	.38747	4.422		
Trichloroethene	.40371	.42467	.40460	.39962	.39613	.40575	2.738		
1,2-Dichloropropane	.26092	.26665	.25815	.27112	.26551	.26447	1.914	*	
Bromodichloromethane	.57291	.62055	.64409	.65945	.67702	.63481	6.355		
2-Chloroethylvinyl ether	.09135	.09016	.08904	.08703	.09496	.09051	3.263		
Cis-1,3-Dichloropropene	.41347	.44012	.43155	.46062	.45254	.43966	4.189		
4-Methyl-2-pentanone	.06400	.05792	.05353	.05944	.05418	.05782	7.364		
Toluene-d8	.88637	.88227	.81227	.88304	.82174	.85714	4.296		
Toluene	.85342	.90087	.83602	.78037	.78777	.83169	5.964	*	
Trans-1,3-Dichloropropene	.35194	.37927	.37349	.38633	.39166	.37654	4.085		
1,1,2-Trichloroethane	.26367	.27072	.25613	.26939	.25862	.26371	2.433		
2-Hexanone	.06636	.06139	.05504	.06171	.05732	.06036	7.240		

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Case No: ----------

Instrument ID: GCMSVOA1

Contractor: COLUMBIA ANALYTICAL

Calibration Date: 10/25/91

Contract No: ----------

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Compound	Laboratory ID: >V4608 RF 20.00	>V4607 RF 50.00	>V4609 RF 100.00	>V4610 RF 150.00	>V4611 RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Tetrachloroethene	.50605	.57228	.49287	.46761	.46286	.50033	8.791		
Dibromochloromethane	.62997	.66884	.66689	.70336	.69081	.67198	4.170		
Chlorobenzene	.84585	.94034	.83550	.82352	.81916	.85287	5.862		**
Ethylbenzene	1.32311	1.46316	1.32562	1.29095	1.31610	1.34379	5.070	*	
Styrene	.85044	.84506	.78328	.83616	.79820	.82263	3.650		
M+P-Xylene	1.17997	1.31231	1.17924	1.15786	1.19685	1.20525	5.097		
O-Xylene	1.24758	1.29051	1.17790	1.29303	1.22979	1.24776	3.818		
Bromoform	.47156	.52244	.48155	.50883	.51952	.50038	4.557		**
1,1,2,2-Tetrachloroethane	.40573	.43201	.37808	[illegible]	.37945	.39640	5.741		**
Bromofluorobenzene	.65880	.70346	.62365	.67434	.64037	.66012	4.671		
1,3-Dichlorobenzene	.97542	1.06897	[illegible]	.88258	.91511	.94975	7.886		
1,4-Dichlorobenzene	.94241	1.11813	.91974	.92372	.94513	.96982	8.625		
1,2-Dichlorobenzene	.87895	.99190	.78919	.79105	.83305	.85683	9.800		

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Operator ID: JEFF-1
Output File: ^V4608::D1
Data File: >V4608::D2
.me: 20 PPB 8240 I-CAL
.isc: GCMSVOA1 (60M VOCOL)

Quant Rev: 7 Quant Time: 911025 10:06
Injected at: 911025 09:30
Dilution Factor: 1.00000
Instrument ID: GCMSVOA1

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.78	127.9	47501	50.00	UG/L	98
2)	Chloromethane	2.65	50.0	12749	21.51	UG/L	90
3)	Vinyl Chloride	2.78	62.0	14460	19.51	UG/L	97
4)	Bromomethane	3.35	94.0	19082	17.46	UG/L	81
5)	Chloroethane	3.49	64.0	10080M	18.29	UG/L	93
6)	Trichlorofluoromethane	3.81	101.0	51198	18.50	UG/L	99
7)	Trichlorotrifluoroethane 113	4.52	101.0	42205	18.42	UG/L	95
8)	1,1-Dichloroethene	4.78	96.0	18266	18.53	UG/L	97
9)	Acetone	4.92	43.0	4194M	36.21	UG/L	89
10)	Dimethyl Ketone	4.94	58.0	777M	37.48	UG/L	85
11)	Carbon Disulfide	5.43	76.0	49522	27.53	UG/L	100
12)	Methylene Chloride	5.73	83.9	28732	24.96	UG/L	88
13)	Vinyl Acetate	7.26	86.0	1824	14.96	UG/L	100
14)	Trans-1,2-Dichloroethene	6.16	96.0	17670	17.00	UG/L	93
15)	Cis-1,2-Dichloroethene	8.18	96.0	17543	15.64	UG/L	94
16)	2-Butanone	8.11	72.0	670M	21.82	UG/L	98
17)	1,1-Dichloroethane	7.04	63.0	33228	18.48	UG/L	95
18)	Chloroform	8.47	82.9	44358	15.46	UG/L	97
19)	1,1,1-Trichloroethane	9.12	97.0	43962	16.14	UG/L	97
20)	Carbon Tetrachloride	9.52	116.9	44431	16.10	UG/L	90
21)	1,2-Dichloroethane-d4	9.86	65.0	25673	19.09	UG/L	97
22)	*1,4-Difluorobenzene	10.65	114.0	195653	50.00	UG/L	90
23)	Benzene	9.93	78.0	48354	17.83	UG/L	88
24)	1,2-Dichloroethane	10.04	62.0	29298	16.35	UG/L	97
25)	Trichloroethene	11.08	130.0	31595	16.31	UG/L	87
26)	1,2-Dichloropropane	11.52	63.0	20420	17.50	UG/L	94
27)	Bromodichloromethane	11.98	82.9	44837	15.74	UG/L	92
28)	2-Chloroethylvinyl ether	12.88	63.0	7149	17.82	UG/L	86
29)	Cis-1,3-Dichloropropene	13.20	75.0	32359	16.33	UG/L	94
30)	4-Methyl-2-pentanone	12.93	58.0	5009M	29.04	UG/L	87
31)	Toluene-d8	13.54	98.2	69368	21.80	UG/L	96
32)	Toluene	13.71	91.0	66790	19.13	UG/L	88
33)	*Chlorobenzene-d5	16.76	117.0	173786	50.00	UG/L	94
34)	Trans-1,3-Dichloropropene	14.33	75.0	24465	15.54	UG/L	88
35)	1,1,2-Trichloroethane	14.59	97.0	18329	16.28	UG/L	86
36)	2-Hexanone	14.80	58.0	4613M	28.97	UG/L	91
37)	Tetrachloroethene	14.98	164.0	35178	17.80	UG/L	98
38)	Dibromochloromethane	15.56	129.0	43792	15.64	UG/L	97
39)	Chlorobenzene	16.85	112.0	58799	17.66	UG/L	98
40)	Ethylbenzene	17.02	91.0	91975	17.72	UG/L	99

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 10:06
Output File: ^V4608::D1 Injected at: 911025 09:30
Data File: >V4608::D2 Dilution Factor: 1.00000
me: 20 PPB 8240 I-CAL Instrument ID: GCMSVOA1
isc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	18.27	104.0	59118	27.30	UG/L	82
42)	M+P-Xylene	17.19	91.0	82025	18.04	UG/L	92
43)	O-Xylene	18.13	91.0	86725	27.22	UG/L	85
44)	Bromoform	18.96	172.9	32780	15.99	UG/L	95
45)	1,1,2,2-Tetrachloroethane	19.54	82.9	28204	21.59	UG/L	99
46)	Bromofluorobenzene	19.54	174.0	45796	19.55	UG/L	89
47)	1,3-Dichlorobenzene	21.99	146.0	67806	18.80	UG/L	90
48)	1,4-Dichlorobenzene	22.27	146.0	65511	18.14	UG/L	95
49)	1,2-Dichlorobenzene	23.09	146.0	61100	18.58	UG/L	96

* Compound is ISTD

Operator ID: JEFF-1
Output File: ^V4607::D1
Data File: >V4607::D2
Name: 50 PPB 8240 I-CAL
sc: GCMSVOA1 (60M VOCOL)

Quant Rev: 7 Quant Time: 911025 09:24
Injected at: 911025 08:53
Dilution Factor: 1.00000
Instrument ID: GCMSVOA1

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.78	127.9	41818	50.00	UG/L	98
2)	Chloromethane	2.64	50.0	31900	61.13	UG/L	95
3)	Vinyl Chloride	2.78	62.0	36266	55.58	UG/L	96
4)	Bromomethane	3.34	94.0	48236	50.13	UG/L	82
5)	Chloroethane	3.49	64.0	27604M	56.91	UG/L	97
6)	Trichlorofluoromethane	3.81	101.0	121120	49.72	UG/L	99
7)	Trichlorotrifluoroethane 113	4.55	101.0	91178	45.20	UG/L	98
8)	1,1-Dichloroethene	4.81	96.0	42526	49.00	UG/L	97
9)	Acetone	4.96	43.0	5548M	54.41	UG/L	96
10)	Dimethyl Ketone	4.94	58.0	1508M	82.63	UG/L	95
11)	Carbon Disulfide	5.46	76.0	107641	67.98	UG/L	100
12)	Methylene Chloride	5.77	83.9	60941	60.13	UG/L	91
13)	Vinyl Acetate	7.29	86.0	4481M	41.74	UG/L	100
14)	Trans-1,2-Dichloroethene	6.18	96.0	42000	45.91	UG/L	96
15)	Cis-1,2-Dichloroethene	8.20	96.0	46500	47.08	UG/L	97
16)	2-Butanone	8.11	72.0	2015M	74.55	UG/L	92
17)	1,1-Dichloroethane	7.07	63.0	77356	48.88	UG/L	95
18)	Chloroform	8.48	82.9	110207	43.62	UG/L	94
19)	1,1,1-Trichloroethane	9.13	97.0	105218	43.88	UG/L	96
20)	Carbon Tetrachloride	9.53	116.9	111493	45.89	UG/L	88
21)	1,2-Dichloroethane-d4	9.88	65.0	54120	45.71	UG/L	95
22)	*1,4-Difluorobenzene	10.69	114.0	172620	50.00	UG/L	95
23)	Benzene	9.94	78.0	112758	47.12	UG/L	87
24)	1,2-Dichloroethane	10.06	62.0	64880	41.04	UG/L	96
25)	Trichloroethene	11.12	130.0	73307	42.89	UG/L	85
26)	1,2-Dichloropropane	11.56	63.0	46029	44.70	UG/L	93
27)	Bromodichloromethane	12.05	82.9	107119	42.61	UG/L	88
28)	2-Chloroethylvinyl ether	12.93	63.0	15563	43.96	UG/L	98
29)	Cis-1,3-Dichloropropene	13.26	75.0	75974	43.45	UG/L	97
30)	4-Methyl-2-pentanone	12.98	58.0	9999	65.70	UG/L	92
31)	Toluene-d8	13.60	98.2	152298	54.24	UG/L	87
32)	Toluene	13.76	91.0	155509	50.49	UG/L	85
33)	*Chlorobenzene-d5	16.81	117.0	148764	50.00	UG/L	98
34)	Trans-1,3-Dichloropropene	14.38	75.0	56421	41.87	UG/L	88
35)	1,1,2-Trichloroethane	14.65	97.0	40273	41.80	UG/L	97
36)	2-Hexanone	14.85	58.0	9132	66.99	UG/L	94
37)	Tetrachloroethene	15.02	164.0	85134	50.31	UG/L	96
38)	Dibromochloromethane	15.61	129.0	99499	41.50	UG/L	96
39)	Chlorobenzene	16.89	112.0	139888	49.09	UG/L	91
40)	Ethylbenzene	17.05	91.0	217665	49.00	UG/L	93

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 09:24
Output File: ^V4607::D1 Injected at: 911025 08:53
Data File: >V4607::D2 Dilution Factor: 1.00000
me: 50 PPB 8240 I-CAL Instrument ID: GCMSVOA1
isc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	18.30	104.0	125718	67.82	UG/L	90
42)	M+P-Xylene	17.21	91.0	195224	50.16	UG/L	92
43)	O-Xylene	18.15	91.0	191981	70.39	UG/L	81
44)	Bromoform	18.98	172.9	77721	44.29	UG/L	96
45)	1,1,2,2-Tetrachloroethane	19.57	82.9	64268	57.47	UG/L	92
46)	Bromofluorobenzene	19.58	174.0	104649	52.20	UG/L	95
47)	1,3-Dichlorobenzene	22.00	146.0	159024	51.50	UG/L	92
48)	1,4-Dichlorobenzene	22.29	146.0	166337	53.80	UG/L	94
49)	1,2-Dichlorobenzene	23.10	146.0	147559	52.42	UG/L	98

* Compound is ISTD

Operator ID: JEFF-1
Output File: ^V4609::D1
Data File: >V4609::D2
.me: 100 PPB 8240 I-CAL
.sc: GCMSVOA1 (60M VOCOL)

Quant Rev: 7 Quant Time: 911025 10:36
Injected at: 911025 10:05
Dilution Factor: 1.00000
Instrument ID: GCMSVOA1

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.76	127.9	49767	50.00	UG/L	86
2)	Chloromethane	2.62	50.0	60132	96.83	UG/L	95
3)	Vinyl Chloride	2.76	62.0	69754	89.82	UG/L	95
4)	Bromomethane	3.30	94.0	89193	77.89	UG/L	93
5)	Chloroethane	3.45	64.0	50411	87.32	UG/L	98
6)	Trichlorofluoromethane	3.78	101.0	256340	88.43	UG/L	98
7)	Trichlorotrifluoroethane 113	4.49	101.0	203334	84.70	UG/L	92
8)	1,1-Dichloroethene	4.75	96.0	93044	90.09	UG/L	95
9)	Acetone	4.89	43.0	10514M	86.65	UG/L	90
10)	Dimethyl Ketone	4.94	58.0	2440	112.35	UG/L	80
11)	Carbon Disulfide	5.40	76.0	237200	125.88	UG/L	100
12)	Methylene Chloride	5.70	83.9	101579M	84.22	UG/L	
13)	Vinyl Acetate	7.23	86.0	9788	76.62	UG/L	100
14)	Trans-1,2-Dichloroethene	6.12	96.0	96137	88.30	UG/L	92
15)	Cis-1,2-Dichloroethene	8.16	96.0	95766	81.47	UG/L	97
16)	2-Butanone	8.07	72.0	4197M	130.48	UG/L	91
17)	1,1-Dichloroethane	7.01	63.0	177644	94.32	UG/L	91
18)	Chloroform	8.45	82.9	247855	82.44	UG/L	98
19)	1,1,1-Trichloroethane	9.09	97.0	250305	87.71	UG/L	96
20)	Carbon Tetrachloride	9.47	116.9	257748	89.14	UG/L	93
21)	1,2-Dichloroethane-d4	9.82	65.0	129181	91.69	UG/L	96
22)	*1,4-Difluorobenzene	10.62	114.0	201106	50.00	UG/L	92
23)	Benzene	9.89	78.0	245117	87.92	UG/L	88
24)	1,2-Dichloroethane	10.01	62.0	150741	81.85	UG/L	93
25)	Trichloroethene	11.05	130.0	162734	81.73	UG/L	82
26)	1,2-Dichloropropane	11.49	63.0	103831	86.55	UG/L	96
27)	Bromodichloromethane	11.95	82.9	259060	88.46	UG/L	90
28)	2-Chloroethylvinyl ether	12.83	63.0	35813	86.84	UG/L	99
29)	Cis-1,3-Dichloropropene	13.17	75.0	173575	85.21	UG/L	95
30)	4-Methyl-2-pentanone	12.89	58.0	21531	121.44	UG/L	94
31)	Toluene-d8	13.51	98.2	326705	99.87	UG/L	96
32)	Toluene	13.67	91.0	336259	93.72	UG/L	89
33)	*Chlorobenzene-d5	16.74	117.0	173698	50.00	UG/L	92
34)	Trans-1,3-Dichloropropene	14.30	75.0	129749	82.47	UG/L	84
35)	1,1,2-Trichloroethane	14.57	97.0	88978	79.09	UG/L	94
36)	2-Hexanone	14.76	58.0	19121	120.14	UG/L	93
37)	Tetrachloroethene	14.94	164.0	171222	86.66	UG/L	95
38)	Dibromochloromethane	15.55	129.0	231675	82.76	UG/L	96
39)	Chlorobenzene	16.83	112.0	290248	87.24	UG/L	97
40)	Ethylbenzene	17.00	91.0	460515	88.79	UG/L	99

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 10:36
Output File: ^V4609::D1 Injected at: 911025 10:05
Data File: >V4609::D2 Dilution Factor: 1.00000
me: 100 PPB 8240 I-CAL Instrument ID: GCMSVOA1
sc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	18.25	104.0	272109	125.73	UG/L	90
42)	M+P-Xylene	17.17	91.0	409665	90.15	UG/L	90
43)	O-Xylene	18.11	91.0	409199	128.49	UG/L	86
44)	Bromoform	18.94	172.9	167287	81.65	UG/L	97
45)	1,1,2,2-Tetrachloroethane	19.53	82.9	131343	100.60	UG/L	96
46)	Bromofluorobenzene	19.53	174.0	216653	92.55	UG/L	87
47)	1,3-Dichlorobenzene	21.97	146.0	314970	87.37	UG/L	86
48)	1,4-Dichlorobenzene	22.26	146.0	319514	88.51	UG/L	96
49)	1,2-Dichlorobenzene	23.07	146.0	274162	83.42	UG/L	98

* Compound is ISTD

Operator ID: JEFF-1
Output File: ^V4610::D1
Data File: >V4610::D2
me: 150 PPB 8240 I-CAL
sc: GCMSVOA1 (60M VOCOL)

Quant Rev: 7 Quant Time: 911025 11:12
Injected at: 911025 10:41
Dilution Factor: 1.00000
Instrument ID: GCMSVOA1

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.73	127.9	50594	50.00	UG/L	95
2)	Chloromethane	2.62	50.0	87082	137.94	UG/L	88
3)	Vinyl Chloride	2.75	62.0	95597	121.09	UG/L	98
4)	Bromomethane	3.30	94.0	108644	93.32	UG/L	88
5)	Chloroethane	3.45	64.0	69083	117.71	UG/L	96
6)	Trichlorofluoromethane	3.76	101.0	382313	129.72	UG/L	99
7)	Trichlorotrifluoroethane 113	4.49	101.0	298642	122.37	UG/L	90
8)	1,1-Dichloroethene	4.75	96.0	135025	128.60	UG/L	93
9)	Acetone	4.91	43.0	19087M	154.72	UG/L	91
10)	Dimethyl Ketone	4.89	58.0	4554M	206.26	UG/L	93
11)	Carbon Disulfide	5.41	76.0	387719	202.40	UG/L	100
12)	Methylene Chloride	5.71	83.9	149179M	121.67	UG/L	
13)	Vinyl Acetate	7.22	86.0	16253	125.15	UG/L	100
14)	Trans-1,2-Dichloroethene	6.13	96.0	148841	134.47	UG/L	91
15)	Cis-1,2-Dichloroethene	8.16	96.0	159723	133.66	UG/L	96
16)	2-Butanone	8.09	72.0	7802	238.60	UG/L	88
17)	1,1-Dichloroethane	7.01	63.0	260273	135.93	UG/L	93
18)	Chloroform	8.43	82.9	397314	129.98	UG/L	91
19)	1,1,1-Trichloroethane	9.08	97.0	379789	130.91	UG/L	93
20)	Carbon Tetrachloride	9.47	116.9	397419	135.19	UG/L	86
21)	1,2-Dichloroethane-d4	9.82	65.0	221961	154.96	UG/L	93
22)	*1,4-Difluorobenzene	10.63	114.0	193855	50.00	UG/L	92
23)	Benzene	9.90	78.0	355837	132.41	UG/L	88
24)	1,2-Dichloroethane	10.01	62.0	237238	133.64	UG/L	97
25)	Trichloroethene	11.07	130.0	232406	121.09	UG/L	82
26)	1,2-Dichloropropane	11.50	63.0	157671	136.35	UG/L	96
27)	Bromodichloromethane	11.97	82.9	383515	135.86	UG/L	93
28)	2-Chloroethylvinyl ether	12.86	63.0	50615	127.32	UG/L	96
29)	Cis-1,3-Dichloropropene	13.19	75.0	267879	136.42	UG/L	94
30)	4-Methyl-2-pentanone	12.91	58.0	34566	202.25	UG/L	94
31)	Toluene-d8	13.53	98.2	513545	162.86	UG/L	93
32)	Toluene	13.70	91.0	453835	131.21	UG/L	91
33)	*Chlorobenzene-d5	16.76	117.0	163541	50.00	UG/L	88
34)	Trans-1,3-Dichloropropene	14.32	75.0	189541	127.96	UG/L	86
35)	1,1,2-Trichloroethane	14.58	97.0	132167	124.77	UG/L	96
36)	2-Hexanone	14.79	58.0	30276	202.04	UG/L	87
37)	Tetrachloroethene	14.96	164.0	229418	123.33	UG/L	97
38)	Dibromochloromethane	15.55	129.0	345096	130.93	UG/L	97
39)	Chlorobenzene	16.84	112.0	404039	128.99	UG/L	93
40)	Ethylbenzene	17.00	91.0	633372	129.70	UG/L	98

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 11:12
Output File: ^V4610::D1 Injected at: 911025 10:41
Data File: >V4610::D2 Dilution Factor: 1.00000
me: 150 PPB 8240 I-CAL Instrument ID: GCMSVOA1
sc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	18.26	104.0	410237	201.32	UG/L	93
42)	M+P-Xylene	17.17	91.0	568074	132.77	UG/L	89
43)	O-Xylene	18.12	91.0	634390	211.57	UG/L	82
44)	Bromoform	18.94	172.9	248661	128.90	UG/L	85
45)	1,1,2,2-Tetrachloroethane	19.54	82.9	189751	154.36	UG/L	96
46)	Bromofluorobenzene	19.53	174.0	330849	150.11	UG/L	89
47)	1,3-Dichlorobenzene	21.97	146.0	433015	127.57	UG/L	91
48)	1,4-Dichlorobenzene	22.25	146.0	453197	133.34	UG/L	89
49)	1,2-Dichlorobenzene	23.07	146.0	388109	125.42	UG/L	98

* Compound is ISTD

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 11:49
Output File: ^V4611::D1 Injected at: 911025 11:16
Data File: >V4611::D2 Dilution Factor: 1.00000
Name: 200 PPB 8240 I-CAL Instrument ID: GCMSVOA1
Misc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.74	127.9	49677	50.00	UG/L	96
2)	Chloromethane	2.62	50.0	113691	183.41	UG/L	93
3)	Vinyl Chloride	2.75	62.0	124208	160.23	UG/L	99
4)	Bromomethane	3.29	94.0	134714	117.85	UG/L	88
5)	Chloroethane	3.44	64.0	86153	149.51	UG/L	99
6)	Trichlorofluoromethane	3.75	101.0	487862	168.59	UG/L	96
7)	Trichlorotrifluoroethane 113	4.48	101.0	367041	153.18	UG/L	98
8)	1,1-Dichloroethene	4.75	96.0	170077	164.98	UG/L	93
9)	Acetone	4.90	43.0	19541	161.33	UG/L	89
10)	Dimethyl Ketone	4.90	58.0	5610	258.78	UG/L	90
11)	Carbon Disulfide	5.40	76.0	456774	242.85	UG/L	100
12)	Methylene Chloride	5.72	83.9	199305M	165.55	UG/L	
13)	Vinyl Acetate	7.25	86.0	20246	158.77	UG/L	100
14)	Trans-1,2-Dichloroethene	6.14	96.0	187529	172.55	UG/L	94
15)	Cis-1,2-Dichloroethene	8.17	96.0	189286	161.33	UG/L	94
16)	2-Butanone	8.09	72.0	8985M	279.85	UG/L	97
17)	1,1-Dichloroethane	7.01	63.0	328258	174.60	UG/L	92
18)	Chloroform	8.45	82.9	499219	166.34	UG/L	99
19)	1,1,1-Trichloroethane	9.08	97.0	485820	170.55	UG/L	94
20)	Carbon Tetrachloride	9.49	116.9	498035	172.54	UG/L	94
21)	1,2-Dichloroethane-d4	9.83	65.0	266421	169.44	UG/L	94
22)	*1,4-Difluorobenzene	10.62	114.0	185290	50.00	UG/L	88
23)	Benzene	9.90	78.0	441181	171.76	UG/L	88
24)	1,2-Dichloroethane	10.01	62.0	299754	176.66	UG/L	92
25)	Trichloroethene	11.06	130.0	293599	160.04	UG/L	79
26)	1,2-Dichloropropane	11.49	63.0	196785	178.04	UG/L	94
27)	Bromodichloromethane	11.97	82.9	501782	165.97	UG/L	87
28)	2-Chloroethylvinyl ether	12.85	63.0	70380	185.22	UG/L	92
29)	Cis-1,3-Dichloropropene	13.18	75.0	335405	178.71	UG/L	96
30)	4-Methyl-2-pentanone	12.92	58.0	40156	245.82	UG/L	93
31)	Toluene-d8	13.53	98.2	609043	202.08	UG/L	92
32)	Toluene	13.70	91.0	583865	176.61	UG/L	94
33)	*Chlorobenzene-d5	16.76	117.0	157904	50.00	UG/L	99
34)	Trans-1,3-Dichloropropene	14.31	75.0	247379	172.96	UG/L	89
35)	1,1,2-Trichloroethane	14.58	97.0	163351	159.71	UG/L	95
36)	2-Hexanone	14.78	58.0	36206	250.24	UG/L	86
37)	Tetrachloroethene	14.96	164.0	292350	162.77	UG/L	98
38)	Dibromochloromethane	15.54	129.0	436328	171.46	UG/L	88
39)	Chlorobenzene	16.84	112.0	517395	171.07	UG/L	92
40)	Ethylbenzene	17.01	91.0	831268	176.30	UG/L	96

Operator ID: JEFF-1 Quant Rev: 7 Quant Time: 911025 11:49
Output File: ^V4611::D1 Injected at: 911025 11:16
Data File: >V4611::D2 Dilution Factor: 1.00000
me: 200 PPB 8240 I-CAL Instrument ID: GCMSVOA1
sc: GCMSVOA1 (60M VOCOL)

ID File: ID_DVO::D1
Title: EPA 8240 VOLATILE ORGANICS GCMSVOA1
Last Calibration: 911004 12:46 Last Qcal Time: 911023 12:06

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	18.27	104.0	504155	256.25	UG/L	97
42)	M+P-Xylene	17.18	91.0	755951	182.99	UG/L	90
43)	O-Xylene	18.13	91.0	776752	268.29	UG/L	81
44)	Bromoform	18.96	172.9	328134	176.17	UG/L	97
45)	1,1,2,2-Tetrachloroethane	19.55	82.9	239666	201.93	UG/L	96
46)	Bromofluorobenzene	19.55	174.0	404466	190.07	UG/L	95
47)	1,3-Dichlorobenzene	21.99	146.0	578001	176.36	UG/L	93
48)	1,4-Dichlorobenzene	22.27	146.0	596958	181.91	UG/L	97
49)	1,2-Dichlorobenzene	23.07	146.0	526166	176.10	UG/L	98

* Compound is ISTD

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/15/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916712C
Sample Matrix:	Water		

CASE NARRATIVE SUMMARY

Sample WB-3 was decanted for EPA Method 8270 analysis. This sample contained approximately one and one-half inches of sediment on the bottom of the bottle.

All samples were analyzed according to the QA/QC criteria of Columbia Analytical Services, Inc.

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/15/91
Work Order #: K916712C

Dissolved Priority Pollutant Metals
µg/L (ppb)

	Sample Name:		WB-3	WB-6	Method Blank
	Lab Code:		K6712-2	K6712-3	K6712-MB
Analyte	**Method**	**MRL**			
Antimony	6010	50	ND	--	ND
Arsenic	7060	5	12	--	ND
Beryllium	6010	5	ND	--	ND
Cadmium	6010	3	ND	--	ND
Chromium	6010	5	9	--	ND
Copper	6010	10	ND	--	ND
Lead	7412	2	17	ND	ND
Mercury	7470	0.5	ND	--	ND
Nickel	6010	20	30	--	ND
Selenium	7740	5	ND	--	ND
Silver	6010	10	ND	--	ND
Thallium	7841	5	ND	--	ND
Zinc	6010	10	ND	--	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by JM Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Laboratory Chronicle

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Received: 11/15/91
Work Order #: K916712C

Inorganic Parameters

Analyte	Method	Date Analyzed
Mercury	7470	11/21/91

Approved by Jim Stellar Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/15/91
Work Order #: K916712C

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		FB-3	WB-3	Method Blank
Lab Code:		K6712-1	K6712-2	K6712-MB
Date Analyzed:		11/22/91	11/22/91	11/22/91
Analyte	**MRL**			
Chloromethane	1	ND	ND	ND
Vinyl Chloride	1	ND	ND	ND
Bromomethane	1	ND	ND	ND
Chloroethane	1	ND	ND	ND
Trichlorofluoromethane (Freon 11)	1	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	10	ND	ND	ND
1,1-Dichloroethene	1	ND	ND	ND
Acetone	20	ND	ND	ND
Carbon Disulfide	1	ND	ND	ND
Methylene Chloride	10	ND	ND	ND
trans-1,2-Dichloroethene	1	ND	ND	ND
cis-1,2-Dichloroethene	1	ND	ND	ND
2-Butanone (MEK)	10	ND	31	ND
1,1-Dichloroethane	1	ND	ND	ND
Chloroform	1	5	ND	ND
1,1,1-Trichloroethane (TCA)	1	ND	ND	ND
Carbon Tetrachloride	1	ND	ND	ND
Benzene	1	ND	ND	ND
1,2-Dichloroethane	1	ND	ND	ND
Vinyl Acetate	10	ND	ND	ND
Trichloroethene (TCE)	1	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND
Bromodichloromethane	1	ND	ND	ND
2-Chloroethyl Vinyl Ether	10	ND	ND	ND
trans-1,3-Dichloropropene	1	ND	ND	ND
2-Hexanone	10	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	10	ND	ND	ND
Toluene	1	ND	ND	ND
cis-1,3-Dichloropropene	1	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND
Tetrachloroethene (PCE)	1	ND	ND	ND
Dibromochloromethane	1	ND	ND	ND
Chlorobenzene	1	ND	ND	ND
Ethylbenzene	1	ND	ND	ND
Styrene	1	ND	ND	ND
Total Xylenes	1	ND	ND	ND
Bromoform	1	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/15/91
Date Extracted: 11/20/91
Date Analyzed: 11/22/91
Work Order #: K916712C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: WB-3
Lab Code: K6712-2

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Aniline	20	ND	Diethyl Phthalate	5	ND
Bis(2-chloroethyl) Ether	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,2-Dichlorobenzene	5	ND	Fluorene	5	ND
1,3-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
1,4-Dichlorobenzene	5	ND	N-Nitrosodiphenylamine	5	ND
Bis(2-chloroisopropyl) Ether	5	ND	4-Bromophenyl Phenyl Ether	5	ND
N-Nitroso-di-n-propylamine	5	ND	Hexachlorobenzene	5	ND
Hexachloroethane	5	ND	Phenanthrene	5	ND
Nitrobenzene	5	ND	Anthracene	5	ND
Isophorone	5	ND	Di-n-butyl Phthalate	5	ND
Bis(2-chloroethoxy)methane	5	ND	Fluoranthene	5	ND
1,2,4-Trichlorobenzene	5	ND	Pyrene	5	ND
Naphthalene	5	ND	Butylbenzyl Phthalate	5	ND
Chloroaniline	5	ND	3,3'-Dichlorobenzidine	20	ND
Hexachlorobutadiene	5	ND	Benz(a)anthracene	5	ND
2-Methylnaphthalene	5	ND	Bis(2-ethylhexyl) Phthalate	5	ND
Hexachlorocyclopentadiene	10	ND	Chrysene	5	ND
2-Chloronaphthalene	5	ND	Di-n-octyl Phthalate	5	ND
2-Nitroaniline	20	ND	Benzo(b)fluoranthene	5	ND
Dimethyl Phthalate	5	ND	Benzo(k)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(a)pyrene	5	ND
3-Nitroaniline	20	ND	Indeno(1,2,3-c,d)pyrene	5	ND
Acenaphthene	5	7	Dibenz(a,h)anthracene	5	ND
Dibenzofuran	5	ND	Benzo(g,h,i)perylene	5	ND
2,4-Dinitrotoluene	5	ND			

Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol♦	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Extracted: 11/20/91
Date Analyzed: 11/26/91
Work Order #: K916712C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: Method Blank
Lab Code: K6712-MB

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Aniline	20	ND	Diethyl Phthalate	5	ND
Bis(2-chloroethyl) Ether	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,2-Dichlorobenzene	5	ND	Fluorene	5	ND
1,3-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
1,4-Dichlorobenzene	5	ND	N-Nitrosodiphenylamine	5	ND
Bis(2-chloroisopropyl) Ether	5	ND	4-Bromophenyl Phenyl Ether	5	ND
N-Nitroso-di-n-propylamine	5	ND	Hexachlorobenzene	5	ND
Hexachloroethane	5	ND	Phenanthrene	5	ND
Nitrobenzene	5	ND	Anthracene	5	ND
Isophorone	5	ND	Di-n-butyl Phthalate	5	ND
Bis(2-chloroethoxy)methane	5	ND	Fluoranthene	5	ND
1,2,4-Trichlorobenzene	5	ND	Pyrene	5	ND
Naphthalene	5	ND	Butylbenzyl Phthalate	5	ND
4-Chloroaniline	5	ND	3,3'-Dichlorobenzidine	20	ND
Hexachlorobutadiene	5	ND	Benz(a)anthracene	5	ND
2-Methylnaphthalene	5	ND	Bis(2-ethylhexyl) Phthalate	5	ND
Hexachlorocyclopentadiene	10	ND	Chrysene	5	ND
2-Chloronaphthalene	5	ND	Di-n-octyl Phthalate	5	ND
2-Nitroaniline	20	ND	Benzo(b)fluoranthene	5	ND
Dimethyl Phthalate	5	ND	Benzo(k)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(a)pyrene	5	ND
3-Nitroaniline	20	ND	Indeno(1,2,3-c,d)pyrene	5	ND
Acenaphthene	5	ND	Dibenz(a,h)anthracene	5	ND
Dibenzofuran	5	ND	Benzo(g,h,i)perylene	5	ND
2,4-Dinitrotoluene	5	ND			

Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol*	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Quantified as 4-methylphenol.

Approved by JM Siddall Date 12/12/91

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Work Order #: K916712C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Priority Pollutant Metals
µg/L (ppb)

Sample Name: Batch QC
Lab Code: K6641-1

						Percent Recovery			
Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Duplicate Spiked Sample Result	Spiked Sample	Duplicate Spiked Sample	CAS Acceptance Criteria	Relative Percent Difference
Antimony	50	1,000	ND	970	1,010	97	101	75-125	4
Arsenic	5	80	6	83	87	96	101	75-125	5
Beryllium	5	100	ND	98	99	98	99	75-125	1
Cadmium	3	100	ND	91	97	91	97	75-125	6
Chromium	5	400	ND	378	395	94	99	75-125	4
Copper	10	500	ND	492	491	98	98	75-125	<1
Lead	2	40	ND	46	43	115	108	75-125	7
Mercury	0.5	1	ND	0.9	0.9	90	90	60-140	<1
Nickel	20	1,000	ND	937	976	94	98	75-125	4
Selenium	5	20	ND	22	23	110	115	60-125	4
Silver	10	100	ND	90	94	90	94	75-125	4
Thallium	5	100	ND	91	88	91	88	75-125	3
Zinc	10	1,000	21	936	975	92	95	75-125	4

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

pproved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB1	CCB2	CCB3	CCB4
Antimony	6010	50	ND	ND	ND	ND
Arsenic	7060	5	ND	ND	ND	ND
Beryllium	6010	5	ND	ND	ND	ND
Cadmium	6010	3	ND	ND	ND	ND
Chromium	6010	5	ND	ND	ND	ND
Copper	6010	10	ND	ND	ND	ND
Lead	7421	2	ND	ND	ND	ND
Mercury	7470	0.5	ND	ND	--	--
Nickel	6010	20	ND	ND	ND	ND
Selenium	7740	5	ND	ND	ND	ND
Silver	6010	10	ND	ND	ND	ND
Thallium	7841	5	ND	ND	ND	ND
Zinc	6010	10	ND	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by DM Siddak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Continuing Calibration Blank (CCB) Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB5	CCB6
Antimony	6010	50	ND	--
Arsenic	7060	5	ND	--
Beryllium	6010	5	ND	--
Cadmium	6010	3	ND	--
Chromium	6010	5	ND	--
Copper	6010	10	ND	--
Nickel	6010	20	ND	--
Silver	6010	10	ND	--
Thallium	7841	5	ND	ND
Zinc	6010	10	ND	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Jim Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Initial Calibration Verification (ICV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Antimony	6010	980	1,040	106
Arsenic	7060	50	53	106
Beryllium	6010	508	486	96
Cadmium	6010	516	530	103
Chromium	6010	514	518	101
Copper	6010	525	519	99
Lead	7421	98	107	109
Mercury	7470	5.0	5.4	108
Nickel	6010	504	514	102
Selenium	7740	50	54	108
Silver	6010	517	492	95
Thallium	7841	101	101	100
Zinc	6010	3,050	3,050	100

ICV Source: EPA ICV

Approved by Tim Sedlak Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV1 Result	Percent Recovery	CCV2 Result	Percent Recovery	CCV3 Result	Percent Recovery
Antimony	6010	5,000	4,900	98	4,920	98	5,030	101
rsenic	7060	40	40	100	39	98	40	100
Beryllium	6010	500	482	96	499	100	523	105
Cadmium	6010	500	501	100	517	104	533	107
Chromium	6010	5,000	4,960	99	5,130	103	5,280	106
Copper	6010	500	489	98	490	98	510	102
Lead	7421	40	41	102	40	100	38	95
Mercury	7470	3.0	3.1	103	3.0	100	--	--
Nickel	6010	500	490	98	514	103	524	105
Selenium	7740	40	40	100	42	105	41	102
Silver	6010	500	497	99	508	102	524	105
Thallium	7841	40	39	98	38	95	39	98
Zinc	6010	2,500	2,450	98	2,510	100	2,600	104

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06

Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV4 Result	Percent Recovery	CCV5 Result	Percent Recovery	CCV6 Result	Percent Recovery
Antimony	6010	5,000	5,030	101	5,070	101	--	--
Arsenic	7060	40	38	95	39	98	--	--
Beryllium	6010	500	508	102	511	102	--	--
Cadmium	6010	500	495	99	498	100	--	--
Chromium	6010	5,000	5,010	100	5,050	101	--	--
Copper	6010	500	511	102	511	102	--	--
Lead	7421	40	38	95	--	--	--	--
Nickel	6010	500	505	101	508	102	--	--
Selenium	7740	40	44	110	--	--	--	--
Silver	6010	500	499	100	504	101	--	--
Thallium	7841	40	37	92	37	92	37	92
Zinc	6010	2,500	2,500	100	2,520	101	--	--

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Analyzed:**	11/22/91
Project:	The O'Brien Corp./#E50-01.06	**Work Order #:**	K916712C
Sample Matrix:	Water		

QA/QC Report
Laboratory Control Sample Summary
Dissolved Priority Pollutant Metals
EPA Method 6010
µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Antimony	980	1,040	106	75-125
Arsenic	50	49	98	75-125
Beryllium	508	512	101	75-125
Cadmium	516	526	102	75-125
Chromium	514	519	101	75-125
Copper	525	520	101	75-125
Lead	98	94	96	75-125
Mercury	5.0	5.4	108	75-125
Nickel	504	523	104	75-125
Selenium	50	48	96	75-125
Silver	517	491	95	75-125
Thallium	101	98	97	75-125
Zinc	3,050	2,990	98	75-125

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/15/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/22/91
Sample Matrix:	Water	**Work Order #:**	K916712C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
B-3	K6712-1	88.8	104	106
WB-3	K6712-2	91.9	103	108
Method Blank	K6712-MB	92.9	103	103
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: The O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/15/91
Date Extracted: 11/20/91
Date Analyzed: 11/22/91
Work Order #: K916712C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
WB-3	K6712-2	58.8	39.7	95.2	80.0	76.8	104
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Extracted:**	11/20/91
Project:	The O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/26/91
Sample Matrix:	Water	**Work Order #:**	K916712C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
Method Blank	K6712-MB	47.2	29.7	65.9	81.2	78.6	105
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

Approved by _____ Date 12/12/91

APPENDIX B

CHAIN OF CUSTODY INFORMATION

Columbia Analytical Services, Inc.

1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 11/13/91 PAGE 1 OF 1

PROJECT NAME O'BRIEN #ESO-01.06

PROJECT MNGR.

COMPANY/ADDRESS

PHONE 453-3267

SAMPLERS SIGNATURE J Butera

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO4, PO4, F; NO2, Alk, TDS, TSS (circle)	NH3-N, COD, Total-P, TKN, NO3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols				REMARKS
FB-3	11/13	—		H2O	2		X														CHECK WITH MARK & VINIAN BEFORE ANALYSIS
WB-3	↓	1150			5	X	X						X								
WB-6	↓	915	7-8	↓	3			X					X								

RELINQUISHED BY:

Signature J Butera

Printed Name J Butera

Firm ENCON-SJ

Date/Time 11/13/91 1800

RECEIVED BY:

Signature

Printed Name Howard Friedman

Firm CAS-SJ

Date/Time 11-14-91 9:30

RELINQUISHED BY:

Signature

Printed Name

Firm

Date/Time

RECEIVED BY:

Signature Lori K. Hawn

Printed Name CAS

Firm 11/15/91 1:00

Date/Time

TURNAROUND REQUIREMENTS:

___ 24 hr ___ 48 hr ___ 5 day

___ Standard (~ 10-15 working days)

___ Provide Verbal Preliminary Results

___ Provide FAX Preliminary Results

Requested Report Date

REPORT REQUIREMENTS

___ I. Routine Report

___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)

X III. Data Validation Report (includes All Raw Data)

___ IV. CLP Deliverable Report

INVOICE INFORMATION:

P.O. #

Bill to:

SAMPLE RECEIPT:

Shipping VIA: Sampler

Shipping #:

Condition: bubbles in WB-3 with 1" approx of solvent/oil

Lab No.: SJ91-1428

SPECIAL INSTRUCTIONS/COMMENTS:

SAR#1971

8240 } to Kelso
8270 Metals }

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

APPENDIX C

RAW DATA

716642

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729

SAMPLE NUMBER(S)	SERVICE REQUEST NUMBER
See Below	916641C; 916670
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP-Red-Water-GFAA

DATA

SAMPLE 6642 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (6641C;	6670C; 6712C;)			50 ml		50 ml	
LCSW 6641C			X	↓		↓	
6641C - 1			X				
1DS*			↓				
1S*							
6670C - 2							
3							
6712C - 2							
3							
6729 - 1							
2							
3							
6642 - 1			↓	↓		↓	

COMMENTS: * Spike = 0.5 ml SSS #4
LCSW = ICV-2 = Lot #1290
ICV-4 = " 1290

ANALYST	DATE	PAGE Number
	11/18/91	
REVIEWER	DATE	

[DIGEST2.FRM]

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729C

SAMPLE NUMBER(S) See Below	SERVICE REQUEST NUMBER 916641C; 916670C
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP-Blue-Water-ICP

DATA

SAMPLE (6661 6729C)	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (641C; 670C; 6712C; 642)				50 ml		50 ml	
ICSW 641C			X				
641C-1			X				
1DS*							
1S*							
670C-2							
3							
6712C-2							
3							
6729C-1							
2							
3							
642-1							
6661-1							
2							
3							
4							
5			↓	↓		↓	

COMMENTS: *Spike = 0.5 ml of SSS #1, 2, 3 + 100 ppm Mo + B
ICSW - ICV-1 = Lot # 0691
ICV-3 = " 1190

ANALYST	DATE 11/18/91	PAGE Number
REVIEWER	DATE	

[DIGEST2.FRM]

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

916642

Service Request Number : 916641C ; 916670C ; 916712C ; 916729C ;

Q.C. Sample Number : 641C-1 Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
1	Be	1.25	✓	D37622	9/92	Baker	5	
for	Cd	1.25	✓	D22642	6/92	Baker	5	
ICP	Co	12.50	✓	2-4CO	6/92	SPEX	50	
only	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/19/91 by CW Date Analyzed _____ by _____

	HCl	25.00	✓	E28834		Baker	--	
2	Sb	12.50	✓	903464-24	4/92	Fisher	50	
ICP	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/7/91 by CW Date Analyzed _____ by _____

	HNO3	2.50	✓	E17065		Baker	--	
3	Ag	1.25	✓	E16618	4/93	Baker	5	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

	HNO3	2.50	✓	E08045		Baker	--	
4	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
GFAA	Pb	0.50	✓	D17621	5/92	BAKER	2	0.5
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/13/91 by ASO Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW Date Analyzed _____ by _____

5	HCL	25.00	✓	E28834		Baker	--	
ICP	As	50.00	✓	D22643	6/92	Baker	200	
ONLY	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

PLG1101

0277

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

Service Request Number : 916712C; 916729C; 916642; 916661
916641C; 916670C

Q.C. Sample Number : 6641C-1* Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc- mg/l	Enter mls added
1 for ICP only	HNO3	2.50	✓	E17065	----------	Baker		0.5
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
	Be	1.25	✓	D37622	9/92	Baker	5	
	Cd	1.25	✓	D22642	6/92	Baker	5	
	Co	12.50	✓	2-4CO	6/92	SPEX	50	
	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/19/91 by CW Date Analyzed _____ by _____

2 ICP	HCl	25.00	✓	E28834	-------	Baker	--	0.5
	Sb	12.50	✓	903464-24	4/92	Fisher	50	
	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/7/91 by CW Date Analyzed _____ by _____

3	HNO3	2.50	✓	E17065	-------	Baker	--	0.5
	Ag	1.25	✓	E16618	4/93	Baker	5	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/19/91 by CW Date Analyzed _____ by _____

4 GFAA	HNO3	2.50	✓	E08045	-------	Baker	--	
	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/12/91 by ASO Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW Date Analyzed _____ by _____

5 ICP ONLY	HCL	25.00	✓	E28834	----------	Baker	--	
	As	50.00	✓	D22643	6/92	Baker	200	
	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

* Spike = 0.5 ml of 100 ppm Mo & B

DIG1101

04278

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729, 6670C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	ICV (50.4)	—	—	—	—	52.6	104%
2	CCV (40)	—	—	—	—	39.5	99%
3	CCB	—	—	—	—	<1	<0.001
4	PBW 6641, 6712	6729, 6642 6670	50	—	—	<1	<0.001
5	LCSW (50.4)	50		1	2	24.6	98%
6	6641C-1			—	—	6.0	0.006
7	C-1A					26.8	104%
8	C-1D5					>	—
9	C-1S					>	—
10	6712-C-2	50	50			12.3	0.012
11	C-2A					32.4	100%
12	6712C-3	50	50			9.3	0.009
13	CCV (40)	—	—	—	—	39.0	98%
14	CCB	—	—	—	—	<1	<0.001
15	6729C-1	50	50			6.2	0.006
16	C-1A					26.4	102%
17	C-2					21.0	0.021
18	C-3					21.4	0.021
19	6642-1	50	50			>	—
20	1A					>	—
21	6670C-2	50	50			6.3	0.006
22	C-3					4.3	0.004
23	C-3A					253	105%
24	CCV (40)	—	—	—	—	39.6	99%
25	CCB	—	—	—	—	<1	<0.001

COMMENTS:

SPIKE LEVEL: As 20 ug/L

ANALYST: CJ Bruno	DATE: 11/19/91	PAGE NUMBER: 1
REVIEWER:	DATE:	

[ALMCSGFA1.FRM]

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6631C, 6641C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	PBW 6631C	50	50			<1	<0.001
27	6631C-1					<1	<0.001
28	C-1A					17.8	89%
29	C-1B5					>	—
30	C-1S					>	—
31	C-2					<1	<0.001
32	C-3					26	0.003
33	C-4					>B	—
34	C-5					2.1	0.002
35	C-6	↓	↓			>B	—
36	CCV (40)	—	—			38.1	95%
37	CCB	—	—			<1	<0.001
38	6631C7	50	50			>B	—
39	C-8	↓	↓			>B	—
40	C-9	↓	↓	↓	↓	17.7	0.018
41	6641C-1S	50	50	1	2	41.6	0.083 / 96%
42	C-1B5	↓	↓	↓	↓	43.4	0.087 / 101%
43	CCV (40)	—	—	—	—	39.2	98%
44	CCB	—	—	—	—	<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6641C-1S @ 80 ug/l A: 20 ug/l

ANALYST: J. Bruno	DATE: 11/19/91	PAGE Number: 2
REVIEWER:	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso. WA 98626 (206) 577-7222

OPERATOR CJ Burro
DATE 11/19/91 08:00
BATCH As

PROGRAM 6 As EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.004
STANDARD 1	10.0	4.7	0.031	0.030	0.032
STANDARD 2	20.0	2.5	0.062	0.061	0.064
STANDARD 3	40.0	0.3	0.115	0.116	0.115
STANDARD 4	60.0	2.5	0.174	0.177	0.171
SAMPLE 1	52.6	2.6	0.152	0.149	0.155
SAMPLE 2	39.5	0.7	0.114	0.114	0.115
SAMPLE 3	-0.2	99.9	-0.001	-0.001	0.000
SAMPLE 4	-0.3	66.9	-0.001	-0.000	-0.001
SAMPLE 5	24.6	2.2	0.076	0.077	0.075
SAMPLE 6	6.0	2.4	0.019	0.018	0.019
SAMPLE 7	26.8	0.3	0.082	0.082	0.082
SAMPLE 8	OVER	1.5	0.253	0.250	0.256
SAMPLE 9	OVER	0.9	0.247	0.245	0.248
SAMPLE 10	12.3	1.6	0.038	0.039	0.038
SAMPLE 11	32.4	0.0	0.097	0.097	0.097
SAMPLE 12	9.3	2.1	0.029	0.029	0.029
SAMPLE 13	39.0	0.9	0.113	0.112	0.114
SAMPLE 14	-0.6	30.8	-0.002	-0.002	-0.002
SAMPLE 15	6.2	2.8	0.019	0.019	0.020
SAMPLE 16	26.6	0.4	0.082	0.081	0.082
SAMPLE 17	21.0	2.2	0.066	0.065	0.067
SAMPLE 18	21.4	1.7	0.066	0.067	0.066
SAMPLE 19	OVER	1.1	0.667*	0.673*	0.662*
SAMPLE 20	OVER	99.9	0.339*	0.677*	0.001
SAMPLE 21	6.3	2.8	0.020	0.020	0.019
SAMPLE 22	4.3	3.4	0.013	0.014	0.013
SAMPLE 23	25.3	1.5	0.078	0.079	0.077
SAMPLE 24	39.6	0.4	0.115	0.114	0.115
SAMPLE 25	-0.1	99.9	-0.000	-0.001	0.001
SAMPLE 26	-0.3	62.3	-0.001	-0.001	-0.001
SAMPLE 27	0.2	0.0	0.000	0.001	0.000
SAMPLE 28	17.8	0.8	0.056	0.055	0.056
SAMPLE 29	OVER	0.2	0.202	0.203	0.202
SAMPLE 30	OVER	1.0	0.202	0.201	0.204
SAMPLE 31	0.5	75.1	0.001	0.001	0.002
SAMPLE 32	2.6	12.2	0.008	0.009	0.007
SAMPLE 33	OVER	17.6	0.257B	0.225B	0.289B
SAMPLE 34	2.1	10.6	0.006	0.006	0.007
SAMPLE 35	49.1B	38.9	0.142B	0.103B	0.181B
SAMPLE 36	38.1	2.9	0.111	0.113	0.109
SAMPLE 37	-0.5	63.8	-0.001	-0.001	-0.002

cf Bro
11/19/91
A5

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	OVER	25.7	0.594B	0.702B	0.486B
SAMPLE 40	17.7	10.3	0.055	0.059	0.051
SAMPLE 41	41.6	1.9	0.120	0.121	0.118
SAMPLE 42	43.4	0.0	0.125	0.125	0.125
SAMPLE 43	39.2	0.4	0.114	0.113	0.114
SAMPLE 44	-0.3	7.8	-0.001	-0.001	-0.001
SAMPLE 45	-0.3	44.4	-0.001	-0.001	-0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.007	0.007
SAMPLE 1	40.5	0.2	0.117	0.117	0.117
SAMPLE 2	-0.3	51.1	-0.001	-0.001	-0.001
SAMPLE 3	OVER	0.9	0.275	0.277	0.273
SAMPLE 4	55.2	99.9	0.160	0.321	-0.002
SAMPLE 5	35.6	1.6	0.105	0.104	0.106
SAMPLE 6	35.3	1.9	0.105	0.103	0.106
SAMPLE 7	10.1	3.7	0.031	0.032	0.031
SAMPLE 8	-0.1	99.9	-0.000	0.000	-0.001
SAMPLE 9	45.2	0.9	0.130	0.131	0.130
SAMPLE 10	OVER	14.4	0.201B	0.222B	0.181B
SAMPLE 11	8.3	3.0	0.026	0.025	0.026
SAMPLE 12	30.4	2.0	0.092	0.091	0.093
SAMPLE 13	38.6	0.9	0.112	0.113	0.112
SAMPLE 14	-0.2	0.0	-0.001	-0.001	-0.001
SAMPLE 15	6.3	3.1	0.020	0.019	0.020
SAMPLE 16	39.6	0.5	0.114	0.115	0.114
SAMPLE 17	-0.3	14.0	-0.001	-0.001	-0.001

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6631

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729C, 6670C 6631C
ANALYSIS FOR: Pb	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	PBW 6641, 6670, 6712, 6729, 6642		50	—	—	<2	<0.002
2	LCSW (984)	50		1	5	18.7	95%
3	6641C-1			—	—	<2	<0.002
4	C-1A					22.2	111%
5	C-1DS					45.8	0.046 / 115% ①
6	C-5					43.0	0.043 / 108%
7	6712C-2					17.4	0.017
8	C-2A					40.3	114%
9	C-3					<2	<0.002
10	CCV (40)	—	—			38.3	96%
11	CCB	—	—			<2	<0.002
12	6729C-1	50	50			17.6	0.018
13	C-1A					40.6	115%
14	C-2					6.9	0.007
15	C-3					9.7	0.010
16	6670C-2	50	50			<2	<0.002
17	C-3					11/19/91 ~~9~~ 3.8	0.004
18	C-3A					23.5	98%
19	6642-1	50	50			<2	<0 —
20	6642-1					<1	—
21	1A					24.5	—
22	CCV (40)	—	—			38.1	95%
23	CCB	—	—			<1	<0.001
24	PBW 6631C	50	50			<1	<0.001
25	6631C-1					<1	<0.001

COMMENTS: ① Spiked at 40 ug/l

SPIKE LEVEL: A: 20 ug/l

ANALYST	DATE:	PAGE NUMBER:
J. Brown	11/19/91	3
REVIEWER	DATE:	

[AMCSGFAI.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2

1317 South 13th Street P.O. Box 479

Kelso, WA 98626 (206) 577-7222

OPERATOR CJ Bruna

DATE 11/19/91 Time 09:00

BATCH Pb

PROGRAM 19 Pb EPA/PTI PLATFORM

SAMPLE	CONC	%RSD	MEAN	READINGS	
	ppb		ABS		
BLANK	0.0		0.003	0.002	0.004
STANDARD 1	5.0	5.0	0.009	0.009	0.009
STANDARD 2	30.0	0.8	0.053	0.053	0.054
STANDARD 3	40.0	1.7	0.070	0.069	0.070
STANDARD 4	50.0	0.3	0.087	0.087	0.087
SAMPLE 1	21.4	0.2	0.038	0.038	0.038
SAMPLE 2	41.1	1.0	0.071	0.071	0.072
SAMPLE 3	0.8	18.9	0.001	0.002	0.001
SAMPLE 4	1.0	17.6	0.002	0.002	-0.002
MPLE 5	2.4	89.3	0.004	0.007	0.002
SAMPLE 6	25.6	2.0	0.046	0.046	0.045
SAMPLE 7	6.4	2.2	0.012	0.011	0.012

					0.005
[redacted] 10	0.9	24.1	0.002	0.002	0.001
MPLE 11	0.8	11.6	0.001	0.002	0.001
SAMPLE 12	0.9	0.0	0.002	0.002	0.002
PLE 13	1.1	8.1	0.002	0.002	0.002
SAMPLE 14	39.7	3.3	0.069	0.067	0.071
SAMPLE 15	0.5	40.2	0.001	0.001	0.001
SAMPLE 16	0.9	7.6	0.002	0.002	0.002
SAMPLE 17	1.3	5.2	0.002	0.002	0.002
SAMPLE 18	1.8	16.6	0.003	0.003	0.004
SAMPLE 19	1.0	11.1	0.002	0.002	0.002
AMPLE 20	1.0	8.9	0.002	0.002	0.002
AMPLE 21	23.0	0.0	0.041	0.041	0.041
AMPLE 22	0.8	47.0	0.001	0.001	0.002
MPLE 23	1.1	28.9	0.002	0.002	0.002
MPLE 24	1.4	11.5	0.002	0.003	0.002
MPLE 25	1.4	3.4	0.003	0.003	0.002
E 26	40.8	1.8	0.071	0.070	0.072
MPLE 27	1.2	15.0	0.002	0.002	0.002
PLE 28	1.7	2.0	0.003	0.003	0.003
PLE 29	1.2	46.2	0.002	0.002	0.003
PLE 30	2.2	1.5	0.004	0.004	0.004
PLE 31	1.2	42.1	0.002	0.003	0.002
LE 32	1.0	39.1	0.002	0.002	0.001
LE 33	1.1	20.1	0.002	0.002	0.002
LE 34	40.4	1.5	0.070	0.069	0.071
LE 35	1.3	15.4	0.002	0.003	0.002

J Bruno
11/19/91
Pb

cf Bruno 11/19/9 Pb

BLANK	0.0		-0.001	-0.000	-0.002
SAMPLE 1	-0.0	99.9	-0.000	0.000	-0.000
SAMPLE 2	18.7	0.8	0.034	0.033	0.034
SAMPLE 3	0.0	99.9	0.000	0.001	-0.001
SAMPLE 4	22.2	1.9	0.040	0.039	0.040
SAMPLE 5	45.8	1.0	0.080	0.080	0.079
SAMPLE 6	43.0	0.8	0.075	0.074	0.075
SAMPLE 7	17.4	1.3	0.031	0.031	0.032
SAMPLE 8	40.3	1.5	0.070	0.071	0.069
SAMPLE 9	-0.6	11.6	-0.001	-0.001	-0.001
SAMPLE 10	38.3	2.5	0.067	0.068	0.066
SAMPLE 11	-1.4	12.6	-0.003	-0.002	-0.003
SAMPLE 12	17.6	2.7	0.032	0.031	0.032
SAMPLE 13	40.6	0.9	0.071	0.070	0.071
SAMPLE 14	6.9	2.6	0.013	0.013	0.012
SAMPLE 15	9.7	0.0	0.018	0.018	0.018
SAMPLE 16	-0.9	9.9	-0.002	-0.002	-0.002
SAMPLE 17	3.8	6.6	0.007	0.007	0.007
SAMPLE 18	23.5	0.8	0.042	0.042	0.042
SAMPLE 19	-1.1	0.0	-0.002	-0.002	-0.002
SAMPLE 20	0.0	0.0	0.000	0.000	0.000
SAMPLE 21	24.5	0.4	0.044	0.044	0.044
SAMPLE 22	38.1	4.0	0.067	0.065	0.068
SAMPLE 23	-1.0	4.5	-0.002	-0.002	-0.002
BLANK	0.0		-0.001	-0.000	-0.001
SAMPLE 24	-0.4	16.7	-0.001	-0.001	-0.001
SAMPLE 25	0.3	76.7	0.001	0.000	0.001
SAMPLE 26	21.1	0.2	0.038	0.038	0.038
SAMPLE 27	39.6	1.4	0.069	0.068	0.070

[redacted]PLE 31	8.6	0.4	0.016	0.016	0.016
SAMPLE 32	0.4	81.2	0.001	0.000	0.001
SAMPLE 33	0.6	99.9	0.001	0.003	-0.001
SAMPLE 34	36.0	3.4	0.063	0.065	0.062
SAMPLE 35	-0.3	51.4	-0.001	-0.000	-0.001
BLANK	0.0		0.000	0.001	-0.000
RESLOPE 3	40.0	5.5	0.062	0.060	0.065
SAMPLE 36	1.0	99.9	0.002	0.003	0.000
SAMPLE 37	OVER	8.6	0.262B	0.277B	0.246B
SAMPLE 38	1.0	38.1	0.002	0.001	0.002
SAMPLE 39	0.8	24.3	0.001	0.001	0.002
SAMPLE 40	OVER	1.0	0.118	0.119	0.117
SAMPLE 41	0.4	99.9	0.001	0.000	0.001
SAMPLE 42	41.0	1.0	0.064	0.064	0.063
SAMPLE 43	0.4	50.4	0.001	0.001	0.000

J Brun
11/19/97
Pb

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 916641

SAMPLE NUMBER: As Listed		SERVICE REQUEST #: 916641 916670 916712 916729 916681 916731
ANALYSIS FOR: Hg	METHOD: CVAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	ug/l measured	(mg/L or mg/Kg) Sample (actual)
1	ICV	5.0 ppb				5.43	108%
2	CCV-1	3.0 ppb				3.07	102%
3	CCB-1					<.2	<.0002
4	6641 6670 6712 6729 6681 6731 PBW	20ml	20ml			↓	↓
5	6641-1					↓	↓
6	-1BS			⊛		0.88	.0009 90%
7	-1SD			⊛		0.89	.0009 90%
8	6670-2					<.2	<.0002
9	-3					↓	↓
10	6712-2					↓	↓
11	6729-1					↓	↓
12	-1S			⊛		0.92	.0009 90%
13	-1SD	✓	✓	⊛		0.86	.0009 90%
14	CCV-2	3.0 ppb				3.01	100%
15	CCB-2					<.2	<.0002
16	6729-2	20ml	20ml			↓	↓
17	-3	↓	↓			↓	↓
18	6681-1	↓	↓			↓	↓
19	-1D	↓	↓			↓	↓
20	-1S	↓	↓	⊛		0.95	.0010 100%
21	6731-1	↓	↓			<.2	<.0002
22	-3	↓	↓			↓	↓
23	-3S	↓	↓	⊛		1.01	.0010 100%
24	-3SD	↓	↓	⊛		0.98	.0010 100%
25	-4	↓	✓			<.2	<.0002

11/21/91

COMMENTS:

SPIKE LEVEL: ⊛ 1.0 ppb

ANALYST: Sandy Brush	DATE: 11/21/91	PAGE NUMBER:
REVIEWER:	DATE:	

(AMKSGFA1.FRM)

Varian SpectrAA 10/20 System Report

lumbia Analytical Services
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11 21 91
BATCH NO.

PROGRAM 23 Hg

Sandy Brun

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		0.001	0.001	0.001	0.001
STANDARD 1	1.00	1.2	0.018	0.018	0.018	0.018
STANDARD 2	3.00	1.4	0.051	0.051	0.051	0.052
STANDARD 3	5.00	0.5	0.083	0.084	0.083	0.083
STANDARD 4	10.00	0.5	0.177	0.177	0.177	0.178
SAMPLE 1	5.43	1.4	0.091	0.090	0.092	0.092
SAMPLE 2	3.07	1.0	0.052	0.053	0.052	0.052
SAMPLE 3	-0.00	99.9	-0.000	0.000	-0.000	-0.000
SAMPLE 4	-0.01	99.9	-0.000	-0.000	0.000	-0.000
SAMPLE 5	-0.00	99.9	-0.000	0.001	-0.001	-0.000
SAMPLE 6	0.88	2.0	0.016	0.016	0.016	0.015
MPLE 7	0.89	3.7	0.016	0.016	0.015	0.016
MPLE 8	0.04	50.5	0.001	0.001	0.000	0.001
SAMPLE 9	0.02	60.6	0.000	0.000	0.000	0.000
SAMPLE 10	0.04	66.8	0.001	0.000	0.001	0.000
SAMPLE 11	0.01	57.7	0.000	0.000	0.000	0.000
SAMPLE 12	0.92	1.5	0.016	0.016	0.017	0.016
SAMPLE 13	0.86	1.1	0.015	0.015	0.015	0.016
SAMPLE 14	3.01	1.3	0.051	0.051	0.052	0.052
SAMPLE 15	0.01	73.9	0.000	0.000	0.000	0.000
SAMPLE 16	0.02	56.9	0.000	0.000	0.001	0.000
SAMPLE 17	0.03	69.7	0.001	0.000	0.001	0.000
SAMPLE 18	0.02	30.8	0.000	0.000	0.000	0.000
SAMPLE 19	0.02	99.9	0.000	0.001	-0.000	0.000
SAMPLE 20	0.95	1.5	0.017	0.017	0.016	0.017
SAMPLE 21	0.02	68.3	0.000	0.000	0.000	0.001
SAMPLE 22	0.03	95.9	0.001	0.000	0.000	0.001
SAMPLE 23	1.01	1.5	0.018	0.018	0.018	0.018
SAMPLE 24	0.98	1.2	0.017	0.017	0.017	0.018
SAMPLE 25	0.03	28.3	0.001	0.001	0.000	0.001
SAMPLE 26	3.22	0.7	0.055	0.055	0.054	0.055
SAMPLE 27	0.02	90.1	0.000	0.000	0.000	0.001
SAMPLE 28	0.05	7.5	0.001	0.001	0.001	0.001
SAMPLE 29	0.04	27.1	0.001	0.001	0.001	0.001
SAMPLE 30	0.04	14.1	0.001	0.001	0.001	0.001
SAMPLE 31	0.02	69.4	0.000	0.000	0.000	0.001
SAMPLE 32	0.03	68.8	0.000	0.000	0.001	0.000
IPLE 33	0.04	47.2	0.001	0.001	0.001	0.000
SAMPLE 34	0.03	99.9	0.001	0.001	-0.000	0.001
SAMPLE 35	-0.02	73.7	-0.000	-0.000	-0.000	-0.000
SAMPLE 36	9.58	0.2	0.169	0.169	0.169	0.169
SAMPLE 37	-0.04	9.2	-0.001	-0.001	-0.001	-0.001
SAMPLE 38	3.19	0.2	0.054	0.055	0.054	0.054

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
MPLE 39	-0.03	13.2	-0.000	-0.000	-0.000	-0.001
ANK	0.00		-0.001	-0.001	-0.001	-0.001
SAMPLE 40	-0.01	54.6	-0.000	-0.000	-0.000	-0.000
SAMPLE 41	0.01	99.9	0.000	0.000	0.001	-0.001
SAMPLE 42	10.37	1.0	0.185	0.183	0.185	0.187
SAMPLE 43	0.01	99.9	0.000	0.000	-0.000	0.000
SAMPLE 44	0.06	42.9	0.001	0.001	0.001	0.001
SAMPLE 45	0.05	27.8	0.001	0.001	0.001	0.001
SAMPLE 46	0.10	21.4	0.002	0.002	0.001	0.002
SAMPLE 47	0.09	3.6	0.002	0.002	0.002	0.002
SAMPLE 48	0.08	21.0	0.001	0.002	0.001	0.001
SAMPLE 49	3.29	1.1	0.056	0.055	0.056	0.056
SAMPLE 50	3.17	0.5	0.054	0.054	0.054	0.054
SAMPLE 51	0.03	65.7	0.001	0.001	0.000	0.000
SAMPLE 52	10.61	0.4	0.190	0.189	0.190	0.190
SAMPLE 53	3.13	0.5	0.053	0.053	0.054	0.054
SAMPLE 54	0.02	99.9	0.000	0.000	0.001	-0.000

Sandy Brush 11/21/91

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6694/6641/6670/6712
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6694-PBS		100	—	—	<1	<2.0
2	-1	0.096g Dry		1	2	3.8	7.9
3	-1A					15.6	RERUN
4	-1D					3.5	7.3
5	-1L					14.2	104%
6	-1S					14.5	30/105%
7	-2	0.074g				3.0	8.1
8	-3	0.078g				2.9	7.4
9	-4	0.070g				2.7	7.7
10	CCV (40)					42.0	105%
11	CCB					<1	<0.001
12	6694-PBW		50	—	—	<1	<0.001
13	-5	50		—	—	<2	<0.002
14	-5A			—	—	23.2	116% *
15	-5D			—	—	<1	<0.001
16	-5S			—	—	12.4	0.012/120%
17	6641/6670/6712 PBW		50	50		<1	<0.001
18	LCSW			1	2	24.1	96%
19	6641-1	50		—	—	<1	<0.001
20	-1A			—	—	12.0	120%
21	CCV (40)					41.0	105%
22	CCB					<1	<0.001
23	6641-1S	50	50	—	—	22.4	0.022/110%
24	-1SD			—	—	22.9	0.023/115%
25	6670-2			—	—	<1	<0.001

COMMENTS: * post spiked w/ 20 µg/l

SPIKE LEVEL: 20 µg/l (2 mg/kg Dry) A: + 10 µg/l

ANALYST	DATE: 11/22/91	PAGE NUMBER: 3
REVIEWER	DATE: 11-24-91	

CAMCSGFA1.FRM

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6670/6712/6710
ANALYSIS FOR: SC	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6670-2A	50	50	—	—	11.9	~~119%~~
27	-3			—	—	<1	<0.001
28	6712-2			—	—	<1	<0.001
29	-2A			—	—	13.5	135%
30	CCV					43.7	109%
31	CCB					<1	<0.001
32	6670-2A			—	—	11.5	115%
33	6710-PBW		50	—	—	<1	<0.001
34	-1 DISS	50		—	—	<1	<0.001
35	-1A			—	—	12.0	120%
36	-1S			—	—	11.6	0.012/120%
37	-1SD			—	—	11.9	0.012/120%
38	-2			—	—	<1	<0.001
39	-3			—	—	<1	<0.001
40	-4			—	—	<1	<0.001
41	-5			—	—	<1	<0.001
42	-6 TOTAL			—	—	<1	<0.001
43	CCV (40)					40.1	100%
44	CCB					<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 10 ug/l A: +10 ug/l

ANALYST Ivan Chicaton	DATE: 11/22/91	PAGE Number: 4
REVIEWER	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso. WA 98626 (206) 577-7222

K91-6670C

OPERATOR Ivan Unrecht
DATE 11/22/91 08:00
BATCH

PROGRAM 12 Se EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.003	0.004	0.002
STANDARD 1	5.0	7.3	0.008	0.008	0.008
STANDARD 2	30.0	1.0	0.054	0.053	0.054
STANDARD 3	40.0	2.2	0.072	0.074	0.071
STANDARD 4	50.0	0.3	0.092	0.091	0.092
SAMPLE 1 ICV	26.8	2.6	0.047	0.048	0.047
SAMPLE 2 CCV1	40.4	3.0	0.073	0.072	0.075
SAMPLE 3 CCB1	-0.3	99.9	-0.000	0.000	-0.001
SAMPLE 4	0.5	47.0	0.001	0.001	0.001
SAMPLE 5	0.2	71.7	0.000	0.000	0.000
SAMPLE 6	11.5	3.1	0.019	0.019	0.019
SAMPLE 7	-1.9	11.3	-0.003	-0.003	-0.003
SAMPLE 8	7.0	1.5	0.011	0.011	0.011
SAMPLE 9	39.2	0.6	0.071	0.071	0.071
SAMPLE 10	-0.4	99.9	-0.001	0.000	-0.002
SAMPLE 11	-10.0	1.3	-0.016	-0.016	-0.016
SAMPLE 12	-3.3	10.3	-0.005	-0.006	-0.005
SAMPLE 13	6.6	1.0	0.011	0.011	0.011
SAMPLE 14	-1.7	25.7	-0.003	-0.003	-0.002
SAMPLE 15	9.7	7.5	0.016	0.015	0.017
SAMPLE 16	41.1	0.1	0.075	0.075	0.074
SAMPLE 17	0.6	75.4	0.001	0.000	0.001
SAMPLE 18	-0.3	96.2	-0.000	-0.000	-0.001
SAMPLE 19	20.8	3.2	0.036	0.035	0.037
SAMPLE 20	28.8	1.9	0.051	0.052	0.051
SAMPLE 21	-0.4	0.0	-0.001	-0.001	-0.001
SAMPLE 22	-0.5	99.9	-0.001	-0.000	-0.002
SAMPLE 23	10.8	4.7	0.018	0.017	0.018
SAMPLE 24	9.8	6.3	0.016	0.015	0.017
SAMPLE 25	9.5	3.3	0.016	0.015	0.016
SAMPLE 26	-0.1	0.0	-0.000	-0.000	-0.000
SAMPLE 27	-0.2	16.0	-0.000	-0.000	-0.000
SAMPLE 28	-0.3	51.6	-0.000	-0.001	-0.000
SAMPLE 29	0.2	0.0	0.000	0.000	0.000
SAMPLE 30	38.6	1.4	0.070	0.069	0.071
SAMPLE 31	0.5	14.8	0.001	0.001	0.001
SAMPLE 32	OVER	0.2	0.650*	0.651*	0.649*
SAMPLE 33	OVER	1.8	0.666*	0.658*	0.675*

Ivan Unicatu
11/22/91

K91-6670 C

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 34	OVER	2.9	0.248	0.253	0.243
SAMPLE 35	30.8	3.8	0.055	0.057	0.054
SAMPLE 36	39.6	1.1	0.072	0.072	0.071
SAMPLE 37	23.0	0.9	0.040	0.040	0.040
SAMPLE 38	31.3	2.8	0.056	0.057	0.055
SAMPLE 39	38.0	2.5	0.069	0.067	0.070
SAMPLE 40	-0.1	99.9	-0.000	0.000	-0.001
BLANK	0.0		-0.003	-0.004	-0.003
SAMPLE 1	-0.7	5.2	-0.001	-0.001	-0.001
SAMPLE 2	3.8	2.2	0.006	0.006	0.006
SAMPLE 3	15.6	5.1	0.026	0.027	0.025
SAMPLE 4	3.5	2.4	0.006	0.006	0.006
SAMPLE 5	14.2	4.1	0.024	0.024	0.023
SAMPLE 6	14.5	2.3	0.024	0.025	0.024
SAMPLE 7	3.0	0.0	0.005	0.005	0.005
SAMPLE 8	2.9	1.3	0.005	0.005	0.005
SAMPLE 9	2.7	59.8	0.004	0.003	0.006
SAMPLE 10 CCV2	42.0	1.6	0.076	0.075	0.077
SAMPLE 11 CCB2	-0.7	41.5	-0.001	-0.002	-0.001
SAMPLE 12	-0.3	99.9	-0.000	-0.001	0.000
SAMPLE 13	1.0	25.3	0.002	0.001	0.002
SAMPLE 14	23.2	2.7	0.040	0.039	0.041
SAMPLE 15	0.6	95.9	0.001	0.002	0.000
SAMPLE 16	12.4	3.4	0.020	0.021	0.020
SAMPLE 17 PB	-0.2	99.9	-0.000	0.000	-0.001
SAMPLE 18 LCS	24.1 1:2	2.1	0.042	0.041	0.043
SAMPLE 19	-0.1	99.9	-0.000	0.001	-0.002
SAMPLE 20	12.0	2.1	0.020	0.019	0.020
SAMPLE 21 CCV3	41.0	1.0	0.074	0.075	0.074
SAMPLE 22 CCB3	0.1	99.9	0.000	0.001	-0.001
SAMPLE 23	22.4	0.3	0.039	0.039	0.039
SAMPLE 24	22.9	0.5	0.040	0.040	0.039
SAMPLE 25 6670-2	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 26	11.9	0.0	0.020	0.020	0.019
SAMPLE 27 6670-3	0.4	99.9	0.001	-0.001	0.002
SAMPLE 28	0.7	16.6	0.001	0.001	0.001
SAMPLE 29	13.5	1.7	0.022	0.022	0.023
SAMPLE 30 CCV4	43.7	0.0	0.079	0.079	0.079
SAMPLE 31 CCB4	0.6	66.4	0.001	0.001	0.000
SAMPLE 32	11.5	20.3	0.019	0.022	0.016
SAMPLE 33	-0.2	66.5	-0.000	-0.000	-0.000
SAMPLE 34	0.5	0.0	0.001	0.001	0.001
SAMPLE 35	12.0	2.3	0.020	0.020	0.019
SAMPLE 36	11.6	5.2	0.019	0.018	0.020
SAMPLE 37	11.9	0.0	0.020	0.020	0.020
SAMPLE 38	-0.2	0.0	-0.000	-0.000	-0.000
SAMPLE 39	-0.2	24.1	-0.000	-0.000	-0.000
SAMPLE 40	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 41	-0.6	82.8	-0.001	-0.000	-0.001
SAMPLE 42	-0.5	65.3	-0.001	-0.000	-0.001
SAMPLE 43	40.1	3.1	0.073	0.071	0.074

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # : 6633
ANALYSIS FOR: Tl	METHOD: GFAA	6593, 6516, 6631, 6641, 6694

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(ug/L or mg/Kg) Sample (actual)
1	ICV (100.7)			1	2	50.6	100%
2	CCV (40)	—	—	—	—	39.2	98 %
3	CCB	—	—	—	-	<1	<0.001
4	6593-PBS	—	50	1	1	<1	<0.2
5	1	0.25	50	1	2	1.1	0.4
6	1A	↓	50	1	2	19.8	94%
7	6633 6516-PBS	—	100	1	1	<1	<0.2
8	6	.50	100	1	2	3.6	1.4
9	6A	.50	100	1	2	23.4	99%
10	6631-PBW	50	50	—	—	<1	<0.001
11	CCV	—	—	—	—	38.5	96%
12	CCB	—	—	—	—	<1	<0.001
13	2	50	50	1	1	~~1.5~~ <2	<0.002
14	2A	50	50	1	1	19.5	98%
15	6641-PBW	50	50	1	1	<1	<0.001
16	LCSW (100.7)	↓	↓	1	5	19.5	97%
17	1			1	1	<1	<0.001
18	1A			1	1	20.4	102%
19	1S			1	1	over Highest ABS	—
20	1SD	↓	↓	1	1	over ↓ ↓	—
21	6694-PBS		100	1	1	<1	<1.0
22	1	.096	100	1	2	1.4	2.9
23	ICV	—	—	—	—	38.7	97%
24	CCB	—	—	—	—	<1	<0.001
25	1A	.096	100	1	2	20.1	94%

COMMENTS:

SPIKE LEVEL: 6641 @ 100ug/L or 0.10 mg/L is +20

ANALYST	DATE: 11-22-91	PAGE NUMBER: 1
REVIEWER	DATE:	

CAMCSGFA1.FRM

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: TI	METHOD: GFAA	6694 6685 6670

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6694-1d	.096	100	1	2	<1	<2.1
27	~~1d~~ 1S	.096	100	1	2	48.1	100.2 | 93%
28	~~1S~~ 2	.074	100	1	2	<1	<3.0
29	3	.078	100	1	2	<1	<3.0
30	4	.070	100	1	2	<1	<3.0
31	PBW 6694	50	50	1	1	<1	~~<3.0~~ 0.001
32	5	50	50	1	1	<1	<0.001
33	5D	↓	↓	1	1	<1	<0.001
34	5S	↓	↓	1	1	48.5	0.048 | 96%
35	CCV 4	—	—	—	—	37.2	93%
36	CCB 4	—	—	—	—	<1	<0.001
37	6685-PBS	1.0 As Rec'd	100	—	—	<1	<0.1
38	1	↓	100	1	2	<1	<0.2
39	1A	↓	100	1	2	19.1	96%
40	6670-PBW	50	50	1	1	<1	<0.001
41	2	↓	↓	↓	↓	<1	<0.001
42	2A	↓	↓	↓	↓	19.4	97%
43	3	↓	↓	↓	↓	<1	<0.001
44	CCV 5	—	—	—	—	37.1	93%
45	CCB 5	—	—	—	—	<1	<0.001
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6694 @ ~~100mg/L~~ 50mg/L or .050mg/L or ~~104.2mg/Kg~~ A: +20

ANALYST: [signature]	DATE: 11-22-91	PAGE NUMBER: 2
REVIEWER: [signature]	DATE: 11-24-91	

[AWKSGFAZ.FRM]

00296

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: Tl	METHOD: GFAA	6712, 6641 6748, 6633

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6712-PBW	50	50	1	1	<1	<0.001
2	2	50	50			<1	<0.001
3	2A	50	50			18.4	92 %
4	6641-5S	50	50	1	2	43.8	0.088 | 88 %
5	5D			1	2	45.5	0.091 | 91 %
6	6748-PB		10	1	1	<1	<0.1
7	1	.123 (As Rec'd)	10	1	2	<1	<0.2
8	1A	.121		1	2	18.1	90 %
9	1S	.125		1	2	20.8	33 | 82 %
10	CCV	—	—	—	—	37.2	93 %
11	CCB	—	—	—	—	<1	<0.001
12	6633-PBS	- with 6516 -		1	1	- w/6516 -	~~
13	4	1.0 (As Rec'd)	100	1	2	2.9	0.6
14	4A					22.1	96 %
15	4S					46.9	9.3 | 94 %
16	4SD					47.5	9.5 | 95 %
17	8					2.8	0.6
18	12					3.0	0.6
19	16					2.7	0.6
20	20					2.1	0.4
21	CCV	—	—	—	—	38.2	96 %
22	CCB	—	—	—	—	<1	<0.001
23							
24							
25							

COMMENTS: 4 mg/kg 100 mg/L 10 mg/kg
6748 @ 50 mg/L or 0.10 mg/L 6633 @ ~~50 mg/L or 5 mg/Kg~~

SPIKE LEVEL: 6641 @ 100 mg/L OR 0.010 mg/L: 120

ANALYST	DATE: 11-22-91	PAGE NUMBER:
REVIEWER	DATE: 11-24-91	3

CAMCSGFAT.FRM

00297

arian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.002	0.001	0.003
STANDARD 1	10.0	5.4	0.019	0.018	0.020
STANDARD 2	20.0	3.3	0.037	0.038	0.036
STANDARD 3	40.0	0.5	0.070	0.070	0.070
STANDARD 4	60.0	0.7	0.099	0.098	0.099
SAMPLE 1	50.6	0.8	0.086	0.085	0.086
SAMPLE 2	39.2	1.0	0.069	0.068	0.069
SAMPLE 3	0.4	99.9	0.001	0.003	-0.001
SAMPLE 4	0.9	35.3	0.002	0.001	0.002
SAMPLE 5	1.1	17.1	0.002	0.002	0.002
PLE 6	19.8	0.2	0.036	0.036	0.036
SAMPLE 7	0.4	40.3	0.001	0.001	0.001
SAMPLE 8	3.6	6.5	0.007	0.007	0.007
SAMPLE 9	23.4	1.4	0.043	0.042	0.043
SAMPLE 10	0.3	99.9	0.001	0.000	0.001
SAMPLE 11	38.5	1.4	0.067	0.068	0.067
SAMPLE 12	0.7	28.3	0.001	0.002	0.001
SAMPLE 13	1.5	28.7	0.003	0.003	0.002
SAMPLE 14	19.5	2.2	0.036	0.037	0.035
SAMPLE 15	-0.5	99.9	-0.001	0.001	-0.003
SAMPLE 16	19.5	3.6	0.036	0.035	0.037
SAMPLE 17	0.2	99.9	0.000	-0.000	0.001
SAMPLE 18	20.4	0.4	0.038	0.038	0.037
SAMPLE 19	OVER	0.5	0.148	0.148	0.147
SAMPLE 20	OVER	1.3	0.147	0.145	0.148
SAMPLE 21	0.9	0.0	0.002	0.002	0.002
SAMPLE 22	1.4	26.8	0.003	0.003	0.002
SAMPLE 23	38.7	1.4	0.068	0.067	0.069
SAMPLE 24	0.4	19.1	0.001	0.001	0.001
SAMPLE 25	20.9	5.2	0.038	0.037	0.040
SAMPLE 26	0.2	64.1	0.000	0.001	0.000
SAMPLE 27	48.1	0.8	0.082	0.082	0.083
SAMPLE 28	0.6	19.6	0.001	0.001	0.001
SAMPLE 29	-0.3	99.9	-0.001	0.000	-0.001
SAMPLE 30	0.2	99.9	0.000	0.001	-0.001
PLE 31	0.1	99.9	0.000	0.001	-0.001
PLE 32	-0.7	75.7	-0.001	-0.002	-0.001
SAMPLE 33	0.0	99.9	0.000	0.001	-0.001
SAMPLE 34	48.5	0.0	0.083	0.083	0.083
SAMPLE 35	37.2	1.1	0.065	0.066	0.065
SAMPLE 36	0.1	99.9	0.000	0.000	0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	19.1	0.0	0.035	0.035	0.035
SAMPLE 40	0.3	50.0	0.001	0.000	0.001
SAMPLE 41	-0.1	99.9	-0.000	0.000	-0.000
SAMPLE 42	19.4	0.5	0.036	0.036	0.036
SAMPLE 43	-0.3	99.9	-0.001	-0.000	-0.001
SAMPLE 44	37.1	2.3	0.065	0.066	0.064
SAMPLE 45	0.1	99.9	0.000	-0.002	0.002

JBlodgett 11-22-91

arian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

11-22-91

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.002
SAMPLE 1	-1.2	7.0	-0.002	-0.002	-0.002
SAMPLE 2	-0.4	99.9	-0.001	-0.002	0.001
SAMPLE 3	18.4	1.2	0.034	0.034	0.034
SAMPLE 4	43.8	1.9	0.076	0.075	0.077
SAMPLE 5	45.5	1.6	0.078	0.077	0.079
SAMPLE 6	-0.8	79.0	-0.002	-0.002	-0.001
SAMPLE 7	-0.3	99.9	-0.001	-0.002	0.001
SAMPLE 8	18.1	0.5	0.034	0.034	0.034
SAMPLE 9	20.8	6.1	0.038	0.040	0.037
PLE 10	37.2	1.7	0.065	0.066	0.065
SAMPLE 11	-0.5	0.0	-0.001	-0.001	-0.001

BLANK	0.0		0.003	0.004	0.003
S PLE 13	2.9	0.0	0.005	0.005	0.005
S. PLE 14	22.1	1.9	0.040	0.041	0.040
SAMPLE 15	46.9	1.0	0.080	0.080	0.081
SAMPLE 16	47.5	0.8	0.081	0.081	0.082
SAMPLE 17	2.8	16.4	0.005	0.005	0.006
SAMPLE 18	3.0	6.2	0.006	0.006	0.005
SAMPLE 19	2.7	11.4	0.005	0.005	0.006
SAMPLE 20	2.1	33.5	0.004	0.003	0.005
SAMPLE 21	38.2	0.8	0.067	0.067	0.067
SAMPLE 22	0.0	99.9	0.000	-0.000	0.000

11-22-91

:hod: EPACLP1 Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Avge	.0168	-.0009	.0011	.0042	.0009	.0051	.0000
#1	.0167	-.0006	.0016	.0043	.0009	.0051	.0000
#2	.0169	-.0011	.0007	.0041	.0010	.0050	.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Avge	.0834	.0008	-.0001	.0011	.0316	.0010	.0004
#1	.0831	.0010	-.0004	.0011	.0317	.0010	.0003
#2	.0836	.0006	.0001	.0010	.0314	.0010	.0004

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Avge	.0003	.0001	.0004	.0004	.3536	-.0013	-.0001
#1	.0005	.0001	.0003	.0010	.3536	-.0006	.0000
#2	.0001	.0000	.0004	-.0003	.3537	-.0020	-.0003

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Avge	.1083	-.0026	.0002	.0002	.0483	.0104	.0009
#1	.1074	-.0051	.0001	.0003	.0487	.0101	.0009
#2	.1091	-.0001	.0003	.0001	.0479	.0106	.0009

lem	Tl1908	Li6707	Sr4215
Avge	.0030	.0270	.0000
#1	.0027	.0271	.0000
#2	.0032	.0269	.0000

thod: EPACLP1 Standard: STD3

Elem	Al3082	As1936	Be3130	Ca3179	Co2286	Cu3247	Fe2599
Avge	2.657	.4219	.4640	3.312	.2443	.4153	4.623
#1	2.657	.4209	.4640	3.311	.2441	.4157	4.621
#2	2.657	.4230	.4640	3.312	.2444	.4149	4.626

Elem	Pb2203	Mg2795	Mg3832	Mn2576	Mo2020	Se1960	V_2924
Avge	2.229	4.598	.4723	.3831	.2353	.3471	.3647
#1	2.227	4.595	.4725	.3830	.2357	.3496	.3646
#2	2.231	4.601	.4721	.3831	.2349	.3446	.3649

Elem	Zn2138	Ti3349
Avge	1.091	.4371
#1	1.091	.4369
#2	1.092	.4374

thod: EPACLP1 Standard: STD2

Elem	Sb2068	Ba4934	Cd2288	Cr2677	Ni2316	K_7665	Ag3280
Avge	1.871	.2859	.2059	4.980	.2230	1.521	.3273
#1	1.875	.2864	.2063	4.982	.2230	1.521	.3274
#2	1.867	.2854	.2056	4.979	.2230	1.520	.3271

Elem	Na5889
Avge	13.71
#1	13.71
#2	13.72

›thod: EPACLP1 Standard: STD4

Elem	B_2496	Sn1899	P_2149	Si2881	Tl1908	Li6707
Avge	.8214	11.96	4.061	8.117	.7862	2.785
#1	.8233	11.96	4.062	8.131	.7847	2.803
#2	.8196	11.96	4.061	8.103	.7878	2.767

thod: EPACLP1 Sample Name: ICV Operator: WGM
Run Time: 11/22/91 10:42:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.973	1.040	-.0082	2.057	.4862	.0324	.5304
#1	2.007	1.057	.0072	2.064	.4874	.0341	.5298
#2	1.939	1.023	-.0237	2.050	.4849	.0306	.5309

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.76	.5181	.4895	.5189	2.005	5.142	24.83
#1	49.78	.5216	.4977	.5242	2.011	5.166	24.87
#2	49.74	.5147	.4813	.5135	1.999	5.117	24.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.71	.5064	-.0009	.5136	52.28	.0048	.4917
#1	25.84	.5085	-.0003	.5188	52.41	.0085	.4980
#2	25.58	.5043	-.0015	.5085	52.16	.0011	.4853

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	52.64	-.0078	.5316	3.054	.1851	.0194	.0007
#1	52.83	-.0058	.5324	3.058	.1780	.0474	.0007
#2	52.45	-.0097	.5308	3.051	.1922	-.0086	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0482	.0197	.0159
#1	.0249	.0207	.0163
#2	.0715	.0186	.0155

hod: EPACLP1 Sample Name: ICV-AS,SE Operator: WGM
Run Time: 11/22/91 10:45:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	.0068	4.699	.0008	-.0000	.0044	.0033
#1	.0117	.0038	4.674	.0008	-.0002	.0044	.0030
#2	.0030	.0099	4.723	.0008	.0002	.0044	.0035

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0144	.0024	.0012	.0009	.0042	.0042	.0104
#1	.0170	.0010	.0018	.0009	.0044	-.0006	.0120
#2	.0117	.0039	.0006	.0009	.0040	.0090	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.0009	-.0015	-.0016	.0643	5.133	.0011
#1	-.0004	.0009	-.0033	-.0061	.0092	5.148	.0009
#2	.0240	.0009	.0003	.0029	.1194	5.117	.0013

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0333	.0051	.0004	.0010	.0285	.0154	.0000
#1	.0362	.0037	-.0006	.0016	.0249	.0152	.0000
#2	.0304	.0064	.0014	.0003	.0320	.0156	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0009	.0018	.0000
#1	-.0023	.0021	.0000
#2	.0041	.0016	.0000

Analysis Report QC Standard Fri 11-22-91 10:54:25 AM page 1

Method: EPACLP1 Sample Name: CCV Operator: WGM
Run Time: 11/22/91 10:52:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.897	4.898	.9883	.4952	.4819	.0122	.5010
#1	4.893	4.906	.9782	.4952	.4819	.0149	.5026
#2	4.900	4.889	.9985	.4952	.4819	.0096	.4994

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.849	4.955	.4823	.4886	4.935	4.862	4.888
#1	4.852	4.953	.4829	.4893	4.935	4.857	4.886
#2	4.846	4.957	.4817	.4879	4.934	4.867	4.889

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.873	.4866	.4877	.4902	24.74	.9780	.4967
#1	4.875	.4862	.4868	.4861	24.69	.9956	.4984
#2	4.871	.4870	.4886	.4944	24.79	.9603	.4949

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.86	-.0508	.4941	2.446	.1104	.0170	.4908
#1	24.87	-.0524	.4945	2.447	.1068	.0161	.4905
#2	24.85	-.0491	.4937	2.446	.1139	.0178	.4912

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2771	.0003	.0023
#1	-.2748	.0000	.0023
#2	-.2793	.0005	.0023

thod: EPACLP1 Sample Name: CCB Operator: WGM
un Time: 11/22/91 10:55:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0035	L.0049	L-.0010	L.0003	L.0002	.0009	L.0004
#1	L.0014	L.0053	L-.0041	L.0003	L.0002	.0009	L.0008
#2	L-.0084	L.0045	L.0021	L.0003	L.0002	.0009	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	.0020	L-.0012	L-.0002	L.0006	L.0054	.0023
#1	L.0002	.0022	L.0006	L.0002	L.0012	L.0039	.0030
#2	L-.0011	L.0019	L-.0029	L-.0005	L.0000	L.0070	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	L.0000	L-.0015	L-.0013	L-.1775	L.0008	L-.0002
#1	L-.0050	L.0002	L-.0003	L-.0029	L-.2663	L.0008	L.0009
#2	L.0042	L-.0002	L-.0027	L.0003	L-.0887	L.0008	L-.0013

lem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0021	.0078	L.0002	L.0007	-.0018	-.0009	.0003
#1	L-.0005	.0037	L.0006	L.0010	.0036	.0059	.0000
#2	L.0047	.0118	L-.0002	L.0003	-.0071	-.0077	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0014	-.0013	.0001
#1	L-.0059	-.0005	.0002
#2	L.0032	-.0021	.0000

Analysis Report QC Standard Fri 11-22-91 11:00:23 AM page 1

:hod: EPACLP1 Sample Name: ICSAB Operator: WGM
. .1 Time: 11/22/91 10:58:44
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	526.4	.0095	4.898	.4871	.4554	.2502	.9042
#1	526.9	.0297	4.911	.4876	.4560	.2494	.9036
#2	525.9	-.0107	4.885	.4866	.4548	.2511	.9048

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	465.2	.4773	.4168	.5361	176.7	4.431	241.4
#1	465.0	.4783	.4159	.5361	176.7	4.414	241.3
#2	465.4	.4763	.4176	.5361	176.8	4.448	241.6

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	484.1	.4686	-.0189	.8439	-1.325	4.498	.8871
#1	484.2	.4682	-.0155	.8461	-1.337	4.528	.8851
#2	483.9	.4690	-.0222	.8416	-1.313	4.468	.8890

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
nits	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.779	-.0484	.4703	1.143	3.700	.1654	.0072
#1	1.779	-.0518	.4711	1.143	3.741	.1641	.0072
#2	1.779	-.0449	.4695	1.143	3.658	.1667	.0072

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0214	.0849	.4341
#1	-.0075	.0844	.4349
#2	.0502	.0855	.4332

Method: EPACLP1 Sample Name: CCV Operator: PN
Run Time: 11/22/91 14:26:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.928	4.918	.9995	.5129	.4993	.0096	.5172
#1	4.937	4.926	.9906	.5165	.5038	.0079	.5191
#2	4.919	4.910	1.008	.5094	.4948	.0114	.5153

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.066	5.129	.4989	.4898	5.123	4.983	5.071
#1	5.098	5.161	.5015	.4920	5.154	5.011	5.099
#2	5.034	5.096	.4963	.4876	5.092	4.955	5.043

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.115	.5061	.5026	.5143	24.73	1.007	.5081
#1	5.125	.5091	.5068	.5104	24.86	1.036	.5103
#2	5.105	.5031	.4983	.5181	24.61	.9772	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	22.61	-.0485	.4979	2.512	.1468	.0181	.5039
#1	Q22.46	-.0479	.4996	2.527	.1495	.0165	.5069
#2	22.77	-.0491	.4962	2.498	.1442	.0196	.5010

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2501	.0070	.0025
#1	-.2680	.0067	.0027
#2	-.2323	.0073	.0023

Method: EPACLP1 Sample Name: CCB Operator: WGM
Run Time: 11/22/91 14:44:49
C mment:
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0128	L.0065	L-.0055	L.0005	L.0002	.0061	L.0001
#1	.0128	L.0077	L.0007	L.0005	L.0002	.0061	L.0007
#2	.0127	L.0053	L-.0117	L.0005	L.0002	.0061	L-.0005

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0031	L.0003	L.0004	L.0003	L.0001	.0039
#1	.0097	.0032	L.0012	L.0006	L.0008	L.0021	.0042
#2	.0084	.0030	L-.0006	L.0002	L-.0002	L-.0019	.0036

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0001	L.0000	L-.0006	L-.0003	L.3026	L-.0021	L.0009
#1	L.0068	L.0002	L-.0009	L-.0029	L.3770	L-.0074	L.0013
#2	L-.0069	L-.0002	L-.0003	L.0022	L.2283	L.0033	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
/ge	.0944	.0043	L-.0004	L.0010	.0249	.0093	.0000
#1	.0883	.0007	L-.0006	L.0010	.0249	.0099	.0000
#2	.1005	.0079	L-.0002	L.0010	.0249	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0055	.0060	.0000
#1	L-.0078	.0062	.0000
#2	L-.0032	.0057	.0000

Cont from 6480

Analysis Report Fri 11-22-91 03:27:31 PM page 1

Method: EPACLP1 Sample Name: PBW 6641... Operator: WGM
Run Time: 11/22/91 15:25:52
mment: 6670, 6712, 6729, 6642, 6661. WATER, 50/50
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0098	L.0046	L-.0106	L-.0000	L.0002	.0079	L.0009
#1	L.0041	L.0015	L-.0095	L.0003	L.0002	.0096	L.0016
#2	.0154	L.0076	L-.0116	L-.0003	L.0002	.0061	L.0002

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0042	L-.0001	L.0006	L-.0002	L-.0011	L.0029	L.0019
#1	L.0046	L-.0010	L-.0000	L-.0005	L-.0012	L-.0019	.0020
#2	L.0038	L.0007	L.0012	L.0002	L-.0009	L.0077	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0007	L-.0000	L-.0009	L.0003	L-.0704	L.0029	L-.0007
#1	L-.0265	L-.0002	L-.0009	L-.0003	L-.1622	L.0033	L-.0013
#2	L.0279	L.0002	L-.0009	L.0010	L.0214	L.0025	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	L.0399	.0040	L.0008	L.0000	.0071	.0542	.0003
#1	L.0378	.0067	L.0002	L.0003	.0214	.0535	.0007
#2	L.0420	.0013	L.0014	L-.0003	-.0071	.0548	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0191	.0052	.0000
#1	L-.0333	.0052	.0000
#2	L-.0050	.0052	.0000

Method: EPACLP1 Sample Name: LCSW 6641 Operator: WGM
Run Time: 11/22/91 15:28:40
Comment: WATER 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.010	1.039	Q.0060	2.134	.5122	.0315	.5263
#1	2.003	1.041	Q.0087	2.126	.5109	.0324	.5256
#2	2.016	1.037	Q.0032	2.142	.5136	.0306	.5271

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.20	.5187	.4948	.5196	2.039	5.044	25.21
#1	50.18	.5181	.4954	.5180	2.037	5.061	25.20
#2	50.22	.5193	.4942	.5211	2.040	5.028	25.22

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.96	.5150	-.0018	.5233	51.16	Q.0057	.4914
#1	26.86	.5148	-.0015	.5226	51.05	Q.0266	.4910
#2	27.06	.5152	-.0021	.5239	51.28	Q-.0152	.4919

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	47.57	-.0200	.5296	2.993	.1798	.0908	.0003
#1	47.37	-.0187	.5281	2.997	.1869	.0901	.0000
#2	47.77	-.0213	.5312	2.989	.1727	.0914	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.0219	.0212	.0169
#1	-.0200	.0207	.0168
#2	-.0237	.0218	.0170

Method: EPACLP1 Sample Name: 6641-1 Operator: WGM
Run Time: 11/22/91 15:31:46
Comment: WATER, 50/50, DISSOLVED
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0349	L.0046	L.0030	1.098	L-.0002	.3894	L-.0000
#1	.0360	L-.0007	L.0050	1.097	L-.0002	.3841	L-.0001
#2	.0339	L.0100	L.0010	1.098	L-.0002	.3946	L.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.72	L-.0017	L.0018	L.0000	.0352	L.0093	H77.30
#1	27.82	L-.0017	L.0012	L.0002	.0365	L.0019	H77.50
#2	27.62	L-.0017	.0023	L-.0002	.0340	L.0167	H77.10

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.15	.5036	.0030	L.0093	2.268	L-.0032	L-.0006
#1	89.18	.5045	L.0027	.0151	2.451	L.0017	L.0000
#2	89.12	.5026	.0033	L.0035	2.084	L-.0082	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	132.5	.0115	.0021	.0209	.3435	15.53	.0003
#1	132.2	.0109	L.0018	.0206	.3524	15.56	.0007
#2	132.8	.0121	.0025	.0213	.3346	15.50	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L.0169	.0243	.4510
#1	L-.0392	.0249	.4506
#2	.0729	.0238	.4515

Method: EPACLP1 Sample Name: CCV Operator: WGM
Run Time: 11/22/91 15:34:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.152	5.033	1.044	.5335	.5234	.0122	.5328
#1	5.166	5.061	1.043	.5322	.5229	.0096	.5370
#2	5.138	5.006	1.045	.5347	.5238	.0149	.5286

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.258	5.277	.5137	.5103	5.316	5.116	5.310
#1	5.281	5.293	.5160	.5107	5.323	5.138	5.322
#2	5.235	5.260	.5113	.5100	5.308	5.094	5.297

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.415	.5250	.5211	.5236	25.55	1.051	.5235
#1	5.421	.5255	.5220	.5264	25.61	1.057	.5270
#2	5.409	.5244	.5202	.5207	25.49	1.044	.5200

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	23.34	-.0439	.5149	2.598	.1379	.0262	.5275
#1	23.31	-.0422	.5154	2.608	.1246	.0289	.5282
#2	23.37	-.0455	.5144	2.589	.1513	.0236	.5269

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2593	.0080	.0028
#1	-.2711	.0088	.0029
#2	-.2474	.0073	.0027

Method: EPACLP1 Sample Name: CCB Operator: WGM
Run Time: 11/22/91 15:37:27
Comment:
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0027	L-.0015	L-.0068	L.0005	L.0002	.0026	L-.0006
#1	L-.0035	L.0015	L-.0088	L.0008	L.0002	.0009	L-.0019
#2	L-.0019	L-.0046	L-.0047	L.0003	L.0002	.0044	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0029	L-.0004	L-.0003	L-.0003	L-.0009	L-.0055	.0107
#1	.0069	L.0007	L-.0006	L-.0005	L.0000	L-.0064	.0126
#2	L-.0011	L-.0016	L.0000	L-.0002	L-.0019	L-.0045	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0274	L-.0000	L-.0009	L-.0019	L-.1928	L.0016	L-.0009
#1	L-.0207	L.0002	L-.0009	L-.0016	L.0031	L-.0033	L-.0013
#2	L-.0342	L-.0002	L-.0009	L-.0022	L-.3887	L.0066	L-.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0257	.0012	L-.0018	L.0013	.0142	.0031	-.0003
#1	L.0310	.0001	L-.0022	L.0016	.0107	.0055	-.0007
#2	L.0205	.0022	L-.0014	L.0010	.0178	.0007	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0155	.0044	.0000
#1	L-.0169	.0052	.0000
#2	L-.0141	.0036	.0000

Method: EPACLP1 Sample Name: CCV Operator: WGM
Run Time: 11/22/91 15:45:27
Comment:
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.072	5.029	1.012	.5130	.5085	.0096	.4950
#1	5.048	4.988	1.017	.5090	.5048	.0131	.4925
#2	5.096	5.070	1.008	.5170	.5122	.0061	.4975

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.968	5.010	.4988	.5106	5.036	4.979	5.012
#1	4.960	4.991	.4973	.5061	5.017	4.951	4.996
#2	4.977	5.030	.5003	.5151	5.055	5.008	5.027

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.049	.5015	.5063	.5051	25.03	1.003	.4992
#1	5.034	.4993	.5056	.5038	24.88	.9887	.4972
#2	5.065	.5038	.5069	.5063	25.18	1.018	.5011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.63	-.0533	.5041	2.500	.1130	.0216	.5090
#1	25.41	-.0509	.5027	2.496	.1175	.0187	.5056
#2	25.85	-.0557	.5055	2.503	.1086	.0244	.5124

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2978	.0060	.0026
#1	-.2977	.0062	.0025
#2	-.2978	.0057	.0027

Method: EPACLP1 Sample Name: CCB Operator: WGM
Run Time: 11/22/91 15:48:55
Comment:
le: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0048	L.0096	L.0070	L-.0002	L.0002	.0009	L.0006
#1	L.0027	L.0084	L-.0021	L.0001	L.0002	-.0026	L.0014
#2	L.0070	.0108	L.0162	L-.0004	L.0002	.0044	L-.0003

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0052	.0023	L-.0003	L.0009	L-.0027	L.0057	.0025
#1	L-.0045	.0030	L-.0000	L.0009	L-.0022	L.0087	.0026
#2	L-.0058	L.0016	L-.0006	L.0009	L-.0032	L.0027	.0023

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0162	L.0002	L-.0003	L-.0010	L-.4536	L.0091	L.0004
#1	L.0235	L.0002	L-.0003	L-.0022	L-.4072	L.0216	L.0004
#2	L.0089	L.0002	L-.0003	L.0003	L-.5000	L-.0035	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0051	.0072	L.0000	L.0010	-.0018	.0099	.0000
#1	L.0073	.0055	L.0002	L.0010	.0018	.0112	.0000
#2	L.0030	.0088	L-.0002	L.0010	-.0053	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0392	.0034	.0000
#1	L-.0196	.0036	.0000
#2	L-.0588	.0031	.0000

Method: EPACLP1 Sample Name: 6641-1-SD Operator: WGM
Run Time: 11/22/91 15:52:09
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.938	.9703	L.0064	5.065	.0977	2.313	.0914
#1	3.946	.9727	L.0040	5.072	.0980	2.325	.0921
#2	3.929	.9680	L.0088	5.057	.0974	2.302	.0906

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.74	.3781	.9333	.4916	1.960	.9366	H74.63
#1	26.73	.3774	.9345	.4927	1.962	.9280	H74.66
#2	26.75	.3788	.9321	.4906	1.958	.9451	H74.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.15	1.434	1.876	.9370	1.300	L-.0068	.0902
#1	86.24	1.435	1.876	.9421	1.250	L-.0135	.0900
#2	86.06	1.433	1.875	.9319	1.349	L-.0001	.0904

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	152.1	.0046	.9305	.9335	.3631	15.58	.0000
#1	151.9	.0076	.9328	.9345	.3631	15.60	.0000
#2	152.3	.0016	.9282	.9325	.3631	15.57	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0110	.0215	.4618
#1	L.0018	.0218	.4624
#2	L-.0237	.0212	.4613

Method: EPACLP1 Sample Name: 6641-1-S Operator: WGM
Run Time: 11/22/91 15:57:11
Comment: DISSOLVED, 50/50
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.991	1.015	L.0103	5.058	.0988	2.366	.0966
#1	3.981	1.020	L-.0032	5.033	.0983	2.348	.0965
#2	4.001	1.011	L.0238	5.084	.0993	2.384	.0967

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.77	.3954	.9655	.4914	2.009	.9820	H76.41
#1	27.69	.3944	.9646	.4888	2.004	.9837	H76.22
#2	27.85	.3964	.9664	.4940	2.014	.9804	H76.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.22	1.475	1.944	.9760	2.249	L.0085	.0943
#1	85.76	1.471	1.937	.9769	2.333	L.0030	.0936
#2	86.67	1.479	1.950	.9750	2.166	L.0140	.0950

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	148.7	.0046	.9540	.9751	.3960	15.85	.0000
#1	147.6	.0019	.9503	.9725	.4147	15.80	.0000
#2	149.7	.0073	.9577	.9778	.3773	15.89	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0313	.0243	.4575
#1	L-.0180	.0243	.4557
#2	L-.0446	.0243	.4594

Conf from 6691

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Method: EPACLP1 Sample Name: 6670-2 Operator: WGM
Run Time: 11/22/91 15:59:35
Comment: DISSOLVED, 50/50
de: CONC Corr. Factor: 1

TB cnf 6691 = N.D WGM 11/22/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0551	L.0058	L.0057	.2691	L-.0003	.2109	L.0003
#1	.0583	L.0046	L.0013	.2681	L-.0005	.2109	L.0014
#2	.0519	L.0069	L.0101	.2701	L-.0002	.2109	L-.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	33.48	L-.0019	L.0015	.0122	.9342	L-.0010	49.59
#1	33.61	L-.0016	.0030	.0127	.9337	L.0026	49.58
#2	33.35	L-.0022	L-.0000	.0117	.9348	L-.0047	49.59

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.01	.0571	L.0010	.0111	.5638	L-.0122	L-.0004
#1	53.73	.0573	L.0010	L.0092	.7494	L-.0017	L.0002
#2	54.29	.0569	L.0010	.0130	L.3783	L-.0226	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	262.6	-.0006	L.0013	.0083	.4014	11.55	.0013
#1	260.4	-.0055	L.0013	.0089	.4325	11.52	.0007
#2	264.8	.0043	L.0013	.0076	.3702	11.57	.0020

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0462	.0181	.3921
#1	L-.0543	.0192	.3898
#2	L-.0380	.0171	.3945

Method: EPACLP1 Sample Name: 6670-3 Operator: WGM
Run Time: 11/22/91 16:01:45
Comment: DISSOLVED, 50/50
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5086	L.0053	L-.0053	.1792	L-.0000	.3062	L.0016
#1	.5377	L.0084	L-.0098	.1809	L.0002	.3124	L.0023
#2	.4795	L.0022	L-.0008	.1774	L-.0002	.3001	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.05	L.0018	.0023	.0057	1.552	L.0081	33.82
#1	25.99	.0023	L.0011	.0052	1.570	L.0061	33.85
#2	26.11	L.0014	.0035	.0062	1.534	L.0101	33.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.64	.9948	L.0004	.0155	3.251	L.0164	L-.0007
#1	35.81	.9957	L.0016	.0130	3.062	L.0072	L-.0014
#2	35.47	.9938	L-.0009	.0181	3.440	L.0257	L-.0001

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.2	.0110	.0029	.0092	.2385	13.00	.0252
#1	127.6	.0070	.0021	.0089	.2385	13.14	.0262
#2	124.8	.0151	.0037	.0095	.2385	12.86	.0242

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0210	.0166	.3050
#1	L-.0247	.0161	.3073
#2	L-.0173	.0171	.3027

Cont Furn 6670

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Method: EPACLP1 Sample Name: 6712-2 Operator: WGM
Run Time: 11/22/91 16:04:27
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB = 6641 = N.D. 11/23/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2673	.0127	L-.0006	.1213	L-.0002	.5959	L.0004
#1	.2774	.0115	L-.0094	.1218	L-.0002	.6011	L.0009
#2	.2571	.0138	L.0082	.1208	L-.0002	.5906	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.11	.0088	L-.0000	.0094	.5713	.0229	33.83
#1	14.15	.0076	L-.0006	.0092	.5727	.0209	33.89
#2	14.08	.0099	L.0006	.0096	.5700	.0249	33.77

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.54	.1250	.0079	.0301	5.332	L.0008	L-.0014
#1	35.55	.1256	.0072	.0263	5.314	L-.0050	L-.0016
#2	35.53	.1245	.0085	.0339	5.351	L.0067	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	90.89	.0078	.0060	.0093	.2705	14.55	.0147
#1	90.86	.0082	.0060	.0090	.2723	14.60	.0138
#2	90.93	.0073	.0060	.0096	.2688	14.49	.0157

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0868	.0168	.4130
#1	L-.1178	.0166	.4135
#2	L-.0558	.0171	.4125

cont From 6712

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Method: EPACLP1 Sample Name: 6729-1 Operator: WGM
Run Time: 11/22/91 16:08:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB w/ 6641 = N.D. was 11/4/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0437	.0248	L.0056	1.858	L-.0002	1.103	L.0021
#1	.0440	.0233	L-.0026	1.858	L-.0002	1.107	L.0015
#2	.0434	.0264	L.0137	1.859	L-.0002	1.100	L.0026

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.05	.0027	.0051	L.0005	1.454	.0368	H104.0
#1	92.16	.0023	.0054	L.0006	1.455	.0322	H104.1
#2	91.95	.0031	.0048	L.0003	1.453	.0414	H104.0

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.6	.8637	.0075	.0130	16.09	L.0029	L-.0007
#1	126.6	.8641	.0066	L.0085	16.11	L.0159	L-.0005
#2	126.7	.8633	.0085	.0174	16.08	L-.0100	L-.0009

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	149.4	.0090	.0068	.0082	.5331	23.74	.0036
#1	149.5	.0130	.0068	.0082	.5268	23.75	.0033
#2	149.4	.0049	.0068	.0082	.5393	23.73	.0039

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0500	.0546	1.409
#1	L-.0706	.0549	1.408
#2	L-.0295	.0544	1.410

Method: EPACLP1 Sample Name: 6729-2 Operator: WGM
Run Time: 11/22/91 16:10:14
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0532	.0167	L.0261	.6563	L.0002	.9423	L.0020
#1	.0535	.0194	L.0291	.6548	L.0002	.9458	.0030
#2	.0530	.0139	L.0231	.6578	L.0002	.9388	L.0011

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.12	L-.0004	.0021	.0227	1.674	.0219	H85.99
#1	54.04	L.0006	.0030	.0228	1.674	.0255	H85.91
#2	54.20	L-.0014	L.0012	.0225	1.675	L.0183	H86.07

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.5	.6898	.0160	L.0070	18.44	L-.0072	L-.0000
#1	100.2	.6889	.0147	L.0079	18.43	L-.0114	L.0004
#2	100.8	.6907	.0172	L.0060	18.44	L-.0030	L-.0005

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	129.1	.0072	L.0019	.0065	.8285	16.70	.0013
#1	129.0	.0082	.0021	.0069	.8241	16.69	.0013
#2	129.2	.0061	L.0017	.0062	.8330	16.71	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0417	.0394	1.134
#1	L-.0513	.0394	1.132
#2	L-.0322	.0394	1.136

Method: EPACLP1 Sample Name: 6729-3 Operator: WGM
Run Time: 11/22/91 16:12:42
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0326	L-.0001	L.0072	.6681	L-.0000	.9677	L.0013
#1	.0669	.0202	L.0238	.6643	L-.0002	.9703	L.0017
#2	L-.0017	L-.0203	L-.0095	.6718	L.0002	.9651	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.32	L-.0026	L-.0027	.0161	1.708	L.0182	H86.27
#1	54.23	L-.0017	.0036	.0197	1.701	L.0117	H86.09
#2	54.40	L-.0034	L-.0090	.0124	1.716	.0247	H86.44

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	101.8	.6956	.0160	L.0085	18.43	L-.0088	L-.0059
#1	101.5	.6945	.0160	L.0047	18.25	L-.0172	L.0008
#2	102.2	.6967	.0160	.0124	18.62	L-.0003	L-.0127

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	131.5	.0021	L.0008	.0072	.8036	16.99	.0013
#1	130.8	.0040	L.0017	.0089	.7867	16.97	.0013
#2	132.3	.0001	L-.0002	.0055	.8205	17.00	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0815	.0383	1.152
#1	L-.0415	.0378	1.146
#2	.2045	.0388	1.158

Cont to 6642

Analysis Report QC Standard Fri 11-22-91 04:22:46 PM page 1

chod: EPACLP1 Sample Name: CCV Operator: WGM
Run Time: 11/22/91 16:21:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.098	5.071	1.009	.5175	.5114	.0122	.4982
#1	5.089	5.046	1.010	.5175	.5106	.0131	.4954
#2	5.107	5.095	1.009	.5175	.5122	.0114	.5009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.027	5.052	.5042	.5114	5.076	5.042	5.047
#1	5.021	5.043	.5015	.5099	5.069	5.027	5.045
#2	5.034	5.061	.5069	.5130	5.083	5.058	5.050

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.100	.5071	.5100	.5079	25.03	.9923	.5044
#1	5.098	.5071	.5106	.5063	24.89	.9953	.5029
#2	5.101	.5071	.5094	.5095	25.17	.9894	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.40	-.0449	.5058	2.516	.0988	.0240	.5131
#1	25.41	-.0416	.5048	2.514	.0961	.0236	.5128
#2	25.39	-.0482	.5068	2.517	.1015	.0244	.5134

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2896	.0065	.0026
#1	-.3024	.0062	.0025
#2	-.2769	.0067	.0027

Method: EPACLP1 Sample Name: CCB Operator: WGM
Run Time: 11/22/91 16:35:32
Comment:
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0016	L.0003	L-.0169	L-.0007	L-.0002	.0009	L.0017
#1	L-.0016	L-.0048	L-.0216	L-.0009	L-.0002	-.0009	L.0024
#2	L.0048	L.0053	L-.0122	L-.0004	L-.0002	.0026	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0096	L.0009	L-.0012	L.0000	L-.0052	L.0014	L.0017
#1	L-.0112	L-.0004	L-.0012	L-.0002	L-.0056	L.0034	L.0014
#2	L-.0081	.0022	L-.0012	L.0002	L-.0047	L-.0006	L.0020

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0056	L-.0000	L-.0012	L-.0026	L-.8123	L.0049	L.0000
#1	L.0007	L-.0002	L-.0015	L-.0029	L-.8216	L-.0102	L-.0000
#2	L.0105	L.0002	L-.0009	L-.0022	L-.8030	L.0200	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0076	.0064	L.0002	L-.0003	-.0080	.0068	-.0003
#1	L-.0060	.0067	L-.0006	L-.0003	-.0107	.0055	.0000
#2	L-.0092	.0061	L.0010	L-.0003	-.0053	.0081	-.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0041	.0039	.0001
#1	L-.0077	.0036	.0000
#2	L-.0004	.0041	.0002

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 17:36
Output File: ^F3710::D1 Injected at: 911122 17:13
Data File: >F3710::D5 Dilution Factor: 1.00000
Name: K6712-1 FB-3 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	20719	50.00	UG/L	97
12)	Methylene Chloride	3.72	83.9	1370	2.45	UG/L	89
18)	Chloroform	6.51	82.9	5373	4.79	UG/L	91
21)	1,2-Dichloroethane-d4	7.92	65.0	24579	44.40	UG/L	86
22)	*1,4-Difluorobenzene	8.74	114.0	77661	50.00	UG/L	92
31)	Toluene-d8	11.56	98.2	72619	52.07	UG/L	94
32)	Toluene	11.74	91.0	652	.488	UG/L	62
33)	*Chlorobenzene-d5	14.69	117.0	65372	50.00	UG/L	92
40)	Ethylbenzene	15.12	91.0	160	.0976	UG/L	62
42)	M+P-Xylene	15.12	91.0	160	.109	UG/L	62
46)	Bromofluorobenzene	17.41	174.0	38955	52.85	UG/L	94

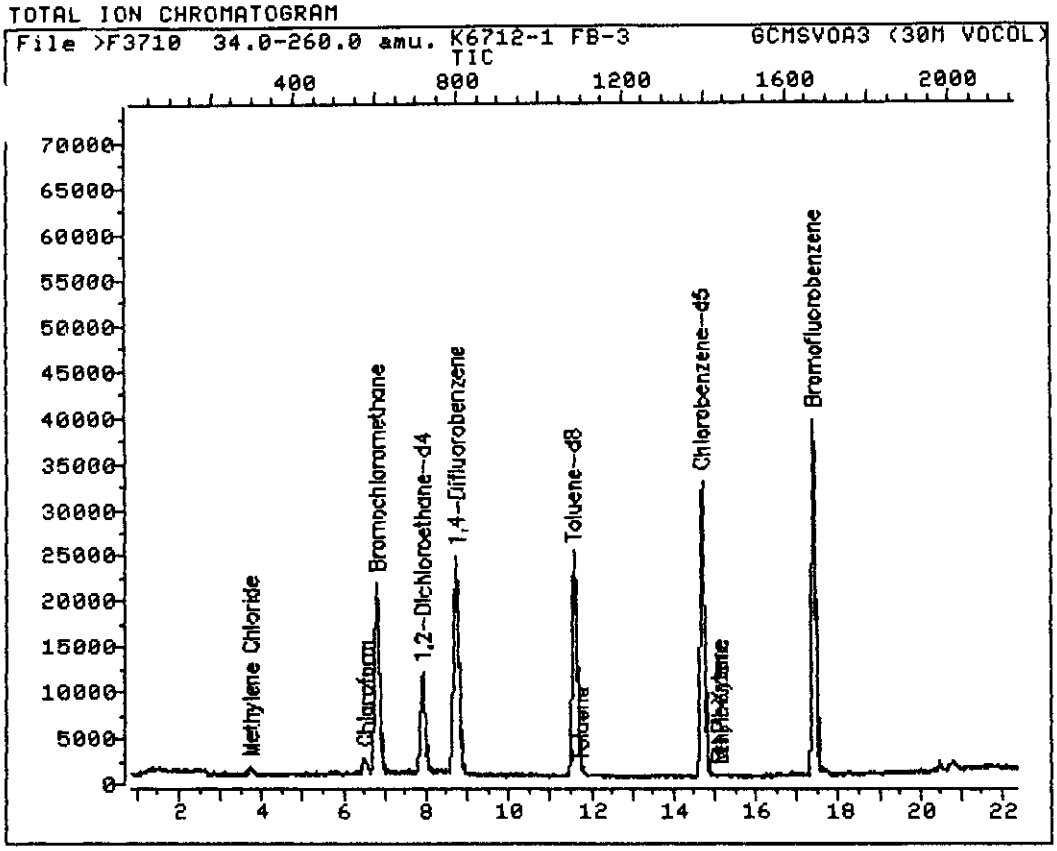
* Compound is ISTD

88.8 - 104.1 - 105.7

Rev 11/26/91

00329

TOTAL ION CHROMATOGRAM



Data File: >F3710::D5 Quant Output File: ^F3710::D1
Name: K6712-1 FB-3 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

Operator ID: JEFFG-2
Quant Time : 911122 17:36
Injected at: 911122 17:13

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 18:04
Output File: ^F3711::D1 Injected at: 911122 17:40
Data File: >F3711::D5 Dilution Factor: 1.00000
Name: K6712-2 WB-3 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

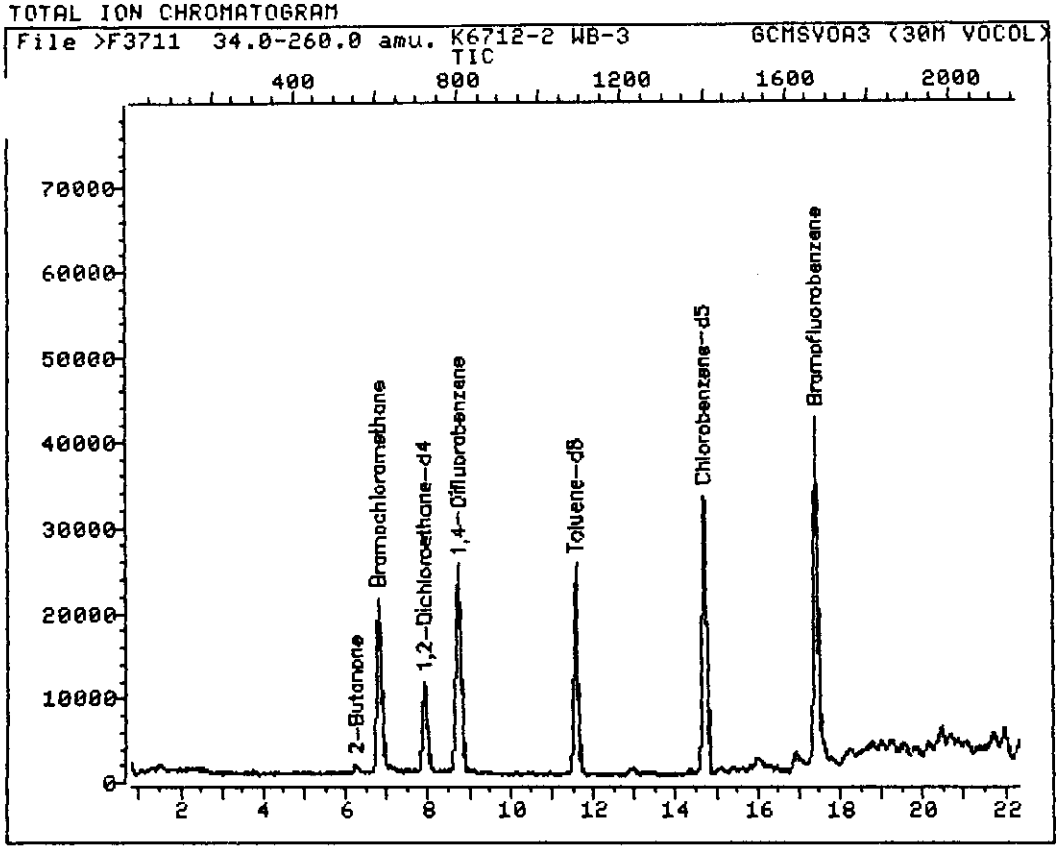
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	19777	50.00	UG/L	91
16)	2-Butanone	6.24	72.0	1169	31.17	UG/L	90
21)	1,2-Dichloroethane-d4	7.92	65.0	24290	45.96	UG/L	89
22)	*1,4-Difluorobenzene	8.75	114.0	78441	50.00	UG/L	92
31)	Toluene-d8	11.57	98.2	72441	51.42	UG/L	94
33)	*Chlorobenzene-d5	14.69	117.0	65113	50.00	UG/L	93
46)	Bromofluorobenzene	17.42	174.0	39478	53.78	UG/L	97

* Compound is ISTD

91.9 - 102.8 - 107.6

Dav 11/24/91

TOTAL ION CHROMATOGRAM



Data File: >F3711::D5 Quant Output File: ^F3711::D1
Name: K6712-2 WB-3 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

Operator ID: JEFFG-2
Quant Time : 911122 18:04
Injected at: 911122 17:40

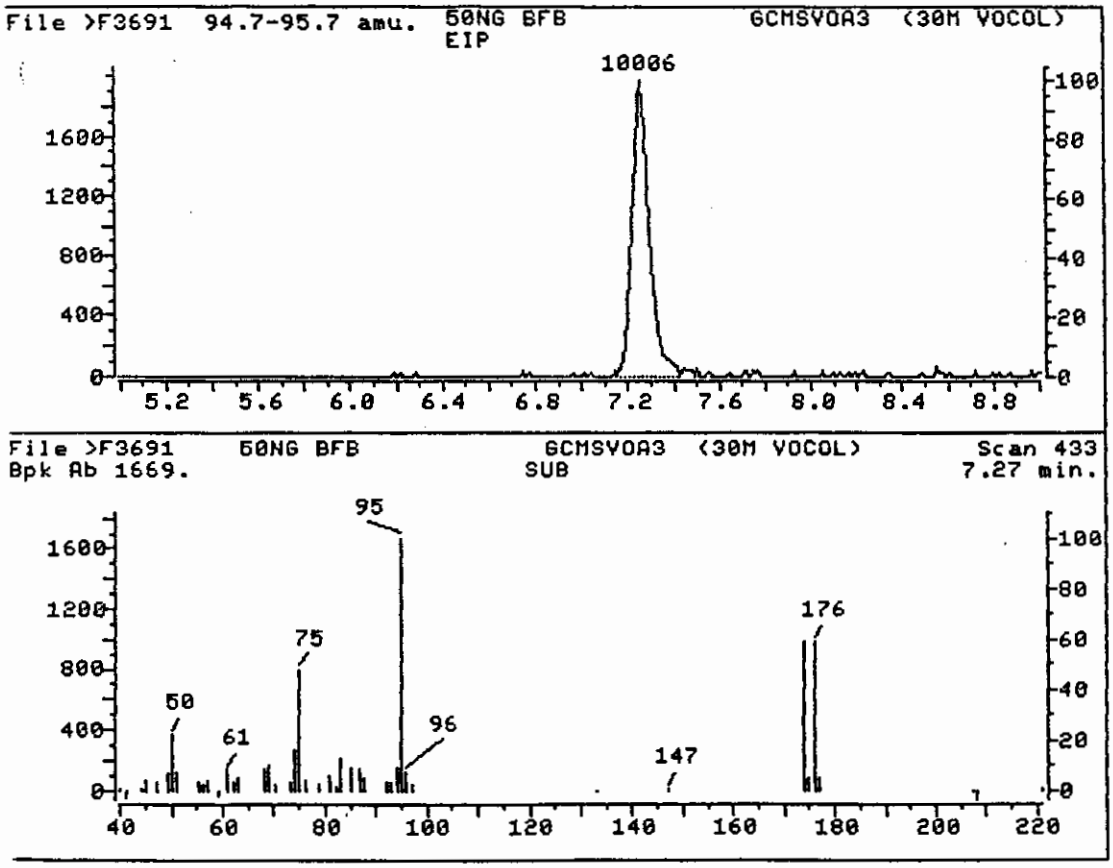
GC/MS PERFORMANCE STANDARD

Move cursor; then press carriage return :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	22.05	22.05	Ok
75	30-60% of mass 95	47.93	47.93	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	7.37	7.37	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	58.42	58.42	Ok
175	5-9% of mass 174	5.21	8.92	Ok
176	95-101% of mass 174	58.48	100.10	Ok
177	5-9% of mass 176	4.43	7.58	Ok

Injection Date: 11/22/91
Injection Time: 08:16
Data File: >F3691
Scan: 433

FMGR : AL,,3



perator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 09:21
Output File: ^F3692::D1 Injected at: 911122 08:55
Data File: >F3692::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.78	127.9	19350	50.00	UG/L	95
2)	Chloromethane	.99	50.0	14522	53.60	UG/L	95
3)	Vinyl Chloride	1.09	62.0	18461	53.03	UG/L	99
4)	Bromomethane	1.52	94.0	21075	58.66	UG/L	92
5)	Chloroethane	1.62	64.0	14203	56.88	UG/L	99
6)	Trichlorofluoromethane	1.89	101.0	33389	52.26	UG/L	95
7)	Trichlorotrifluoroethane 113	2.48	101.0	39714	56.55	UG/L	71
8)	1,1-Dichloroethene	2.69	96.0	21745	58.38	UG/L	98
9)	Acetone	2.84	43.0	4459	51.39	UG/L	94
10)	Dimethyl Ketone	2.83	58.0	1302	52.45	UG/L	79
11)	Carbon Disulfide	3.34	76.0	60287	53.16	UG/L	100
12)	Methylene Chloride	3.68	83.9	26107	59.29	UG/L	88
13)	Vinyl Acetate	5.33	86.0	1843	58.06	UG/L	100
14)	Trans-1,2-Dichloroethene	4.16	96.0	24384	58.51	UG/L	96
15)	Cis-1,2-Dichloroethene	6.21	96.0	22094	58.13	UG/L	91
16)	2-Butanone	6.21	72.0	1835M	51.23	UG/L	
17)	1,1-Dichloroethane	5.05	63.0	52896	54.62	UG/L	95
18)	Chloroform	6.50	82.9	52423	54.58	UG/L	94
19)	1,1,1-Trichloroethane	7.16	97.0	38205	52.95	UG/L	92
20)	Carbon Tetrachloride	7.54	116.9	36568	52.07	UG/L	91
21)	1,2-Dichloroethane-d4	7.91	65.0	25853	50.16	UG/L	90
22)	*1,4-Difluorobenzene	8.73	114.0	85322	50.00	UG/L	97
23)	Benzene	7.95	78.0	70835	54.94	UG/L	88
24)	1,2-Dichloroethane	8.08	62.0	27840	50.30	UG/L	98
25)	Trichloroethene	9.13	130.0	29493	52.49	UG/L	98
26)	1,2-Dichloropropane	9.58	63.0	33598	53.39	UG/L	99
27)	Bromodichloromethane	10.04	82.9	49192	52.37	UG/L	90
28)	2-Chloroethylvinyl ether	10.98	63.0	13066	52.69	UG/L	80
29)	Cis-1,3-Dichloropropene	11.25	75.0	46451	53.71	UG/L	96
30)	4-Methyl-2-pentanone	11.31	58.0	6708	44.30	UG/L	79
31)	Toluene-d8	11.57	98.2	76615	47.96	UG/L	91
32)	Toluene	11.72	91.0	73349	54.03	UG/L	89
33)	*Chlorobenzene-d5	14.69	117.0	69948	50.00	UG/L	96
34)	Trans-1,3-Dichloropropene	12.35	75.0	30334	57.69	UG/L	89
35)	1,1,2-Trichloroethane	12.60	97.0	22077	59.12	UG/L	95
36)	2-Hexanone	13.35	58.0	5913	56.25	UG/L	95
37)	Tetrachloroethene	12.95	163.9	28216	58.23	UG/L	94
38)	Dibromochloromethane	13.52	128.9	39604	54.87	UG/L	98
39)	Chlorobenzene	14.77	112.0	58047	58.04	UG/L	96
40)	Ethylbenzene	14.96	91.0	87737	57.13	UG/L	98

Operator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 09:21
Output File: ^F3692::D1 Injected at: 911122 08:55
Data File: >F3692::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911121 11:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.17	104.0	57063	52.18	UG/L	78
42)	M+P-Xylene	15.12	91.0	78293	55.59	UG/L	70
43)	O-Xylene	16.03	91.0	79834	52.13	UG/L	90
44)	Bromoform	16.84	172.9	28532	56.04	UG/L	97
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	35713	60.09	UG/L	97
46)	Bromofluorobenzene	17.42	174.0	39432	48.54	UG/L	92
47)	1,3-Dichlorobenzene	19.79	146.0	54227	57.35	UG/L	94
48)	1,4-Dichlorobenzene	20.08	146.0	56615	57.91	UG/L	95
49)	1,2-Dichlorobenzene	20.86	146.0	48657	56.76	UG/L	87

* Compound is ISTD

Continuing Calibration Check
HSL Compounds

Case No: Calibration Date: 11/22/91

Contractor: Columbia Analytical Time: 08:55

Contract No: Laboratory ID: >F3692

Instrument ID: GCMSV0A3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.77738	.75049	3.46		**
Vinyl Chloride	.92696	.95406	2.92	*	
Bromomethane	1.11403	1.08915	2.23		
Chloroethane	.62555	.73401	17.34		
Trichlorofluoromethane	1.95392	1.72553	11.69		
Trichlorotrifluoroethane 113	2.34006	2.05240	12.29		
1,1-Dichloroethene	1.20151	1.12377	6.47	*	
Acetone	.17341	.23044	32.89		
Carbon Disulfide	3.28773	3.11561	5.24		
Methylene Chloride	1.27826	1.34920	5.55		
Vinyl Acetate	.17302	.09525	44.95		
Trans-1,2-Dichloroethene	1.30768	1.26015	3.63		
Cis-1,2-Dichloroethene	1.37348	1.14181	16.87		
-Butanone	.06353	.09483	49.26		
1,1-Dichloroethane	2.46858	2.73364	10.74		**
Chloroform	2.77221	2.70920	2.27	*	
1,1,1-Trichloroethane	2.15169	1.97442	8.24		
Carbon Tetrachloride	2.12308	1.88982	10.99		
1,2-Dichloroethane-d4	1.33775	1.33607	.13		
Benzene	.79669	.83021	4.21		
1,2-Dichloroethane	.37973	.32629	14.07		
Trichloroethene	.42926	.34567	19.47		
1,2-Dichloropropane	.36089	.39378	9.11	*	
Bromodichloromethane	.63030	.57655	8.53		
2-Chloroethylvinyl ether	.15538	.15314	1.44		
Cis-1,3-Dichloropropene	.54597	.54442	.28		
4-Methyl-2-pentanone	.07375	.07862	6.61		
Toluene-d8	.88140	.89795	1.88		
Toluene	.90982	.85967	5.51	*	
Trans-1,3-Dichloropropene	.45656	.43367	5.01		
1,1,2-Trichloroethane	.33618	.31562	6.12		
2-Hexanone	.06693	.08453	26.31		

RF - Response Factor from daily standard file at 50.00 UG/L

$\overline{RF}$ - 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: Calibration Date: 11/22/91

Contractor: Columbia Analytical Time: 08:55

Contract No: Laboratory ID: >F3692

Instrument ID: GCMSV0A3 Initial Calibration Date: 10/15/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Tetrachloroethene	.50284	.40339	19.78		
Dibromochloromethane	.68949	.56619	17.88		
Chlorobenzene	.90562	.82986	8.37		**
Ethylbenzene	1.34590	1.25432	6.80	*	
Styrene	.80955	.81579	.77		
M+P-Xylene	1.18449	1.11930	5.50		
O-Xylene	1.14863	1.14133	.63		
Bromoform	.50363	.40790	19.01		**
1,1,2,2-Tetrachloroethane	.46319	.51057	10.23		**
Bromofluorobenzene	.61479	.56373	8.30		
1,3-Dichlorobenzene	.84722	.77525	8.49		
1,4-Dichlorobenzene	.87672	.80939	7.68		
1,2-Dichlorobenzene	.75383	.69562	7.72		

RF - Response Factor from daily standard file at 50.00 UG/L

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

%Diff - % Difference from original average or curve

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

perator ID: JEFFG-2 Quant Rev: 7 Quant Time: 911122 10:17
Output File: ^F3694::D1 Injected at: 911122 09:53
Data File: >F3694::D5 Dilution Factor: 1.00000
Name: METHOD BLANK Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911122 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	19794	50.00	UG/L	94
12)	Methylene Chloride	3.70	83.9	1228	2.30	UG/L	84
21)	1,2-Dichloroethane-d4	7.90	65.0	24575	46.46	UG/L	89
22)	*1,4-Difluorobenzene	8.73	114.0	80484	50.00	UG/L	93
31)	Toluene-d8	11.56	98.2	74720	51.69	UG/L	93
33)	*Chlorobenzene-d5	14.69	117.0	67368	50.00	UG/L	89
46)	Bromofluorobenzene	17.42	174.0	38967	51.30	UG/L	95

* Compound is ISTD

92.9 - 103.4 - 102.6

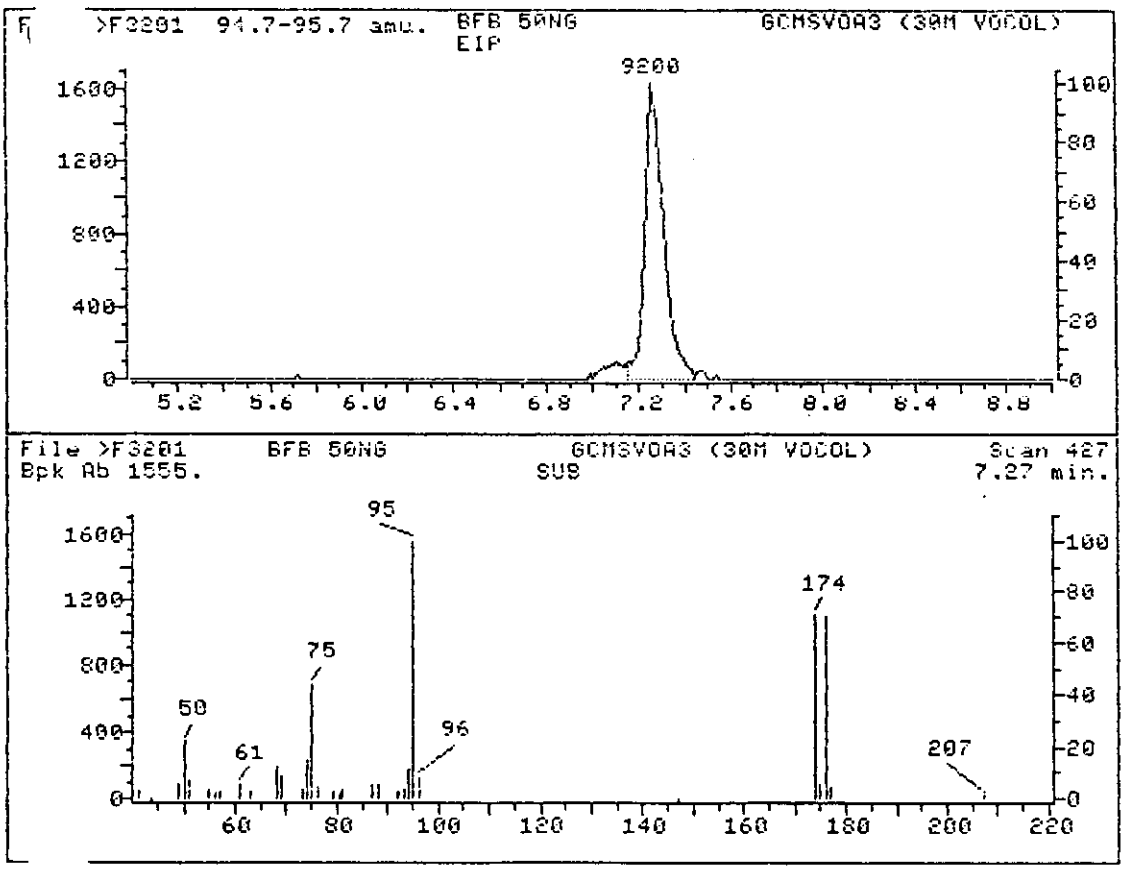
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	22.06	22.06	Ok
75	30-60% of mass 95	44.24	44.24	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	8.10	8.10	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	71.06	71.06	Ok
175	5-9% of mass 174	5.72	8.05	Ok
176	95-101% of mass 174	69.77	98.19	Ok
177	5-9% of mass 176	4.76	6.82	Ok

Injection Date: 10/15/91
Injection Time: 12:30
Data File: >F3201
Scan: 427

FMGR : AL, Move cursor; then press carriage return :



Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:45
Output File: ^F3203::D1 Injected at: 911015 13:22
Data File: >F3203::D5 Dilution Factor: 1.00000
Name: 20 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17679	50.00	UG/L	91
2)	Chloromethane	1.00	50.0	5635	23.29	UG/L	94
3)	Vinyl Chloride	1.10	62.0	6796	22.90	UG/L	98
4)	Bromomethane	1.54	94.0	8717	21.28	UG/L	84
5)	Chloroethane	1.64	64.0	4769	21.51	UG/L	98
6)	Trichlorofluoromethane	1.92	101.0	14833	19.83	UG/L	99
7)	Trichlorotrifluoroethane 113	2.50	101.0	16881	20.13	UG/L	80
8)	1,1-Dichloroethene	2.75	96.0	8940	21.74	UG/L	98
9)	Acetone	2.87	43.0	1758	32.36	UG/L	88
10)	Dimethyl Ketone	2.92	58.0	187	18.84	UG/L	65
11)	Carbon Disulfide	3.39	76.0	24381	22.14	UG/L	100
12)	Methylene Chloride	3.73	83.9	9375	20.84	UG/L	96
13)	Vinyl Acetate	5.35	86.0	1264	22.15	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	9612	19.17	UG/L	95
15)	Cis-1,2-Dichloroethene	6.25	96.0	10082	20.41	UG/L	91
16)	2-Butanone	6.26	72.0	399M	15.60	UG/L	
17)	1,1-Dichloroethane	5.10	63.0	17870	21.15	UG/L	94
18)	Chloroform	6.55	82.9	19856	19.17	UG/L	93
19)	1,1,1-Trichloroethane	7.19	97.0	15706	18.48	UG/L	91
20)	Carbon Tetrachloride	7.58	116.9	15440	18.82	UG/L	87
21)	1,2-Dichloroethane-d4	7.94	65.0	10025M	20.92	UG/L	96
22)	*1,4-Difluorobenzene	8.78	114.0	75033	50.00	UG/L	98
23)	Benzene	8.00	78.0	24094	21.39	UG/L	91
24)	1,2-Dichloroethane	8.12	62.0	11850	19.97	UG/L	94
25)	Trichloroethene	9.19	130.0	13067	18.98	UG/L	83
26)	1,2-Dichloropropane	9.62	63.0	11024	21.77	UG/L	98
27)	Bromodichloromethane	10.10	82.9	19044	18.80	UG/L	91
28)	2-Chloroethylvinyl ether	11.03	63.0	5224	23.58	UG/L	87
29)	Cis-1,3-Dichloropropene	11.29	75.0	16402	19.40	UG/L	98
30)	4-Methyl-2-pentanone	11.51	58.0	2317M	28.51	UG/L	
31)	Toluene-d8	11.61	98.2	26549	20.51	UG/L	96
32)	Toluene	11.76	91.0	27135	19.45	UG/L	90
33)	*Chlorobenzene-d5	14.73	117.0	61207	50.00	UG/L	89
34)	Trans-1,3-Dichloropropene	12.39	75.0	11560	19.81	UG/L	89
35)	1,1,2-Trichloroethane	12.65	97.0	8622	21.22	UG/L	100
36)	2-Hexanone	13.52	58.0	1702M	24.98	UG/L	
37)	Tetrachloroethene	13.00	163.9	12662	18.32	UG/L	96
38)	Dibromochloromethane	13.58	128.9	16709	18.41	UG/L	95
39)	Chlorobenzene	14.80	112.0	22610	19.95	UG/L	96
40)	Ethylbenzene	14.99	91.0	32813	19.41	UG/L	99

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:45
Output File: ^F3203::D1 Injected at: 911015 13:22
Data File: >F3203::D5 Dilution Factor: 1.00000
Name: 20 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.21	104.0	20061	20.80	UG/L	91
42)	M+P-Xylene	15.15	91.0	28996	20.42	UG/L	71
43)	O-Xylene	16.07	91.0	29852	21.23	UG/L	86
44)	Bromoform	16.88	172.9	12317	17.71	UG/L	97
45)	1,1,2,2-Tetrachloroethane	17.47	82.9	12405	21.74	UG/L	96
46)	Bromofluorobenzene	17.46	174.0	15289	17.95	UG/L	93
47)	1,3-Dichlorobenzene	19.83	146.0	21988	18.19	UG/L	91
48)	1,4-Dichlorobenzene	20.12	146.0	22712	17.99	UG/L	90
49)	1,2-Dichlorobenzene	20.89	146.0	20378	18.82	UG/L	87

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:18
Output File: ^F3202::D1 Injected at: 911015 12:55
Data File: >F3202::D5 Dilution Factor: 1.00000
Name: 50 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17789	50.00	UG/L	92
2)	Chloromethane	.99	50.0	13385	54.98	UG/L	86
3)	Vinyl Chloride	1.10	62.0	16234	54.36	UG/L	96
4)	Bromomethane	1.53	94.0	21080	51.13	UG/L	86
5)	Chloroethane	1.64	64.0	11989	53.73	UG/L	97
6)	Trichlorofluoromethane	1.93	101.0	35440	47.08	UG/L	97
7)	Trichlorotrifluoroethane 113	2.49	101.0	40993	48.58	UG/L	88
8)	1,1-Dichloroethene	2.74	96.0	20804	50.28	UG/L	98
9)	Acetone	2.89	43.0	2383	43.60	UG/L	94
10)	Dimethyl Ketone	2.89	58.0	460	46.06	UG/L	94
11)	Carbon Disulfide	3.37	76.0	61677	55.65	UG/L	100
12)	Methylene Chloride	3.72	83.9	22496	49.71	UG/L	97
13)	Vinyl Acetate	5.38	86.0	3118	54.30	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	22969	45.52	UG/L	93
15)	Cis-1,2-Dichloroethene	6.24	96.0	24040	48.36	UG/L	89
16)	2-Butanone	6.26	72.0	1049	40.76	UG/L	84
17)	1,1-Dichloroethane	5.09	63.0	43759	51.48	UG/L	93
18)	Chloroform	6.53	82.9	48118	46.16	UG/L	94
19)	1,1,1-Trichloroethane	7.19	97.0	36944	43.20	UG/L	99
20)	Carbon Tetrachloride	7.58	116.9	36168	43.81	UG/L	85
21)	1,2-Dichloroethane-d4	7.93	65.0	24328M	50.46	UG/L	95
22)	*1,4-Difluorobenzene	8.78	114.0	76601	50.00	UG/L	95
23)	Benzene	8.00	78.0	58838	51.18	UG/L	88
24)	1,2-Dichloroethane	8.13	62.0	27733	45.78	UG/L	97
25)	Trichloroethene	9.19	130.0	30942	44.01	UG/L	90
26)	1,2-Dichloropropane	9.62	63.0	26743	51.73	UG/L	91
27)	Bromodichloromethane	10.08	82.9	45478	43.97	UG/L	92
28)	2-Chloroethylvinyl ether	11.01	63.0	12480	55.18	UG/L	86
29)	Cis-1,3-Dichloropropene	11.29	75.0	40368	46.77	UG/L	98
30)	4-Methyl-2-pentanone	11.44	58.0	5377^	64.81	UG/L	97
31)	Toluene-d8	11.61	98.2	66823	50.58	UG/L	93
32)	Toluene	11.76	91.0	65787	46.19	UG/L	88
33)	*Chlorobenzene-d5	14.72	117.0	63050	50.00	UG/L	92
34)	Trans-1,3-Dichloropropene	12.40	75.0	26972	44.87	UG/L	91
35)	1,1,2-Trichloroethane	12.65	97.0	19552	46.72	UG/L	94
36)	2-Hexanone	13.47	58.0	3648M	51.98	UG/L	87
37)	Tetrachloroethene	13.00	163.9	29413	41.30	UG/L	97
38)	Dibromochloromethane	13.56	128.9	39475	42.23	UG/L	99
39)	Chlorobenzene	14.80	112.0	52643	45.10	UG/L	95
40)	Ethylbenzene	14.99	91.0	78213	44.92	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 13:18
Output File: ^F3202::D1 Injected at: 911015 12:55
Data File: >F3202::D5 Dilution Factor: 1.00000
Name: 50 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.21	104.0	50701	51.04	UG/L	9(
42)	M+P-Xylene	15.15	91.0	68676	46.95	UG/L	7<
43)	O-Xylene	16.07	91.0	73367	50.66	UG/L	85
44)	Bromoform	16.87	172.9	28102	39.22	UG/L	95
45)	1,1,2,2-Tetrachloroethane	17.47	82.9	27775	47.26	UG/L	9E
46)	Bromofluorobenzene	17.44	174.0	37695	42.97	UG/L	97
47)	1,3-Dichlorobenzene	19.83	146.0	51871	41.65	UG/L	93
48)	1,4-Dichlorobenzene	20.12	146.0	53145	40.88	UG/L	93
49)	1,2-Dichlorobenzene	20.90	146.0	47773	42.84	UG/L	89

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:24
Output File: ^F3204::D1 Injected at: 911015 13:48
Data File: >F3204::D5 Dilution Factor: 1.00000
Name: 100 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.83	127.9	17402	50.00	UG/L	92
2)	Chloromethane	1.00	50.0	27197	114.19	UG/L	98
3)	Vinyl Chloride	1.10	62.0	32541	111.40	UG/L	95
4)	Bromomethane	1.52	94.0	40518	100.47	UG/L	86
5)	Chloroethane	1.64	64.0	22111	101.30	UG/L	93
6)	Trichlorofluoromethane	1.91	101.0	68668	93.25	UG/L	97
7)	Trichlorotrifluoroethane 113	2.51	101.0	80799	97.88	UG/L	90
8)	1,1-Dichloroethene	2.74	96.0	41188	101.76	UG/L	94
9)	Acetone	2.91	43.0	5967M	111.60	UG/L	88
10)	Dimethyl Ketone	2.92	58.0	1434	146.77	UG/L	97
11)	Carbon Disulfide	3.39	76.0	112405	103.68	UG/L	100
12)	Methylene Chloride	3.74	83.9	43878	99.11	UG/L	92
13)	Vinyl Acetate	5.37	86.0	6012	107.03	UG/L	100
14)	Trans-1,2-Dichloroethene	4.19	96.0	44871	90.90	UG/L	92
15)	Cis-1,2-Dichloroethene	6.27	96.0	47301	97.27	UG/L	89
16)	2-Butanone	6.27	72.0	2361	93.78	UG/L	93
17)	1,1-Dichloroethane	5.10	63.0	85381	102.68	UG/L	95
18)	Chloroform	6.54	82.9	97240	95.36	UG/L	92
19)	1,1,1-Trichloroethane	7.21	97.0	76476	91.41	UG/L	97
20)	Carbon Tetrachloride	7.60	116.9	76068	94.20	UG/L	84
21)	1,2-Dichloroethane-d4	7.95	65.0	46765M	99.15	UG/L	92
22)	*1,4-Difluorobenzene	8.78	114.0	72467	50.00	UG/L	96
23)	Benzene	8.02	78.0	116617	107.22	UG/L	88
24)	1,2-Dichloroethane	8.14	62.0	56303	98.24	UG/L	96
25)	Trichloroethene	9.20	130.0	62896	94.57	UG/L	89
26)	1,2-Dichloropropane	9.62	63.0	52150	106.63	UG/L	93
27)	Bromodichloromethane	10.09	82.9	92898	94.93	UG/L	93
28)	2-Chloroethylvinyl ether	11.03	63.0	23526	109.95	UG/L	85
29)	Cis-1,3-Dichloropropene	11.31	75.0	79877	97.83	UG/L	97
30)	4-Methyl-2-pentanone	11.42	58.0	10744	136.88	UG/L	93
31)	Toluene-d8	11.63	98.2	129120	103.30	UG/L	94
32)	Toluene	11.77	91.0	133684	99.22	UG/L	91
33)	*Chlorobenzene-d5	14.73	117.0	59313	50.00	UG/L	90
34)	Trans-1,3-Dichloropropene	12.40	75.0	54447	96.28	UG/L	93
35)	1,1,2-Trichloroethane	12.66	97.0	40789	103.61	UG/L	96
36)	2-Hexanone	13.41	58.0	8222	124.54	UG/L	83
37)	Tetrachloroethene	13.00	163.9	60438	90.21	UG/L	98
38)	Dibromochloromethane	13.57	128.9	83593	95.06	UG/L	97
39)	Chlorobenzene	14.81	112.0	108505	98.82	UG/L	96
40)	Ethylbenzene	14.99	91.0	162623	99.29	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:24
Output File: ^F3204::D1 Injected at: 911015 13:48
Data File: >F3204::D5 Dilution Factor: 1.00000
Name: 100 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	97935	104.80	UG/L	88
42)	M+P-Xylene	15.16	91.0	146383	106.39	UG/L	72
43)	O-Xylene	16.07	91.0	138139	101.39	UG/L	88
44)	Bromoform	16.87	172.9	63891	94.79	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.48	82.9	58451	105.72	UG/L	97
46)	Bromofluorobenzene	17.46	174.0	74958	90.83	UG/L	95
47)	1,3-Dichlorobenzene	19.84	146.0	104731	89.39	UG/L	91
48)	1,4-Dichlorobenzene	20.11	146.0	108407	88.63	UG/L	92
49)	1,2-Dichlorobenzene	20.90	146.0	93388	89.02	UG/L	87

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:38
Output File: ^F3205::D1 Injected at: 911015 14:15
Data File: >F3205::D5 Dilution Factor: 1.00000
Name: 150 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.85	127.9	17045	50.00	UG/L	91
2)	Chloromethane	1.00	50.0	41133	176.32	UG/L	95
3)	Vinyl Chloride	1.10	62.0	47542	166.16	UG/L	97
4)	Bromomethane	1.52	94.0	52947	134.04	UG/L	89
5)	Chloroethane	1.64	64.0	32469	151.87	UG/L	98
6)	Trichlorofluoromethane	1.90	101.0	99040	137.31	UG/L	96
7)	Trichlorotrifluoroethane 113	2.51	101.0	123401	152.61	UG/L	94
8)	1,1-Dichloroethene	2.75	96.0	61767	155.79	UG/L	97
9)	Acetone	2.90	43.0	8030M	153.33	UG/L	91
10)	Dimethyl Ketone	2.90	58.0	1947	203.45	UG/L	94
11)	Carbon Disulfide	3.38	76.0	165137	155.50	UG/L	100
12)	Methylene Chloride	3.74	83.9	66110	152.46	UG/L	95
13)	Vinyl Acetate	5.39	86.0	8851	160.87	UG/L	100
14)	Trans-1,2-Dichloroethene	4.19	96.0	67500	139.61	UG/L	96
15)	Cis-1,2-Dichloroethene	6.27	96.0	70832	148.70	UG/L	90
16)	2-Butanone	6.27	72.0	3476	140.97	UG/L	95
17)	1,1-Dichloroethane	5.10	63.0	127576	156.64	UG/L	95
18)	Chloroform	6.56	82.9	144302	144.47	UG/L	94
19)	1,1,1-Trichloroethane	7.21	97.0	110419	134.74	UG/L	98
20)	Carbon Tetrachloride	7.61	116.9	108447	137.11	UG/L	85
21)	1,2-Dichloroethane-d4	7.95	65.0	67147M	145.34	UG/L	94
22)	*1,4-Difluorobenzene	8.78	114.0	72253	50.00	UG/L	96
23)	Benzene	8.02	78.0	172477	159.04	UG/L	89
24)	1,2-Dichloroethane	8.13	62.0	80565	140.99	UG/L	98
25)	Trichloroethene	9.19	130.0	92307	139.21	UG/L	90
26)	1,2-Dichloropropane	9.62	63.0	77817	159.58	UG/L	91
27)	Bromodichloromethane	10.09	82.9	135700	139.08	UG/L	95
28)	2-Chloroethylvinyl ether	11.03	63.0	30026	140.75	UG/L	84
29)	Cis-1,3-Dichloropropene	11.30	75.0	117020	143.74	UG/L	96
30)	4-Methyl-2-pentanone	11.41	58.0	15401	196.80	UG/L	84
31)	Toluene-d8	11.62	98.2	192153	154.18	UG/L	94
32)	Toluene	11.77	91.0	198198	147.54	UG/L	91
33)	*Chlorobenzene-d5	14.73	117.0	59105	50.00	UG/L	91
34)	Trans-1,3-Dichloropropene	12.40	75.0	79248	140.63	UG/L	93
35)	1,1,2-Trichloroethane	12.66	97.0	57977	147.79	UG/L	97
36)	2-Hexanone	13.37	58.0	11547	175.52	UG/L	82
37)	Tetrachloroethene	13.00	163.9	87034	130.37	UG/L	95
38)	Dibromochloromethane	13.57	128.9	123096	140.48	UG/L	97
39)	Chlorobenzene	14.81	112.0	161467	147.57	UG/L	95
40)	Ethylbenzene	15.00	91.0	241382	147.90	UG/L	99

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 14:38
)utput File: ^F3205::D1 Injected at: 911015 14:15
Data File: >F3205::D5 Dilution Factor: 1.00000
Name: 150 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	140848	151.24	UG/L	89
42)	M+P-Xylene	15.16	91.0	208352	151.96	UG/L	71
43)	O-Xylene	16.07	91.0	195966	144.34	UG/L	87
44)	Bromoform	16.87	172.9	90159	134.23	UG/L	99
45)	1,1,2,2-Tetrachloroethane	17.48	82.9	78878	143.17	UG/L	99
46)	Bromofluorobenzene	17.46	174.0	111302	135.35	UG/L	9E
47)	1,3-Dichlorobenzene	19.83	146.0	150350	128.78	UG/L	92
48)	1,4-Dichlorobenzene	20.11	146.0	155637	127.70	UG/L	93
49)	1,2-Dichlorobenzene	20.90	146.0	130176	124.52	UG/L	8E

* Compound is ISTD

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 15:07
Output File: ^F3206::D1 Injected at: 911015 14:42
Data File: >F3206::D5 Dilution Factor: 1.00000
Name: 200 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.85	127.9	18001	50.00	UG/L	93
2)	Chloromethane	.99	50.0	54131	219.71	UG/L	94
3)	Vinyl Chloride	1.09	62.0	64551	213.62	UG/L	96
4)	Bromomethane	1.52	94.0	68610	164.46	UG/L	89
5)	Chloroethane	1.63	64.0	36661	162.37	UG/L	94
6)	Trichlorofluoromethane	1.89	101.0	127446	167.31	UG/L	97
7)	Trichlorotrifluoroethane 113	2.49	101.0	163734	191.74	UG/L	99
8)	1,1-Dichloroethene	2.73	96.0	85144	203.35	UG/L	99
9)	Acetone	2.94	43.0	11232M	203.08	UG/L	82
10)	Dimethyl Ketone	2.92	58.0	2872	284.16	UG/L	93
11)	Carbon Disulfide	3.38	76.0	220668	196.76	UG/L	100
12)	Methylene Chloride	3.74	83.9	89819	196.13	UG/L	95
13)	Vinyl Acetate	5.39	86.0	11897	204.75	UG/L	100
14)	Trans-1,2-Dichloroethene	4.18	96.0	92070	180.31	UG/L	95
15)	Cis-1,2-Dichloroethene	6.26	96.0	96920	192.67	UG/L	89
16)	2-Butanone	6.28	72.0	4786	183.78	UG/L	83
17)	1,1-Dichloroethane	5.10	63.0	173378	201.56	UG/L	96
18)	Chloroform	6.55	82.9	196739	186.51	UG/L	95
19)	1,1,1-Trichloroethane	7.20	97.0	151493	175.05	UG/L	96
20)	Carbon Tetrachloride	7.60	116.9	150665	180.37	UG/L	87
21)	1,2-Dichloroethane-d4	7.95	65.0	89770M	183.99	UG/L	92
22)	*1,4-Difluorobenzene	8.78	114.0	73804	50.00	UG/L	95
23)	Benzene	8.02	78.0	239780	216.46	UG/L	90
24)	1,2-Dichloroethane	8.13	62.0	112658	193.01	UG/L	95
25)	Trichloroethene	9.19	130.0	132020	194.91	UG/L	87
26)	1,2-Dichloropropane	9.63	63.0	108999	218.83	UG/L	99
27)	Bromodichloromethane	10.10	82.9	193742	194.40	UG/L	95
28)	2-Chloroethylvinyl ether	11.02	63.0	41051	188.38	UG/L	86
29)	Cis-1,3-Dichloropropene	11.30	75.0	166906	200.71	UG/L	97
30)	4-Methyl-2-pentanone	11.38	58.0	22485	281.28	UG/L	91
31)	Toluene-d8	11.62	98.2	257639	202.38	UG/L	95
32)	Toluene	11.77	91.0	280291	204.26	UG/L	90
33)	*Chlorobenzene-d5	14.74	117.0	59844	50.00	UG/L	89
34)	Trans-1,3-Dichloropropene	12.40	75.0	114165	200.09	UG/L	91
35)	1,1,2-Trichloroethane	12.65	97.0	83264	209.63	UG/L	97
36)	2-Hexanone	13.35	58.0	17434	261.73	UG/L	89
37)	Tetrachloroethene	13.00	163.9	126909	187.75	UG/L	98
38)	Dibromochloromethane	13.57	128.9	177131	199.65	UG/L	99
39)	Chlorobenzene	14.82	112.0	226055	204.05	UG/L	95
40)	Ethylbenzene	15.00	91.0	339086	205.19	UG/L	98

Operator ID: JOE-2 Quant Rev: 7 Quant Time: 911015 15:07
Jutput File: ^F3206::D1 Injected at: 911015 14:42
Data File: >F3206::D5 Dilution Factor: 1.00000
Name: 200 PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911011 11:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.22	104.0	192532	204.19	UG/L	89
42)	M+P-Xylene	15.17	91.0	296787	213.78	UG/L	72
43)	O-Xylene	16.08	91.0	261043	189.90	UG/L	88
44)	Bromoform	16.87	172.9	125025	183.85	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.49	82.9	103208	185.01	UG/L	98
46)	Bromofluorobenzene	17.46	174.0	141714	170.20	UG/L	99
47)	1,3-Dichlorobenzene	19.84	146.0	187791	158.86	UG/L	90
48)	1,4-Dichlorobenzene	20.13	146.0	196629	159.34	UG/L	96
49)	1,2-Dichlorobenzene	20.90	146.0	157435	148.74	UG/L	90

* Compound is ISTD

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSV0A3

Contractor: Columbia Analytical Calibration Date: 10/15/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3203	>F3202	>F3204	>F3205	>F3206				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.79685	.75243	.78143	.80440	.75178	.77738	3.153		**
Vinyl Chloride	.96103	.91259	.93498	.92973	.89649	.92696	2.625	*	
Bromomethane	1.23268	1.18500	1.16418	1.03544	.95286	1.11403	10.408		
Chloroethane	.67439	.67396	.63530	.63497	.50915	.62555	10.860		
Trichlorofluoromethane	2.09755	1.99224	1.97299	1.93683	1.76998	1.95392	6.087		
Trichlorotrifluoroethane 113	2.38715	2.30440	2.32154	2.41324	2.27396	2.34006	2.488		
1,1-Dichloroethene	1.26421	1.16949	1.18343	1.20792	1.18249	1.20151	3.138	*	
Acetone	.24860	.13396	.17145	.15704	.15599	.17341	25.442		
Carbon Disulfide	3.44773	3.46714	3.22966	3.22943	3.06466	3.28773	5.142		
Methylene Chloride	1.32573	1.26460	1.26072	1.29285	1.24742	1.27826	2.446		
Vinyl Acetate	.17874	.17528	.17274	.17309	.16523	.17302	2.871		
Trans-1,2-Dichloroethene	1.35924	1.29119	1.28925	1.32003	1.27868	1.30768	2.497		
Cis-1,2-Dichloroethene	1.42570	1.35140	1.35907	1.38520	1.34604	1.37348	2.391		
2-Butanone	.05642	.05897	.06784	.06798	.06647	.06353	8.559		
1,1-Dichloroethane	2.52701	2.45989	2.45320	2.49489	2.40789	2.46858	1.823		**
Chloroform	2.80785	2.70493	2.79393	2.82198	2.73233	2.77221	1.834	*	
1,1,1-Trichloroethane	2.22100	2.07679	2.19733	2.15936	2.10395	2.15169	2.830		
Carbon Tetrachloride	2.18338	2.03317	2.18561	2.12080	2.09245	2.12308	3.032		
1,2-Dichloroethane-d4	1.41764	1.36759	1.34367	1.31313	1.24674	1.33775	4.757		
Benzene	.80278	.76811	.80462	.79571	.81222	.79669	2.137		
1,2-Dichloroethane	.39483	.36204	.38847	.37168	.38161	.37973	3.447		
Trichloroethene	.43538	.40394	.43396	.42585	.44720	.42926	3.746		
1,2-Dichloropropane	.36731	.34912	.35982	.35900	.36922	.36089	2.207	*	
Bromodichloromethane	.63452	.59370	.64097	.62604	.65627	.63030	3.690		
2-Chloroethylvinyl ether	.17406	.16292	.16232	.13852	.13905	.15538	10.200		
Cis-1,3-Dichloropropene	.54649	.52699	.55113	.53986	.56537	.54597	2.591		
4-Methyl-2-pentanone	.07720	.07019	.07413	.07105	.07616	.07375	4.168		
Toluene-d8	.88458	.87235	.89089	.88648	.87271	.88140	.955		
Toluene	.90410	.85883	.92238	.91437	.94944	.90982	3.638	*	
Trans-1,3-Dichloropropene	.47217	.42779	.45898	.44693	.47693	.45656	4.360		
1,1,2-Trichloroethane	.35217	.31010	.34385	.32697	.34784	.33618	5.184		
2-Hexanone	.06952	.05786	.06931	.06512	.07283	.06693	8.607		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSV0A3

Contractor: Columbia Analytical Calibration Date: 10/15/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3203	>F3202	>F3204	>F3205	>F3206				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Tetrachloroethene	.51718	.46650	.50948	.49084	.53017	.50284	4.933		
Dibromochloromethane	.68248	.62609	.70468	.69422	.73997	.68949	6.011		
Chlorobenzene	.92351	.83494	.91468	.91062	.94435	.90562	4.594		**
Ethylbenzene	1.34025	1.24049	1.37089	1.36132	1.41654	1.34590	4.843	*	
Styrene	.81939	.80414	.82558	.79434	.80431	.80955	1.565		
M+P-Xylene	1.18434	1.08923	1.23399	1.17504	1.23984	1.18449	5.114		
O-Xylene	1.21931	1.16363	1.16449	1.10519	1.09051	1.14863	4.510		
Bromoform	.50309	.44571	.53859	.50847	.52230	.50363	6.984		**
1,1,2,2-Tetrachloroethane	.50668	.44052	.49273	.44485	.43115	.46319	7.354		**
Bromofluorobenzene	.62448	.59786	.63189	.62771	.59201	.61479	2.997		
1,3-Dichlorobenzene	.89810	.82270	.88287	.84793	.78450	.84722	5.407		
1,4-Dichlorobenzene	.92767	.84290	.91386	.87774	.82142	.87672	5.157		
1,2-Dichlorobenzene	.83234	.75770	.78725	.73415	.65769	.75383	8.629		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

COLUMBIA ANALYTICAL SERVICES, INC.

Work Request #: K91-6712 C

Date Extracted: 11/20/91

Analyst: MATT BLACK

Method: 8270/3510

BNA Water/BNA TCLP/TCLP SVO

Lab ID	Client ID	Sample Vol	SS	pH		Surr		Matrix Spike		Emuls		F Sol	F Vol
				A	B	A	B	A	B	A	B		
6712-2		810 ml	—	<2	>12	X	—	—	—	X	X	DCM	1.0 ml
1120 LCS BNA	—	1000 ml	—	<2	>12	X	—	X	X	—	—	DCM	1.0 ml
1120 WB1 BNA	—	1000 ml	—	<2	>12	X	—	—	—	—	—	DCM	1.0 ml
	Matt L R Black 11/20/91												

11-22-91

Comments: blank and LCS batched with K91-6731
Sample ~~had~~ had about an inch of Sediment. Water decanted off.

BN Surrogate ID: 5-14-C Combined surr. 50ppm bases use 1.0ml (pipet) Solution Concentration: 50 ug/ml

Acid Surrogate ID: 100ppm Acids Solution Concentration: 100 ug/ml

BN Spike ID: 5-4-C 200 ppm 200 ul (Epp) Sample Concentration: .04 ug/l

Acid Spike ID: 5-17-C 1000 ppm 100 ul (Epp) Sample Concentration: .01 ug/l

Vial: 2.0 ml Miniscus Marked Extract Storage: None Stored

Reviewed by: [signature] 11/25/91 Date: 11/25 Filename: BNA RCH/10-29-91

00352

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911122 17:58
Output File: ^B3388::D1 Injected at: 911122 17:15
Data File: >B3388::D4 Dilution Factor: 1.00000
me: K6712-2 8270/H2O Instrument ID: GCMSBNA1
misc: WB-3 (EMCON & ASSOC.) BTL# 9

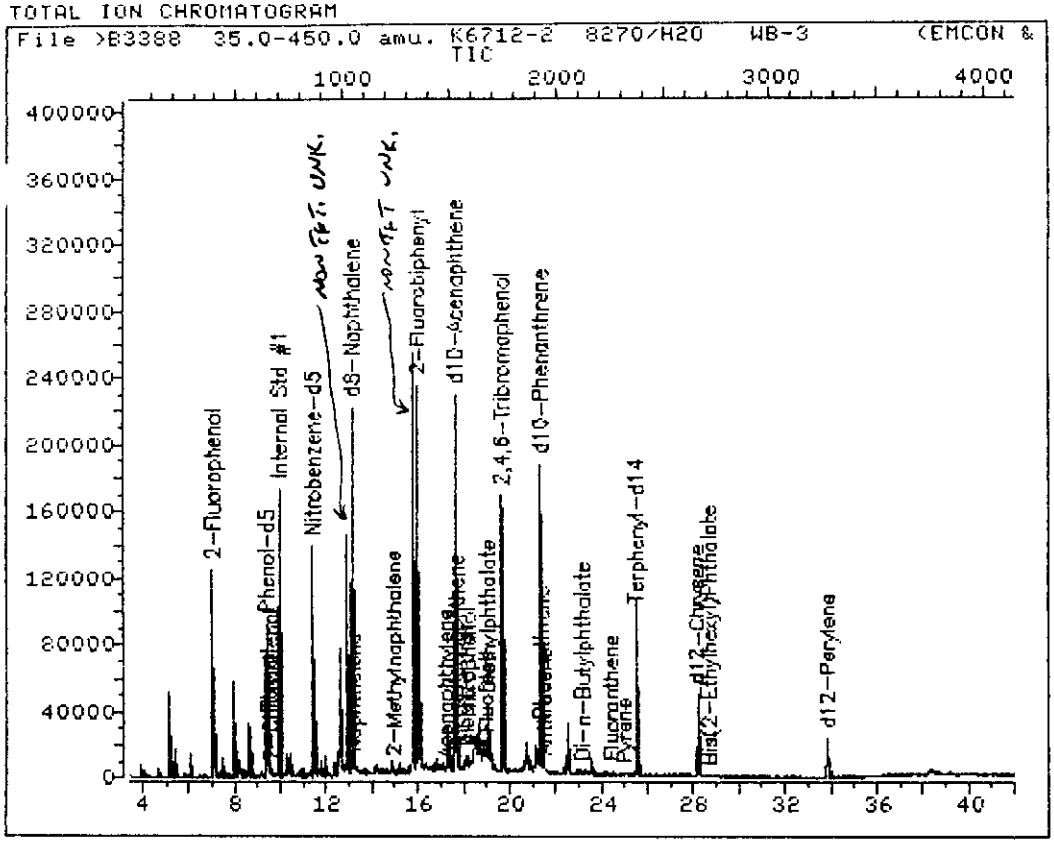
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.94	152.0	52823✓	40.00	ug/mL	94
4)	2-Fluorophenol	7.03	112.0	80922	58.84	ug/mL	94
6)	Phenol-d6	9.39	99.0	82941	39.73	ug/mL	97
7)	Phenol	9.41	94.0	121M	.0446	ug/mL	
9)	2-Chlorophenol	9.54	128.0	123M	.0591	ug/mL	
20)	*d8-Naphthalene	13.12	136.0	211275✓	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.42	82.0	85199	39.98	ug/mL	95
29)	Naphthalene	13.17	128.0	3159	.570	ug/mL	97
33)	2-Methylnaphthalene	14.93	142.0	1498	.458	ug/mL	89
34)	*d10-Acenaphthene	17.61	164.0	115934✓	40.00	ug/mL	89
39)	2-Fluorobiphenyl	15.97	172.0	151304	38.41	ug/mL	95
42)	Acenaphthylene	17.19	152.0	49M	.00940	ug/mL	
44)	Acenaphthene✓	17.67	154.0	19696	5.58	ug/mL	88
46)	4-Nitrophenol	18.19	65.0	2651M	5.60	ug/mL	46
47)	Dibenzofuran	18.08	168.0	4703	.912	ug/mL	94
50)	Diethylphthalate	19.03	149.0	3437M	.714	ug/mL	
52)	Fluorene	18.95	166.0	8039	2.01	ug/mL	96
56)	*d10-Phenanthrene	21.32	188.0	165673✓	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.63	329.8	59368	95.21	ug/mL	97
62)	Phenanthrene	21.36	178.0	15185	3.07	ug/mL	95
63)	Anthracene	21.47	178.0	2086	.434	ug/mL	87
64)	Di-n-Butylphthalate	23.14	149.0	1167M	.182	ug/mL	
65)	Fluoranthene	24.40	202.0	2495	.667	ug/mL	97
66)	*d12-Chrysene	28.14	240.0	54125✓	40.00	ug/mL	97
67)	Pyrene	24.94	202.0	1407M	.475	ug/mL	
68)	Terphenyl-d14	25.48	244.0	94210	52.20	ug/mL	85
72)	Bis(2-Ethylhexyl)Phthalate	28.66	149.0	215M	.135	ug/mL	
74)	*d12-Perylene	33.84	264.0	46121✓	40.00	ug/mL	93

* Compound is ISTD

44) $5.58 \times \frac{1000}{810\ mL} \simeq 6.88 \simeq 7$

TOTAL ION CHROMATOGRAM

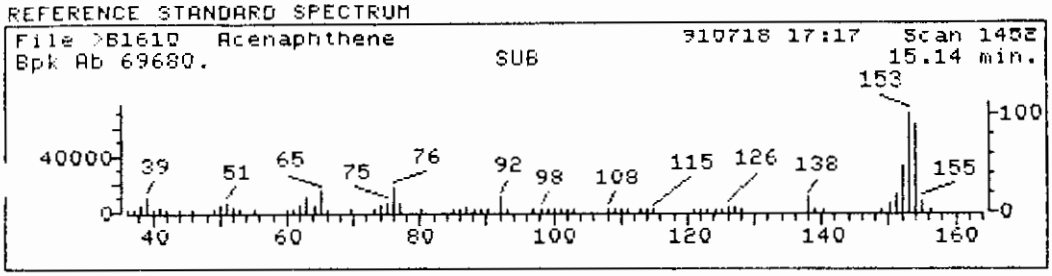


Data File: >B3388::D4 Quant Output File: ^B3388::D1
Name: K6712-2 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-3 (EMCON & ASSOC.) BTL# 9

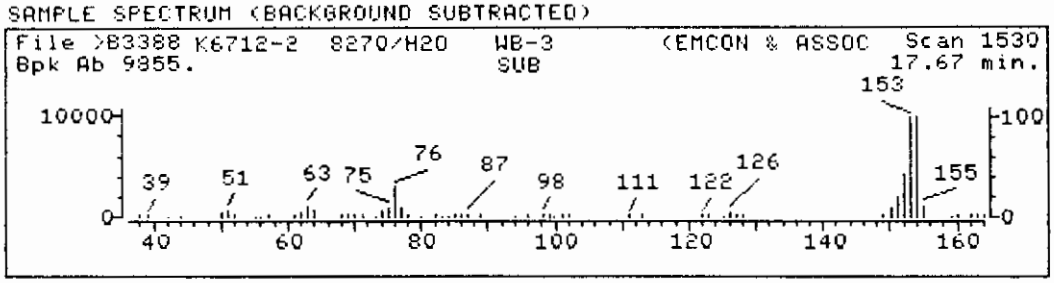
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

Operator ID: KEN-1
Quant Time : 911122 17:58
Injected at: 911122 17:15

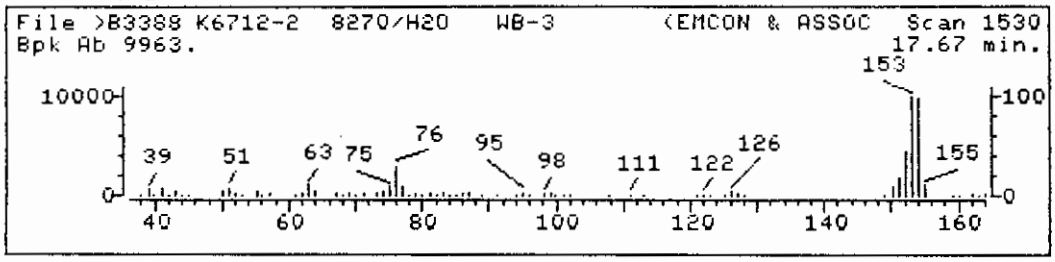
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

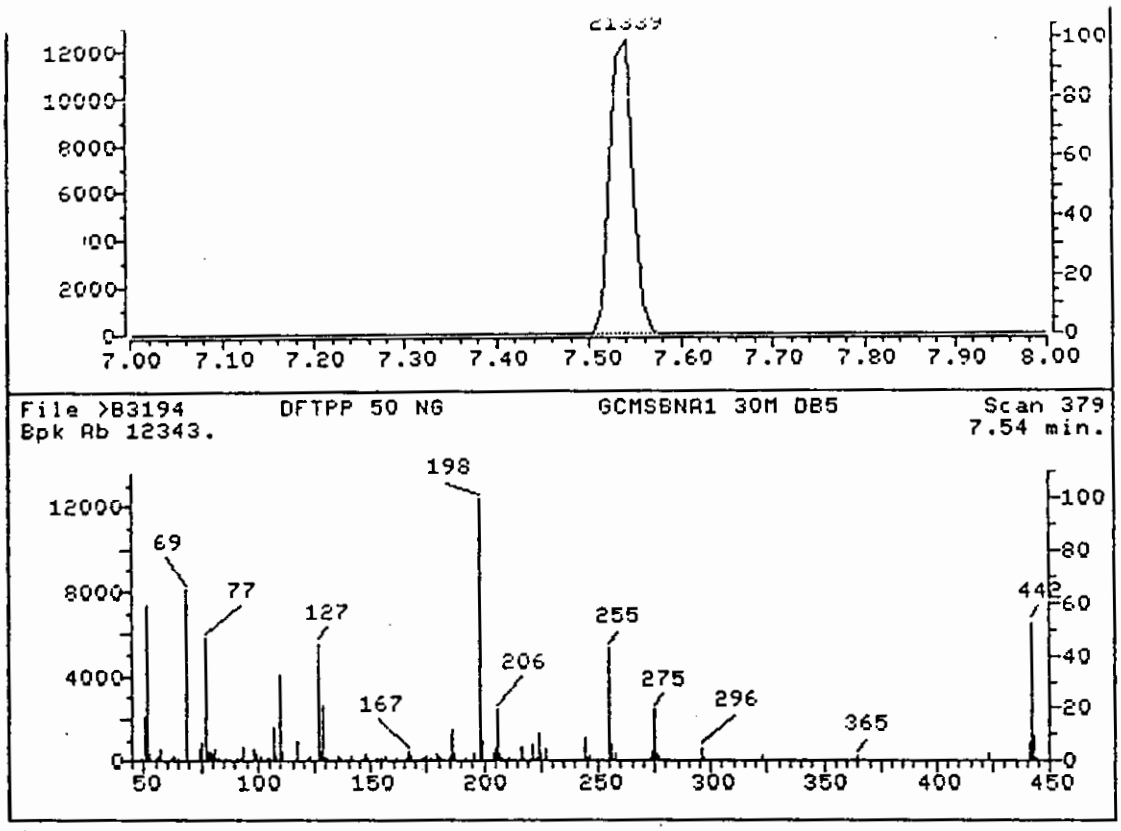


SAMPLE SPECTRUM (UNALTERED)



Data File: >B3388::D4 Quant Output File: ^B3388::D1
Name: K6712-2 8270/H20 Instrument ID: GCMSBNA1
Misc: WB-3 (EMCON & ASSOC.) BTL# 9
Quant Time: 911122 17:58 Quant ID File: ID_BDA::D1
Injected at: 911122 17:15 Last Calibration: 911113 08:36
Last Qcal Time: 911122 09:14

Compound No : 44
Compound Name : Acenaphthene
Scan Number : 1530
Retention Time: 17.67 min.
Quant Ion : 154.0
Area : 19696
Concentration : 5.58 ug/mL
q-value : 88

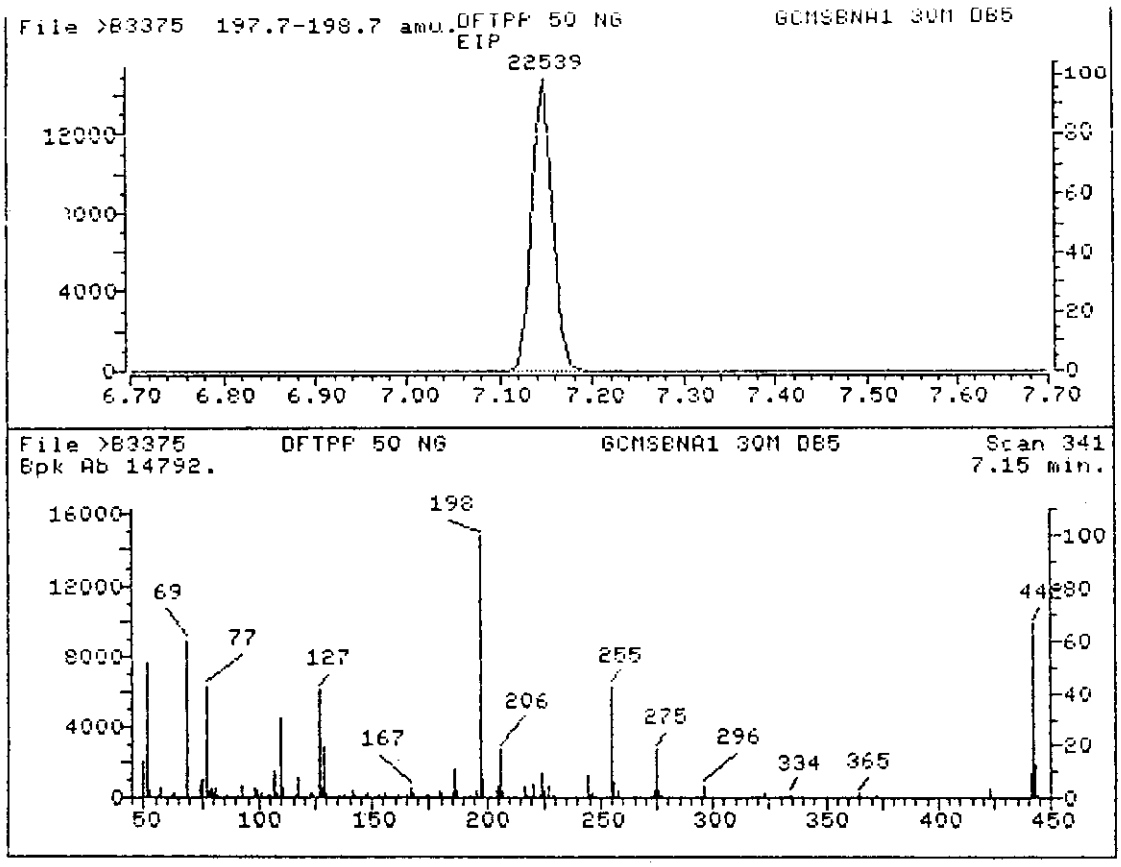


GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	59.43	59.43	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	65.60	65.60	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	44.76	44.76	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.44	7.44	Ok
275	10-30% of mass 198	19.10	19.10	Ok
365	Greater than 1% of mass 198	1.67	1.67	Ok
441	0-100% of mass 443	6.77	69.96	Ok
442	Greater than 40% of mass 198	52.60	52.60	Ok
443	17-23% of mass 442	9.68	18.41	Ok

Injection Date: 11/12/91
Injection Time: 14:17
Data File: >B3194
Scan: 379

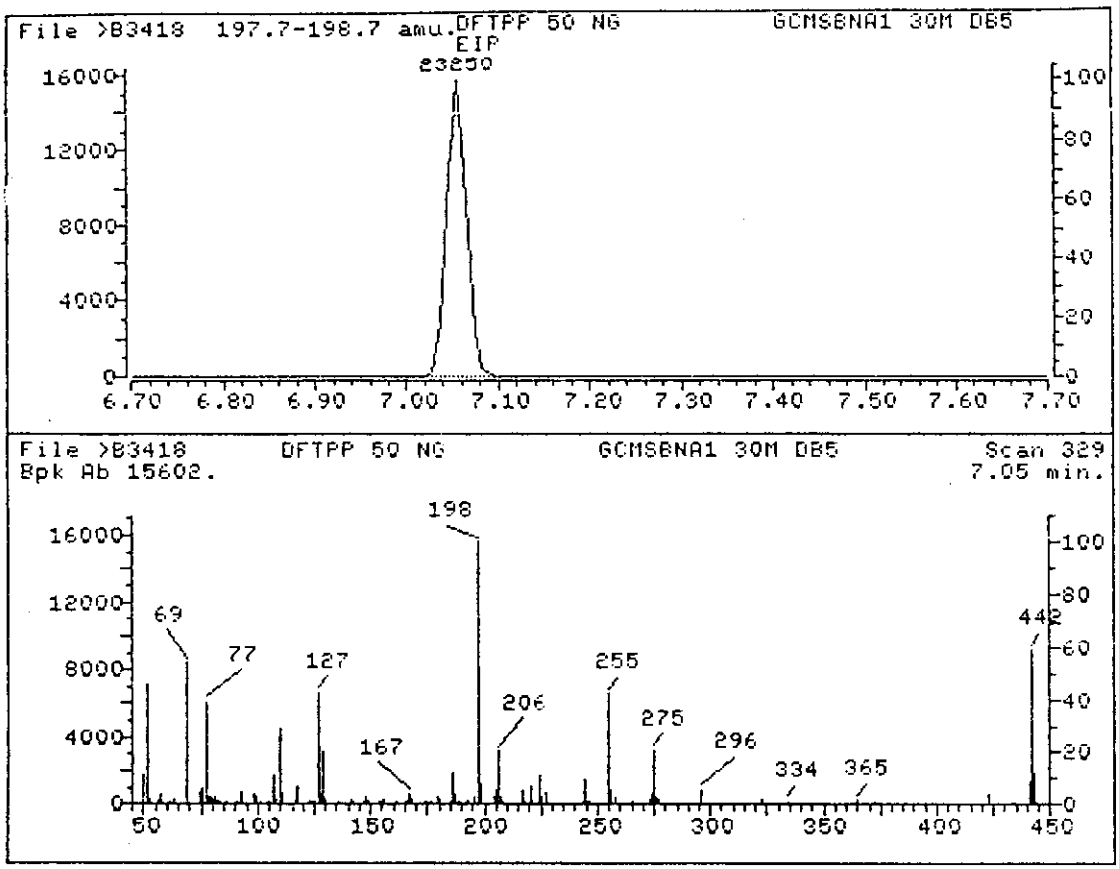


GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	51.18	51.18	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	60.17	60.17	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	41.27	41.27	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.89	6.89	Ok
275	10-30% of mass 198	18.52	18.52	Ok
365	Greater than 1% of mass 198	1.57	1.57	Ok
441	0-100% of mass 443	9.09	71.53	Ok
442	Greater than 40% of mass 198	66.32	66.32	Ok
443	17-23% of mass 442	12.70	19.15	Ok

Injection Date: 11/22/91
Injection Time: 08:57
Data File: >B3375
Scan: 341



GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	45.47	45.47	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	53.86	53.86	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	42.42	42.42	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.59	7.59	Ok
275	10-30% of mass 198	20.75	20.75	Ok
365	Greater than 1% of mass 198	1.86	1.86	Ok
441	0-100% of mass 443	8.56	73.39	Ok
442	Greater than 40% of mass 198	58.75	58.75	Ok
443	17-23% of mass 442	11.66	19.85	Ok

Injection Date: 11/26/91
Injection Time: 09:34
Data File: >B3418
Scan: 329

HSL Compounds

Case No: Instrument ID: GCMSBNA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

tract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
N-Nitroso-Dimethylamine	1.26158	1.19563	1.10632	1.16948	1.08554	.429	1.16371	6.082		
Pyridine	1.79459	1.83164	1.78906	1.80605	1.79023	.424	1.80232	.983		(Conc=22.0,55.0,88.0,132.
2-Fluorophenol	1.17602	1.13823	1.05138	1.03670	.95074	.724	1.07061	8.298		
Aniline	2.09626	2.09146	1.90892	2.05317	1.87982	.940	2.00593	5.170		
Phenol-d6	1.65271	1.60944	1.47648	1.47741	1.30496	.944	1.50420	9.061		
Phenol	2.20371	2.12722	1.88999	1.81208	1.77800	.947	1.96220	9.778	*	
bis(2-Chloroethyl)ether	1.60488	1.50917	1.26012	1.17454	.99838	.959	1.30942	18.884		
2-Chlorophenol	1.75493	1.58178	1.36464	1.28185	1.16090	.961	1.42882	16.682		
1,3-Dichlorobenzene	1.72478	1.63799	1.47025	1.41891	1.28500	.991	1.50739	11.632		
1,4-Dichlorobenzene	1.76758	1.66418	1.48285	1.42426	1.26207	1.004	1.52019	13.122	*	
Benzyl Alcohol	.79188	.72340	.71130	.81694	.71625	1.049	.75195	6.501		
1,2-Dichlorobenzene	1.98131	1.73887	1.53636	1.52870	1.35750	1.046	1.62855	14.678		
2-Methylphenol	1.43710	1.35168	1.21022	1.19258	1.01805	1.080	1.24193	12.965		
bis(2-Chloroisopropyl)ether	4.00890	4.02670	3.65001	3.68715	3.15651	1.084	3.70585	9.541		
4-Methylphenol	1.92981	1.59425	1.52648	1.44999	1.65342	1.119	1.63079	11.258		
N-Nitroso-Di-n-propylamine	1.50043	1.44104	1.39885	1.42371	1.26654	1.125	1.40611	6.155		**
achloroethane	.76864	.64676	.57186	.57561	.45729	1.116	.60403	18.930		
itrobenzene	1.83119	1.77582	1.66692	1.77742	1.60605	1.145	1.73148	5.318		
Nitrobenzene-d5	.45712	.44855	.40221	.42129	.39625	.876	.42509	6.385		
Isophorone	.92091	.91012	.86500	.91087	.83219	.926	.88782	4.267		
2-Nitrophenol	.32945	.31798	.30399	.28908	.26916	.937	.30193	7.870	*	
2,4-Dimethylphenol	.37414	.36869	.35429	.36480	.35020	.953	.36243	2.751		
Benzoic Acid	.22567	.28164	.26331	.28086	.24816	.990	.25993	9.090		
bis(2-Chloroethoxy)methane	.58339	.53659	.48938	.47554	.44124	.971	.50523	10.984		
2,4-Dichlorophenol	.38758	.35470	.35640	.34266	.34408	.981	.35708	5.074	*	
1,2,4-Trichlorobenzene	.36924	.32681	.32045	.29862	.29454	.994	.32193	9.264		
Naphthalene	1.20790	1.13330	1.00339	.95293	.82925	1.004	1.02536	14.561		
4-Chloroaniline	.44322	.43660	.42762	.42249	.41019	1.023	.42802	2.986		
Hexachlorobutadiene	.25000	.22646	.22199	.20132	.18976	1.041	.21791	10.731	*	
4-Chloro-3-methylphenol	.38076	.36476	.35682	.35719	.33308	1.117	.35852	4.802	*	

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

HSL Compounds

Case No: Instrument ID: GCMS8NA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

tract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>83199	>83195	>83198	>83196	>83197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Methylnaphthalene	.65705	.62675	.59380	.55042	.50597	1.133	.58680	10.238		
Hexachlorocyclopentadiene	.54333	.54827	.53393	.50500	.50827	.885	.52776	3.789		**
2,4,6-Trichlorophenol	.57911	.55416	.54641	.50284	.49605	.898	.53572	6.594	*	
2,4,5-Trichlorophenol	.56550	.53084	.54648	.50377	.49605	.901	.52853	5.486		
2-Chloronaphthalene	1.48324	1.33879	1.29182	1.17441	1.10607	.920	1.27887	11.485		
2-Fluorobiphenyl	1.58556	1.40948	1.33918	1.21561	1.15833	.909	1.34163	12.561		
2-Nitroaniline	.38482	.45053	.45783	.46103	.42603	.943	.43605	7.282		
Dimethylphthalate	1.66672	1.52634	1.49109	1.21846	1.03754	.976	1.38803	18.333		
Acenaphthylene	2.24089	2.09640	1.92723	1.61400	1.35668	.978	1.84704	19.492		
3-Nitroaniline	.24771	.30702	.33738	.30723	.26178	1.002	.29222	12.563		
Acenaphthene	1.38335	1.28187	1.20257	1.04683	.91805	1.005	1.16654	15.904	*	
2,4-Dinitrophenol	.17900	.29138	.33406	.32674	.30241	1.017	.28672	21.861		**
4-Nitrophenol	.19764	.26335	.28050	.28010	.24917	1.029	.25415	13.445		**
Dibenzofuran	1.78608	1.70375	1.69460	1.53396	1.42643	1.028	1.62896	8.930		
2,4-Dinitrotoluene	.43341	.49431	.52817	.49436	.44327	1.039	.47871	8.253		
2,6-Dinitrotoluene	.34810	.37814	.39936	.38106	.35538	.985	.37241	5.561		
thylphthalate	1.63076	1.47682	1.38615	1.12486	.86174	1.078	1.29607	23.490		
nlorophenyl-phenylether	.85534	.79774	.79591	.67329	.58904	1.080	.74227	14.600		
Fluorene	1.45389	1.33639	1.25933	1.09423	.97671	1.076	1.22411	15.539		
4-Nitroaniline	.20444	.26651	.30074	.29153	.25462	1.090	.26357	14.383		
4,6-Dinitro-2-methylphenol	.26681	.37986	.40197	.35432	.30846	1.096	.34228	15.974		
N-Nitrosodiphenylamine	.95191	.94932	.98619	.82556	.69484	1.099	.88156	13.717	*	
Azobenzene	.31706	.28958	.27446	.28807	.27676	.913	.28918	5.862		
2,4,6-Tribromophenol	.14652	.15040	.15665	.16243	.16756	.922	.15667	5.433		
4-Bromophenyl-phenylether	.32328	.29567	.29060	.28891	.28600	.951	.29689	5.108		
Hexachlorobenzene	.35620	.33618	.31598	.31851	.31627	.965	.32863	5.341		
Pentachlorophenol	.20480	.24037	.23762	.24127	.23741	.987	.23229	6.656	*	
Phenanthrene	1.30649	1.24641	1.17086	1.14342	1.07176	1.003	1.18779	7.675		
Anthracene	1.22280	1.16628	1.14762	1.08551	1.01133	1.008	1.12671	7.189		
Di-n-Butylphthalate	1.75163	1.73281	1.52180	1.33813	1.13322	1.083	1.49552	17.648		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

HSL Compounds

Case No: Instrument ID: GCMSBNA1

Contractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

tract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Fluoranthene	1.16751	1.22230	1.08394	1.04138	.90082	1.143	1.08319	11.444	*	
Pyrene	2.52497	2.28495	2.19712	1.86689	1.96845	.885	2.16848	12.035		
Terphenyl-d14	1.46097	1.38260	1.38065	1.17490	1.22994	.903	1.32581	8.962		
Butylbenzylphthalate	1.01291	.93708	.86322	.76635	.73906	.952	.86372	13.284		
3,3'-Dichlorobenzidine	.26304	.32237	.35838	.41830	.39917	1.000	.35225	17.644		
Benzo(a)Anthracene	1.29891	1.29813	1.28465	1.32424	1.30259	.998	1.30170	1.100		
Bis(2-Ethylhexyl)Phthalate	1.43615	1.37109	1.25285	1.11010	1.09430	1.018	1.25290	12.176		
Chrysene	1.28149	1.21571	1.25652	1.27919	1.27330	1.003	1.26124	2.161		
Di-n-octylphthalate	2.38608	2.50689	2.21469	1.86961	1.88973	.915	2.17340	13.234	*	
Benzo(b)fluoranthene	1.35099	1.37142	1.44444	1.31394	1.41917	.952	1.37999	3.794		
Benzo(k)fluoranthene	1.32404	1.31203	1.31668	1.21760	1.27083	.955	1.28823	3.461		
Benzo(a)pyrene	1.17181	1.19388	1.22834	1.21876	1.26951	.993	1.21646	3.038	*	
Indeno(1,2,3-cd)pyrene	1.03833	1.09239	1.18150	1.22267	1.28742	1.121	1.16446	8.577		
Dibenz(a,h)anthracene	1.00079	1.04006	1.10369	1.18640	1.22288	1.125	1.11076	8.473		
Benzo(g,h,i)Perylene	1.07276	1.10564	1.20099	1.22647	1.29215	1.153	1.17960	7.607		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

04261

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Output File: ^B3199::D1 Injected at: 911112 18:17
Data File: >B3199::D4 Dilution Factor: 1.00000
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	50091	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.44	42.0	31597	21.10	ug/mL	83
3)	Pyridine	4.47	79.0	49441M	21.55	ug/mL	92
4)	2-Fluorophenol	7.54	112.0	29454	20.66	ug/mL	91
5)	Aniline	9.77	93.0	52502	20.05	ug/mL	90
6)	Phenol-d6	9.80	99.0	41393	20.54	ug/mL	89
7)	Phenol	9.83	94.0	55193	20.72	ug/mL	83
8)	bis(2-Chloroethyl)ether	9.98	93.0	40195	21.27	ug/mL	82
9)	2-Chlorophenol	10.00	128.0	43953	22.19	ug/mL	99
10)	1,3-Dichlorobenzene	10.32	146.0	43198	21.06	ug/mL	95
11)	1,4-Dichlorobenzene	10.45	146.0	44270	21.24	ug/mL	95
12)	Benzyl Alcohol	10.89	108.0	19833	21.89	ug/mL	96
13)	1,2-Dichlorobenzene	10.90	146.0	49623	22.79	ug/mL	97
14)	2-Methylphenol	11.23	107.0	35993	21.26	ug/mL	95
)	bis(2-Chloroisopropyl)ether	11.29	45.0	100405	19.91	ug/mL	88
16)	4-Methylphenol	11.61	107.0	48333	24.21	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.65	70.0	37579	20.82	ug/mL	90
18)	Hexachloroethane	11.63	117.0	19251	23.77	ug/mL	94
19)	Nitrobenzene	11.91	77.0	45863	20.62	ug/mL	95
20)	*d8-Naphthalene	13.56	136.0	186038	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.86	82.0	42521	20.38	ug/mL	98
22)	Isophorone	12.53	82.0	85662	20.24	ug/mL	85
23)	2-Nitrophenol	12.71	139.0	30645	20.72	ug/mL	97
24)	2,4-Dimethylphenol	12.90	122.0	34802	20.30	ug/mL	87
25)	Benzoic Acid	13.24	122.0	20992	16.03	ug/mL	95
26)	bis(2-Chloroethoxy)methane	13.15	93.0	54266	21.74	ug/mL	98
27)	2,4-Dichlorophenol	13.28	162.0	36052	21.85	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.48	180.0	34346	22.60	ug/mL	96
29)	Naphthalene	13.61	128.0	112358	21.32	ug/mL	98
30)	4-Chloroaniline	13.87	127.0	41228	20.30	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	23255	22.08	ug/mL	95
32)	4-Chloro-3-methylphenol	15.15	107.0	35418	20.88	ug/mL	95
33)	2-Methylnaphthalene	15.37	142.0	61118	20.97	ug/mL	98
34)	*d10-Acenaphthene	18.05	164.0	95812	40.00	ug/mL	87
35)	Hexachlorocyclopentadiene	15.97	237.0	26029	19.82	ug/mL	96
36)	2,4,6-Trichlorophenol	16.19	196.0	27743	20.90	ug/mL	96
37)	2,4,5-Trichlorophenol	16.27	196.0	27091	21.31	ug/mL	98
38)	2-Chloronaphthalene	16.59	162.0	71056	22.16	ug/mL	97
39)	2-Fluorobiphenyl	16.41	172.0	75958	22.50	ug/mL	94
)	2-Nitroaniline	17.00	65.0	18435	17.08	ug/mL	78

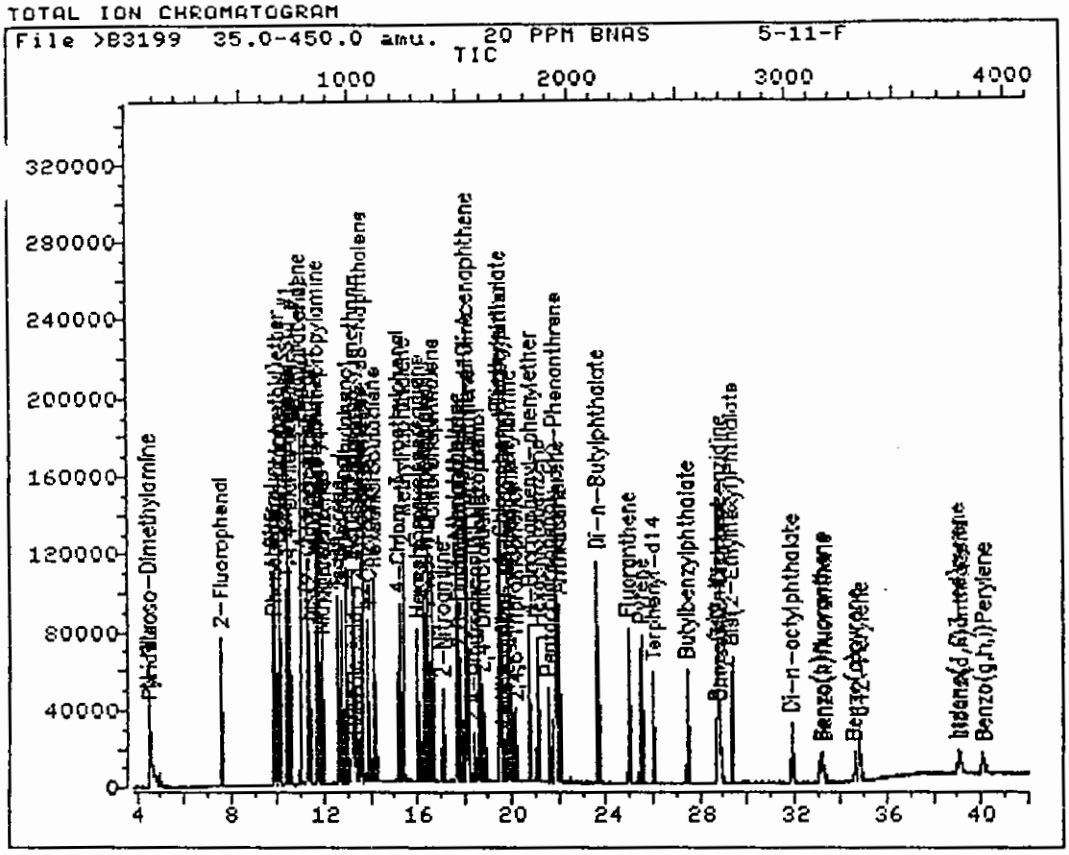
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Output File: ^B3199::D1 Injected at: 911112 18:17
ta File: >B3199::D4 Dilution Factor: 1.00000
me: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	79846	21.84	ug/mL	74
42)	Acenaphthylene	17.65	152.0	107352	21.38	ug/mL	93
43)	3-Nitroaniline	18.07	138.0	11867	16.14	ug/mL	95
44)	Acenaphthene	18.14	154.0	66271	21.58	ug/mL	93
45)	2,4-Dinitrophenol	18.34	184.0	8575	12.29	ug/mL	97
46)	4-Nitrophenol	18.55	65.0	9468	15.01	ug/mL	40
47)	Dibenzofuran	18.55	168.0	85564	20.97	ug/mL	95
48)	2,4-Dinitrotoluene	18.74	165.0	20763	17.54	ug/mL	93
49)	2,6-Dinitrotoluene	17.77	165.0	16676	18.41	ug/mL	91
50)	Diethylphthalate	19.43	149.0	78123	22.08	ug/mL	96
51)	4-Chlorophenyl-phenylether	19.49	204.0	40976	21.44	ug/mL	93
52)	Fluorene	19.42	166.0	69650	21.76	ug/mL	94
53)	4-Nitroaniline	19.64	138.0	9794	15.34	ug/mL	93
54)	4,6-Dinitro-2-methylphenol	19.75	198.0	12782	14.05	ug/mL	94
55)	N-Nitrosodiphenylamine	19.83	169.0	45602	20.05	ug/mL	96
56)	*d10-Phenanthrene	21.79	188.0	142587	40.00	ug/mL	99
57)	Azobenzene	19.88	182.0	22604	21.90	ug/mL	90
58)	2,4,6-Tribromophenol	20.09	329.8	10446	19.48	ug/mL	93
59)	4-Bromophenyl-phenylether	20.72	248.0	23048	21.87	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	25395	21.19	ug/mL	99
61)	Pentachlorophenol	21.51	266.0	14601	17.04	ug/mL	98
62)	Phenanthrene	21.85	178.0	93144	20.96	ug/mL	99
63)	Anthracene	21.96	178.0	87178	20.97	ug/mL	99
64)	Di-n-Butylphthalate	23.61	149.0	124880	20.22	ug/mL	97
65)	Fluoranthene	24.90	202.0	83236	19.10	ug/mL	94
66)	*d12-Chrysene	28.77	240.0	66468	40.00	ug/mL	98
67)	Pyrene	25.46	202.0	83915	22.10	ug/mL	98
68)	Terphenyl-d14	25.98	244.0	48554	21.13	ug/mL	91
69)	Butylbenzylphthalate	27.41	149.0	33663	21.62	ug/mL	87
70)	3,3'-Dichlorobenzidine	28.78	252.0	8742	16.32	ug/mL	88
71)	Benzo(a)Anthracene	28.73	228.0	43168	20.01	ug/mL	96
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	47729	20.95	ug/mL	90
73)	Chrysene	28.86	228.0	42589	21.08	ug/mL	97
74)	*d12-Perylene	34.81	264.0	46825	40.00	ug/mL	93
75)	Di-n-octylphthalate	31.85	149.0	55864	19.04	ug/mL	87
76)	Benzo(b)fluoranthene	33.10	252.0	31630	19.70	ug/mL	96
77)	Benzo(k)fluoranthene	33.22	252.0	30999	20.18	ug/mL	98
78)	Benzo(a)pyrene	34.54	252.0	27435	19.63	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	38.99	276.0	24310	19.01	ug/mL	96
80)	Dibenz(a,h)anthracene	39.14	278.0	23431	19.24	ug/mL	97
81)	Benzo(g,h,i)Perylene	40.09	276.0	25116	19.41	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3199::D4 Quant Output File: ^B3199::D1
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 19:01
Injected at: 911112 18:17

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
Output File: ^B3195::D1 Injected at: 911112 14:37
Data File: >B3195::D3 Dilution Factor: 1.00000
e: 50 PPM BNA STD Instrument ID: GCMSBNA1
c: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q.
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	45924	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	4.46	42.0	68635M	49.90	ug/mL	
3)	Pyridine	4.43	79.0	115660M	74.20	ug/mL	
4)	2-Fluorophenol	7.53	112.0	65340M	63.41	ug/mL	
5)	Aniline	9.77	93.0	120060	55.18	ug/mL	89
6)	Phenol-d6	9.81	99.0	92390	61.88	ug/mL	87
7)	Phenol	9.84	94.0	122113	58.17	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.97	93.0	86634	62.34	ug/mL	77
9)	2-Chlorophenol	9.99	128.0	90802	52.48	ug/mL	96
10)	1,3-Dichlorobenzene	10.31	146.0	94029	52.42	ug/mL	94
11)	1,4-Dichlorobenzene	10.45	146.0	95532	53.79	ug/mL	94
12)	Benzyl Alcohol	10.90	108.0	41527	44.03	ug/mL	96
13)	1,2-Dichlorobenzene	10.89	146.0	99820	47.23	ug/mL	93
14)	2-Methylphenol	11.24	107.0	77593M	49.79	ug/mL	
15)	bis(2-Chloroisopropyl)ether	11.29	45.0	231153	50.41	ug/mL	87
)	4-Methylphenol	11.62	107.0	91518M	44.19	ug/mL	
17)	N-Nitroso-Di-n-propylamine	11.67	70.0	82723M	47.42	ug/mL	
18)	Hexachloroethane	11.62	117.0	37127	44.64	ug/mL	94
19)	Nitrobenzene	11.91	77.0	101941M	48.89	ug/mL	
20)	*d8-Naphthalene	13.56	136.0	169863	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.87	82.0	95241	58.43	ug/mL	96
22)	Isophorone	12.54	82.0	193245M	52.38	ug/mL	
23)	2-Nitrophenol	12.71	139.0	67516	52.47	ug/mL	95
24)	2,4-Dimethylphenol	12.91	122.0	78284	49.10	ug/mL	89
25)	Benzoic Acid	13.36	122.0	59801M	62.37	ug/mL	97
26)	bis(2-Chloroethoxy)methane	13.16	93.0	113934	51.67	ug/mL	97
27)	2,4-Dichlorophenol	13.29	162.0	75313	45.10	ug/mL	92
28)	1,2,4-Trichlorobenzene	13.49	180.0	69392	44.08	ug/mL	97
29)	Naphthalene	13.62	128.0	240632	53.42	ug/mL	97
30)	4-Chloroaniline	13.87	127.0	92702	47.80	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	48084	43.63	ug/mL	98
32)	4-Chloro-3-methylphenol	15.15	107.0	77449M	55.74	ug/mL	
33)	2-Methylnaphthalene	15.37	142.0	133076M	37.47	ug/mL	98
34)	*d10-Acenaphthene	18.06	164.0	84764	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.97	237.0	58092	50.69	ug/mL	93
36)	2,4,6-Trichlorophenol	16.20	196.0	58716	50.01	ug/mL	98
37)	2,4,5-Trichlorophenol	16.27	196.0	56245M	48.28	ug/mL	93
38)	2-Chloronaphthalene	16.60	162.0	141851	52.94	ug/mL	98
39)	2-Fluorobiphenyl	16.41	172.0	149341	52.78	ug/mL	95
40)	2-Nitroaniline	17.01	65.0	47736	48.81	ug/mL	82

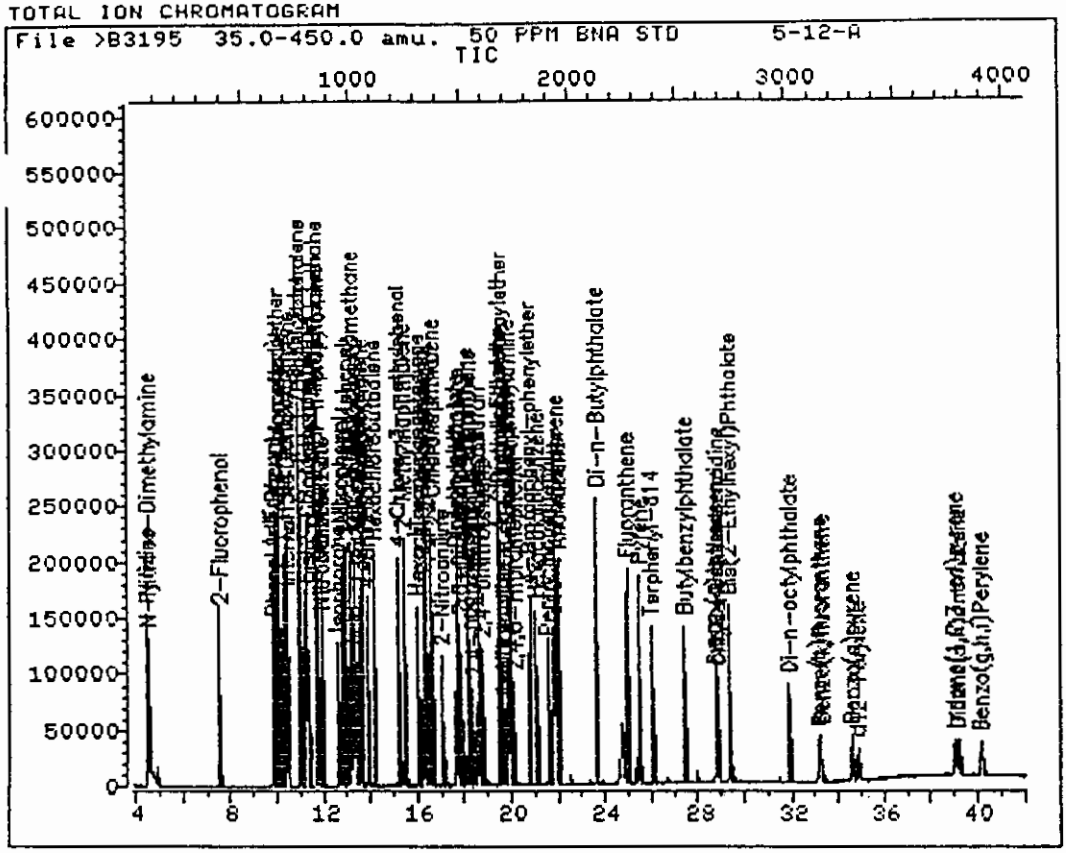
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
Output File: ^B3195::D1 Injected at: 911112 14:37
Data File: >B3195::D3 Dilution Factor: 1.00000
File: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	161723	46.79	ug/mL	75
42)	Acenaphthylene	17.66	152.0	222124	50.27	ug/mL	91
43)	3-Nitroaniline	18.08	138.0	32530	49.97	ug/mL	95
44)	Acenaphthene	18.14	154.0	135821	53.54	ug/mL	94
45)	2,4-Dinitrophenol	18.35	184.0	30873	56.03	ug/mL	98
46)	4-Nitrophenol	18.56	65.0	27903	46.40	ug/mL	57
47)	Dibenzofuran	18.55	168.0	180521	47.16	ug/mL	97
48)	2,4-Dinitrotoluene	18.75	165.0	52375	51.89	ug/mL	92
49)	2,6-Dinitrotoluene	17.77	165.0	40066	50.44	ug/mL	93
50)	Diethylphthalate	19.45	149.0	156477	45.15	ug/mL	93
51)	4-Chlorophenyl-phenylether	19.50	204.0	84525	50.42	ug/mL	93
52)	Fluorene	19.43	166.0	141597	47.08	ug/mL	96
53)	4-Nitroaniline	19.65	138.0	28238	48.42	ug/mL	92
54)	4,6-Dinitro-2-methylphenol	19.77	198.0	40248	53.18	ug/mL	90
[illegible])	N-Nitrosodiphenylamine	19.83	169.0	100585	54.08	ug/mL	97
[illegible])	*d10-Phenanthrene	21.80	188.0	135870	40.00	ug/mL	99
57)	Azobenzene	19.89	182.0	49181	55.87	ug/mL	88
58)	2,4,6-Tribromophenol	20.09	329.8	25544	42.09	ug/mL	95
59)	4-Bromophenyl-phenylether	20.72	248.0	50216	46.69	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	57096	47.70	ug/mL	98
61)	Pentachlorophenol	21.51	266.0	40823	55.55	ug/mL	98
62)	Phenanthrene	21.86	178.0	211688	52.69	ug/mL	99
63)	Anthracene	21.98	178.0	198078	51.13	ug/mL	97
64)	Di-n-Butylphthalate	23.61	149.0	294296M	58.38	ug/mL	
65)	Fluoranthene	24.91	202.0	207593M	58.96	ug/mL	
66)	*d12-Chrysene	28.78	240.0	72748	40.00	ug/mL	98
67)	Pyrene	25.47	202.0	207782	52.44	ug/mL	97
68)	Terphenyl-d14	25.98	244.0	125727	51.69	ug/mL	87
69)	Butylbenzylphthalate	27.41	149.0	85213M	66.99	ug/mL	
70)	3,3'-Dichlorobenzidine	28.78	252.0	29315	50.93	ug/mL	95
71)	Benzo(a)Anthracene	28.73	228.0	118045	52.39	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	124680M	73.48	ug/mL	
73)	Chrysene	28.87	228.0	110551	49.04	ug/mL	92
74)	*d12-Perylene	34.81	264.0	48894	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.85	149.0	153215M	76.03	ug/mL	
76)	Benzo(b)fluoranthene	33.12	252.0	83818M	48.40	ug/mL	
77)	Benzo(k)fluoranthene	33.24	252.0	80188M	51.38	ug/mL	
78)	Benzo(a)pyrene	34.56	252.0	72967	51.02	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	39.00	276.0	66764M	55.43	ug/mL	
[illegible])	Dibenz(a,h)anthracene	39.15	278.0	63566M	54.74	ug/mL	
[illegible])	Benzo(g,h,i)Perylene	40.10	276.0	67574M	51.96	ug/mL	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3195::D3 Quant Output File: ^B3195::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 15:33
Injected at: 911112 14:37

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 18:09
Output File: ^B3198::D1 Injected at: 911112 17:25
Data File: >B3198::D4 Dilution Factor: 1.00000
Name: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.43	152.0	46675	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.45	42.0	103275	74.02	ug/mL	94
3)	Pyridine	4.41	79.0	183710M	85.95	ug/mL	92
4)	2-Fluorophenol	7.54	112.0	98146	73.90	ug/mL	91
5)	Aniline	9.79	93.0	178198	73.02	ug/mL	91
6)	Phenol-d6	9.84	99.0	137829	73.39	ug/mL	91
7)	Phenol	9.87	94.0	176431	71.08	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.99	93.0	117632	66.80	ug/mL	85
9)	2-Chlorophenol	10.01	128.0	127389	69.02	ug/mL	98
10)	1,3-Dichlorobenzene	10.32	146.0	137248	71.81	ug/mL	94
11)	1,4-Dichlorobenzene	10.46	146.0	138424	71.28	ug/mL	94
12)	Benzyl Alcohol	10.93	108.0	66400	78.66	ug/mL	94
13)	1,2-Dichlorobenzene	10.90	146.0	143419	70.68	ug/mL	95
14)	2-Methylphenol	11.27	107.0	112974	71.63	ug/mL	93
15)	bis(2-Chloroisopropyl)ether	11.30	45.0	340728	72.52	ug/mL	87
16)	4-Methylphenol	11.66	107.0	142497	76.60	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.72	70.0	130583	77.66	ug/mL	88
18)	Hexachloroethane	11.64	117.0	53383	70.74	ug/mL	93
19)	Nitrobenzene	11.94	77.0	155607	75.09	ug/mL	91
20)	*d8-Naphthalene	13.58	136.0	181038	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.89	82.0	145630	71.73	ug/mL	95
22)	Isophorone	12.57	82.0	313196	76.03	ug/mL	88
23)	2-Nitrophenol	12.73	139.0	110069	76.48	ug/mL	96
24)	2,4-Dimethylphenol	12.93	122.0	128280	76.87	ug/mL	90
25)	Benzoic Acid	13.47	122.0	95340M	74.79	ug/mL	92
26)	bis(2-Chloroethoxy)methane	13.19	93.0	177194	72.96	ug/mL	97
27)	2,4-Dichlorophenol	13.32	162.0	129044	80.38	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.50	180.0	116029	78.44	ug/mL	92
29)	Naphthalene	13.63	128.0	363304	70.83	ug/mL	97
30)	4-Chloroaniline	13.89	127.0	154832	78.36	ug/mL	95
31)	Hexachlorobutadiene	14.13	225.0	80379	78.42	ug/mL	97
32)	4-Chloro-3-methylphenol	15.18	107.0	129195	78.26	ug/mL	96
33)	2-Methylnaphthalene	15.39	142.0	215002	75.80	ug/mL	96
34)	*d10-Acenaphthene	18.07	164.0	95855	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.98	237.0	102360	77.91	ug/mL	98
36)	2,4,6-Trichlorophenol	16.21	196.0	104753	78.88	ug/mL	97
37)	2,4,5-Trichlorophenol	16.29	196.0	104765	82.36	ug/mL	90
38)	2-Chloronaphthalene	16.61	162.0	247654	77.19	ug/mL	94
39)	2-Fluorobiphenyl	16.43	172.0	256734	76.01	ug/mL	94
40)	2-Nitroaniline	17.03	65.0	87771	81.30	ug/mL	87

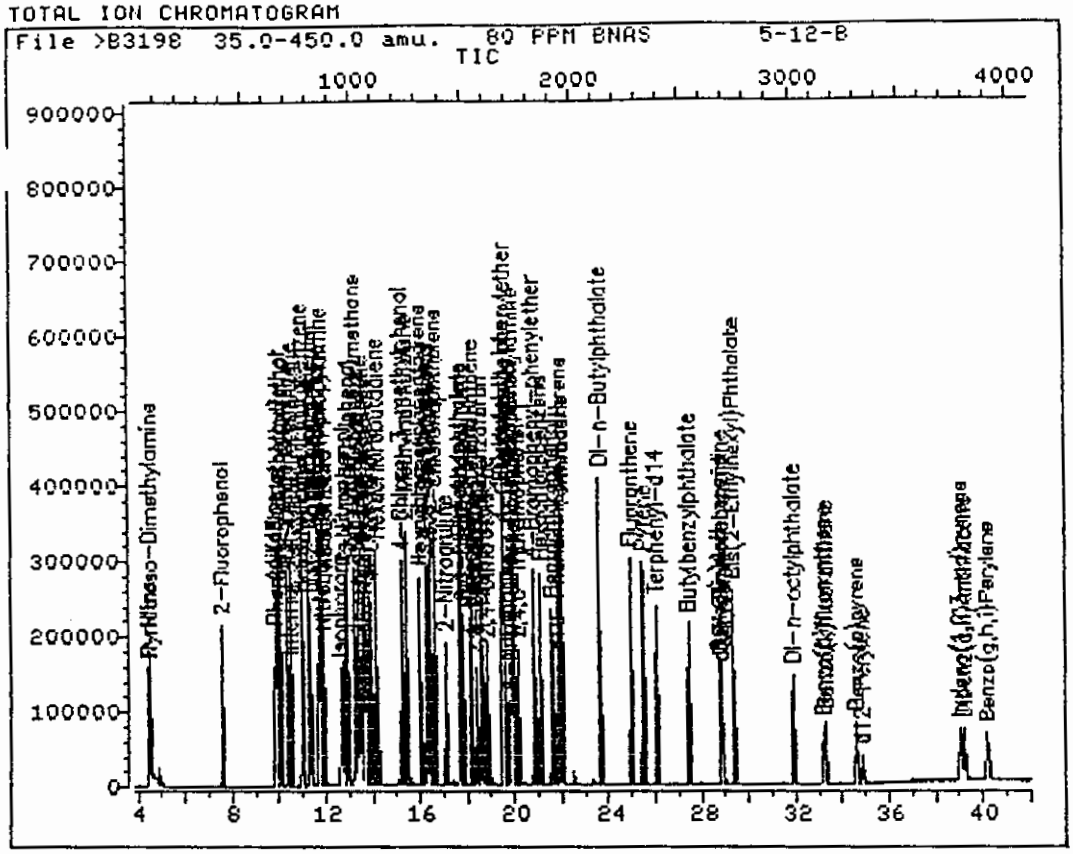
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 18:09
Output File: ^B3198::D1 Injected at: 911112 17:25
Data File: >B3198::D4 Dilution Factor: 1.00000
Name: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.64	163.0	285857	78.15	ug/mL	71
42)	Acenaphthylene	17.68	152.0	369469	73.54	ug/mL	94
43)	3-Nitroaniline	18.10	138.0	64679	87.91	ug/mL	93
44)	Acenaphthene	18.16	154.0	230545	75.05	ug/mL	95
45)	2,4-Dinitrophenol	18.38	184.0	64042	91.72	ug/mL	93
46)	4-Nitrophenol	18.59	65.0	53775	85.21	ug/mL	87
47)	Dibenzofuran	18.57	168.0	324871	79.57	ug/mL	96
48)	2,4-Dinitrotoluene	18.77	165.0	101256	85.48	ug/mL	85
49)	2,6-Dinitrotoluene	17.80	165.0	76562	84.49	ug/mL	91
50)	Diethylphthalate	19.47	149.0	265739	75.09	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.50	204.0	152584	79.82	ug/mL	94
52)	Fluorene	19.44	166.0	241426	75.39	ug/mL	95
53)	4-Nitroaniline	19.69	138.0	57655	90.28	ug/mL	90
54)	4,6-Dinitro-2-methylphenol	19.79	198.0	77061	84.66	ug/mL	88
55)	N-Nitrosodiphenylamine	19.85	169.0	189063	83.11	ug/mL	97
56)	*d10-Phenanthrene	21.81	188.0	168953	40.00	ug/mL	99
57)	Azobenzene	19.90	182.0	92741	75.82	ug/mL	93
58)	2,4,6-Tribromophenol	20.11	329.8	52933	83.32	ug/mL	93
59)	4-Bromophenyl-phenylether	20.73	248.0	98194	78.63	ug/mL	84
60)	Hexachlorobenzene	21.05	284.0	106772	75.19	ug/mL	91
61)	Pentachlorophenol	21.53	266.0	80292	79.09	ug/mL	96
62)	Phenanthrene	21.88	178.0	395640	75.15	ug/mL	99
63)	Anthracene	21.99	178.0	387788	78.72	ug/mL	98
64)	Di-n-Butylphthalate	23.62	149.0	514227	70.26	ug/mL	96
65)	Fluoranthene	24.92	202.0	366270	70.94	ug/mL	92
66)	*d12-Chrysene	28.80	240.0	82567	40.00	ug/mL	97
67)	Pyrene	25.47	202.0	362819	76.92	ug/mL	98
68)	Terphenyl-d14	25.99	244.0	227992	79.89	ug/mL	84
69)	Butylbenzylphthalate	27.41	149.0	142547	73.69	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	59180	88.93	ug/mL	97
71)	Benzo(a)Anthracene	28.74	228.0	212139	79.17	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.32	149.0	206888	73.10	ug/mL	93
73)	Chrysene	28.88	228.0	207494	82.69	ug/mL	93
74)	*d12-Perylene	34.81	264.0	62037	40.00	ug/mL	95
75)	Di-n-octylphthalate	31.87	149.0	274786	70.68	ug/mL	87
76)	Benzo(b)fluoranthene	33.14	252.0	179218	84.26	ug/mL	97
77)	Benzo(k)fluoranthene	33.25	252.0	163366	80.28	ug/mL	97
78)	Benzo(a)pyrene	34.58	252.0	152405	82.31	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	39.03	276.0	146594	86.53	ug/mL	94
80)	Dibenz(a,h)anthracene	39.18	278.0	136939	84.89	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.15	276.0	149012	86.90	ug/mL	85

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3198::D4 Quant Output File: ^B3198::D1
Name: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 18:09
Injected at: 911112 17:25

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
Output File: ^B3196::D1 Injected at: 911112 15:41
Data File: >B3196::D4 Dilution Factor: 1.00000
me: 120 PPM BNAS Instrument ID: GCMSBNA1
...sc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.43	152.0	46445	40.00	ug/mL	95
2)	N-Nitroso-Dimethylamine	4.46	42.0	162950	117.38	ug/mL	90
3)	Pyridine	4.39	79.0	276811M	130.16	ug/mL	93
4)	2-Fluorophenol	7.55	112.0	144448	109.30	ug/mL	91
5)	Aniline	9.81	93.0	286078	117.80	ug/mL	91
6)	Phenol-d6	9.86	99.0	205855	110.16	ug/mL	92
7)	Phenol	9.90	94.0	252486	102.22	ug/mL	87
8)	bis(2-Chloroethyl)ether	10.01	93.0	163654	93.39	ug/mL	68
9)	2-Chlorophenol	10.03	128.0	178606	97.25	ug/mL	97
10)	1,3-Dichlorobenzene	10.34	146.0	197704	103.95	ug/mL	97
11)	1,4-Dichlorobenzene	10.48	146.0	198449	102.70	ug/mL	93
12)	Benzyl Alcohol	10.96	108.0	113828	135.52	ug/mL	92
13)	1,2-Dichlorobenzene	10.91	146.0	213001	105.50	ug/mL	96
14)	2-Methylphenol	11.28	107.0	166168	105.88	ug/mL	90
15)	bis(2-Chloroisopropyl)ether	11.31	45.0	513749^	109.88	ug/mL	87
16)	4-Methylphenol	11.69	107.0	202035	109.14	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.76	70.0	198372	118.56	ug/mL	87
18)	Hexachloroethane	11.64	117.0	80203	106.80	ug/mL	95
19)	Nitrobenzene	11.96	77.0	247657	120.11	ug/mL	90
20)	*d8-Naphthalene	13.59	136.0	185377	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.91	82.0	234293	112.71	ug/mL	93
22)	Isophorone	12.61	82.0	506562M	120.10	ug/mL	89
23)	2-Nitrophenol	12.74	139.0	160767	109.09	ug/mL	93
24)	2,4-Dimethylphenol	12.97	122.0	202879	118.73	ug/mL	88
25)	Benzoic Acid	13.56	122.0	156195M	119.67	ug/mL	89
26)	bis(2-Chloroethoxy)methane	13.21	93.0	264462	106.35	ug/mL	96
27)	2,4-Dichlorophenol	13.34	162.0	190566	115.93	ug/mL	91
28)	1,2,4-Trichlorobenzene	13.51	180.0	166074	109.65	ug/mL	96
29)	Naphthalene	13.65	128.0	529956	100.90	ug/mL	97
30)	4-Chloroaniline	13.91	127.0	234960	116.12	ug/mL	99
31)	Hexachlorobutadiene	14.14	225.0	111962	106.68	ug/mL	96
32)	4-Chloro-3-methylphenol	15.19	107.0	198646	117.51	ug/mL	96
33)	2-Methylnaphthalene	15.40	142.0	306104	105.39	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	101728	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.99	237.0	154117	110.53	ug/mL	90
36)	2,4,6-Trichlorophenol	16.23	196.0	153460	108.89	ug/mL	92
37)	2,4,5-Trichlorophenol	16.31	196.0	153742	113.88	ug/mL	96
38)	2-Chloronaphthalene	16.62	162.0	358412	105.27	ug/mL	96
39)	2-Fluorobiphenyl	16.44	172.0	370986	103.49	ug/mL	93
40)	2-Nitroaniline	17.05	65.0	140698	122.80	ug/mL	81

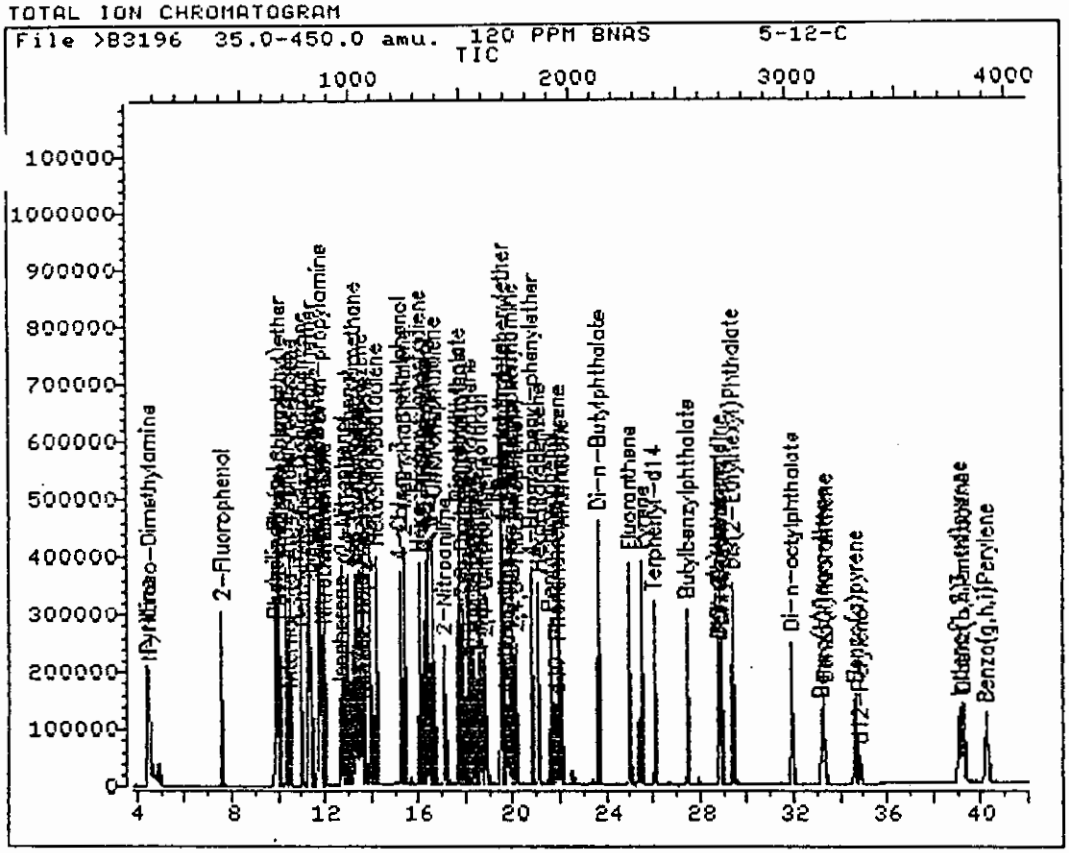
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
Output File: ^B3196::D1 Injected at: 911112 15:41
Data File: >B3196::D4 Dilution Factor: 1.00000
Name: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHDD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	371856	95.80	ug/mL	74
42)	Acenaphthylene	17.69	152.0	492566	92.39	ug/mL	93
43)	3-Nitroaniline	18.13	138.0	93762	120.08	ug/mL	93
44)	Acenaphthene	18.17	154.0	319477	98.00	ug/mL	94
45)	2,4-Dinitrophenol	18.40	184.0	99716	134.56	ug/mL	96
46)	4-Nitrophenol	18.61	65.0	85481	127.63	ug/mL	89
47)	Dibenzofuran	18.58	168.0	468139	108.04	ug/mL	98
48)	2,4-Dinitrotoluene	18.79	165.0	150870	120.01	ug/mL	87
49)	2,6-Dinitrotoluene	17.82	165.0	116294	120.93	ug/mL	92
50)	Diethylphthalate	19.48	149.0	343289	91.40	ug/mL	95
51)	4-Chlorophenyl-phenylether	19.52	204.0	205478	101.28	ug/mL	94
52)	Fluorene	19.45	166.0	333941	98.26	ug/mL	97
53)	4-Nitroaniline	19.71	138.0	88970	131.27	ug/mL	93
54)	4,6-Dinitro-2-methylphenol	19.83	198.0	108133	111.93	ug/mL	91
)	N-Nitrosodiphenylamine	19.87	169.0	251947	104.36	ug/mL	96
56)	*d10-Phenanthrene	21.81	188.0	157138	40.00	ug/mL	99
57)	Azobenzene	19.92	182.0	135798	119.37	ug/mL	89
58)	2,4,6-Tribromophenol	20.13	329.8	76573	129.60	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	136194	117.25	ug/mL	86
60)	Hexachlorobenzene	21.06	284.0	150151	113.69	ug/mL	88
61)	Pentachlorophenol	21.53	266.0	113738	120.45	ug/mL	96
62)	Phenanthrene	21.89	178.0	539022	110.08	ug/mL	97
63)	Anthracene	22.00	178.0	511726	111.69	ug/mL	99
64)	Di-n-Butylphthalate	23.62	149.0	630812	92.67	ug/mL	97
65)	Fluoranthene	24.93	202.0	490923	102.24	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	89220	40.00	ug/mL	96
67)	Pyrene	25.49	202.0	499691	98.04	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	314474	101.97	ug/mL	83
69)	Butylbenzylphthalate	27.42	149.0	205121	98.14	ug/mL	86
70)	3,3'-Dichlorobenzidine	28.79	252.0	111962	155.71	ug/mL	99
71)	Benzo(a)Anthracene	28.75	228.0	354446	122.41	ug/mL	94
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	297130	97.16	ug/mL	91
73)	Chrysene	28.90	228.0	342387	126.27	ug/mL	92
74)	*d12-Perylene	34.82	264.0	84756	40.00	ug/mL	92
75)	Di-n-octylphthalate	31.88	149.0	475383	89.49	ug/mL	86
76)	Benzo(b)fluoranthene	33.16	252.0	334092	114.97	ug/mL	98
77)	Benzo(k)fluoranthene	33.30	252.0	309596	111.36	ug/mL	96
78)	Benzo(a)pyrene	34.61	252.0	309892	122.50	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	39.06	276.0	310885	134.31	ug/mL	93
)	Dibenz(a,h)anthracene	39.22	278.0	301663	136.88	ug/mL	96
81)	Benzo(g,h,i)Perylene	40.18	276.0	311852	133.11	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3196::D4 Quant Output File: ^B3196::D1
Name: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 16:24
Injected at: 911112 15:41

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
Output File: ^B3197::D1 Injected at: 911112 16:33
(a File: >B3197::D4 Dilution Factor: 1.00000
, e: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.44	152.0	51389	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.52	42.0	223139	145.27	ug/mL	94
3)	Pyridine	4.42	79.0	404792M	172.02	ug/mL	93
4)	2-Fluorophenol	7.58	112.0	195430	133.64	ug/mL	92
5)	Aniline	9.84	93.0	386408	143.81	ug/mL	93
6)	Phenol-d6	9.89	99.0	268243	129.73	ug/mL	94
7)	Phenol	9.93	94.0	365478	133.73	ug/mL	86
8)	bis(2-Chloroethyl)ether	10.04	93.0	205223	105.85	ug/mL	63
9)	2-Chlorophenol	10.06	128.0	238630	117.43	ug/mL	94
10)	1,3-Dichlorobenzene	10.35	146.0	264140	125.52	ug/mL	95
11)	1,4-Dichlorobenzene	10.49	146.0	259427	121.34	ug/mL	95
12)	Benzyl Alcohol	11.01	108.0	147229	158.42	ug/mL	95
13)	1,2-Dichlorobenzene	10.93	146.0	279043	124.91	ug/mL	96
14)	2-Methylphenol	11.30	107.0	209267	120.51	ug/mL	87
)	bis(2-Chloroisopropyl)ether	11.33	45.0	648840^	125.42	ug/mL	86
16)	4-Methylphenol	11.73	107.0	339870M	165.94	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.80	70.0	260344	140.62	ug/mL	84
18)	Hexachloroethane	11.65	117.0	93998	113.13	ug/mL	90
19)	Nitrobenzene	11.99	77.0	330134	144.70	ug/mL	88
20)	*d8-Naphthalene	13.60	136.0	199594	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.94	82.0	316358	141.34	ug/mL	95
22)	Isophorone	12.65	82.0	664397M	146.30	ug/mL	88
23)	2-Nitrophenol	12.76	139.0	214888	135.43	ug/mL	95
24)	2,4-Dimethylphenol	12.99	122.0	279594	151.98	ug/mL	93
25)	Benzoic Acid	13.56	122.0	198128M	140.98	ug/mL	93
26)	bis(2-Chloroethoxy)methane	13.23	93.0	352279	131.57	ug/mL	98
27)	2,4-Dichlorophenol	13.37	162.0	274704	155.21	ug/mL	88
28)	1,2,4-Trichlorobenzene	13.52	180.0	235151	144.20	ug/mL	96
29)	Naphthalene	13.66	128.0	662054	117.07	ug/mL	96
30)	4-Chloroaniline	13.93	127.0	327483	150.32	ug/mL	98
31)	Hexachlorobutadiene	14.15	225.0	151501	134.07	ug/mL	92
32)	4-Chloro-3-methylphenol	15.21	107.0	265922	146.10	ug/mL	97
33)	2-Methylnaphthalene	15.41	142.0	403951	129.17	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	108797	40.00	ug/mL	88
35)	Hexachlorocyclopentadiene	15.99	237.0	221191	148.33	ug/mL	99
36)	2,4,6-Trichlorophenol	16.24	196.0	215874	143.22	ug/mL	91
37)	2,4,5-Trichlorophenol	16.24	196.0	215874	149.51	ug/mL	86
38)	2-Chloronaphthalene	16.64	162.0	481350	132.19	ug/mL	95
39)	2-Fluorobiphenyl	16.45	172.0	504091	131.49	ug/mL	93
)	2-Nitroaniline	17.07	65.0	185405	151.30	ug/mL	87

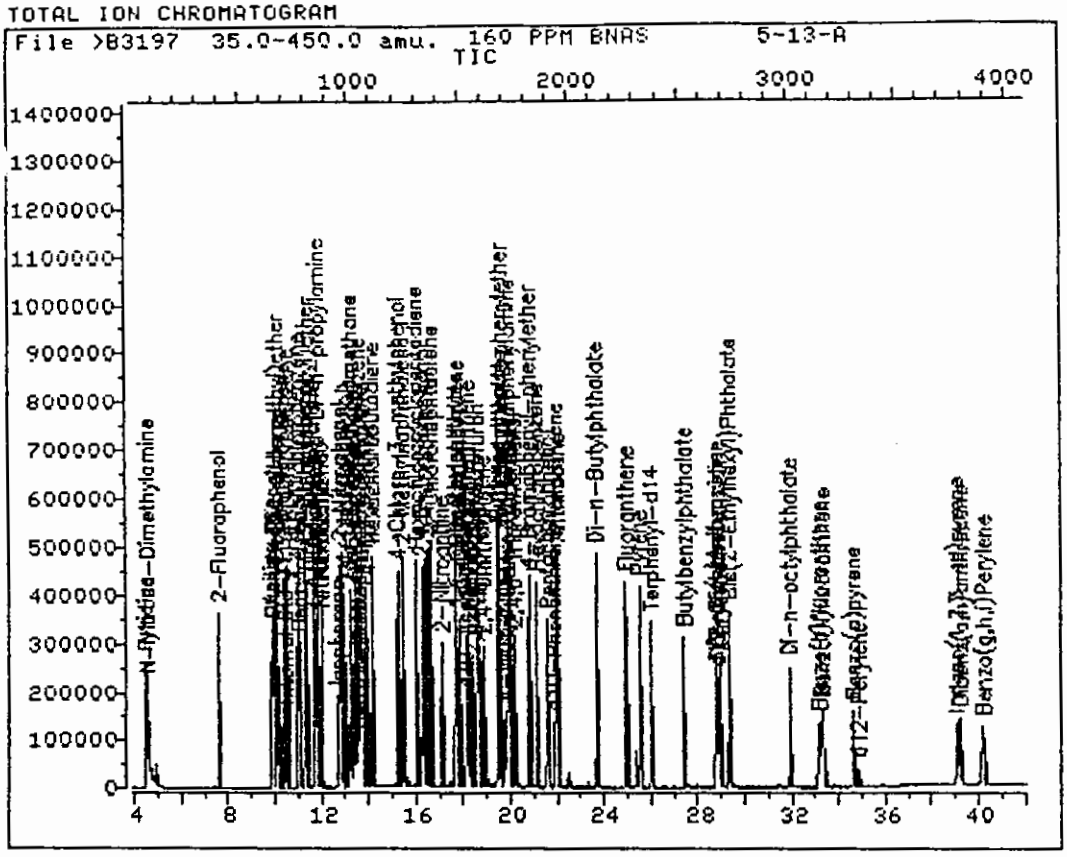
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
Output File: ^B3197::D1 Injected at: 911112 16:33
Data File: >B3197::D4 Dilution Factor: 1.00000
Name: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	451524	108.76	ug/mL	72
42)	Acenaphthylene	17.70	152.0	590409	103.54	ug/mL	94
43)	3-Nitroaniline	18.14	138.0	113922	136.42	ug/mL	92
44)	Acenaphthene	18.18	154.0	399523	114.59	ug/mL	94
45)	2,4-Dinitrophenol	18.41	184.0	131604	166.06	ug/mL	94
46)	4-Nitrophenol	18.63	65.0	108437	151.39	ug/mL	88
47)	Dibenzofuran	18.59	168.0	620764	133.96	ug/mL	94
48)	2,4-Dinitrotoluene	18.81	165.0	192906	143.48	ug/mL	86
49)	2,6-Dinitrotoluene	17.83	165.0	154657	150.37	ug/mL	90
50)	Diethylphthalate	19.50	149.0	375018	93.36	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.53	204.0	256345	118.14	ug/mL	91
52)	Fluorene	19.46	166.0	425051	116.94	ug/mL	96
53)	4-Nitroaniline	19.74	138.0	110806	152.86	ug/mL	91
54)	4,6-Dinitro-2-methylphenol	19.84	198.0	134239	129.93	ug/mL	87
)	N-Nitrosodiphenylamine	19.89	169.0	302385	117.11	ug/mL	97
56)	*d10-Phenanthrene	21.83	188.0	154383	40.00	ug/mL	97
57)	Azobenzene	19.93	182.0	170908	152.92	ug/mL	92
58)	2,4,6-Tribromophenol	20.14	329.8	103353	178.04	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	176617	154.77	ug/mL	83
60)	Hexachlorobenzene	21.07	284.0	195305	150.52	ug/mL	96
61)	Pentachlorophenol	21.55	266.0	146610	158.03	ug/mL	97
62)	Phenanthrene	21.89	178.0	661848	137.58	ug/mL	99
63)	Anthracene	22.00	178.0	624529	138.74	ug/mL	97
64)	Di-n-Butylphthalate	23.63	149.0	699798	104.64	ug/mL	99
65)	Fluoranthene	24.93	202.0	556287	117.92	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	71019	40.00	ug/mL	95
67)	Pyrene	25.48	202.0	559189	137.84	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	349396	142.33	ug/mL	81
69)	Butylbenzylphthalate	27.42	149.0	209950	126.19	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	113394	198.11	ug/mL	96
71)	Benzo(a)Anthracene	28.75	228.0	370034	160.55	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	310864	127.70	ug/mL	93
73)	Chrysene	28.89	228.0	361715	167.58	ug/mL	91
74)	*d12-Perylene	34.82	264.0	62923	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.88	149.0	475631	120.61	ug/mL	87
76)	Benzo(b)fluoranthene	33.16	252.0	357193	165.57	ug/mL	97
77)	Benzo(k)fluoranthene	33.29	252.0	319857	154.98	ug/mL	96
78)	Benzo(a)pyrene	34.60	252.0	319526	170.14	ug/mL	94
79)	Indeno(1,2,3-cd)pyrene	39.06	276.0	324034	188.57	ug/mL	91
)	Dibenz(a,h)anthracene	39.21	278.0	307788	188.12	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.20	276.0	325225	186.99	ug/mL	84

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3197::D4 Quant Output File: ^B3197::D1
Name: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 17:17
Injected at: 911112 16:33

HSL Compounds

Case No: Calibration Date: 11/22/91

Contractor: COLUMBIA ANALYTICAL Time: 09:14

itract No: Laboratory ID: >B3376

Instrument ID: GCMSBNAI Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	1.06054	8.87			
Pyridine	1.80232	1.59967	11.24			(Conc=55.00)
2-Fluorophenol	1.07061	1.04142	2.73			
Aniline	2.00593	2.05380	2.39			
Phenol-d6	1.50420	1.58091	5.10			
Phenol	1.96220	2.05382	4.67	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.42657	8.95			
2-Chlorophenol	1.42882	1.57571	10.28			
1,3-Dichlorobenzene	1.50739	1.55236	2.98			
1,4-Dichlorobenzene	1.52019	1.52073	.04	*	✓	
Benzyl Alcohol	.75195	.82397	9.58			
1,2-Dichlorobenzene	1.62855	1.81436	11.41			
2-Methylphenol	1.24193	1.43842	15.82			
bis(2-Chloroisopropyl)ether	3.70585	3.65527	1.36			
4-Methylphenol	1.63079	1.87849	15.19			
N-Nitroso-Di-n-propylamine	1.40611	1.41573	.68		**	✓
achloroethane	.60403	.70388	16.53			
crobenzene	1.73148	1.90824	10.21			
Nitrobenzene-d5	.42509	.40348	5.08			
Isophorone	.88782	.87202	1.78			
2-Nitrophenol	.30193	.30363	.56	*	✓	
2,4-Dimethylphenol	.36243	.36866	1.72			
Benzoic Acid	.25993	.26777	3.02			
bis(2-Chloroethoxy)methane	.50523	.52288	3.49			
2,4-Dichlorophenol	.35708	.37455	4.89	*	✓	
1,2,4-Trichlorobenzene	.32193	.32252	.18			
Naphthalene	1.02536	1.04848	2.25			
4-Chloroaniline	.42802	.45052	5.26		✓	
Hexachlorobutadiene	.21791	.21445	1.59	*	✓	
4-Chloro-3-methylphenol	.35852	.41721	16.37	*	✓	
2-Methylnaphthalene	.58680	.61950	5.57			
Hexachlorocyclopentadiene	.52776	.42209	20.02		**	✓

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/22/91

Contractor: COLUMBIA ANALYTICAL Time: 09:14

Contract No: Laboratory ID: >B3376

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.52990	1.09	*	
2,4,5-Trichlorophenol	.52853	.54339	2.81		
2-Chloronaphthalene	1.27887	1.30415	1.98		
2-Fluorobiphenyl	1.34163	1.35916	1.31		
2-Nitroaniline	.43605	.45550	4.46		
Dimethylphthalate	1.38803	1.41789	2.15		
Acenaphthylene	1.84704	1.79782	2.66		
3-Nitroaniline	.29222	.29762	1.85		
Acenaphthene	1.16654	1.21773	4.39	*	
2,4-Dinitrophenol	.28672	.24904	13.14		**
4-Nitrophenol	.25415	.16335	35.73		**
Dibenzofuran	1.62896	1.77880	9.20		
2,4-Dinitrotoluene	.47871	.53094	10.91		
2,6-Dinitrotoluene	.37241	.38775	4.12		
Diethylphthalate	1.29607	1.66161	28.20		
4-Chlorophenyl-phenylether	.74227	.80190	8.03		
uorene	1.22411	1.38234	12.93		
-Nitroaniline	.26357	.23567	10.58		
4,6-Dinitro-2-methylphenol	.34228	.32960	3.71		
N-Nitrosodiphenylamine	.88156	.97574	10.68	*	
Azobenzene	.28918	.30136	4.21		
2,4,6-Tribromophenol	.15667	.15055	3.91		
4-Bromophenyl-phenylether	.29689	.29056	2.13		
Hexachlorobenzene	.32863	.33832	2.95		
Pentachlorophenol	.23229	.18001	22.51	*	
Phenanthrene	1.18779	1.19567	.66		
Anthracene	1.12671	1.15960	2.92		
Di-n-Butylphthalate	1.49552	1.55037	3.67		
Fluoranthene	1.08319	.90303	16.63	*	
Pyrene	2.16848	2.18771	.89		
Terphenyl-d14	1.32581	1.33386	.61		
Butylbenzylphthalate	.86372	.79468	7.99		

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/22/91

Contractor: COLUMBIA ANALYTICAL Time: 09:14

Contract No: Laboratory ID: >B3376

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.30488	13.45		
Benzo(a)Anthracene	1.30170	1.15909	10.96		
Bis(2-Ethylhexyl)Phthalate	1.25290	1.17737	6.03		
Chrysene	1.26124	1.13699	9.85		
Di-n-octylphthalate	2.17340	1.94760	10.39	*	
Benzo(b)fluoranthene	1.37999	1.29573	6.11		
Benzo(k)fluoranthene	1.28823	1.22303	5.06		
Benzo(a)pyrene	1.21646	1.14557	5.83	*	
Indeno(1,2,3-cd)pyrene	1.16446	1.13717	2.34		
Dibenz(a,h)anthracene	1.11076	1.08972	1.89		
Benzo(g,h,i)Perylene	1.17960	1.19482	1.29		

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

$\overline{RF}$ - 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: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

C act No: Laboratory ID: >B3419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	.88103	24.29			
Pyridine	1.80232	1.32635	26.41			(Conc=55.00)
2-Fluorophenol	1.07061	.96347	10.01			
Aniline	2.00593	1.89492	5.53			
Phenol-d6	1.50420	1.44940	3.64			
Phenol	1.96220	1.85761	5.33	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.20480	7.99			
2-Chlorophenol	1.42882	1.44209	.93			
1,3-Dichlorobenzene	1.50739	1.59577	5.86			
1,4-Dichlorobenzene	1.52019	1.58867	4.50	*	✓	
Benzyl Alcohol	.75195	.78482	4.37			
1,2-Dichlorobenzene	1.62855	1.78028	9.32			
2-Methylphenol	1.24193	1.19395	3.86			
bis(2-Chloroisopropyl)ether	3.70585	2.91128	21.44			
4-Methylphenol	1.63079	1.59141	2.41			
N-Nitroso-Di-n-propylamine	1.40611	1.17921	16.14		**	✓
Hexachloroethane	.60403	.66751	10.51			
Nitrobenzene	1.73148	1.61633	6.65			
Nitrobenzene-d5	.42509	.36837	13.34			
Isophorone	.88782	.80152	9.74			
2-Nitrophenol	.30193	.31687	4.95	*	✓	
2,4-Dimethylphenol	.36243	.37804	4.31			
Benzoic Acid	.25993	.21273	18.16			
bis(2-Chloroethoxy)methane	.50523	.48315	4.37			
2,4-Dichlorophenol	.35708	.39314	10.10	*	✓	
1,2,4-Trichlorobenzene	.32193	.36027	11.91			
Naphthalene	1.02536	1.06650	4.01			
4-Chloroaniline	.42802	.43773	2.27			
Hexachlorobutadiene	.21791	.23929	9.81	*	✓	
4-Chloro-3-methylphenol	.35852	.35276	1.61	*	✓	
2-Methylnaphthalene	.58680	.62355	6.26			
Hexachlorocyclopentadiene	.52776	.54169	2.64		**	✓

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

C :t No: Laboratory ID: >B3419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.60738	13.38	*	
2,4,5-Trichlorophenol	.52853	.56392	6.70		
2-Chloronaphthalene	1.27887	1.48915	16.44		
2-Fluorobiphenyl	1.34163	1.54284	15.00		
2-Nitroaniline	.43605	.36876	15.43		
Dimethylphthalate	1.38803	1.41642	2.05		
Acenaphthylene	1.84704	1.90902	3.36		
3-Nitroaniline	.29222	.24618	15.76		
Acenaphthene	1.16654	1.30203	11.61	*	
2,4-Dinitrophenol	.28672	.16616	42.05		**
4-Nitrophenol	.25415	.20419	19.66		**
Dibenzofuran	1.62896	1.85069	13.61		
2,4-Dinitrotoluene	.47871	.42599	11.01		
2,6-Dinitrotoluene	.37241	.36642	1.61		
Diethylphthalate	1.29607	1.48104	14.27		
4-Chlorophenyl-phenylether	.74227	.81080	9.23		
F ne	1.22411	1.34426	9.82		
4-. oaniline	.26357	.22351	15.20		
4,6-Dinitro-2-methylphenol	.34228	.23607	31.03		
N-Nitrosodiphenylamine	.88156	.84442	4.21	*	
Azobenzene	.28918	.35557	22.96		
2,4,6-Tribromophenol	.15667	.15866	1.27		
4-Bromophenyl-phenylether	.29689	.33344	12.31		
Hexachlorobenzene	.32863	.34964	6.39		
Pentachlorophenol	.23229	.18242	21.47	*	
Phenanthrene	1.18779	1.23933	4.34		
Anthracene	1.12671	1.21733	8.04		
Di-n-Butylphthalate	1.49552	1.52901	2.24		
Fluoranthene	1.08319	.95927	11.44	*	
Pyrene	2.16848	1.98285	8.56		
Terphenyl-d14	1.32581	1.19528	9.85		
Butylbenzylphthalate	.86372	.80635	6.64		

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

Project No: Laboratory ID: >83419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.36274	2.98		
Benzo(a)Anthracene	1.30170	1.31913	1.34		
Bis(2-Ethylhexyl)Phthalate	1.25290	1.20929	3.48		
Chrysene	1.26124	1.30609	3.56		
Di-n-octylphthalate	2.17340	1.98591	8.63	*	✓
Benzo(b)fluoranthene	1.37999	1.37560	.32		
Benzo(k)fluoranthene	1.28923	1.30512	1.31		✓
Benzo(a)pyrene	1.21646	1.20718	.76	*	
Indeno(1,2,3-cd)pyrene	1.16446	1.20086	3.13		
Dibenz(a,h)anthracene	1.11076	1.14727	3.29		
Benzo(g,h,i)Perylene	1.17960	1.24220	5.31		

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

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

%Diff - % Difference from original average or curve

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

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911122 09:58
Output File: ^B3376::D1 Injected at: 911122 09:14
^ ta File: >B3376::D3 Dilution Factor: 1.00000
..e: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911121 12:50

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.94	152.0	54763	40.00	ug/mL	97
2)	N-Nitroso-Dimethylamine	3.71	42.0	72598	47.06	ug/mL	96
3)	Pyridine	3.65	79.0	120454M	56.03	ug/mL	95
4)	2-Fluorophenol	7.01	112.0	71289	48.33	ug/mL	91
5)	Aniline	9.30	93.0	140590	49.74	ug/mL	90
6)	Phenol-d6	9.39	99.0	108219	50.07	ug/mL	91
7)	Phenol	9.43	94.0	140592	49.23	ug/mL	86
8)	bis(2-Chloroethyl)ether	9.52	93.0	97654	49.40	ug/mL	82
9)	2-Chlorophenol	9.53	128.0	107863	51.34	ug/mL	98
10)	1,3-Dichlorobenzene	9.84	146.0	106265	48.53	ug/mL	97
11)	1,4-Dichlorobenzene	9.98	146.0	104100	47.13	ug/mL	95
12)	Benzyl Alcohol	10.46	108.0	56404	53.74	ug/mL	95
13)	1,2-Dichlorobenzene	10.43	146.0	124200	50.91	ug/mL	97
14)	2-Methylphenol	10.85	107.0	98465	49.08	ug/mL	82
)	bis(2-Chloroisopropyl)ether	10.85	45.0	250217	46.97	ug/mL	74
.6)	4-Methylphenol	11.22	107.0	128590	51.65	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.24	70.0	96912	49.38	ug/mL	91
18)	Hexachloroethane	11.17	117.0	48183	48.43	ug/mL	96
19)	Nitrobenzene	11.47	77.0	130626	50.52	ug/mL	94
20)	*d8-Naphthalene	13.12	136.0	234465	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.43	82.0	118253	48.64	ug/mL	92
22)	Isophorone	12.10	82.0	255574	49.88	ug/mL	90
23)	2-Nitrophenol	12.27	139.0	88987	51.50	ug/mL	96
24)	2,4-Dimethylphenol	12.51	122.0	108048	49.17	ug/mL	93
25)	Benzoic Acid	13.01	122.0	78479	62.89	ug/mL	96
26)	bis(2-Chloroethoxy)methane	12.74	93.0	153245	48.57	ug/mL	99
27)	2,4-Dichlorophenol	12.88	162.0	109773	50.12	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.04	180.0	94524	49.17	ug/mL	93
29)	Naphthalene	13.17	128.0	307289	50.01	ug/mL	97
30)	4-Chloroaniline	13.45	127.0	132040	50.23	ug/mL	97
31)	Hexachlorobutadiene	13.68	225.0	62852	49.82	ug/mL	96
32)	4-Chloro-3-methylphenol	14.76	107.0	122277	49.44	ug/mL	97
33)	2-Methylnaphthalene	14.92	142.0	181565	48.95	ug/mL	94
34)	*d10-Acenaphthene	17.60	164.0	133930	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.52	237.0	70663	43.11	ug/mL	93
36)	2,4,6-Trichlorophenol	15.77	196.0	88712	48.20	ug/mL	88
37)	2,4,5-Trichlorophenol	15.86	196.0	90970	47.30	ug/mL	99
38)	2-Chloronaphthalene	16.15	162.0	218331	49.94	ug/mL	98
39)	2-Fluorobiphenyl	15.97	172.0	227541	49.05	ug/mL	94
)	2-Nitroaniline	16.58	65.0	76256	50.10	ug/mL	82

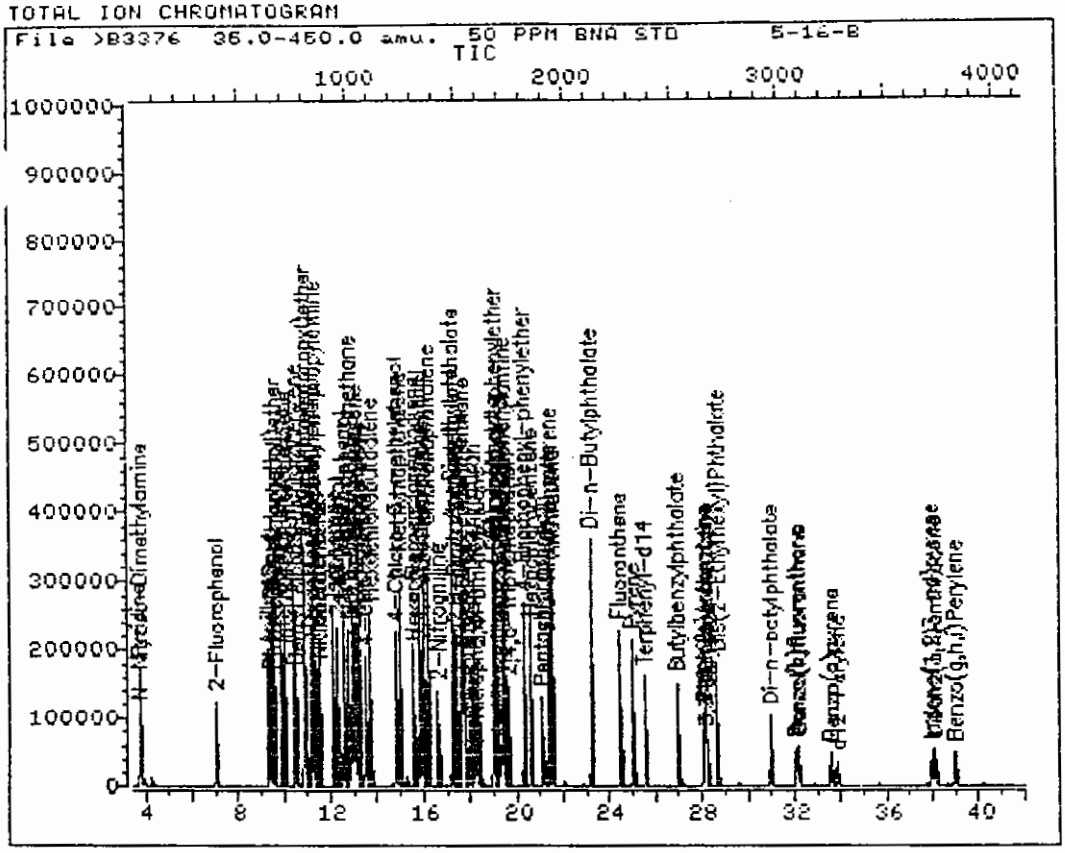
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911122 09:58
Output File: ^B3376::D1 Injected at: 911122 09:14
Data File: >B3376::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911121 12:50

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.19	163.0	237373	49.39	ug/mL	79
42)	Acenaphthylene	17.21	152.0	300977	46.78	ug/mL	93
43)	3-Nitroaniline	17.64	138.0	49826	49.98	ug/mL	95
44)	Acenaphthene	17.68	154.0	203864	48.37	ug/mL	94
45)	2,4-Dinitrophenol	17.90	184.0	41693	53.87	ug/mL	94
46)	4-Nitrophenol	18.19	65.0	27346	35.26	ug/mL	63
47)	Dibenzofuran	18.09	168.0	297794	49.24	ug/mL	86
48)	2,4-Dinitrotoluene	18.30	165.0	88886	53.51	ug/mL	91
49)	2,6-Dinitrotoluene	17.34	165.0	64914	53.23	ug/mL	90
50)	Diethylphthalate	19.00	149.0	278175	52.43	ug/mL	92
51)	4-Chlorophenyl-phenylether	19.03	204.0	134248	51.42	ug/mL	94
52)	Fluorene	18.96	166.0	231421	50.14	ug/mL	96
53)	4-Nitroaniline	19.21	138.0	39454	47.83	ug/mL	95
54)	4,6-Dinitro-2-methylphenol	19.30	198.0	55179	52.79	ug/mL	94
5)	N-Nitrosodiphenylamine	19.38	169.0	163351	50.19	ug/mL	95
56)	*d10-Phenanthrene	21.31	188.0	214372	40.00	ug/mL	98
57)	Azobenzene	19.43	182.0	80754	52.86	ug/mL	91
58)	2,4,6-Tribromophenol	19.63	329.8	40341	48.57	ug/mL	94
59)	4-Bromophenyl-phenylether	20.26	248.0	77861	49.67	ug/mL	93
60)	Hexachlorobenzene	20.55	284.0	90658	52.75	ug/mL	98
61)	Pentachlorophenol	21.05	266.0	48237	44.43	ug/mL	97
62)	Phenanthrene	21.37	178.0	320397	49.21	ug/mL	99
63)	Anthracene	21.49	178.0	310732	50.16	ug/mL	98
64)	Di-n-Butylphthalate	23.14	149.0	415445	53.57	ug/mL	95
65)	Fluoranthene	24.39	202.0	241980	44.03	ug/mL	91
66)	*d12-Chrysene	28.13	240.0	86228	40.00	ug/mL	97
67)	Pyrene	24.94	202.0	235802	55.49	ug/mL	96
68)	Terphenyl-d14	25.47	244.0	143770	54.28	ug/mL	86
69)	Butylbenzylphthalate	26.90	149.0	85655	59.87	ug/mL	86
70)	3,3'-Dichlorobenzidine	28.16	252.0	32862	56.03	ug/mL	99
71)	Benzo(a)Anthracene	28.09	228.0	124933	49.67	ug/mL	96
72)	Bis(2-Ethylhexyl)Phthalate	28.66	149.0	126903	68.57	ug/mL	96
73)	Chrysene	28.21	228.0	122550	48.92	ug/mL	93
74)	*d12-Perylene	33.83	264.0	69392	40.00	ug/mL	94
75)	Di-n-octylphthalate	30.95	149.0	168935	62.51	ug/mL	86
76)	Benzo(b)fluoranthene	32.05	252.0	112392	49.05	ug/mL	98
77)	Benzo(k)fluoranthene	32.16	252.0	106086	49.50	ug/mL	98
78)	Benzo(a)pyrene	33.56	252.0	99367	52.25	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	37.92	276.0	98638	54.64	ug/mL	90
80)	Dibenz(a,h)anthracene	38.07	278.0	94522	52.76	ug/mL	97
81)	Benzo(g,h,i)Perylene	38.93	276.0	103639	53.04	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3376::D3 Quant Output File: ^B3376::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-16-B BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911121 12:50

Operator ID: KEN-1
Quant Time : 911122 09:58
Injected at: 911122 09:14

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 10:35
Output File: ^B3419::D1 Injected at: 911126 09:51
Data File: >B3419::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	67354	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	3.63	42.0	74176	48.33	ug/mL	85
3)	Pyridine	3.56	79.0	122836	50.66	ug/mL	96
4)	2-Fluorophenol	6.91	112.0	81117	48.37	ug/mL	87
5)	Aniline	9.21	93.0	159538	48.72	ug/mL	90
6)	Phenol-d6	9.31	99.0	122029	49.44	ug/mL	93
7)	Phenol	9.35	94.0	156397	48.44	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.43	93.0	101435	49.50	ug/mL	79
9)	2-Chlorophenol	9.43	128.0	121413	48.66	ug/mL	91
10)	1,3-Dichlorobenzene	9.75	146.0	134352	47.92	ug/mL	92
11)	1,4-Dichlorobenzene	9.89	146.0	133754	48.67	ug/mL	91
12)	Benzyl Alcohol	10.37	108.0	66076	51.46	ug/mL	98
13)	1,2-Dichlorobenzene	10.33	146.0	149886	47.94	ug/mL	95
14)	2-Methylphenol	10.75	107.0	100522	48.94	ug/mL	86
15)	bis(2-Chloroisopropyl)ether	10.76	45.0	245108	48.25	ug/mL	80
16)	4-Methylphenol	11.14	107.0	133985	49.44	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.14	70.0	99281	48.70	ug/mL	96
18)	Hexachloroethane	11.07	117.0	56199	46.68	ug/mL	98
19)	Nitrobenzene	11.38	77.0	136083	49.04	ug/mL	95
20)	*d8-Naphthalene	13.02	136.0	276146	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.33	82.0	127156	50.45	ug/mL	96
22)	Isophorone	12.00	82.0	276601	51.30	ug/mL	83
23)	2-Nitrophenol	12.17	139.0	109379	50.90	ug/mL	91
24)	2,4-Dimethylphenol	12.42	122.0	130494	51.03	ug/mL	92
25)	Benzoic Acid	12.91	122.0	73429	46.36	ug/mL	92
26)	bis(2-Chloroethoxy)methane	12.65	93.0	166776	49.80	ug/mL	97
27)	2,4-Dichlorophenol	12.78	162.0	135705	51.56	ug/mL	89
28)	1,2,4-Trichlorobenzene	12.94	180.0	124360	51.01	ug/mL	92
29)	Naphthalene	13.08	128.0	368138	49.98	ug/mL	96
30)	4-Chloroaniline	13.35	127.0	151098	50.73	ug/mL	91
31)	Hexachlorobutadiene	13.58	225.0	82598	54.57	ug/mL	98
32)	4-Chloro-3-methylphenol	14.66	107.0	121768	49.84	ug/mL	96
33)	2-Methylnaphthalene	14.82	142.0	215240	48.89	ug/mL	98
34)	*d10-Acenaphthene	17.49	164.0	137507	40.00	ug/mL	84
35)	Hexachlorocyclopentadiene	15.42	237.0	93107	48.06	ug/mL	95
36)	2,4,6-Trichlorophenol	15.66	196.0	104399	51.53	ug/mL	96
37)	2,4,5-Trichlorophenol	15.74	196.0	96929	49.25	ug/mL	91
38)	2-Chloronaphthalene	16.04	162.0	255961	51.11	ug/mL	96
39)	2-Fluorobiphenyl	15.87	172.0	265189	50.50	ug/mL	95
40)	2-Nitroaniline	16.46	65.0	63383	50.88	ug/mL	95

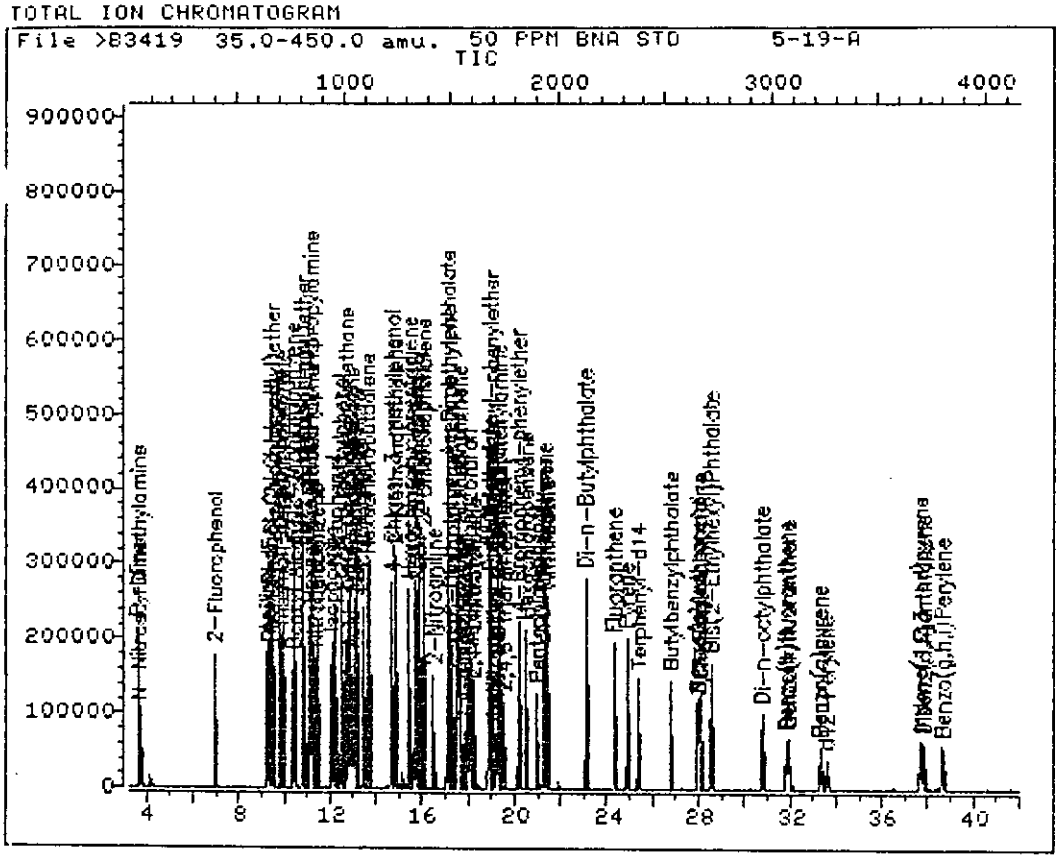
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 10:35
Output File: ^B3419::D1 Injected at: 911126 09:51
Data File: >B3419::D3 Dilution Factor: 1.00000
me: 50 PPM BNA STD Instrument ID: GCMSBNA1
isc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.08	163.0	243460	54.04	ug/mL	71
42)	Acenaphthylene	17.09	152.0	328130	49.19	ug/mL	93
43)	3-Nitroaniline	17.52	138.0	42314	50.93	ug/mL	91
44)	Acenaphthene	17.58	154.0	223797	50.53	ug/mL	92
45)	2,4-Dinitrophenol	17.78	184.0	28561	41.48	ug/mL	94
46)	4-Nitrophenol	18.04	65.0	35097	50.18	ug/mL	95
47)	Dibenzofuran	17.98	168.0	318103	51.08	ug/mL	89
48)	2,4-Dinitrotoluene	18.17	165.0	73221	53.98	ug/mL	82
49)	2,6-Dinitrotoluene	17.22	165.0	62982	53.45	ug/mL	85
50)	Diethylphthalate	18.89	149.0	254566	56.16	ug/mL	94
51)	4-Chlorophenyl-phenylether	18.93	204.0	139363	52.91	ug/mL	93
52)	Fluorene	18.84	166.0	231057	49.37	ug/mL	99
53)	4-Nitroaniline	19.09	138.0	38417	54.94	ug/mL	89
54)	4,6-Dinitro-2-methylphenol	19.19	198.0	40576	49.50	ug/mL	81
55)	N-Nitrosodiphenylamine	19.26	169.0	145142	54.34	ug/mL	95
56)	*d10-Phenanthrene	21.18	188.0	174728	40.00	ug/mL	98
57)	Azobenzene	19.31	182.0	77661	49.05	ug/mL	96
58)	2,4,6-Tribromophenol	19.51	329.8	34654	51.20	ug/mL	95
59)	4-Bromophenyl-phenylether	20.13	248.0	72826	49.33	ug/mL	89
60)	Hexachlorobenzene	20.44	284.0	76364	53.63	ug/mL	89
61)	Pentachlorophenol	20.92	266.0	39843	47.41	ug/mL	97
62)	Phenanthrene	21.24	178.0	270682	47.25	ug/mL	98
63)	Anthracene	21.35	178.0	265876	49.21	ug/mL	99
64)	Di-n-Butylphthalate	23.02	149.0	333951	62.65	ug/mL	96
65)	Fluoranthene	24.26	202.0	209514	53.77	ug/mL	93
66)	*d12-Chrysene	27.97	240.0	84582	40.00	ug/mL	97
67)	Pyrene	24.80	202.0	209642	43.33	ug/mL	97
68)	Terphenyl-d14	25.34	244.0	126374	49.18	ug/mL	86
69)	Butylbenzylphthalate	26.77	149.0	85253	58.45	ug/mL	81
70)	3,3'-Dichlorobenzidine	27.99	252.0	38352	63.84	ug/mL	94
71)	Benzo(a)Anthracene	27.92	228.0	139468	50.83	ug/mL	93
72)	Bis(2-Ethylhexyl)Phthalate	28.50	149.0	127855	66.60	ug/mL	91
73)	Chrysene	28.04	228.0	138090	50.01	ug/mL	90
74)	*d12-Perylene	33.54	264.0	73951	40.00	ug/mL	91
75)	Di-n-octylphthalate	30.72	149.0	183575	64.27	ug/mL	87
76)	Benzo(b)fluoranthene	31.78	252.0	127159	50.87	ug/mL	97
77)	Benzo(k)fluoranthene	31.88	252.0	120644	46.21	ug/mL	97
78)	Benzo(a)pyrene	33.26	252.0	111590	49.84	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	37.65	276.0	111006	54.27	ug/mL	93
80)	Dibenz(a,h)anthracene	37.79	278.0	106052	54.93	ug/mL	96
81)	Benzo(g,h,i)Perylene	38.61	276.0	114827	53.10	ug/mL	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3419::D3 Quant Output File: ^B3419::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911126 10:35
Injected at: 911126 09:51

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911122 17:58
Output File: ^B3388::D1 Injected at: 911122 17:15
Data File: >B3388::D4 Dilution Factor: 1.00000
...e: K6712-2 8270/H20 Instrument ID: GCMSBNA1
...sc: WB-3 (EMCON & ASSOC.) BTL# 9

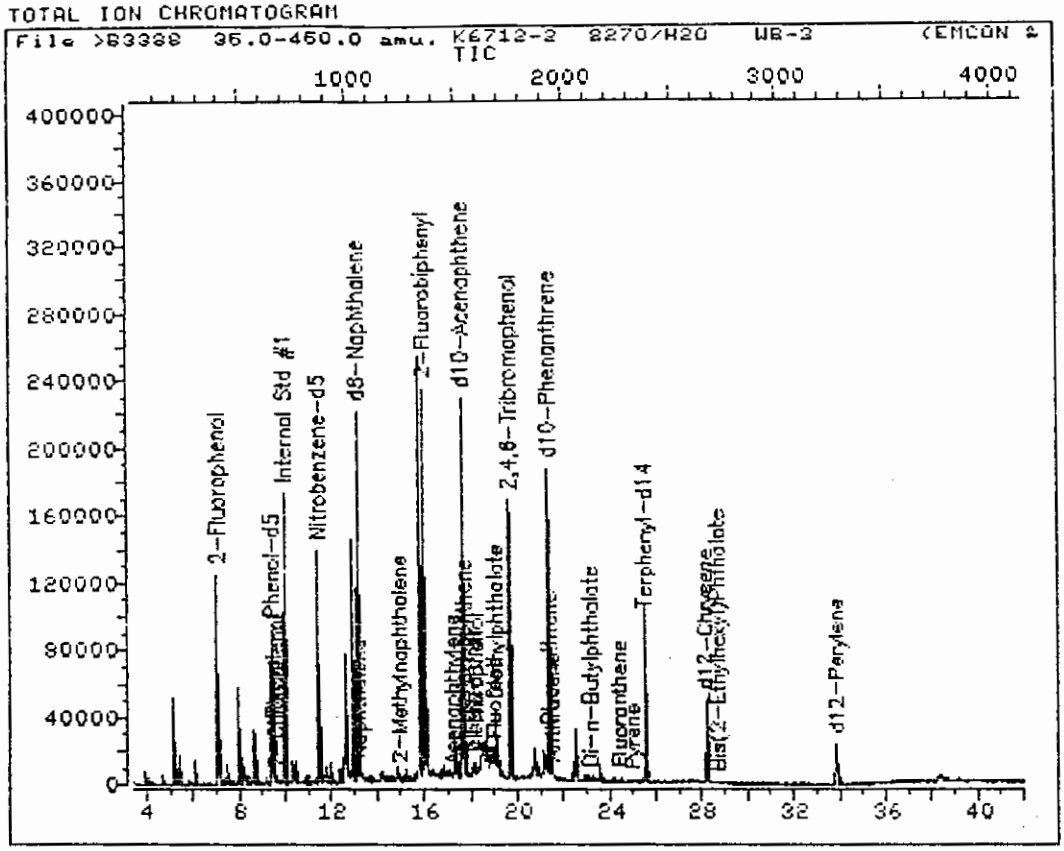
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

	Compound	R.T.	Q ion	Area		Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.94	152.0	52823		40.00	ug/mL	94
4)	2-Fluorophenol	7.03	112.0	80922		58.84	ug/mL	94
6)	Phenol-d6	9.39	99.0	82941		39.73	ug/mL	97
~~7)~~	~~Phenol~~	~~9.41~~	~~94.0~~	~~121M~~	~~NR~~	~~.0446~~	~~ug/mL~~	
~~8)~~	~~2-Chlorophenol~~	~~9.54~~	~~128.0~~	~~123M~~	~~NR~~	~~.0591~~	~~ug/mL~~	
20)	*d8-Naphthalene	13.12	136.0	211275		40.00	ug/mL	88
21)	Nitrobenzene-d5	11.42	82.0	85199		39.98	ug/mL	95
~~89)~~	~~Naphthalene~~	~~13.17~~	~~128.0~~	~~3159~~	~~NR~~	~~.570~~	~~ug/mL~~	~~97~~
~~33)~~	~~2-Methylnaphthalene~~	~~14.93~~	~~142.0~~	~~1498~~	~~NR~~	~~.458~~	~~ug/mL~~	~~89~~
34)	*d10-Acenaphthene	17.61	164.0	115934		40.00	ug/mL	89
39)	2-Fluorobiphenyl	15.97	172.0	151304		38.41	ug/mL	95
~~42)~~	~~Acenaphthylene~~	~~17.19~~	~~152.0~~	~~49M~~	~~NR~~	~~.00940~~	~~ug/mL~~	
44)	Acenaphthene	17.67	154.0	19696		5.58	ug/mL	88
~~46)~~	~~4-Nitrophenol~~	~~18.19~~	~~65.0~~	~~2651M~~	~~NR~~	~~5.60~~	~~ug/mL~~	~~46~~
~~47)~~	~~Dibenzofuran~~	~~18.08~~	~~168.0~~	~~4703~~	~~NR~~	~~.912~~	~~ug/mL~~	~~94~~
~~51)~~	~~Diethylphthalate~~	~~19.03~~	~~149.0~~	~~3437M~~	~~NR~~	~~.714~~	~~ug/mL~~	
~~52)~~	~~Fluorene~~	~~18.95~~	~~166.0~~	~~8039~~	~~NR~~	~~2.01~~	~~ug/mL~~	~~96~~
56)	*d10-Phenanthrene	21.32	188.0	165673		40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.63	329.8	59368		95.21	ug/mL	97
~~62)~~	~~Phenanthrene~~	~~21.36~~	~~178.0~~	~~15185~~	~~NR~~	~~3.07~~	~~ug/mL~~	~~95~~
~~63)~~	~~Anthracene~~	~~21.47~~	~~178.0~~	~~2086~~		~~.434~~	~~ug/mL~~	~~87~~
~~64)~~	~~Di-n-Butylphthalate~~	~~23.14~~	~~149.0~~	~~1167M~~		~~.182~~	~~ug/mL~~	
~~65)~~	~~Fluoranthene~~	~~24.40~~	~~202.0~~	~~2495~~	~~NR~~	~~.667~~	~~ug/mL~~	~~97~~
66)	*d12-Chrysene	28.14	240.0	54125		40.00	ug/mL	97
~~67)~~	~~Pyrene~~	~~24.94~~	~~202.0~~	~~1407M~~	~~NR~~	~~.475~~	~~ug/mL~~	
68)	Terphenyl-d14	25.48	244.0	94210		52.20	ug/mL	85
~~72)~~	~~Bis(2-Ethylhexyl)Phthalate~~	~~28.66~~	~~149.0~~	~~215M~~	~~NR~~	~~.135~~	~~ug/mL~~	
74)	*d12-Perylene	33.84	264.0	46121		40.00	ug/mL	93

* Compound is ISTD

12/2/91 - KY

TOTAL ION CHROMATOGRAM



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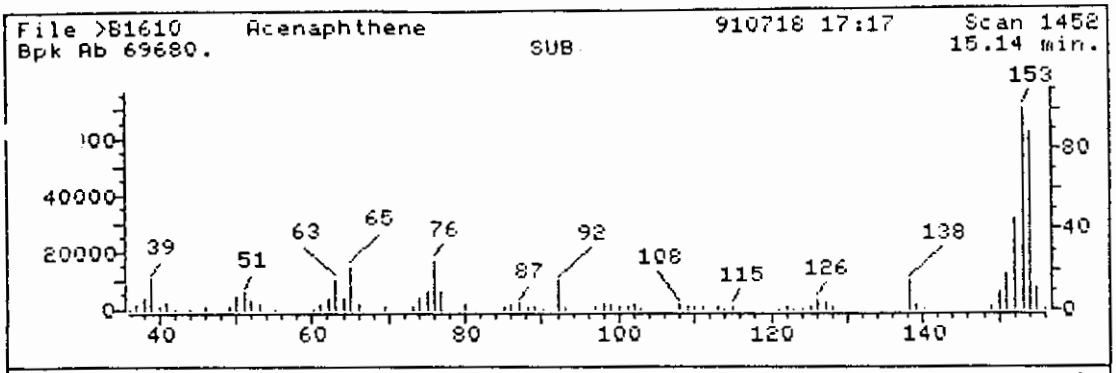
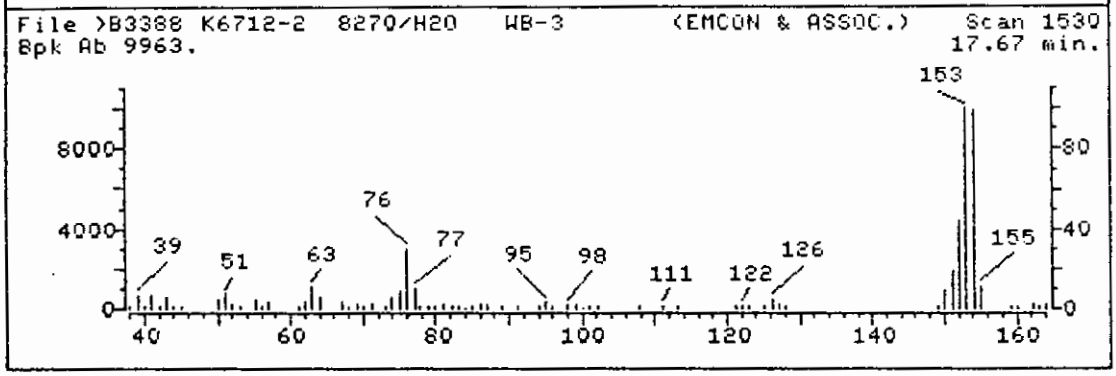
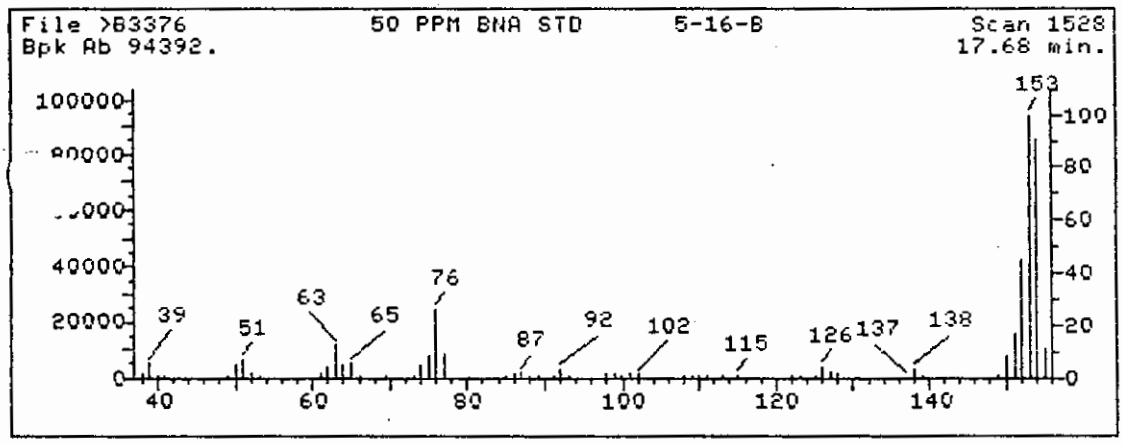
Misc: WB-3 (EMCON & ASSOC.) BTL# 9

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

Operator ID: KEN-1
Quant Time : 911122 17:58
Injected at: 911122 17:15







GCMSBNA1
30M .25 DB-5
11/22/91 1715

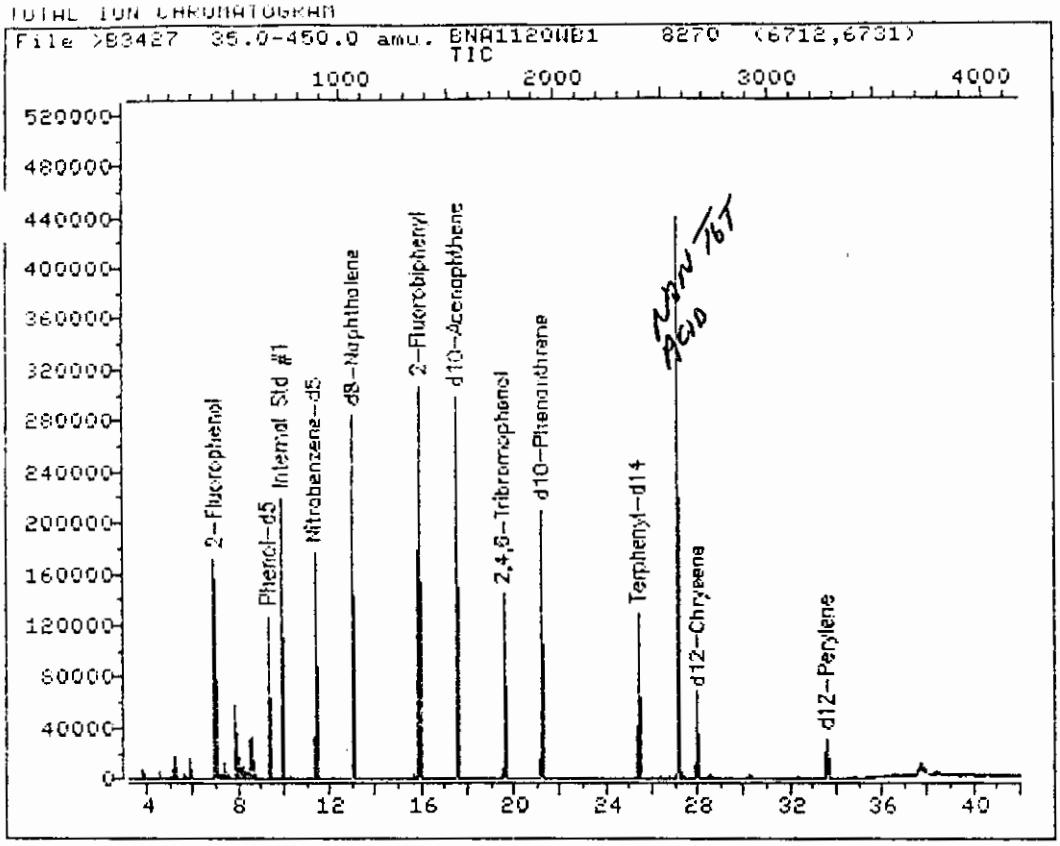
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 17:32
Output File: ^B3427::D1 Injected at: 911126 16:49
Data File: >B3427::D4 Dilution Factor: 1.00000
me: BNA1120WB1 8270 Instrument ID: GCMSBNA1
c: (6712,6731) K6712-mB BTL# 8
Method Blank
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.84	152.0	70371 ✓	40.00	ug/mL	94
4)	2-Fluorophenol	6.92	112.0	80083	47.25	ug/mL	86
6)	Phenol-d6	9.28	99.0	75646	29.67	ug/mL	92
~~7)~~	~~Phenol~~ KY	~~9.30~~	~~94.0~~	~~177M~~	NR ~~.0542~~	~~ug/mL~~	
~~8)~~	~~2-Chlorophenol~~ KY	~~9.44~~	~~128.0~~	~~142M~~	NR ~~.0560~~	~~ug/mL~~	
20)	*d8-Naphthalene	13.01	136.0	274925 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.32	82.0	102754	40.58	ug/mL	95
~~29)~~	~~Naphthalene~~ KY	~~13.05~~	~~128.0~~	~~141M~~	NR ~~.0192~~	~~ug/mL~~	
34)	*d10-Acenaphthene	17.48	164.0	149031 ✓	40.00	ug/mL	83
39)	2-Fluorobiphenyl	15.86	172.0	225952	39.31	ug/mL	94
~~50)~~	~~Diethylphthalate~~ KY	~~18.87~~	~~149.0~~	~~460M~~	NR ~~.0834~~	~~ug/mL~~	
56)	*d10-Phenanthrene	21.18	188.0	187557 ✓	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.50	329.8	49000	65.86	ug/mL	92
~~64)~~	~~Di-n-Butylphthalate~~ KY	~~23.01~~	~~149.0~~	~~1085M~~	NR ~~.151~~	~~ug/mL~~	
65)	*d12-Chrysene	27.96	240.0	69307 ✓	40.00	ug/mL	94
	Terphenyl-d14	25.35	244.0	108506	52.39	ug/mL	88
~~71)~~	~~Butylbenzylphthalate~~ KY	~~26.77~~	~~149.0~~	~~309M~~	NR ~~.221~~	~~ug/mL~~	
~~72)~~	~~Bis(2-Ethylhexyl)Phthalate~~ KY	~~28.49~~	~~149.0~~	~~1733M~~	NR ~~.827~~	~~ug/mL~~	
74)	*d12-Perylene	33.53	264.0	58516 ✓	40.00	ug/mL	93
~~75)~~	~~Di-n-octylphthalate~~ KY	~~30.71~~	~~149.0~~	~~1320M~~	NR ~~.454~~	~~ug/mL~~	

* Compound is ISTD

✓ KY 12/2/91

TOTAL ION CHROMATOGRAM



Data File: >B3427::D4 Quant Output File: ^B3427::D1
Name: BNA1120WB1 8270 Instrument ID: GCMSBNA1
Misc: (6712,6731) K6712-MB BTL# 8
Method Blank

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 17:32
Injected at: 911126 16:49

Columbia Analytical Services inc.

RECEIVED
DEC 19 1991

December 17, 1991

Vivian Hsiong
EMCON Associates
1921 Ringwood Avenue
San Jose, CA 95131

Re: **O'Brien Corp./Project #E50-01.06/SJ91-1428**

Dear Vivian:

Enclosed are the results of the samples submitted to our lab on November 16, 1991. For your reference, these analyses have been assigned our work order number K916729C.

Please note that metals results for water samples (excluding drinking water) are now being reported in µg/L (ppb) rather than mg/L (ppm).

All analyses were performed in accordance with our laboratory's quality assurance program.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Janice M. Sedlak

Janice M. Sedlak
Project Chemist

JMS/das

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Work Order #:**	K916729C
Sample Matrix:	Water		

CASE NARRATIVE SUMMARY

All samples were analyzed in accordance with Columbia Analytical Services, Inc. QA/QC program. Sample SWB-1 required an elevated method reporting limit due to matrix interferences and required dilution. The surrogate recovery for this sample is not applicable because of dilution of the surrogate concentration below the method reporting limit. Samples XDUP-1 and SWB-2 method reporting limits were elevated due to insufficient sample quantity.

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Work Order #: K916729C

Dissolved Priority Pollutant Metals
µg/L (ppb)

	Sample Name:	SWB-1	SWB-2	XDUP-1
	Lab Code:	K6729-1	K6729-2	K6729-3
Analyte	**Method**	**MRL**		
Antimony	6010	50	ND	ND	ND
Arsenic	7060	5	6	21	21
Beryllium	6010	5	ND	ND	ND
Cadmium	6010	3	ND	ND	ND
Chromium	6010	5	ND	ND	ND
Copper	6010	10	ND	23	16
Lead	7421	2	18	7	10
Mercury	7470	0.5	ND	ND	ND
Nickel	6010	20	ND	ND	ND
Selenium	7740	5	ND	ND	ND
Silver	6010	10	ND	ND	ND
Thallium	7841	5	ND	ND	ND
Zinc	6010	10	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by JM Sellek Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Work Order #:**	K916729C
Sample Matrix:	Water		

Dissolved Priority Pollutant Metals
µg/L (ppb)

	Sample Name:		Method Blank
	Lab Code:		K6729-MB
Analyte	**Method**	**MRL**	
Antimony	6010	50	ND
Arsenic	7060	5	ND
Beryllium	6010	5	ND
Cadmium	6010	3	ND
Chromium	6010	5	ND
Copper	6010	10	ND
Lead	7421	2	ND
Mercury	7470	0.5	ND
Nickel	6010	20	ND
Selenium	7740	5	ND
Silver	6010	10	ND
Thallium	7841	5	ND
Zinc	6010	10	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Work Order #:**	K916729C
Sample Matrix:	Water		

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		SWB-1	XDUP-1	FB-4
Lab Code:		K6729-1	K6729-3	K6729-4
Date Analyzed:		11/25/91	11/25/91	11/25/91
Analyte	**MRL**			
Chloromethane	1	ND	ND	ND
Vinyl Chloride	1	ND	ND	ND
Bromomethane	1	ND	ND	ND
Chloroethane	1	ND	ND	ND
Trichlorofluoromethane (Freon 11)	1	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	10	ND	ND	ND
1,1-Dichloroethene	1	ND	ND	ND
Acetone	20	ND	ND	ND
Carbon Disulfide	1	ND	ND	ND
Methylene Chloride	10	ND	ND	ND
trans-1,2-Dichloroethene	1	ND	ND	ND
cis-1,2-Dichloroethene	1	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND
1,1-Dichloroethane	1	ND	ND	ND
Chloroform	1	ND	ND	5
1,1,1-Trichloroethane (TCA)	1	ND	ND	ND
Carbon Tetrachloride	1	ND	ND	ND
Benzene	1	12	ND	ND
1,2-Dichloroethane	1	ND	ND	ND
Vinyl Acetate	10	ND	ND	ND
Trichloroethene (TCE)	1	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND
Bromodichloromethane	1	ND	ND	ND
2-Chloroethyl Vinyl Ether	10	ND	ND	ND
trans-1,3-Dichloropropene	1	ND	ND	ND
2-Hexanone	10	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	10	ND	ND	ND
Toluene	1	ND	ND	ND
cis-1,3-Dichloropropene	1	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND
Tetrachloroethene (PCE)	1	ND	ND	ND
Dibromochloromethane	1	ND	ND	ND
Chlorobenzene	1	ND	ND	ND
Ethylbenzene	1	17	ND	ND
Styrene	1	ND	ND	ND
Total Xylenes	1	120	ND	ND
Bromoform	1	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Tim Sullak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Work Order #:**	K916729C
Sample Matrix:	Water		

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		SWB-2	TB-1	Method Blank
Lab Code:		K6729-2	K6729-5	K6729-MB
Date Analyzed:		11/27/91	11/27/91	11/27/91
Analyte	**MRL**			
Chloromethane	1	ND	ND	ND
Vinyl Chloride	1	ND	ND	ND
Bromomethane	1	ND	ND	ND
Chloroethane	1	ND	ND	ND
Trichlorofluoromethane (Freon 11)	1	ND	ND	ND
Trichlorotrifluoroethane (Freon 113)	10	ND	ND	ND
1,1-Dichloroethene	1	ND	ND	ND
Acetone	20	ND	ND	ND
Carbon Disulfide	1	1	ND	ND
Methylene Chloride	10	ND	ND	ND
trans-1,2-Dichloroethene	1	ND	ND	ND
cis-1,2-Dichloroethene	1	ND	ND	ND
2-Butanone (MEK)	10	ND	ND	ND
1,1-Dichloroethane	1	ND	ND	ND
Chloroform	1	ND	5	ND
1,1,1-Trichloroethane (TCA)	1	ND	ND	ND
Carbon Tetrachloride	1	ND	ND	ND
Benzene	1	ND	ND	ND
1,2-Dichloroethane	1	ND	2	ND
Vinyl Acetate	10	ND	ND	ND
Trichloroethene (TCE)	1	ND	ND	ND
1,2-Dichloropropane	1	ND	ND	ND
Bromodichloromethane	1	ND	ND	ND
2-Chloroethyl Vinyl Ether	10	ND	ND	ND
trans-1,3-Dichloropropene	1	ND	ND	ND
2-Hexanone	10	ND	ND	ND
4-Methyl-2-pentanone (MIBK)	10	ND	ND	ND
Toluene	1	ND	ND	ND
cis-1,3-Dichloropropene	1	ND	ND	ND
1,1,2-Trichloroethane	1	ND	ND	ND
Tetrachloroethene (PCE)	1	ND	ND	ND
Dibromochloromethane	1	ND	ND	ND
Chlorobenzene	1	ND	ND	ND
Ethylbenzene	1	ND	ND	ND
Styrene	1	ND	ND	ND
Total Xylenes	1	ND	ND	ND
Bromoform	1	ND	ND	ND
1,1,2,2-Tetrachloroethane	1	ND	ND	ND
1,3-Dichlorobenzene	1	ND	ND	ND
1,4-Dichlorobenzene	1	ND	ND	ND
1,2-Dichlorobenzene	1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by [signature] Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates **Work Order #:** K916729C
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name:		**Method Blank**
Lab Code:		**K6729-MB**
Date Analyzed:		**11/25/91**
Analyte	**MRL**	
Chloromethane	1	ND
Vinyl Chloride	1	ND
Bromomethane	1	ND
Chloroethane	1	ND
Trichlorofluoromethane (Freon 11)	1	ND
Trichlorotrifluoroethane (Freon 113)	10	ND
1,1-Dichloroethene	1	ND
Acetone	20	ND
Carbon Disulfide	1	ND
Methylene Chloride	10	ND
trans-1,2-Dichloroethene	1	ND
cis-1,2-Dichloroethene	1	ND
2-Butanone (MEK)	10	ND
1,1-Dichloroethane	1	ND
Chloroform	1	ND
1,1,1-Trichloroethane (TCA)	1	ND
Carbon Tetrachloride	1	ND
Benzene	1	ND
1,2-Dichloroethane	1	ND
Vinyl Acetate	10	ND
Trichloroethene (TCE)	1	ND
1,2-Dichloropropane	1	ND
Bromodichloromethane	1	ND
2-Chloroethyl Vinyl Ether	10	ND
trans-1,3-Dichloropropene	1	ND
2-Hexanone	10	ND
4-Methyl-2-pentanone (MIBK)	10	ND
Toluene	1	ND
cis-1,3-Dichloropropene	1	ND
1,1,2-Trichloroethane	1	ND
Tetrachloroethene (PCE)	1	ND
Dibromochloromethane	1	ND
Chlorobenzene	1	ND
Ethylbenzene	1	ND
Styrene	1	ND
Total Xylenes	1	ND
Bromoform	1	ND
1,1,2,2-Tetrachloroethane	1	ND
1,3-Dichlorobenzene	1	ND
1,4-Dichlorobenzene	1	ND
1,2-Dichlorobenzene	1	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by [signature] Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
mple Matrix: Water

Date Received: 11/16/91
Date Extracted: 11/21/91
Date Analyzed: 11/25/91
Work Order #: K916729C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: SWB-1
Lab Code: K6729-1

Base Neutral Analyte	MRL*	Result	Base Neutral Analyte	MRL*	Result
N-Nitrosodimethylamine	50	ND	2,6-Dinitrotoluene	50	ND
Aniline	200	ND	Diethyl Phthalate	50	ND
Bis(2-chloroethyl) Ether	50	ND	4-Chlorophenyl Phenyl Ether	50	ND
1,2-Dichlorobenzene	50	ND	Fluorene	50	ND
1,3-Dichlorobenzene	50	ND	4-Nitroaniline	200	ND
1,4-Dichlorobenzene	50	ND	N-Nitrosodiphenylamine	50	ND
Bis(2-chloroisopropyl) Ether	50	ND	4-Bromophenyl Phenyl Ether	50	ND
N-Nitroso-di-n-propylamine	50	ND	Hexachlorobenzene	50	ND
Hexachloroethane	50	ND	Phenanthrene	50	ND
Nitrobenzene	50	ND	Anthracene	50	ND
Isophorone	50	ND	Di-n-butyl Phthalate	50	390
Bis(2-chloroethoxy)methane	50	ND	Fluoranthene	50	ND
1,2,4-Trichlorobenzene	50	ND	Pyrene	50	ND
phthalene	50	480	Butylbenzyl Phthalate	50	ND
. Chloroaniline	50	ND	3,3'-Dichlorobenzidine	200	ND
Hexachlorobutadiene	50	ND	Benz(a)anthracene	50	ND
2-Methylnaphthalene	50	170	Bis(2-ethylhexyl) Phthalate	50	ND
Hexachlorocyclopentadiene	100	ND	Chrysene	50	ND
2-Chloronaphthalene	50	ND	Di-n-octyl Phthalate	50	ND
2-Nitroaniline	200	ND	Benzo(b)fluoranthene	50	ND
Dimethyl Phthalate	50	ND	Benzo(k)fluoranthene	50	ND
Acenaphthylene	50	ND	Benzo(a)pyrene	50	ND
3-Nitroaniline	200	ND	Indeno(1,2,3-c,d)pyrene	50	ND
Acenaphthene	50	ND	Dibenz(a,h)anthracene	50	ND
Dibenzofuran	50	ND	Benzo(g,h,i)perylene	50	ND
2,4-Dinitrotoluene	50	ND			

Acid Analyte	MRL*	Result	Acid Analyte	MRL*	Result
Phenol	50	ND	2,4-Dichlorophenol	50	ND
2-Chlorophenol	50	ND	4-Chloro-3-methylphenol	50	ND
Benzyl Alcohol	50	ND	2,4,6-Trichlorophenol	50	ND
2-Methylphenol	50	ND	2,4,5-Trichlorophenol	50	ND
3- and 4-Methylphenol♦	50	ND	2,4-Dinitrophenol	500	ND
2-Nitrophenol	50	ND	4-Nitrophenol	500	ND
2,4-Dimethylphenol	50	ND	2-Methyl-4,6-dinitrophenol	200	ND
Benzoic Acid	500	ND	Pentachlorophenol	300	ND

RL Method Reporting Limit
Elevated MRLs because of matrix interferences and because the sample required dilution.
ND None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by [signature] Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Date Extracted: 11/21/91
Date Analyzed: 11/25/91
Work Order #: K916729C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: SWB-2
Lab Code: K6729-2

Base Neutral Analyte	MRL*	Result	Base Neutral Analyte	MRL*	Result
N-Nitrosodimethylamine	10	ND	2,6-Dinitrotoluene	10	ND
Aniline	30	ND	Diethyl Phthalate	10	ND
Bis(2-chloroethyl) Ether	10	ND	4-Chlorophenyl Phenyl Ether	10	ND
1,2-Dichlorobenzene	10	ND	Fluorene	10	ND
1,3-Dichlorobenzene	10	ND	4-Nitroaniline	30	ND
1,4-Dichlorobenzene	10	ND	N-Nitrosodiphenylamine	10	ND
Bis(2-chloroisopropyl) Ether	10	ND	4-Bromophenyl Phenyl Ether	10	ND
N-Nitroso-di-n-propylamine	10	ND	Hexachlorobenzene	10	ND
Hexachloroethane	10	ND	Phenanthrene	10	ND
Nitrobenzene	10	ND	Anthracene	10	ND
Isophorone	10	ND	Di-n-butyl Phthalate	10	ND
Bis(2-chloroethoxy)methane	10	ND	Fluoranthene	10	ND
1,2,4-Trichlorobenzene	10	ND	Pyrene	10	ND
phthalene	10	21	Butylbenzyl Phthalate	10	ND
Chloroaniline	10	ND	3,3'-Dichlorobenzidine	30	ND
Hexachlorobutadiene	10	ND	Benz(a)anthracene	10	ND
2-Methylnaphthalene	10	19	Bis(2-ethylhexyl) Phthalate	10	ND
Hexachlorocyclopentadiene	15	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Di-n-octyl Phthalate	10	ND
2-Nitroaniline	30	ND	Benzo(b)fluoranthene	10	ND
Dimethyl Phthalate	10	ND	Benzo(k)fluoranthene	10	ND
Acenaphthylene	10	ND	Benzo(a)pyrene	10	ND
3-Nitroaniline	30	ND	Indeno(1,2,3-c,d)pyrene	10	ND
Acenaphthene	10	ND	Dibenz(a,h)anthracene	10	ND
Dibenzofuran	10	ND	Benzo(g,h,i)perylene	10	ND
2,4-Dinitrotoluene	10	ND			

Acid Analyte	MRL*	Result	Acid Analyte	MRL*	Result
Phenol	10	ND	2,4-Dichlorophenol	10	ND
2-Chlorophenol	10	ND	4-Chloro-3-methylphenol	10	ND
Benzyl Alcohol	10	ND	2,4,6-Trichlorophenol	10	ND
2-Methylphenol	10	ND	2,4,5-Trichlorophenol	10	ND
3- and 4-Methylphenol♦	10	ND	2,4-Dinitrophenol	70	ND
2-Nitrophenol	10	ND	4-Nitrophenol	70	ND
2,4-Dimethylphenol	10	ND	2-Methyl-4,6-dinitrophenol	30	ND
Benzoic Acid	70	ND	Pentachlorophenol	40	ND

RL Method Reporting Limit
Elevated MRLs because there was insufficient sample quantity for optimum analysis.
ND None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by [signature] Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Date Extracted: 11/21/91
Date Analyzed: 11/26/91
Work Order #: K916729C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: XDUP-1
Lab Code: K6729-3

Base Neutral Analyte	MRL*	Result	Base Neutral Analyte	MRL*	Result
N-Nitrosodimethylamine	10	ND	2,6-Dinitrotoluene	10	ND
Aniline	30	ND	Diethyl Phthalate	10	ND
Bis(2-chloroethyl) Ether	10	ND	4-Chlorophenyl Phenyl Ether	10	ND
1,2-Dichlorobenzene	10	ND	Fluorene	10	ND
1,3-Dichlorobenzene	10	ND	4-Nitroaniline	30	ND
1,4-Dichlorobenzene	10	ND	N-Nitrosodiphenylamine	10	ND
Bis(2-chloroisopropyl) Ether	10	ND	4-Bromophenyl Phenyl Ether	10	ND
N-Nitroso-di-n-propylamine	10	ND	Hexachlorobenzene	10	ND
Hexachloroethane	10	ND	Phenanthrene	10	ND
Nitrobenzene	10	ND	Anthracene	10	ND
Isophorone	10	ND	Di-n-butyl Phthalate	10	ND
Bis(2-chloroethoxy)methane	10	ND	Fluoranthene	10	ND
1,2,4-Trichlorobenzene	10	ND	Pyrene	10	ND
phthalene	10	19	Butylbenzyl Phthalate	10	ND
Chloroaniline	10	ND	3,3'-Dichlorobenzidine	30	ND
Hexachlorobutadiene	10	ND	Benz(a)anthracene	10	ND
2-Methylnaphthalene	10	17	Bis(2-ethylhexyl) Phthalate	10	ND
Hexachlorocyclopentadiene	15	ND	Chrysene	10	ND
2-Chloronaphthalene	10	ND	Di-n-octyl Phthalate	10	ND
2-Nitroaniline	30	ND	Benzo(b)fluoranthene	10	ND
Dimethyl Phthalate	10	ND	Benzo(k)fluoranthene	10	ND
Acenaphthylene	10	ND	Benzo(a)pyrene	10	ND
3-Nitroaniline	30	ND	Indeno(1,2,3-c,d)pyrene	10	ND
Acenaphthene	10	ND	Dibenz(a,h)anthracene	10	ND
Dibenzofuran	10	ND	Benzo(g,h,i)perylene	10	ND
2,4-Dinitrotoluene	10	ND			

Acid Analyte	MRL*	Result	Acid Analyte	MRL*	Result
Phenol	10	ND	2,4-Dichlorophenol	10	ND
2-Chlorophenol	10	ND	4-Chloro-3-methylphenol	10	ND
Benzyl Alcohol	10	ND	2,4,6-Trichlorophenol	10	ND
2-Methylphenol	10	ND	2,4,5-Trichlorophenol	10	ND
3- and 4-Methylphenol♦	10	ND	2,4-Dinitrophenol	70	ND
2-Nitrophenol	10	ND	4-Nitrophenol	70	ND
2,4-Dimethylphenol	10	ND	2-Methyl-4,6-dinitrophenol	30	ND
Benzoic Acid	70	ND	Pentachlorophenol	40	ND

RL Method Reporting Limit
Elevated MRLs because there was insufficient sample quantity for optimum analysis.
ND None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by [signature] Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Extracted: 11/21/91
Date Analyzed: 11/26/91
Work Order #: K916729C

Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: Method Blank
Lab Code: K6729-MB

Base Neutral Analyte	MRL	Result	Base Neutral Analyte	MRL	Result
N-Nitrosodimethylamine	5	ND	2,6-Dinitrotoluene	5	ND
Aniline	20	ND	Diethyl Phthalate	5	ND
Bis(2-chloroethyl) Ether	5	ND	4-Chlorophenyl Phenyl Ether	5	ND
1,2-Dichlorobenzene	5	ND	Fluorene	5	ND
1,3-Dichlorobenzene	5	ND	4-Nitroaniline	20	ND
1,4-Dichlorobenzene	5	ND	N-Nitrosodiphenylamine	5	ND
Bis(2-chloroisopropyl) Ether	5	ND	4-Bromophenyl Phenyl Ether	5	ND
N-Nitroso-di-n-propylamine	5	ND	Hexachlorobenzene	5	ND
Hexachloroethane	5	ND	Phenanthrene	5	ND
Nitrobenzene	5	ND	Anthracene	5	ND
Isophorone	5	ND	Di-n-butyl Phthalate	5	ND
Bis(2-chloroethoxy)methane	5	ND	Fluoranthene	5	ND
1,2,4-Trichlorobenzene	5	ND	Pyrene	5	ND
ıphthalene	5	ND	Butylbenzyl Phthalate	5	ND
·Chloroaniline	5	ND	3,3'-Dichlorobenzidine	20	ND
Hexachlorobutadiene	5	ND	Benz(a)anthracene	5	ND
2-Methylnaphthalene	5	ND	Bis(2-ethylhexyl) Phthalate	5	ND
Hexachlorocyclopentadiene	10	ND	Chrysene	5	ND
2-Chloronaphthalene	5	ND	Di-n-octyl Phthalate	5	ND
2-Nitroaniline	20	ND	Benzo(b)fluoranthene	5	ND
Dimethyl Phthalate	5	ND	Benzo(k)fluoranthene	5	ND
Acenaphthylene	5	ND	Benzo(a)pyrene	5	ND
3-Nitroaniline	20	ND	Indeno(1,2,3-c,d)pyrene	5	ND
Acenaphthene	5	ND	Dibenz(a,h)anthracene	5	ND
Dibenzofuran	5	ND	Benzo(g,h,i)perylene	5	ND
2,4-Dinitrotoluene	5	ND			

Acid Analyte	MRL	Result	Acid Analyte	MRL	Result
Phenol	5	ND	2,4-Dichlorophenol	5	ND
2-Chlorophenol	5	ND	4-Chloro-3-methylphenol	5	ND
Benzyl Alcohol	5	ND	2,4,6-Trichlorophenol	5	ND
2-Methylphenol	5	ND	2,4,5-Trichlorophenol	5	ND
3- and 4-Methylphenol♦	5	ND	2,4-Dinitrophenol	50	ND
2-Nitrophenol	5	ND	4-Nitrophenol	50	ND
2,4-Dimethylphenol	5	ND	2-Methyl-4,6-dinitrophenol	20	ND
Benzoic Acid	50	ND	Pentachlorophenol	30	ND

RL Method Reporting Limit
.D None Detected at or above the method reporting limit
♦ Quantified as 4-methylphenol.

Approved by [signature] Date 12/17/91

APPENDIX A

LABORATORY QC RESULTS

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Work Order #: K916729C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Dissolved Priority Pollutant Metals
µg/L (ppb)

Sample Name: Batch QC
Lab Code: K6641-1

						Percent Recovery			
Analyte	MRL	Spike Level	Sample Result	Spiked Sample Result	Duplicate Spiked Sample Result	Spiked Sample	Duplicate Spiked Sample	CAS Acceptance Criteria	Relative Percent Difference
Antimony	50	1,000	ND	970	1,010	97	101	75-125	4
Arsenic	5	80	6	83	87	96	101	75-125	5
Beryllium	5	100	ND	98	99	98	99	75-125	1
Cadmium	3	100	ND	91	97	91	97	75-125	6
Chromium	5	400	ND	378	395	94	99	75-125	4
Copper	10	500	ND	492	491	98	98	75-125	<1
Lead	2	40	ND	46	43	115	108	75-125	7
Mercury	0.5	1	ND	0.9	0.9	90	90	60-140	<1
Nickel	20	1,000	ND	937	976	94	98	75-125	4
Selenium	5	20	ND	22	23	110	115	60-125	4
Silver	10	100	ND	90	94	90	94	75-125	4
Thallium	5	100	ND	91	88	91	88	75-125	3
Zinc	10	1,000	21	936	975	92	95	75-125	4

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/19,21,22,29/91
Work Order #: K916729C

QA/QC Report
Continuing Calibration Blank CCB Summary
µg/L (ppb)

Analyte	EPA Method	MRL	CCB1	CCB2	CCB3	CCB4
Antimony	6010	50	ND	ND	ND	ND
Arsenic	7060	5	ND	ND	ND	ND
Beryllium	6010	5	ND	ND	ND	ND
Cadmium	6010	3	ND	ND	ND	ND
Chromium	6010	5	ND	ND	ND	ND
Copper	6010	10	ND	ND	ND	ND
Lead	7421	2	ND	ND	ND	ND
Mercury	7470	0.5	ND	ND	ND	ND
Nickel	6010	20	ND	ND	ND	ND
Selenium	7740	5	ND	ND	ND	ND
Silver	6010	10	ND	ND	ND	ND
Thallium	7841	5	ND	ND	ND	ND
Zinc	6010	10	ND	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/22,25,29/91
Work Order #: K916729C

QA/QC Report
Continuing Calibration Blank CCB Summary
μg/L (ppb)

Analyte	EPA Method	MRL	CCB5	CCB6	CCB7	CCB8
Antimony	6010	50	ND	ND	--	ND
Beryllium	6010	5	ND	--	--	--
Cadmium	6010	3	ND	--	--	--
Chromium	6010	5	ND	--	--	--
Copper	6010	10	ND	--	--	--
Nickel	6010	20	ND	--	--	--
Selenium	7740	5	ND	--	--	--
Silver	6010	10	ND	--	--	--
Thallium	7841	5	ND	ND	ND	ND
Zinc	6010	10	ND	--	--	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by JM Sedlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/19,21/91
Work Order #: K916729C

QA/QC Report
Initial Calibration Verification (ICV) Summary 1
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Antimony	6010	980	1,040	106
Arsenic	7060	50	53	106
Beryllium	6010	508	486	96
Cadmium	6010	516	530	103
Chromium	6010	514	518	101
Copper	6010	525	519	99
Lead	7421	98	107	109
Mercury	7470	5.0	5.4	108
Nickel	6010	504	514	102
Selenium	7740	50	54	107
Silver	6010	517	492	95
Thallium	7841	101	101	100
Zinc	6010	3,050	3,050	100

ICV Source: EPA ICV

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/29/91
Work Order #: K916729C

QA/QC Report
Initial Calibration Verification (ICV) Summary 2
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Selenium	7740	50	52	104
Thallium	7841	101	106	104

ICV Source: EPA ICV

Approved by _____ Date 12/12/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/19,21,22/91
Work Order #: K916729C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV1 Result	Percent Recovery	CCV2 Result	Percent Recovery	CCV3 Result	Percent Recovery
Antimony	6010	5,000	4,900	98	4,920	98	5,030	101
Arsenic	7060	40	40	100	39	98	40	100
Beryllium	6010	500	482	96	499	100	523	105
Cadmium	6010	500	501	100	517	103	533	107
Chromium	6010	5,000	4,960	99	5,130	103	5,280	106
Copper	6010	500	489	98	490	98	510	102
Lead	7421	40	41	102	40	100	38	95
Mercury	7470	3.0	3.1	103	3.0	100	3.2	107
Nickel	6010	500	490	98	514	103	524	105
Selenium	7740	40	40	100	42	105	41	102
Silver	6010	500	497	100	508	102	524	105
Thallium	7841	40	39	98	38	95	39	98
Zinc	6010	2,500	2,450	98	2,510	100	2,600	104

Approved by TW Sedlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/19,22,25,29/91
Work Order #: K916729C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV4 Result	Percent Recovery	CCV5 Result	Percent Recovery	CCV6 Result	Percent Recovery
Antimony	6010	5,000	5,030	101	5,070	101	--	--
Beryllium	6010	500	508	102	511	102	--	--
admium	6010	500	495	99	498	100	--	--
Chromium	6010	5,000	5,010	100	5,050	101	--	--
Copper	6010	500	511	102	511	102	--	--
Lead	7421	40	38	95	--	--	--	--
Nickel	6010	500	505	101	508	102	--	--
Selenium	7740	40	41	102	43	108	38	95
Silver	6010	500	499	100	504	101	--	--
Thallium	7841	40	37	92	37	92	40	100
Zinc	6010	2,500	2,500	100	2,520	101	--	--

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/25/91
Work Order #: K916729C

QA/QC Report
Continuing Calibration Verification (CCV) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	CCV7 Result	Percent Recovery	CCV8 Result	Percent Recovery
Thallium	7841	40	40	100	40	100

Approved by JM Sedlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06

Date Analyzed: 11/19,21,22/91
Work Order #: K916729C

QA/QC Report
Laboratory Control Sample (LCS) Summary
µg/L (ppb)

Analyte	EPA Method	True Value	Result	Percent Recovery
Antimony	6010	980	1,040	106
Arsenic	7060	50	49	98
Beryllium	6010	508	512	101
Cadmium	6010	516	526	102
Chromium	6010	514	519	101
Copper	6010	525	520	99
Lead	7421	98	94	95
Mercury	7470	5.0	5.4	108
Nickel	6010	504	523	104
Selenium	7740	50	48	96
Silver	6010	517	491	95
Thallium	7841	101	98	96
Zinc	6010	3,050	2,990	98

ICV Source: EPA ICV

Approved by JM Sollak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/25/91
Sample Matrix:	Water	**Work Order #:**	K916729C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
SWB-1	K6729-1	105	96.2	105
DUP-1	K6729-3	106	95.2	108
FB-4	K6729-4	102	92.8	99.0
Method Blank	K6729-MB	90.0	92.6	91.4
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by JM Siddlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/27/91
Sample Matrix:	Water	**Work Order #:**	K916729C

QA/QC Report
Surrogate Recovery Summary
Volatile Organic Compounds
EPA Method 8240

Sample Name	Lab Code	Percent Recovery		
		1,2-Dichloroethane - D_4	Toluene - D_8	4-Bromofluorobenzene
SWB-2	K6729-2	86.1	100	102
B-1	K6729-5	88.6	98.7	106
TB-1	K6729-5MS	88.6	103	104
TB-1	K6729-5DMS	89.6	98.7	101
Method Blank	K6729-MB	99.7	94.5	99.3
EPA Acceptance Criteria		76-114	88-110	86-115

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/27/91
Sample Matrix:	Water	**Work Order #:**	K916729C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Volatile Organic Compounds
EPA Method 8240
µg/L (ppb)

Sample Name: TB-1
Lab Code: K6729-5

Analyte	Spike Level	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	EPA Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	50	ND	48.8	46.5	97.6	93.0	61-145	5
Trichloroethene	50	ND	52.6	52.4	105	105	71-120	<1
Chlorobenzene	50	ND	52.4	51.4	105	103	75-130	2
Toluene	50	ND	53.8	51.3	108	103	76-125	5
Benzene	50	ND	52.9	51.6	106	103	76-127	3

ND None Detected at or above the method reporting limit

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Date Extracted:**	11/21/91
Sample Matrix:	Water	**Date Analyzed:**	11/25/91
		Work Order #:	K916729C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
SWB-1	K6729-1	NA	NA	NA	NA	NA	NA
SWB-2	K6729-2	51.9	35.2	90.1	59.6	76.8	77.4
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

NA Not Applicable because of the sample matrix. Analysis of this sample required a dilution such that the surrogate concentration was diluted below the MRL.

Approved by Jim Sidlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Date Extracted: 11/21/91
Date Analyzed: 11/25/91
Work Order #: K916729C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
SWB-1	K6729-1MS	73.2	54.0	89.2	73.1	91.3	86.8
XDUP-1	K6729-3	59.4	38.7	95.5	58.7	77.4	88.8
Method Blank	K6729-MB	50.0	31.8	65.3	83.4	58.6	106
Laboratory Control Sample	K6729-LCS	51.8	32.6	85.3	86.6	70.7	116
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

Approved by Jim Sadlak Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client: EMCON Associates
Project: O'Brien Corp./#E50-01.06
Sample Matrix: Water

Date Received: 11/16/91
Date Extracted: 11/21/91
Date Analyzed: 11/27/91
Work Order #: K916729C

QA/QC Report
Surrogate Recovery Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270

Sample Name	Lab Code	Percent Recovery					
		2FP	PHL	TBP	NBZ	FBP	TPH
SWB-1	K6729-1DMS	72.4	51.8	84.6	70.2	83.5	89.4
EPA Acceptance Criteria		21-100	10-94	10-123	35-114	43-116	33-141

2FP 2-Fluorophenol
PHL Phenol-D_6
TBP 2,4,6-Tribromophenol
NBZ Nitrobenzene-D_5
FBP 2-Fluorobiphenyl
TPH Terphenyl-D_{14}

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Received:**	11/16/91
Project:	O'Brien Corp./#E50-01.06	**Date Extracted:**	11/21/91
Sample Matrix:	Water	**Date Analyzed:**	11/26,27/91
		Work Order #:	K916729C

QA/QC Report
Matrix Spike/Duplicate Matrix Spike Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: SWB-1
Lab Code: K6729-1

	Spike Level		Sample	Spike Result		Percent Recovery		EPA Acceptance	Relative Percent
Analyte	MS	DMS	Result	MS	DMS	MS	DMS	Criteria	Difference
Phenol	222	222	ND	113	109	50.9	49.1	12-89	4
2-Chlorophenol	222	222	ND	178	176	80.2	79.3	27-123	1
1,4-Dichlorobenzene	88.9	88.9	ND	77.6	80.9	87.3	91.0	36-97	4
N-Nitroso-di-n-propylamine	88.9	88.9	ND	126	132	*142	*148	41-116	4
1,2,4-Trichlorobenzene	88.9	88.9	ND	92.7	95.7	*104	*108	39-98	4
4-Chloro-3-methylphenol	222	222	ND	129	134	58.1	60.4	23-97	4
Acenaphthene	88.9	88.9	ND	77.6	77.6	87.3	87.3	46-118	<1
4-Nitrophenol	222	222	ND	35.4	35.2	15.9	15.9	10-80	<1
2,4-Dinitrotoluene	88.9	88.9	ND	51.9	58.3	58.4	65.6	24-96	12
Pentachlorophenol	222	222	ND	153	150	68.9	67.6	9-103	2
Pyrene	88.9	88.9	ND	69.6	73.7	78.3	82.9	26-127	6

ND None Detected at or above the method reporting limit
***** Outside acceptance limits because of matrix interferences. The gas chromatogram showed nontarget components that interfered with the analysis. The sample was not reanalyzed.

Approved by _____ Date 12/17/91

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	EMCON Associates	**Date Extracted:**	11/21/91
Project:	O'Brien Corp./#E50-01.06	**Date Analyzed:**	11/26/91
Sample Matrix:	Water	**Work Order #:**	K916729C

QA/QC Report
Laboratory Control Sample Summary
Acid/Base Neutral Semivolatile Organic Compounds
EPA Methods 3510/8270
µg/L (ppb)

Sample Name: Laboratory Control Sample

Analyte	Spike Level	Spike Result	Percent Recovery	EPA Percent Recovery Acceptance Criteria
Phenol	100	27.3	27.3	5-112
2-Chlorophenol	100	69.6	69.6	23-134
1,4-Dichlorobenzene	40.0	35.6	89.0	20-124
N-Nitroso-di-n-propylamine	40.0	36.4	91.0	D-230
1,2,4-Trichlorobenzene	40.0	39.2	98.0	44-142
4-Chloro-3-methylphenol	100	61.2	61.2	22-147
Acenaphthene	40.0	33.5	83.8	47-145
4-Nitrophenol	100	10.8	10.8	D-132
2,4-Dinitrotoluene	40.0	29.5	73.8	39-139
Pentachlorophenol	100	48.0	48.0	14-176
Pyrene	40.0	39.6	99.0	52-115

D Detected; result must be greater than zero.

Approved by Jeff Sidlak Date 12/17/91

APPENDIX B

CHAIN OF CUSTODY INFORMATION

K6729C

Columbia Analytical Services inc.

1921 Ringwood Ave. • San Jose, CA 95131 • (408) 437-2400, FAX (408)437-9356

CHAIN CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 11·14·91 PAGE 1 OF 1

PROJECT NAME OBRIEN #ESO-01.06

PROJECT MNGR. Mark Wheeler

COMPANY/ADDRESS

PHONE 453-2267

SAMPLERS SIGNATURE J Butera

ANALYSIS REQUESTED

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	TPH as Gas/BTEX DHS LUFT / 8020	TPH as Diesel/HBHC DHS LUFT	TRPH - 418.1	Oil and Grease Method	Metals (total or dissolved) List Below	pH, Cond, Cl, SO_4, PO_4, F, NO_2, Alk, TDS, TSS (circle)	NH_3-N, COD, Total-P, TKN, NO_3 (circle)	Total Organic Carbon TOC 415/9060	Total Phenols					REMARKS
SWB-1	11/14	0900		H_2O	5	X	X						X									
SWB-2	↓	1000		↓	5	X	X						X									
FB-4	↓	—		↓	2		X															
X DUP-1	↓	—		↓	5	X	X						X									
TB-1	↓	—		↓	2		X															

RELINQUISHED BY:	RECEIVED BY:
Signature J Butera	Signature [signature]
Printed Name J Butera	Printed Name Howard Friedman
Firm ENCON SJ	Firm CAS - SJ
Date/Time 11/14/91 1715	Date/Time 11-15-91 8:30

TURNAROUND REQUIREMENTS:
- ___ 24 hr ___ 48 hr ___ 5 day
- ___ Standard (~ 10-15 working days)
- ___ Provide Verbal Preliminary Results
- ___ Provide FAX Preliminary Results
- Requested Report Date ___

REPORT REQUIREMENTS
- ___ I. Routine Report
- ___ II. Report (includes DUP,MS, MSD, as required, may be charged as samples)
- ___ III. Data Validation Report (includes All Raw Data)
- ___ IV. CLP Deliverable Report

INVOICE INFORMATION:
- P.O. # ___
- Bill to: ___

SAMPLE RECEIPT:
- Shipping VIA: sampler
- Shipping #: ___
- Condition: X-Dup & SWB-2 have 1/3 full sediment in VOA
- Lab No.: SJ91-1428

RELINQUISHED BY:	RECEIVED BY:
Signature	Signature Ruth Allison
Printed Name	Printed Name Ruth Allison
Firm	Firm CAS
Date/Time	Date/Time 11/16/91 1100

SPECIAL INSTRUCTIONS/COMMENTS:

bubbles in SWB-1

SAR#1975

metals 8270 8240 } to Kelso

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

APPENDIX C

RAW DATA

716472

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729

SAMPLE NUMBER(S)	SERVICE REQUEST NUMBER
See Below	916641C; 916670
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP-Red-Water-GFAA

DATA

SAMPLE 6642 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW (6641C; 6670C; 6712C;				50 ml		50 ml	
LCSW 6641C			X				
6641C-1			X				
IDS*							
IS*							
6670C-2							
3							
6712C-2							
3							
6729-1							
2							
3							
6642-1			↓	↓		↓	
	1.0		12/4/91				

COMMENTS: * Spike = 0.5 ml SSS #4
LCSW = ICV-2 = Lot# 1290
ICV-4 = " 1290

ANALYST	DATE	PAGE Number
	11/18/91	
REVIEWER	DATE	

[DIGEST2.FRM]

COLUMBIA ANALYTICAL SERVICES, INC.
1317 South 13th Avenue - P.O. Box 479 - Kelso, WA 98626 916712C; 916729C

SAMPLE NUMBER(S) See Below	SERVICE REQUEST NUMBER 916641C; 916670C
ANALYSIS FOR: DIGESTION DATA	METHOD NUMBER CLP - Blue - Water - ICP

DATA

SAMPLE 6661 6729C	INITIAL WEIGHT (g)	DRY	AS REC'D.	INITIAL VOLUME (ml)		FINAL VOLUME (ml)	MATRIX
PBW 6641C; 6670C; 6712C; 6642				50 ml		50 ml	
LCSW 6641C			X				
6641C-1			X				
1DS*							
1S*							
6670C-2							
3							
6712C-2							
3							
6729C-1							
2							
3							
6642-1							
6661-1							
2							
3							
4							
5							

1.0 EA 12/4/91

COMMENTS: *Spike = ~~0.5~~ ml ea SS #1,2,3 + 100ppm Mo+B
LCSW - ICV-1 = Lot# 0691
ICV-3 = " 1190

ANALYST Ortiz	DATE 11/18/91	PAGE Number
REVIEWER	DATE	

[DIGEST2.FRM]

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

916642

Service Request Number : 916641C ; 916670C ; 916712C ; 916729C ;

Q.C. Sample Number : 641C-1 Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
1 for ICP only	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	D44630	11/92	Baker	200	
	Be	1.25	✓	D37622	9/92	Baker	5	
	Cd	1.25	✓	D22642	6/92	Baker	5	
	Co	12.50	✓	2-4CO	6/92	SPEX	50	
	Cu	6.25	✓	D22638	6/92	Baker	25	
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	D26628	7/92	Baker	50	
	Ni	12.50	✓	D17620	5/92	Baker	50	
	V	12.50	✓	D48610	5/92	Baker	50	
	Zn	12.50	✓	D02663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/19/91 by CW Date Analyzed _____ by _____

2 ICP	HCl	25.00	✓	E28834		Baker	--	
	Sb	12.50	✓	903464-24	4/92	Fisher	50	
	Cr	5.00	✓	D10602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/7/91 by CW Date Analyzed _____ by _____

3	HNO3	2.50	✓	E17065		Baker	--	
	Ag	1.25	✓	E16618	4/93	Baker	5	

Date Prepared 10/17/91 by ASO Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW Date Analyzed _____ by _____

4 GFAA	HNO3	2.50	✓	E08045		Baker	--	1.0 CA 12/4
	As	1.00	✓	D22643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
	Pb	0.50	✓	D17621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/13/91 by ASO Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW Date Analyzed _____ by _____

5 ICP ONLY	HCL	25.00	✓	E28834		Baker	--	
	As	50.00	✓	D22643	6/92	Baker	200	
	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO Date Prepared _____ by _____
Date Analyzed 11/4/91 by CW Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$ug/L = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

DIG1101

Columbia Analytical Services Inc.
1317 South 13th Avenue
Kelso, WA 98626

916712C; 916729C; 916642; 916661
Service Request Number : 916641C; 916670C

Q.C. Sample Number : 641C-1* Initials / Date : ASO / 11/18/91

Circle type of Digest: Red (GFAA) BLUE (ICP)
Circle type of sample : Soil Water

EPA Digest Method # _____

Sol'n	Element	mls of 1000 ppm std per 250 mls	Check as added	LOT #	Exp. Date	Source	Spike Sol'n Conc mg/l	Enter mls added
1 for ICP only	HNO3	2.50	✓	E17065		Baker		
	Al	50.00	✓	E02662	1/93	Baker	200	
	Ba	50.00	✓	044630	11/92	Baker	200	
	Be	1.25	✓	037622	9/92	Baker	5	
	Cd	1.25	✓	022642	6/92	Baker	5	1.0
	Co	12.50	✓	2-4C0	6/92	SPEX	50	
	Cu	6.25	✓	022638	6/92	Baker	25	~~0.5~~
	Fe	25.00	✓	E09631	4/93	Baker	100	
	Pb	12.50	✓	E13605	4/93	Baker	50	
	Mn	12.50	✓	026628	7/92	Baker	50	EA
	Ni	12.50	✓	017620	5/92	Baker	50	
	V	12.50	✓	048610	5/92	Baker	50	12/4/91
	Zn	12.50	✓	002663	1/93	Baker	50	

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

2 ICP	HCl	25.00	✓	E28834		Baker	--	1.0
	Sb	12.50	✓	903464-24	4/92	Fisher	50	~~0.5~~
	Cr	5.00	✓	010602	3/92	Baker	20	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by EN — Date Analyzed _____ by _____

3	HNO3	2.50	✓	E17065		Baker	--	1.0
	Ag	1.25	✓	E16618	4/93	Baker	5	~~0.5~~

Date Prepared 10/17/91 by ASO — Date Prepared _____ by _____
Date Analyzed 10/18/91 by CW — Date Analyzed _____ by _____

4 GFAA	HNO3	2.50	✓	E08045		Baker	--	
	As	1.00	✓	022643	6/92	Baker	4	
	Se	0.25	✓	E09614	5/93	Baker	1	
	Pb	0.50	✓	017621	5/92	BAKER	2	
	Tl	1.25	✓	H584	8/92	Mallinckrodt	5	

Date Prepared 9/13/91 by ASO — Date Prepared _____ by _____
Date Analyzed 9/16/91 by CW — Date Analyzed _____ by _____

5 ICP ONLY	HCL	25.00	✓	E28834		Baker	--	
	As	50.00	✓	022643	6/92	Baker	200	
	Se	25.00	✓	2-47SE	7/92	SPEX	100	

Date Prepared 11/1/91 by ASO — Date Prepared _____ by _____
Date Analyzed 11/4/91 by EN — Date Analyzed _____ by _____

Comments: Calculation for the final spike concentration in the digestate is :

$$\text{ug/L} = \frac{(\text{mls spike added}) \times (\text{spike solution concentration}) \times 1000}{\text{final volume of digestate}}$$

* Spike = 0.5 ml of 100 ppm Mo & B

DIG1101

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729, 6670C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) Measured	(mg/L or mg/Kg) Sample (actual)
1	ICV (50.4)	—	—	—	—	52.6	104%
2	CCV, (49	—	—	—	—	39.5	99%
3	CCB,	—	—	—	—	<1	<0.001
4	PBW 6641, 6712,	6729, 6642, 6670	50	—	—	<1	<0.001
5	LCSW (50.4)	50	↓	1	2	24.6	98%
6	6641C-1	↓	↓	—	—	6.0	0.006
7	C-1A	↓	↓	↓	↓	26.8	104%
8	C-1A5	↓	↓	↓	↓	>	—
9	C-1S	↓	↓	↓	↓	>	—
10	6712-C-2	50	50	↓	↓	12.3	0.012
11	C-2A	↓	↓	↓	↓	32.4	100%
12	6712C-3	50	50	↓	↓	9.3	0.009
13	CCV2 (49	—	—	—	—	39.0	98%
14	CCB2	—	—	—	—	<1	<0.001
15	6729C-1	50	50	↓	↓	6.2	0.006
16	C-1A	↓	↓	↓	↓	26.4	102%
17	C-2	↓	↓	↓	↓	21.0	0.021
18	C-3	↓	↓	↓	↓	21.4	0.021
19	6642-1	50	50	↓	↓	>	—
20	1A	↓	↓	↓	↓	>	—
21	6670C-2	50	50	↓	↓	6.3	0.006
22	C-3	↓	↓	↓	↓	4.3	0.004
23	C-3A	↓	↓	↓	↓	25.3	105%
24	CCV3 (40)	—	—	—	—	39.6	99%
25	CCB3	—	—	—	—	4	<0.001

COMMENTS:

SPIKE LEVEL: As 20 ug/L

ANALYST: CJ Bruno	DATE: 11/19/91	PAGE NUMBER: 1
REVIEWER	DATE:	

CASWCSGFA1.FRM

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641C

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6631C, 6641C
ANALYSIS FOR: As	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	PBW 66310	50	50			<1	<0.001
27	6631C-1					<1	<0.001
28	C-1A					17.8	89%
29	C-1D5					>	—
30	C-15					>	—
31	C-2					<1	<0.001
32	C-3					26	0.003
33	C-4					>B	—
34	C-5					2.1	0.002
35	C-6	↓	↓			>B	—
36	CCV 140	—	—			38.1	95%
37	CCB	—	—			<1	<0.001
38	6631C7	50	50			>B	—
39	C-8	↓	↓			>B	—
40	C-9	↓	↓	↓	↓	17.7	0.018
41	6641C-15	50	50	1	2	41.6	0.083 / 96%
42	C-1D5	↓	↓	↓	↓	43.4	0.087 / 101%
43	CCV 140	—	—	—	—	39.2	98%
44	CCB	—	—	—	—	<1	<0.001
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: 6641C-15 @ 80 ug/l A: 20 ug/l

ANALYST: J Bruno	DATE: 11/19/91	PAGE Number: 2
REVIEWER	DATE:	

[AWKSGFA2.FRM]

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11/19/91 08:00
BATCH As

PROGRAM 6 As EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.004
STANDARD 1	10.0	4.7	0.031	0.030	0.032
STANDARD 2	20.0	2.5	0.062	0.061	0.064
STANDARD 3	40.0	0.3	0.115	0.116	0.115
STANDARD 4	60.0	2.5	0.174	0.177	0.171
SAMPLE 1 ICV	52.6	2.6	0.152	0.149	0.155
SAMPLE 2 CCV1	39.5	0.7	0.114	0.114	0.115
SAMPLE 3 CCB1	-0.2	99.9	-0.001	-0.001	0.000
SAMPLE 4 DB	-0.3	66.9	-0.001	-0.000	-0.001
SAMPLE 5 LCS	24.6 1:2	2.2	0.076	0.077	0.075
SAMPLE 6	6.0	2.4	0.019	0.018	0.019
MPLE 7	26.8	0.3	0.082	0.082	0.082
SAMPLE 8	OVER	1.5	0.253	0.250	0.256
SAMPLE 9	OVER	0.9	0.247	0.245	0.248
SAMPLE 10	12.3	1.6	0.038	0.039	0.038
SAMPLE 11	32.4	0.0	0.097	0.097	0.097
SAMPLE 12	9.3	2.1	0.029	0.029	0.029
SAMPLE 13 CCV2	39.0	0.9	0.113	0.112	0.114
SAMPLE 14 CCB2	-0.6	30.8	-0.002	-0.002	-0.002
SAMPLE 15	6.2	2.8	0.019	0.019	0.020
SAMPLE 16	26.6	0.4	0.082	0.081	0.082
SAMPLE 17	21.0	2.2	0.066	0.065	0.067
SAMPLE 18	21.4	1.7	0.066	0.067	0.066
SAMPLE 19	OVER	1.1	0.667*	0.673*	0.662*
SAMPLE 20	OVER	99.9	0.339*	0.677*	0.001
SAMPLE 21	6.3	2.8	0.020	0.020	0.019
SAMPLE 22	4.3	3.4	0.013	0.014	0.013
SAMPLE 23	25.3	1.5	0.078	0.079	0.077
SAMPLE 24 CCV3	39.6	0.4	0.115	0.114	0.115
SAMPLE 25 CCB3	-0.1	99.9	-0.000	-0.001	0.001
SAMPLE 26	-0.3	62.3	-0.001	-0.001	-0.001
SAMPLE 27	0.2	0.0	0.000	0.001	0.000
SAMPLE 28	17.8	0.8	0.056	0.055	0.056
SAMPLE 29	OVER	0.2	0.202	0.203	0.202
SAMPLE 30	OVER	1.0	0.202	0.201	0.204
SAMPLE 31	0.5	75.1	0.001	0.001	0.002
MPLE 32	2.6	12.2	0.008	0.009	0.007
MPLE 33	OVER	17.6	0.257B	0.225B	0.289B
SAMPLE 34	2.1	10.6	0.006	0.006	0.007
SAMPLE 35	49.1B	38.9	0.142B	0.103B	0.181B
SAMPLE 36	38.1	2.9	0.111	0.113	0.109
SAMPLE 37	-0.5	63.8	-0.001	-0.001	-0.002

cj Bwo
11/19/91
A 5

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	OVER	25.7	0.594B	0.702B	0.486B
SAMPLE 40	17.7	10.3	0.055	0.059	0.051
SAMPLE 41	41.6	1.9	0.120	0.121	0.118
SAMPLE 42	43.4	0.0	0.125	0.125	0.125
SAMPLE 43	39.2	0.4	0.114	0.113	0.114
SAMPLE 44	-0.3	7.8	-0.001	-0.001	-0.001
SAMPLE 45	-0.3	44.4	-0.001	-0.001	-0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.007	0.007	0.007
SAMPLE 1	40.5	0.2	0.117	0.117	0.117
SAMPLE 2	-0.3	51.1	-0.001	-0.001	-0.001
SAMPLE 3	OVER	0.9	0.275	0.277	0.273
SAMPLE 4	55.2	99.9	0.160	0.321	-0.002
SAMPLE 5	35.6	1.6	0.105	0.104	0.106
SAMPLE 6	35.3	1.9	0.105	0.103	0.106
SAMPLE 7	10.1	3.7	0.031	0.032	0.031
SAMPLE 8	-0.1	99.9	-0.000	0.000	-0.001
SAMPLE 9	45.2	0.9	0.130	0.131	0.130
SAMPLE 10	OVER	14.4	0.201B	0.222B	0.181B
SAMPLE 11	8.3	3.0	0.026	0.025	0.026
SAMPLE 12	30.4	2.0	0.092	0.091	0.093
SAMPLE 13	38.6	0.9	0.112	0.113	0.112
SAMPLE 14	-0.2	0.0	-0.001	-0.001	-0.001
SAMPLE 15	6.3	3.1	0.020	0.019	0.020
SAMPLE 16	39.6	0.5	0.114	0.115	0.114
SAMPLE 17	-0.3	14.0	-0.001	-0.001	-0.001

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6631

SAMPLE NUMBER:		SERVICE REQUEST # : 91-6641C, 6712C, 6729C, 6670C 6631C
ANALYSIS FOR: Pb	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	PBW 6641, 6670, 6712, 6729, 6642		50	—	—	<2	<0.002
2	LCSW (984)	50		1	5	18.7	95%
3	6641C-1			—	—	<2	<0.002
4	C-1A					22.2	111%
5	C-1DS					458	0.046 / 115% (1)
6	C-5					430	0.043 / 108%
7	6712C-2					17.4	0.017
8	C-2A					40.3	114%
9	C-3					<2	<0.002
10	CCV (40)	—	—			38.3	96%
11	CCB	—	—			<2	<0.002
12	6729C-1	50	50			17.6	0.018
13	C-1A					406	115%
14	C-2					6.9	0.007
15	C-3					9.7	0.010
16	6670C-2	50	50			<2	<0.002
17	C-3					3.8	0.004
18	C-3A					235	98%
19	6642-1	50	50			<2	<0—
20	6642-1					<1	—
21	1A					24.5	—
22	CCV (40)	—	—			38.1	95%
23	CCB	—	—			<1	<0.001
24	PBW 6631C	50	50			<1	<0.001
25	6631C-1					<1	<0.001

COMMENTS: (1) Spiked at 40 ug/L

SPIKE LEVEL: A: 20 ug/L

ANALYST: J. Brown	DATE: 11/19/91	PAGE NUMBER: 3
REVIEWER	DATE: —	

CAMCSGFAA.FRM

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2

1317 South 13th Street P.O. Box 479

Kelso, WA 98626 (206) 577-7222

OPERATOR CJ Burra

DATE 11/19/91 Time 09:00

BATCH Pb

PROGRAM 19 Pb EPA/PTI PLATFORM

SAMPLE	CONC	%RSD	MEAN	READINGS	
	ppb		ABS		
BLANK	0.0		0.003	0.002	0.004
STANDARD 1	5.0	5.0	0.009	0.009	0.009
STANDARD 2	30.0	0.8	0.053	0.053	0.054
STANDARD 3	40.0	1.7	0.070	0.069	0.070
STANDARD 4	50.0	0.3	0.087	0.087	0.087
SAMPLE 1 ICV	21.4	1:5 dil 0.2	0.038	0.038	0.038
SAMPLE 2 CCV1	41.1	1.0	0.071	0.071	0.072
SAMPLE 3 CCB1	0.8	18.9	0.001	0.002	0.001
SAMPLE 4	1.0	17.6	0.002	0.002	-0.002
SAMPLE 5	2.4	89.3	0.004	0.007	0.002
SAMPLE 6	25.6	2.0	0.046	0.046	0.045
SAMPLE 7	6.4	2.2	0.012	0.011	0.012

J Bruno
11/19/91
Pb

[redacted]	10	0.9	24.1	0.002	0.002	0.001
MPLE	11	0.8	11.6	0.001	0.002	0.001
SAMPLE	12	0.9	0.0	0.002	0.002	0.002
E LE	13	1.1	8.1	0.002	0.002	0.002
SAMPLE	14	39.7	3.3	0.069	0.067	0.071
SAMPLE	15	0.5	40.2	0.001	0.001	0.001
SAMPLE	16	0.9	7.6	0.002	0.002	0.002
SAMPLE	17	1.3	5.2	0.002	0.002	0.002
SAMPLE	18	1.8	16.6	0.003	0.003	0.004
SAMPLE	19	1.0	11.1	0.002	0.002	0.002
AMPLE	20	1.0	8.9	0.002	0.002	0.002
AMPLE	21	23.0	0.0	0.041	0.041	0.041
AMPLE	22	0.8	47.0	0.001	0.001	0.002
AMPLE	23	1.1	28.9	0.002	0.002	0.002
MPLE	24	1.4	11.5	0.002	0.003	0.002
MPLE	25	1.4	3.4	0.003	0.003	0.002
MF	26	40.8	1.8	0.071	0.070	0.072
MPLE	27	1.2	15.0	0.002	0.002	0.002
PLE	28	1.7	2.0	0.003	0.003	0.003
PLE	29	1.2	46.2	0.002	0.002	0.003
PLE	30	2.2	1.5	0.004	0.004	0.004
PLE	31	1.2	42.1	0.002	0.003	0.002
LE	32	1.0	39.1	0.002	0.002	0.001
LE	33	1.1	20.1	0.002	0.002	0.002
LE	34 CCV2	40.4	1.5	0.070	0.069	0.071
LE	35 CCB2	1.3	15.4	0.002	0.003	0.002

cf Bruno
11/19/94
Pb

BLANK	0.0		-0.001	-0.000	-0.002
SAMPLE 1 PBW	-0.0	99.9	-0.000	0.000	-0.000
SAMPLE 2 LCSW	18.7 1:5	0.8	0.034	0.033	0.034
SAMPLE 3	0.0	99.9	0.000	0.001	-0.001
SAMPLE 4	22.2	1.9	0.040	0.039	0.040
SAMPLE 5	45.8	1.0	0.080	0.080	0.079
SAMPLE 6	43.0	0.8	0.075	0.074	0.075
SAMPLE 7	17.4	1.3	0.031	0.031	0.032
SAMPLE 8	40.3	1.5	0.070	0.071	0.069
SAMPLE 9	-0.6	11.6	-0.001	-0.001	-0.001
SAMPLE 10 CCV3	38.3	2.5	0.067	0.068	0.066
SAMPLE 11 CCB3	-1.4	12.6	-0.003	-0.002	-0.003
SAMPLE 12 6729-1	17.6	2.7	0.032	0.031	0.032
SAMPLE 13 1A	40.6	0.9	0.071	0.070	0.071
SAMPLE 14 6729-2	6.9	2.6	0.013	0.013	0.012
SAMPLE 15 6729-3	9.7	0.0	0.018	0.018	0.018
SAMPLE 16	-0.9	9.9	-0.002	-0.002	-0.002
SAMPLE 17	3.8	6.6	0.007	0.007	0.007
SAMPLE 18	23.5	0.8	0.042	0.042	0.042
SAMPLE 19	-1.1	0.0	-0.002	-0.002	-0.002
SAMPLE 20	0.0	0.0	0.000	0.000	0.000
SAMPLE 21	24.5	0.4	0.044	0.044	0.044
SAMPLE 22 CCV4	38.1	4.0	0.067	0.065	0.068
SAMPLE 23 CCB4	-1.0	4.5	-0.002	-0.002	-0.002
BLANK	0.0		-0.001	-0.000	-0.001
SAMPLE 24	-0.4	16.7	-0.001	-0.001	-0.001
SAMPLE 25	0.3	76.7	0.001	0.000	0.001
SAMPLE 26	21.1	0.2	0.038	0.038	0.038
SAMPLE 27	39.6	1.4	0.069	0.068	0.070

[redacted]PLE 31	8.6	0.4	0.016	0.016	0.016
SAMPLE 32	0.4	81.2	0.001	0.000	0.001
SAMPLE 33	0.6	99.9	0.001	0.003	-0.001
PLE 34	36.0	3.4	0.063	0.065	0.062
SAMPLE 35	-0.3	51.4	-0.001	-0.000	-0.001
BLANK	0.0		0.000	0.001	-0.000
RESLOPE 3	40.0	5.5	0.062	0.060	0.065
SAMPLE 36	1.0	99.9	0.002	0.003	0.000
SAMPLE 37	OVER	8.6	0.262B	0.277B	0.246B
SAMPLE 38	1.0	38.1	0.002	0.001	0.002
SAMPLE 39	0.8	24.3	0.001	0.001	0.002
SAMPLE 40	OVER	1.0	0.118	0.119	0.117
SAMPLE 41	0.4	99.9	0.001	0.000	0.001
SAMPLE 42	41.0	1.0	0.064	0.064	0.063
SAMPLE 43	0.4	50.4	0.001	0.001	0.000

CJ Brown
11/19/97
Pb

.5

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 916641

SAMPLE NUMBER: As Listed		SERVICE REQUEST #: 916641 916670 916712 916729 916681 916731
ANALYSIS FOR: Hg	METHOD: CVAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	µg/l measured	(mg/L or mg/Kg) Sample (actual)
1	ICV	5.0 ppb				5.43	108%
2	CCV-1	3.0 ppb				3.07	102%
3	CCB-1					<.2	<.0002
4	6641 6670 6712 6729 6681 6731 PBW	20ml	20ml			↓	↓
5	6641-1	↓	↓			↓	↓
11/21 SB 6	↓ -1DS	↓	↓	(*)		0.88	.0009 90%
7	↓ -1SD	↓	↓	(*)		0.89	.0009 90%
8	6670-2	↓	↓			<.2	<.0002
9	↓ -3	↓	↓			↓	↓
10	6712-2	↓	↓			↓	↓
11	6729-1	↓	↓			↓	↓
12	↓ -1S	↓	↓	(*)		0.92	.0009 90%
13	↓ -1SD	↓	↓	(*)		0.86	.0009 90%
14	CCV-2	3.0 ppb				3.01	100%
15	CCB-2					<.2	<.0002
16	6729-2	20ml	20ml			↓	↓
17	↓ -3	↓	↓			↓	↓
18	6681-1	↓	↓			↓	↓
19	↓ -1D	↓	↓			↓	↓
20	↓ -1S	↓	↓	(*)		0.95	.0010 100%
21	6731-1	↓	↓			<.2	<.0002
22	-3	↓	↓			↓	↓
23	-3S	↓	↓	(*)		1.01	.0010 100%
24	-3SD	↓	↓	(*)		0.98	.0010 100%
25	-4	↓	↓			<.2	<.0002

COMMENTS:

SPIKE LEVEL: (*) 1.0 ppb

ANALYST Sandy Brush	DATE: 11/21/91	PAGE Number:
REVIEWER	DATE:	

[AWKSGFA1.FRM]

Varian SpectrAA 10/20 System Report

Columbia Analytical Services
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11 21 91
BATCH NO.

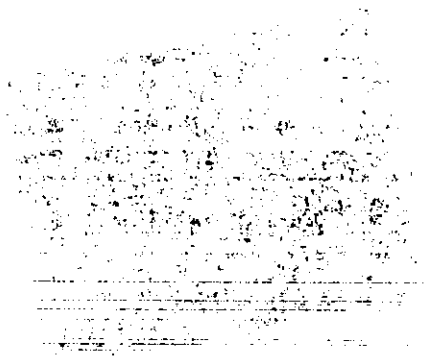
PROGRAM 23 Hg

Sandy Brush

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
BLANK	0.00		0.001	0.001	0.001	0.001
STANDARD 1	1.00	1.2	0.018	0.018	0.018	0.018
STANDARD 2	3.00	1.4	0.051	0.051	0.051	0.052
STANDARD 3	5.00	0.5	0.083	0.084	0.083	0.083
STANDARD 4	10.00	0.5	0.177	0.177	0.177	0.178
SAMPLE 1 ICV, LCS	5.43	1.4	0.091	0.090	0.092	0.092
SAMPLE 2 CCV'	3.07	1.0	0.052	0.053	0.052	0.052
SAMPLE 3 CCB'	-0.00	99.9	-0.000	0.000	-0.000	-0.000
SAMPLE 4 PB	-0.01	99.9	-0.000	-0.000	0.000	-0.000
SAMPLE 5	-0.00	99.9	-0.000	0.001	-0.001	-0.000
SAMPLE 6	0.88	2.0	0.016	0.016	0.016	0.015
SAMPLE 7	0.89	3.7	0.016	0.016	0.015	0.016
SAMPLE 8	0.04	50.5	0.001	0.001	0.000	0.001
SAMPLE 9	0.02	60.6	0.000	0.000	0.000	0.000
SAMPLE 10	0.04	66.8	0.001	0.000	0.001	0.000
SAMPLE 11 6729-1	0.01	57.7	0.000	0.000	0.000	0.000
SAMPLE 12	0.92	1.5	0.016	0.016	0.017	0.016
SAMPLE 13	0.86	1.1	0.015	0.015	0.015	0.016
SAMPLE 14 CCV2	3.01	1.3	0.051	0.051	0.052	0.052
SAMPLE 15 CCB2	0.01	73.9	0.000	0.000	0.000	0.000
SAMPLE 16 6729-2	0.02	56.9	0.000	0.000	0.001	0.000
SAMPLE 17 6729-3	0.03	69.7	0.001	0.000	0.001	0.000
SAMPLE 18	0.02	30.8	0.000	0.000	0.000	0.000
SAMPLE 19	0.02	99.9	0.000	0.001	-0.000	0.000
SAMPLE 20	0.95	1.5	0.017	0.017	0.016	0.017
SAMPLE 21	0.02	68.3	0.000	0.000	0.000	0.001
SAMPLE 22	0.03	95.9	0.001	0.000	0.000	0.001
SAMPLE 23	1.01	1.5	0.018	0.018	0.018	0.018
SAMPLE 24	0.98	1.2	0.017	0.017	0.017	0.018
SAMPLE 25	0.03	28.3	0.001	0.001	0.000	0.001
SAMPLE 26 CCV3	3.22	0.7	0.055	0.055	0.054	0.055
SAMPLE 27 CCB3	0.02	90.1	0.000	0.000	0.000	0.001
SAMPLE 28	0.05	7.5	0.001	0.001	0.001	0.001
SAMPLE 29	0.04	27.1	0.001	0.001	0.001	0.001
SAMPLE 30	0.04	14.1	0.001	0.001	0.001	0.001
SAMPLE 31	0.02	69.4	0.000	0.000	0.000	0.001
SAMPLE 32	0.03	68.8	0.000	0.000	0.001	0.000
SAMPLE 33	0.04	47.2	0.001	0.001	0.001	0.000
SAMPLE 34	0.03	99.9	0.001	0.001	-0.000	0.001
SAMPLE 35	-0.02	73.7	-0.000	-0.000	-0.000	-0.000
SAMPLE 36	9.58	0.2	0.169	0.169	0.169	0.169
SAMPLE 37	-0.04	9.2	-0.001	-0.001	-0.001	-0.001

SAMPLE	CONC	%RSD	MEAN ABS	READINGS		
MPLE 39	-0.03	13.2	-0.000	-0.000	-0.000	-0.001
NK	0.00		-0.001	-0.001	-0.001	-0.001
SAMPLE 40	-0.01	54.6	-0.000	-0.000	-0.000	-0.000
SAMPLE 41	0.01	99.9	0.000	0.000	0.001	-0.001
SAMPLE 42	10.37	1.0	0.185	0.183	0.185	0.187
SAMPLE 43	0.01	99.9	0.000	0.000	-0.000	0.000
SAMPLE 44	0.06	42.9	0.001	0.001	0.001	0.001
SAMPLE 45	0.05	27.8	0.001	0.001	0.001	0.001
SAMPLE 46	0.10	21.4	0.002	0.002	0.001	0.002
SAMPLE 47	0.09	3.6	0.002	0.002	0.002	0.002
SAMPLE 48	0.08	21.0	0.001	0.002	0.001	0.001
SAMPLE 49	3.29	1.1	0.056	0.055	0.056	0.056
SAMPLE 50	3.17	0.5	0.054	0.054	0.054	0.054
SAMPLE 51	0.03	65.7	0.001	0.001	0.000	0.000
SAMPLE 52	10.61	0.4	0.190	0.189	0.190	0.190
SAMPLE 53	3.13	0.5	0.053	0.053	0.054	0.054
SAMPLE 54	0.02	99.9	0.000	0.000	0.001	-0.000

Sandy Brush 11/21/91



COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6670

SAMPLE NUMBER:		SERVICE REQUEST # : 6694/6641/6670/6712
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6694-PBS		100	—	—	<1	<2.0
2	-1	0.096g Dry		1	2	3.8	7.9
3	-1A					15.6	RERUN
4	-1D					3.5	7.3
5	-1A					14.2	104%
6	-1S					14.5	30/105%
7	-2	0.074g				3.0	8.1
8	-3	0.078g				2.9	7.4
9	-4	0.070g				2.7	7.7
10	CCV (40)					42.0	105%
11	CCB					<1	<0.001
12	6694-PBW		50	—	—	<1	<0.001
13	-5	50		—	—	<2	<0.002
14	-5A			—	—	23.2	116% *
15	-5D			—	—	<1	<0.001
16	-5S			—	—	12.4	0.012/120%
17	6641/6670/6712 PBW		50			<1	<0.001
18	LCSW			1	2	24.1	96%
19	6641-1	50		—	—	<1	<0.001
20	-1A			—	—	12.0	120%
21	CCV (40)					41.0	105% 102% 11/25
22	CCB					<1	<0.001
23	6641-1S	50	50	—	—	22.4	0.022/110%
24	-1SD			—	—	22.9	0.023/115%
25	6670-2			—	—	<1	<0.001

COMMENTS: * post spiked w/ 20 µg/l

SPIKE LEVEL: 20 µg/l (2 mg/kg Dry) A: +10 µg/l

ANALYST: Ivan Urrutia	DATE: 11/22/91	PAGE NUMBER: 3
REVIEWER: [illegible]	DATE: 11-24-9[illegible]	

CLMCSGFA1.FRM

Varian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F VARIAN-5
1317 South 13th P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR Ivan Unreaten
DATE 11/22/91 08:00
BATCH

PROGRAM 12 Se EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.003	0.004	0.002
STANDARD 1	5.0	7.3	0.008	0.008	0.008
STANDARD 2	30.0	1.0	0.054	0.053	0.054
STANDARD 3	40.0	2.2	0.072	0.074	0.071
STANDARD 4	50.0	0.3	0.092	0.091	0.092
SAMPLE 1 ICV1	26.8 1:2	2.6	0.047	0.048	0.047
SAMPLE 2 CCV1	40.4	3.0	0.073	0.072	0.075
SAMPLE 3 CCB1	-0.3	99.9	-0.000	0.000	-0.001
SAMPLE 4	0.5	47.0	0.001	0.001	0.001
SAMPLE 5	0.2	71.7	0.000	0.000	0.000
SAMPLE 6	11.5	3.1	0.019	0.019	0.019
SAMPLE 7	-1.9	11.3	-0.003	-0.003	-0.003
SAMPLE 8	7.0	1.5	0.011	0.011	0.011
SAMPLE 9	39.2	0.6	0.071	0.071	0.071
SAMPLE 10	-0.4	99.9	-0.001	0.000	-0.002
SAMPLE 11	-10.0	1.3	-0.016	-0.016	-0.016
SAMPLE 12	-3.3	10.3	-0.005	-0.006	-0.005
SAMPLE 13	6.6	1.0	0.011	0.011	0.011
SAMPLE 14	-1.7	25.7	-0.003	-0.003	-0.002
SAMPLE 15	9.7	7.5	0.016	0.015	0.017
SAMPLE 16	41.1	0.1	0.075	0.075	0.074
SAMPLE 17	0.6	75.4	0.001	0.000	0.001
SAMPLE 18	-0.3	96.2	-0.000	-0.000	-0.001
SAMPLE 19	20.8	3.2	0.036	0.035	0.037
SAMPLE 20	28.8	1.9	0.051	0.052	0.051
SAMPLE 21	-0.4	0.0	-0.001	-0.001	-0.001
SAMPLE 22	-0.5	99.9	-0.001	-0.000	-0.002
SAMPLE 23	10.8	4.7	0.018	0.017	0.018
SAMPLE 24	9.8	6.3	0.016	0.015	0.017
SAMPLE 25	9.5	3.3	0.016	0.015	0.016
SAMPLE 26	-0.1	0.0	-0.000	-0.000	-0.000
SAMPLE 27	-0.2	16.0	-0.000	-0.000	-0.000
SAMPLE 28	-0.3	51.6	-0.000	-0.001	-0.000
SAMPLE 29	0.2	0.0	0.000	0.000	0.000
SAMPLE 30	38.6	1.4	0.070	0.069	0.071
SAMPLE 31	0.5	14.8	0.001	0.001	0.001
SAMPLE 32	OVER	0.2	0.650*	0.651*	0.649*
SAMPLE 33	OVER	1.8	0.666*	0.658*	0.675*

Ivan Urcadez
11/22/91

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 34	OVER	2.9	0.248	0.253	0.243
SAMPLE 35	30.8	3.8	0.055	0.057	0.054
SAMPLE 36	39.6	1.1	0.072	0.072	0.071
SAMPLE 37	23.0	0.9	0.040	0.040	0.040
SAMPLE 38	31.3	2.8	0.056	0.057	0.055
SAMPLE 39	38.0	2.5	0.069	0.067	0.070
SAMPLE 40	-0.1	99.9	-0.000	0.000	-0.001
BLANK	0.0		-0.003	-0.004	-0.003
SAMPLE 1	-0.7	5.2	-0.001	-0.001	-0.001
SAMPLE 2	3.8	2.2	0.006	0.006	0.006
SAMPLE 3	15.6	5.1	0.026	0.027	0.025
SAMPLE 4	3.5	2.4	0.006	0.006	0.006
SAMPLE 5	14.2	4.1	0.024	0.024	0.023
SAMPLE 6	14.5	2.3	0.024	0.025	0.024
SAMPLE 7	3.0	0.0	0.005	0.005	0.005
SAMPLE 8	2.9	1.3	0.005	0.005	0.005
SAMPLE 9	2.7	59.8	0.004	0.003	0.006
SAMPLE 10 CCV2	42.0	1.6	0.076	0.075	0.077
SAMPLE 11 CCB2	-0.7	41.5	-0.001	-0.002	-0.001
SAMPLE 12	-0.3	99.9	-0.000	-0.001	0.000
PLE 13	1.0	25.3	0.002	0.001	0.002
SAMPLE 14	23.2	2.7	0.040	0.039	0.041
SAMPLE 15	0.6	95.9	0.001	0.002	0.000
SAMPLE 16	12.4	3.4	0.020	0.021	0.020
SAMPLE 17	-0.2	99.9	-0.000	0.000	-0.001
SAMPLE 18 LCS	24.1	2.1	0.042	0.041	0.043
SAMPLE 19	-0.1	99.9	-0.000	0.001	-0.002
SAMPLE 20	12.0	2.1	0.020	0.019	0.020
SAMPLE 21 CCV3	41.0	1.0	0.074	0.075	0.074
SAMPLE 22 CCB3	0.1	99.9	0.000	0.001	-0.001
SAMPLE 23	22.4	0.3	0.039	0.039	0.039
SAMPLE 24	22.9	0.5	0.040	0.040	0.039
SAMPLE 25	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 26	11.9	0.0	0.020	0.020	0.019
SAMPLE 27	0.4	99.9	0.001	-0.001	0.002
SAMPLE 28	0.7	16.6	0.001	0.001	0.001
SAMPLE 29	13.5	1.7	0.022	0.022	0.023
SAMPLE 30	43.7	0.0	0.079	0.079	0.079
SAMPLE 31	0.6	66.4	0.001	0.001	0.000
SAMPLE 32	11.5	20.3	0.019	0.022	0.016
SAMPLE 33	-0.2	66.5	-0.000	-0.000	-0.000
SAMPLE 34	0.5	0.0	0.001	0.001	0.001
SAMPLE 35	12.0	2.3	0.020	0.020	0.019
SAMPLE 36	11.6	5.2	0.019	0.018	0.020
SAMPLE 37	11.9	0.0	0.020	0.020	0.020
PLE 38	-0.2	0.0	-0.000	-0.000	-0.000
PLE 39	-0.2	24.1	-0.000	-0.000	-0.000
SAMPLE 40	-0.0	99.9	-0.000	0.001	-0.001
SAMPLE 41	-0.6	82.8	-0.001	-0.000	-0.001
SAMPLE 42	-0.5	65.3	-0.001	-0.000	-0.001
SAMPLE 43	40.1	3.1	0.073	0.071	0.074

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6608

SAMPLE NUMBER:		SERVICE REQUEST #: 6535/6565/6729
ANALYSIS FOR: Se	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6535/6565 PBW		50	—	—	<1	<0.001
2	6535-1	50		—	—	<1	<0.001
3	-1A			—	—	10.0	100%
4	-1D			—	—	<1	<0.001
5	-1S			—	—	9.6	96%
6	-2			—	—	<1	<0.001
7	-4			—	—	<1	<0.001
8	-6			—	—	<1	<0.001
9	-1 DISS			—	—	<1	<0.001
10	-2			—	—	<1	<0.001
11	CCV					41.4	104%
12	CCB					<1	<0.001
13	6535-4 DISS	50	50	—	—	<1	<0.001
14	-6			—	—	<1	<0.001
15	6565-1 TOTAL			—	—	<1	<0.001
16	-1A			—	—	9.2	92%
17	-2			—	—	1.3	0.001
18	-1 DISS			—	—	<1	<0.001
19	-2			—	—	1.3	0.001
20	CCV					42.6	106%
21	CCB					<1	<0.001
22	6729-PBW		50	—	—	<1	<0.001
23	-1	50		—	—	<1	<0.001
24	-1A			—	—	11.7	117%
25	-2			—	—	<1	<0.001

COMMENTS:

SPIKE LEVEL: 10 µg/l A: +10 µg/l

ANALYST	Ivan Chvatal	DATE: 11/29/91	PAGE NUMBER: 3
REVIEWER	CJ Bruno	DATE: 12/2/91	

(AWCSGFA1.FRM)

[illegible]PLE 21	0.1	99.9	0.000	0.001	-0.001
SAMPLE 22	6.3	7.3	0.014	0.013	0.015
SAMPLE 23	0.8	27.6	0.002	0.002	0.002
SAMPLE 24	1.3	99.9	0.003	0.006	-0.000
SAMPLE 25	0.6	99.9	0.001	0.002	0.000
SAMPLE 26	38.0	11.0	0.087	0.081	0.094
SAMPLE 27	0.1	99.9	0.000	0.001	-0.001
BLANK	0.0		-0.000	-0.000	-0.000
RESLOPE 3	40.0	4.0	0.083	0.081	0.086
SAMPLE 28	3.1	46.5	0.006	0.008	0.004
SAMPLE 29	2.4	1.2	0.005	0.005	0.005
SAMPLE 30	0.0	99.9	0.000	-0.000	0.000
SAMPLE 31	0.2	99.9	0.000	0.000	0.001
SAMPLE 32	9.8	1.5	0.020	0.020	0.020
SAMPLE 33	0.3	0.0	0.001	0.001	0.001
SAMPLE 34	8.0	5.7	0.016	0.016	0.017
SAMPLE 35	37.0	0.6	0.078	0.077	0.078
SAMPLE 36	0.2	99.9	0.000	0.001	-0.000

BLANK	0.0		0.001	0.001	0.000
SAMPLE 1	0.3	28.3	0.001	0.001	0.000
SAMPLE 2	0.7	0.0	0.001	0.001	0.001
S LE 3	10.0	0.8	0.021	0.020	0.021
SAMPLE 4	0.8	6.3	0.002	0.002	0.002
SAMPLE 5	9.6	3.0	0.020	0.020	0.019
SAMPLE 6	0.9	63.7	0.002	0.003	0.001
SAMPLE 7	0.7	27.2	0.001	0.002	0.001
SAMPLE 8	0.6	67.3	0.001	0.002	0.001
SAMPLE 9	0.5	31.1	0.001	0.001	0.001
SAMPLE 10	0.5	47.8	0.001	0.001	0.001
SAMPLE 11 ~~CCV~~	41.4	1.6	0.095	0.094	0.096
SAMPLE 12 CCB	0.6	41.9	0.001	0.002	0.001
SAMPLE 13	0.7	49.2	0.001	0.001	0.002
SAMPLE 14	0.4	0.0	0.001	0.001	0.001
SAMPLE 15	0.9	4.7	0.002	0.002	0.002
SAMPLE 16	9.2	3.7	0.019	0.018	0.019
SAMPLE 17	1.3	0.0	0.003	0.003	0.003
SAMPLE 18	0.6	0.0	0.001	0.001	0.001
SAMPLE 19	1.3	23.3	0.003	0.002	0.003
SAMPLE 20 CCV5	42.6	1.4	0.088	0.087	0.089
SAMPLE 21 CCB5	0.0	99.9	0.000	0.002	-0.002

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PLE 22 6729 PBW	-0.2	99.9	-0.000	-0.001	0.000
SAMPLE 23 6729-1	0.4	28.8	0.001	0.001	0.001
SAMPLE 24	11.7	4.2	0.024	0.023	0.025
SAMPLE 25 6729-2	0.2	25.6	0.000	0.000	0.000
SAMPLE 26 6729-3	0.0	99.9	0.000	0.000	-0.000

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 27 6729 PBW	-0.2	99.9	-0.000	-0.001	0.000
SAMPLE 28	OVER	2.0	0.636B	0.627B	0.645B
SAMPLE 29	OVER	15.7	0.764B	0.849B	0.679B
BLANK	0.0		0.002	0.002	0.002
SAMPLE 30	OVER	0.2	0.929B	0.927B	0.931B
SAMPLE 31	13.0B	35.5	0.027B	0.033B	0.020
SAMPLE 32 CCV6	38.2	6.5	0.080	0.084	0.076
BLANK	0.0		-0.001	-0.001	-0.000
SAMPLE 33 CCB6	-0.3	14.3	-0.001	-0.001	-0.001
SAMPLE 34	15.5B	12.8	0.032B	0.035	0.029B
SAMPLE 35	22.5B	29.8	0.047B	0.057B	0.037B
SAMPLE 36	OVER	27.3	0.820B	0.979B	0.662B
SAMPLE 37	0.6	33.1	0.001	0.001	0.001
SAMPLE 38	30.6B	6.8	0.064B	0.067B	0.061B
SAMPLE 39	OVER	16.9	0.834B	0.934B	0.735B
SAMPLE 40	37.5	0.9	0.079	0.079	0.078
SAMPLE 41	0.9	15.1	0.002	0.002	0.002

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # : 6633
ANALYSIS FOR: Tl	METHOD: GFAA	6593, 6516, 6631, 6641, 6694

DATA

Sample Pos.	Lab Code	Initial Sample (g)	(ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(ug/L or mg/Kg) Sample (actual)
1	ICV (100.7)				1	2	50.6	100%
2	CCV1 (40)	—		—	—	—	39.2	98%
3	CCB1	—		—	—	-	<1	<0.001
4	6593-PBS	—		50	1	1	<1	<0.2
5	1	0.25		50	1	2	1.1	0.4
6	1A	+		50	1	2	19.8	94%
7	6633, 6516-PBS	—		100	1	1	<1	<0.2
8	6	.50		100	1	2	3.6	1.4
9	6A	.50		100	1	2	23.4	99%
10	6631-PBW	50		50	—	—	<1	<0.001
11	CCV 2	—		—	—	—	38.5	96%
12	CCB 2	—		—	—	—	<1	<0.001
13	2	50		50	1	1	~~1.5~~ <2	<0.002
14	2A	50		50	1	1	19.5	98%
15	6641-PBW	50		50	1	1	<1	<0.001
16	LCSW (100.9)				1	5	19.5	97%
17	1				1	1	<1	<0.001
18	1A				1	1	20.4	102%
19	1S				1	1	OVER Highest ABS	—
20	1sd	↓		↓	1	1	over ↓ ↓	—
21	6694-PBS			100	1	1	<1	<1.0
22	1	.096		100	1	2	1.4	2.9
23	ICV 3	—		—	—	—	38.7	97%
24	CCB3	—		—	—	—	<1	<0.001
25	1A	.096		100	1	2	20.1	94%

COMMENTS:

SPIKE LEVEL: 6641 @ 100ug/L or 0.10 mg/L Aa: +20

ANALYST	DATE: 11-22-91	PAGE NUMBER: 1
REVIEWER	DATE:	

CAMCSGFAT_FRM1

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6641

SAMPLE NUMBER:		SERVICE REQUEST # :
ANALYSIS FOR: TI	METHOD: GFAA	6712, 6641 6748, 6633

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
1	6712-PBW	50	50	1	1	<1	<0.001
2	2	50	50			<1	<0.001
3	2A	50	50			18.4	92%
4	6641-~~55~~ 1S	50	50	1	2	43.8	0.088 / 88%
5	~~5d~~ 1Sd			1	2	45.5	0.091 / 91%
6	6748-PB		10	1	1	<1	<0.1
7	1	.123 As Rec'd	10	1	2	<1	<0.2
8	1A	.121		1	2	18.1	90%
9	1S EA 12/3	.125		1	2	20.8	3.3 / 82%
10	CCV ~~4~~ 5	—	—	—	—	37.2	93%
11	CCB ~~4~~ 5	—	—	—	—	<1	<0.001
12	6633-PBS	- with 6516 -		1	1	- w/6516 -	—
13	4	1.0 As Rec'd	100	1	2	2.9	0.6
14	4A					22.1	96%
15	4S					46.9	9.38 / 94%
16	4Sd					47.5	9.5 / 95%
17	8					2.8	0.6
18	12					3.0	0.6
19	16					2.7	0.6
20	20					2.1	0.4
21	CCV	—	—	—	—	38.2	96%
22	CCB	—	—	—	—	<1	<0.001
23							
24							
25							

COMMENTS: 6748 @ 50mg/L or → 4mg/kg → 0.10mg/L 6633 @ ~~50mg/L~~ 100mg/L or ~~5mg/kg~~ 10mg/kg

SPIKE LEVEL: 6641 @ 100mg/L OR ~~0.010mg/L~~ A: +20

ANALYST [signature]	DATE: 11-22-91	PAGE NUMBER: 3
REVIEWER	DATE:	

(AWKSGFA1.FRM)

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET

PRINTOUT WITH: 6608

SAMPLE NUMBER:		SERVICE REQUEST # : 6729/6730
ANALYSIS FOR: SE	METHOD: GFAA	

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/Kg) Sample (actual)
26	6729-3	50	50	—	—	<1	<0.001
27	6730-PBW		50	—	—	<1	<0.001
28	-1	50		—	—	BACKGROUND	RERUN
29	-1A			—	—		
30	-2			—	—		
31	-3			—	—		
32	CCV					38.2	96%
33	CCB					<1	<0.001
34	6730-3S	50	50	—	—	BACKGROUND	RERUN
35	-3SD			—	—		
36	-4			—	—		
37	-5			—	—	<1	<0.001
38	-6			—	—	BACKGROUND	RERUN
39	-7			—	—		
40	CCV					37.5	94%
41	CCB					<1	<0.001
42							
43							
44							
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: A:

ANALYST Ivan Chevalier	DATE: 11/29/91	PAGE NUMBER: 4
REVIEWER	DATE:	

[AWKSGFAZ.FRM]

arian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso. WA 98626 (206) 577-7222

OPERATOR Ivan Ulrich
DATE 11/29/91 Time 09:00
BATCH

PROGRAM 25 Se EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.005	0.006	0.004
STANDARD 1	5.0	3.9	0.011	0.012	0.011
STANDARD 2	30.0	0.7	0.070	0.070	0.071
STANDARD 3	40.0	0.6	0.092	0.092	0.091
STANDARD 4	50.0	1.8	0.119	0.118	0.121
SAMPLE 1 ICV 2	25.9 1:2	2.8	0.060	0.059	0.062
SAMPLE 2 CCV4	41.4	1.6	0.095	0.094	0.096
SAMPLE 3 CCB4	0.6	41.9	0.001	0.002	0.001
SAMPLE 4	0.4	13.4	0.001	0.001	0.001
SAMPLE 5	OVER	34.0	0.486B	0.369B	0.603B
SAMPLE 6	OVER	2.4	0.425B	0.432B	0.418B
SAMPLE 7	1.4	11.4	0.003	0.003	0.004
SAMPLE 8	2.7	17.7	0.006	0.007	0.005
SAMPLE 9	2.2	21.0	0.005	0.006	0.004
SAMPLE 10	2.4	31.6	0.005	0.004	0.007
SAMPLE 11	0.9	64.7	0.002	0.001	0.003
SAMPLE 12	2.3	5.9	0.005	0.005	0.006
SAMPLE 13	OVER	7.4	0.153B	0.145B	0.161B
SAMPLE 14	36.8	1.1	0.085	0.085	0.086
SAMPLE 15	0.8	75.6	0.002	0.003	0.001
SAMPLE 16	OVER	15.0	0.185B	0.165B	0.204B
SAMPLE 17	OVER	34.4	0.157B	0.195B	0.119B
SAMPLE 18	OVER	9.6	0.189B	0.202B	0.176B
SAMPLE 19	OVER	17.4	0.286B	0.321B	0.251B
SAMPLE 20	7.8B	63.2	0.018B	0.010B	0.026B
SAMPLE 21	-0.0	99.9	-0.000	0.000	-0.000

arian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.002	0.001	0.003
STANDARD 1	10.0	5.4	0.019	0.018	0.020
STANDARD 2	20.0	3.3	0.037	0.038	0.036
STANDARD 3	40.0	0.5	0.070	0.070	0.070
STANDARD 4	60.0	0.7	0.099	0.098	0.099
SAMPLE 1 ICV	50.6 1:2	0.8	0.086	0.085	0.086
SAMPLE 2 CCV1	39.2	1.0	0.069	0.068	0.069
SAMPLE 3 CCB1	0.4	99.9	0.001	0.003	-0.001
SAMPLE 4	0.9	35.3	0.002	0.001	0.002
SAMPLE 5	1.1	17.1	0.002	0.002	0.002
SAMPLE 6	19.8	0.2	0.036	0.036	0.036
SAMPLE 7	0.4	40.3	0.001	0.001	0.001
SAMPLE 8	3.6	6.5	0.007	0.007	0.007
SAMPLE 9	23.4	1.4	0.043	0.042	0.043
SAMPLE 10	0.3	99.9	0.001	0.000	0.001
SAMPLE 11 CCV2	38.5	1.4	0.067	0.068	0.067
SAMPLE 12 CCB2	0.7	28.3	0.001	0.002	0.001
SAMPLE 13	1.5	28.7	0.003	0.003	0.002
SAMPLE 14	19.5	2.2	0.036	0.037	0.035
SAMPLE 15 PB	-0.5	99.9	-0.001	0.001	-0.003
SAMPLE 16 LCS	19.5 1:5	3.6	0.036	0.035	0.037
SAMPLE 17	0.2	99.9	0.000	-0.000	0.001
SAMPLE 18	20.4	0.4	0.038	0.038	0.037
SAMPLE 19	OVER	0.5	0.148	0.148	0.147
SAMPLE 20	OVER	1.3	0.147	0.145	0.148
SAMPLE 21	0.9	0.0	0.002	0.002	0.002
SAMPLE 22	1.4	26.8	0.003	0.003	0.002
SAMPLE 23 CCV3	38.7	1.4	0.068	0.067	0.069
SAMPLE 24 CCB3	0.4	19.1	0.001	0.001	0.001
SAMPLE 25	20.9	5.2	0.038	0.037	0.040
SAMPLE 26	0.2	64.1	0.000	0.001	0.000
SAMPLE 27	48.1	0.8	0.082	0.082	0.083
SAMPLE 28	0.6	19.6	0.001	0.001	0.001
SAMPLE 29	-0.3	99.9	-0.001	0.000	-0.001
SAMPLE 30	0.2	99.9	0.000	0.001	-0.001
SAMPLE 31	0.1	99.9	0.000	0.001	-0.001
SAMPLE 32	-0.7	75.7	-0.001	-0.002	-0.001
SAMPLE 33	0.0	99.9	0.000	0.001	-0.001
SAMPLE 34	48.5	0.0	0.083	0.083	0.083
SAMPLE 35 CCV4	37.2	1.1	0.065	0.066	0.065
SAMPLE 36 CCB4	0.1	99.9	0.000	0.000	0.001

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 39	19.1	0.0	0.035	0.035	0.035
SAMPLE 40	0.3	50.0	0.001	0.000	0.001
SAMPLE 41	-0.1	99.9	-0.000	0.000	-0.000
SAMPLE 42	19.4	0.5	0.036	0.036	0.036
SAMPLE 43	-0.3	99.9	-0.001	-0.000	-0.001
SAMPLE 44	37.1	2.3	0.065	0.066	0.064
SAMPLE 45	0.1	99.9	0.000	-0.002	0.002

JBlodgett
11-22-91

arian SpectrAA 300/400 Zeeman Report

Columbia Analytical Services F Varian-2
1317 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

11-22-91

OPERATOR
DATE 11/22/91 Time 07:30
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		0.004	0.005	0.002
SAMPLE 1	-1.2	7.0	-0.002	-0.002	-0.002
SAMPLE 2	-0.4	99.9	-0.001	-0.002	0.001
SAMPLE 3	18.4	1.2	0.034	0.034	0.034
SAMPLE 4	43.8	1.9	0.076	0.075	0.077
SAMPLE 5	45.5	1.6	0.078	0.077	0.079
SAMPLE 6	-0.3	79.0	-0.002	-0.002	-0.001
SAMPLE 7	-0.3	99.9	-0.001	-0.002	0.001
SAMPLE 8	18.1	0.5	0.034	0.034	0.034
SAMPLE 9 (12/3 EA)	20.8	6.1	0.038	0.040	0.037
IPLE 10 CCV45	37.2	1.7	0.065	0.066	0.065
SAMPLE 11 CCB45	-0.5	0.0	-0.001	-0.001	-0.001

BLANK	0.0		0.003	0.004	0.003
SAMPLE 13	2.9	0.0	0.005	0.005	0.005
SAMPLE 14	22.1	1.9	0.040	0.041	0.040
SAMPLE 15	46.9	1.0	0.080	0.080	0.081
SAMPLE 16	47.5	0.8	0.081	0.081	0.082
SAMPLE 17	2.8	16.4	0.005	0.005	0.006
SAMPLE 18	3.0	6.2	0.006	0.006	0.005
SAMPLE 19	2.7	11.4	0.005	0.005	0.006
SAMPLE 20	2.1	33.5	0.004	0.003	0.005
SAMPLE 21	38.2	0.8	0.067	0.067	0.067
SAMPLE 22	0.0	99.9	0.000	-0.000	0.000

11-22-91

COLUMBIA ANALYTICAL SERVICES, INC.
ANALYTICAL WORKSHEET PRINTOUT WITH: 6555

SAMPLE NUMBER:	SERVICE REQUEST # :
ANALYSIS FOR: Tl / METHOD: GFAA	6565, 6729, 6730 6588

DATA

Sample Pos.	Lab Code	Initial Sample (g) (ml)	Initial Dilution (ml)	Aliquot (ml)	Final Volume (ml)	(ug/L) measured	(mg/L or mg/kg) Sample (actual)
26	6565-2diss	50	50	1	1	<1	<0.001
27	6729-PBW	50	50			<1	<0.001
28	1					<1	<0.001
29	1A					18.8	94%
30	2					<1	<0.001
31	3					<1	<0.001
32	6730-PBW	50	50			<1	<0.001
33	5					~~<1~~ <2	<0.002
34	5A					18.7	94%
35	CCV	—		—	—	39.5	99%
36	CCB	—	—	—	-	<1	<0.001
37	6	50	50	1	1	1.4	0.001
38	~~CCV~~ 6588-2	—	—	— 1	2 —	<1	<0.002
39	~~CCB~~ 6588-2A	—	—	— 1	2 —	16.2	81%
40	6588-2D			1	2	1.5	0.003
41	6585-25			1	2	17.1	34.2 | 68%
42	CCV	—	—	—	—	38.8	97%
43	CCB	—	—	—	-	<1	<0.001
44							
45							
46							
47							
48							
49							
50							

COMMENTS:

SPIKE LEVEL: A: +20

ANALYST	DATE: 11-25-91	PAGE NUMBER: 4
REVIEWER	DATE: 11-26-91	

CASWSOFA2.FRM

Varian SpectrAA 300/400 Zeeman Report

umbia Analytical Services F Varian-2
..17 South 13th Street P.O. Box 479
Kelso, WA 98626 (206) 577-7222

OPERATOR Jim Blodgett
DATE 11/25/91 Time 10:00
BATCH T1

PROGRAM 26 T1 EPA PLATFORM

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
BLANK	0.0		-0.001	-0.001	-0.001
STANDARD 1	10.0	0.3	0.022	0.022	0.022
STANDARD 2	20.0	1.7	0.044	0.045	0.044
STANDARD 3	40.0	3.8	0.083	0.081	0.086
STANDARD 4	60.0	0.0	0.123	0.123	0.123
SAMPLE 1 ICV2	52.8	1.7	0.109	0.110	0.108
SAMPLE 2 CCV6	39.7	0.6	0.083	0.083	0.082
SAMPLE 3 CCB6	-0.2	47.0	-0.000	-0.000	-0.000
SAMPLE 4	-0.1	38.1	-0.000	-0.000	-0.000
SAMPLE 5	-0.3	99.9	-0.001	-0.001	0.000
SAMPLE 6	19.5	3.2	0.043	0.044	0.042
SAMPLE 7	-1.3	90.8	-0.003	-0.001	-0.005
SAMPLE 8	45.9	1.5	0.095	0.094	0.096
SAMPLE 9	-0.0	99.9	-0.000	-0.000	0.000
SAMPLE 10	0.5	53.0	0.001	0.002	0.001
SAMPLE 11	39.2	0.5	0.082	0.082	0.082
SAMPLE 12	-0.6	48.7	-0.001	-0.001	-0.002
SAMPLE 13	-0.3	21.4	-0.001	-0.001	-0.001
SAMPLE 14	-0.5	8.4	-0.001	-0.001	-0.001
SAMPLE 15	-0.4	0.0	-0.001	-0.001	-0.001
SAMPLE 16	-0.2	37.1	-0.000	-0.001	-0.000
SAMPLE 17	-0.4	24.8	-0.001	-0.001	-0.001
SAMPLE 18	-0.5	67.6	-0.001	-0.002	-0.001
SAMPLE 19	-0.6	7.1	-0.001	-0.001	-0.001
SAMPLE 20	-0.5	36.7	-0.001	-0.001	-0.001
SAMPLE 21	19.9	0.7	0.044	0.044	0.044
SAMPLE 22	0.0	99.9	0.000	0.000	-0.000
SAMPLE 23	38.9	1.4	0.082	0.081	0.082
SAMPLE 24	-0.2	19.8	-0.000	-0.001	-0.000
SAMPLE 25	0.5	7.4	0.001	0.001	0.001
SAMPLE 26	19.7	0.2	0.044	0.044	0.044
SAMPLE 27	0.1	99.9	0.000	0.001	-0.000
SAMPLE 28	40.7	0.1	0.085	0.085	0.085
SAMPLE 29	-0.0	99.9	-0.000	-0.001	0.000
SAMPLE 30	0.4	99.9	0.001	0.002	0.000
SAMPLE 31	0.3	43.1	0.001	0.000	0.001
SAMPLE 32	-0.2	30.7	-0.001	-0.000	-0.001
SAMPLE 33	-0.2	99.9	-0.000	-0.001	0.000
SAMPLE 34	-0.4	15.7	-0.001	-0.001	-0.001
SAMPLE 35	38.5	1.9	0.081	0.080	0.082
SAMPLE 36	0.0	99.9	0.000	-0.000	0.000
SAMPLE 37	0.2	19.8	0.000	0.000	0.001

	CONC ppb	%RSD	MEAN ABS	READINGS	
MPLE 38	-0.1	38.1	-0.000	-0.000	-0.000
MPLE 39	-0.2	35.1	-0.001	-0.000	-0.001
SAMPLE 40	0.2	99.9	0.000	-0.001	0.001
SAMPLE 41	19.9	0.6	0.044	0.044	0.044
SAMPLE 42	-0.6	7.1	-0.001	-0.001	-0.001
SAMPLE 43	39.0	1.4	0.082	0.083	0.081
SAMPLE 44	-0.0	99.9	-0.000	0.001	-0.001
BLANK	0.0		-0.001	-0.000	-0.001
SAMPLE 1	-0.2	46.8	-0.000	-0.000	-0.001
SAMPLE 2	18.7	2.3	0.042	0.041	0.042
SAMPLE 3	-0.1	70.2	-0.000	-0.000	-0.000
SAMPLE 4	44.3	0.0	0.092	0.092	0.092
SAMPLE 5	0.2	99.9	0.000	-0.000	0.001
SAMPLE 6	41.2B	16.7	0.086B	0.096B	0.076B
SAMPLE 7	39.7B	21.6	0.083B	0.070B	0.095B
SAMPLE 8	41.3B	15.5	0.086B	0.077B	0.096B
SAMPLE 9	OVER	2.3	0.151B	0.149B	0.154B
SAMPLE 10	1.2	73.1	0.003	0.001	0.004
SAMPLE 11	40.7	0.9	0.085	0.085	0.084
SAMPLE 12	0.4	99.9	0.001	0.002	0.000
SAMPLE 13	0.4	23.5	0.001	0.001	0.001
SAMPLE 14	0.4	36.1	0.001	0.001	0.001
SAMPLE 15	1.1	54.4	0.002	0.001	0.003
SAMPLE 16	0.1	99.9	0.000	0.000	0.000
SAMPLE 17	0.5	35.1	0.001	0.001	0.001
SAMPLE 18	2.0	13.7	0.004	0.004	0.005
PLE 19	-0.1	99.9	-0.000	-0.000	0.000
SAMPLE 20	-0.1	99.9	-0.000	-0.000	0.000
SAMPLE 21	19.3	1.3	0.043	0.042	0.043
SAMPLE 22	0.1	99.9	0.000	0.000	-0.000
SAMPLE 23 CCV 7	39.5	0.6	0.083	0.082	0.083
SAMPLE 24 CCB 7	0.3	60.2	0.001	0.001	0.000
SAMPLE 25	0.1	99.9	0.000	0.001	-0.000
SAMPLE 26	0.3	98.3	0.001	0.001	0.000
SAMPLE 27 PBW	0.6	71.9	0.001	0.002	0.001
SAMPLE 28 6729-1PBW	0.6	59.3	0.001	0.001	0.002
SAMPLE 29 -1A	18.8	0.6	0.042	0.042	0.042
SAMPLE 30 6729-2	0.6	28.3	0.001	0.002	0.001
SAMPLE 31 -3	0.9	26.4	0.002	0.002	0.002
SAMPLE 32	0.5	87.0	0.001	0.002	0.000
SAMPLE 33	1.1	6.5	0.002	0.002	0.003
SAMPLE 34	18.9	3.3	0.042	0.041	0.043
SAMPLE 35 CCV 8	39.5	0.5	0.083	0.082	0.083
SAMPLE 36 CCB 8	0.9	6.1	0.002	0.002	0.002
SAMPLE 37	1.4	39.6	0.003	0.002	0.004
SAMPLE 38	0.8	28.3	0.002	0.002	0.001
SAMPLE 39	16.2	5.7	0.036	0.037	0.034
SAMPLE 40	1.5	10.1	0.003	0.003	0.003
SAMPLE 41	17.1	1.5	0.038	0.038	0.037
SAMPLE 42	38.8	1.0	0.081	0.082	0.081
SAMPLE 43	0.3	99.9	0.001	0.002	-0.001
SAMPLE 44	0.4	68.6	0.001	0.000	0.001

J. Body
11-25-91

11-25-91

BLANK	0.0		0.002	0.002	0.002
RESLOPE 3	40.0	0.2	0.082	0.082	0.082
SAMPLE 1	39.7	0.7	0.082	0.081	0.082
SAMPLE 2	0.1	99.9	0.000	0.001	-0.001
SAMPLE 3	-0.1	19.0	-0.000	-0.000	-0.000

SAMPLE	CONC ppb	%RSD	MEAN ABS	READINGS	
SAMPLE 4	-0.0	99.9	-0.000	0.000	-0.000
SAMPLE 5	19.0	0.2	0.041	0.041	0.041
SAMPLE 6	0.0	99.9	0.000	0.000	0.000
SAMPLE 7	21.2	1.8	0.046	0.047	0.046
SAMPLE 8	-0.2	99.9	-0.001	0.000	-0.001
SAMPLE 9	-0.1	99.9	-0.000	-0.001	0.000
SAMPLE 10	8.3	1.1	0.018	0.018	0.018
SAMPLE 11	38.6	0.2	0.080	0.080	0.080
SAMPLE 12	-0.5	69.2	-0.001	-0.001	-0.002
SAMPLE 13	-0.8	3.7	-0.002	-0.002	-0.002
SAMPLE 14	-0.1	94.3	-0.000	-0.000	-0.000
SAMPLE 15	17.9	0.8	0.039	0.039	0.039
SAMPLE 16	-0.2	59.5	-0.000	-0.001	-0.000
SAMPLE 17	-0.1	60.2	-0.000	-0.000	-0.000
SAMPLE 18	38.2	2.3	0.079	0.078	0.080
SAMPLE 19	-0.4	64.1	-0.001	-0.001	-0.000
SAMPLE 20	-0.3	20.5	-0.001	-0.001	-0.001
SAMPLE 21	-0.7	59.4	-0.002	-0.001	-0.002
SAMPLE 22	-0.4	99.9	-0.001	0.000	-0.002
SAMPLE 23	-0.6	45.4	-0.001	-0.002	-0.001
SAMPLE 24	-0.3	58.8	-0.001	-0.001	-0.000
SAMPLE 25	-0.4	63.6	-0.001	-0.001	-0.001
SAMPLE 26	-0.2	19.8	-0.000	-0.000	-0.001
SAMPLE 27	-0.3	75.4	-0.001	-0.001	-0.000
SAMPLE 28	0.1	99.9	0.000	0.000	0.000
SAMPLE 29	-0.3	99.9	-0.001	-0.001	0.000
SAMPLE 30	-0.3	99.9	-0.001	0.000	-0.001
SAMPLE 31	-0.5	72.1	-0.001	-0.002	-0.001
SAMPLE 32	-0.3	99.9	-0.001	-0.000	-0.001
SAMPLE 33	-0.4	26.0	-0.001	-0.001	-0.001

:hod: EPACLP1 Standard: STD1-Blank

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Avge	.0168	-.0009	.0011	.0042	.0009	.0051	.0000
#1	.0167	-.0006	.0016	.0043	.0009	.0051	.0000
#2	.0169	-.0011	.0007	.0041	.0010	.0050	.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Avge	.0834	.0008	-.0001	.0011	.0316	.0010	.0004
#1	.0831	.0010	-.0004	.0011	.0317	.0010	.0003
#2	.0836	.0006	.0001	.0010	.0314	.0010	.0004

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Avge	.0003	.0001	.0004	.0004	.3536	-.0013	-.0001
#1	.0005	.0001	.0003	.0010	.3536	-.0006	.0000
#2	.0001	.0000	.0004	-.0003	.3537	-.0020	-.0003

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Avge	.1083	-.0026	.0002	.0002	.0483	.0104	.0009
#1	.1074	-.0051	.0001	.0003	.0487	.0101	.0009
#2	.1091	-.0001	.0003	.0001	.0479	.0106	.0009

em	Tl1908	Li6707	Sr4215
Avge	.0030	.0270	.0000
#1	.0027	.0271	.0000
#2	.0032	.0269	.0000

thod: EPACLP1 Standard: STD3

Elem	Al3082	As1936	Be3130	Ca3179	Co2286	Cu3247	Fe2599
Avge	2.657	.4219	.4640	3.312	.2443	.4153	4.623
#1	2.657	.4209	.4640	3.311	.2441	.4157	4.621
#2	2.657	.4230	.4640	3.312	.2444	.4149	4.626

Elem	Pb2203	Mg2795	Mg3832	Mn2576	Mo2020	Se1960	V_2924
Avge	2.229	4.598	.4723	.3831	.2353	.3471	.3647
#1	2.227	4.595	.4725	.3830	.2357	.3496	.3646
#2	2.231	4.601	.4721	.3831	.2349	.3446	.3649

Elem	Zn2138	Ti3349
Avge	1.091	.4371
#1	1.091	.4369
#2	1.092	.4374

thod: EPACLP1 Standard: STD2

Elem	Sb2068	Ba4934	Cd2288	Cr2677	Ni2316	K_7665	Ag3280
Avge	1.871	.2859	.2059	4.980	.2230	1.521	.3273
#1	1.875	.2864	.2063	4.982	.2230	1.521	.3274
#2	1.867	.2854	.2056	4.979	.2230	1.520	.3271

Elem	Na5889
Avge	13.71
#1	13.71
#2	13.72

ethod: EPACLP1 Standard: STD4

Elem	B_2496	Sn1899	P_2149	Si2881	T11908	Li6707
Avge	.8214	11.96	4.061	8.117	.7862	2.785
#1	.8233	11.96	4.062	8.131	.7847	2.803
#2	.8196	11.96	4.061	8.103	.7878	2.767

Analysis Report QC Standard Fri 11-22-91 10:44:34 AM page 1

thod: EPACLP1 Sample Name: ICV Operator: WGM
..un Time: 11/22/91 10:42:55
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	1.973	1.040	-.0082	2.057	.4862	.0324	.5304
#1	2.007	1.057	.0072	2.064	.4874	.0341	.5298
#2	1.939	1.023	-.0237	2.050	.4849	.0306	.5309

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	49.76	.5181	.4895	.5189	2.005	5.142	24.83
#1	49.78	.5216	.4977	.5242	2.011	5.166	24.87
#2	49.74	.5147	.4813	.5135	1.999	5.117	24.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.71	.5064	-.0009	.5136	52.28	.0048	.4917
#1	25.84	.5085	-.0003	.5188	52.41	.0085	.4980
#2	25.58	.5043	-.0015	.5085	52.16	.0011	.4853

lem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	52.64	-.0078	.5316	3.054	.1851	.0194	.0007
#1	52.83	-.0058	.5324	3.058	.1780	.0474	.0007
#2	52.45	-.0097	.5308	3.051	.1922	-.0086	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0482	.0197	.0159
#1	.0249	.0207	.0163
#2	.0715	.0186	.0155

thod: EPACLP1 Sample Name: ICV-AS,SE Operator: WGM
Run Time: 11/22/91 10:45:26
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0073	.0068	4.699	.0008	-.0000	.0044	.0033
#1	.0117	.0038	4.674	.0008	-.0002	.0044	.0030
#2	.0030	.0099	4.723	.0008	.0002	.0044	.0035

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0144	.0024	.0012	.0009	.0042	.0042	.0104
#1	.0170	.0010	.0018	.0009	.0044	-.0006	.0120
#2	.0117	.0039	.0006	.0009	.0040	.0090	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0118	.0009	-.0015	-.0016	.0643	5.133	.0011
#1	-.0004	.0009	-.0033	-.0061	.0092	5.148	.0009
#2	.0240	.0009	.0003	.0029	.1194	5.117	.0013

.em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0333	.0051	.0004	.0010	.0285	.0154	.0000
#1	.0362	.0037	-.0006	.0016	.0249	.0152	.0000
#2	.0304	.0064	.0014	.0003	.0320	.0156	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0009	.0018	.0000
#1	-.0023	.0021	.0000
#2	.0041	.0016	.0000

Analysis Report QC Standard Fri 11-22-91 10:54:25 AM page 1

M hod: EPACLP1 Sample Name: CCV / Operator: WGM
I Time: 11/22/91 10:52:46
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.897	4.898	.9883	.4952	.4819	.0122	.5010
#1	4.893	4.906	.9782	.4952	.4819	.0149	.5026
#2	4.900	4.889	.9985	.4952	.4819	.0096	.4994

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.849	4.955	.4823	.4886	4.935	4.862	4.888
#1	4.852	4.953	.4829	.4893	4.935	4.857	4.886
#2	4.846	4.957	.4817	.4879	4.934	4.867	4.889

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.873	.4866	.4877	.4902	24.74	.9780	.4967
#1	4.875	.4862	.4868	.4861	24.69	.9956	.4984
#2	4.871	.4870	.4886	.4944	24.79	.9603	.4949

em	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	24.86	-.0508	.4941	2.446	.1104	.0170	.4908
#1	24.87	-.0524	.4945	2.447	.1068	.0161	.4905
#2	24.85	-.0491	.4937	2.446	.1139	.0178	.4912

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2771	.0003	.0023
#1	-.2748	.0000	.0023
#2	-.2793	.0005	.0023

Method: EPACLP1 Sample Name: CCB Operator: WGM
Run Time: 11/22/91 10:55:32
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0035	L.0049	L-.0010	L.0003	L.0002	.0009	L.0004
#1	L.0014	L.0053	L-.0041	L.0003	L.0002	.0009	L.0008
#2	L-.0084	L.0045	L.0021	L.0003	L.0002	.0009	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	.0020	L-.0012	L-.0002	L.0006	L.0054	.0023
#1	L.0002	.0022	L.0006	L.0002	L.0012	L.0039	.0030
#2	L-.0011	L.0019	L-.0029	L-.0005	L.0000	L.0070	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0004	L.0000	L-.0015	L-.0013	L-.1775	L.0008	L-.0002
#1	L-.0050	L.0002	L-.0003	L-.0029	L-.2663	L.0008	L.0009
#2	L.0042	L-.0002	L-.0027	L.0003	L-.0887	L.0008	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0021	.0078	L.0002	L.0007	-.0018	-.0009	.0003
#1	L-.0005	.0037	L.0006	L.0010	.0036	.0059	.0000
#2	L.0047	.0118	L-.0002	L.0003	-.0071	-.0077	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0014	-.0013	.0001
#1	L-.0059	-.0005	.0002
#2	L.0032	-.0021	.0000

Analysis Report QC Stan[illegible] [illegible]:23 AM page 1

[illegible]hod: EPACLP1 Sample Name: [illegible] [illegible]tor: WGM
Run Time: 11/22/91 10:58:44
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	[illegible]	[illegible]	[illegible]	[illegible]_2496	Cd2288
Units	ppm	pp[illegible]	[illegible]	[illegible]	[illegible]	[illegible]pm	ppm
Avge	526.4	.0[illegible]95	[illegible]	[illegible]	[illegible]	.2502	.9042
#1	526.9	.0297	[illegible]	[illegible]	[illegible]	.2494	.9036
#2	525.9	-.0107	[illegible]	[illegible]	[illegible]	.2511	.9048

Elem	Ca3179	Cr2677	[illegible]	[illegible]	[illegible]	Pb2203	Mg2795
Units	ppm	ppm	[illegible]	[illegible]	[illegible]	ppm	ppm
Avge	465.2	.4773	[illegible]	[illegible]	[illegible]	[illegible].431	241.4
#1	465.0	.4783	[illegible]	.[illegible]	[illegible]	[illegible].414	241.3
#2	465.4	.4763	[illegible]	[illegible]	[illegible]	[illegible].448	241.6

Elem	Mg3832	Mn2576	[illegible]	[illegible]	[illegible]	Se1960	Ag3280
Units	ppm	pp[illegible]	[illegible]	[illegible]	[illegible]	[illegible]pm	ppm
Avge	484.1	.4[illegible]71	[illegible]	[illegible]	[illegible]	[illegible].498	.8871
#1	484.2	.4682	[illegible]	[illegible]	[illegible]	[illegible].528	.8851
#2	483.9	.4[illegible]60	[illegible]	[illegible]	[illegible]	[illegible].468	.8890

[illegible]em	Na5889	Sn1899	[illegible]	[illegible]	[illegible]	Ti2881	Ti3349
Units	ppm	ppm	[illegible]	[illegible]	[illegible]	[illegible]pm	ppm
Avge	1.779	-.0484	[illegible]	[illegible]	[illegible]	.1654	.0072
#1	1.779	-.0518	[illegible]	[illegible]	[illegible]	.1641	.0072
#2	1.779	-.0449	[illegible]	[illegible]	[illegible]	.1667	.0072

Elem	Tl1908	Li6707	[illegible]
Units	ppm	ppm	[illegible]
Avge	.0214	.0849	[illegible]
#1	-.0075	.0844	[illegible]
#2	.0502	.0855	[illegible]

Method: EPACLP1 Sample Name: CCV ✓ Operator: PN
Run Time: 11/22/91 14:26:29
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.928	4.918	.9995	.5129	.4993	.0096	.5172
#1	4.937	4.926	.9906	.5165	.5038	.0079	.5191
#2	4.919	4.910	1.008	.5094	.4948	.0114	.5153

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.066	5.129	.4989	.4898	5.123	4.983	5.071
#1	5.098	5.161	.5015	.4920	5.154	5.011	5.099
#2	5.034	5.096	.4963	.4876	5.092	4.955	5.043

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.115	.5061	.5026	.5143	24.73	1.007	.5081
#1	5.125	.5091	.5068	.5104	24.86	1.036	.5103
#2	5.105	.5031	.4983	.5181	24.61	.9772	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	22.61	-.0485	.4979	2.512	.1468	.0181	.5039
#1	Q22.46	-.0479	.4996	2.527	.1495	.0165	.5069
#2	22.77	-.0491	.4962	2.498	.1442	.0196	.5010

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2501	.0070	.0025
#1	-.2680	.0067	.0027
#2	-.2323	.0073	.0023

Method: EPACLP1 Sample Name: CCB ✓ Operator: WGM
Run Time: 11/22/91 14:44:49
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0128	L.0065	L-.0055	L.0005	L.0002	.0061	L.0001
#1	.0128	L.0077	L.0007	L.0005	L.0002	.0061	L.0007
#2	.0127	L.0053	L-.0117	L.0005	L.0002	.0061	L-.0005

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0091	.0031	L.0003	L.0004	L.0003	L.0001	.0039
#1	.0097	.0032	L.0012	L.0006	L.0008	L.0021	.0042
#2	.0084	.0030	L-.0006	L.0002	L-.0002	L-.0019	.0036

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0001	L.0000	L-.0006	L-.0003	L.3026	L-.0021	L.0009
#1	L.0068	L.0002	L-.0009	L-.0029	L.3770	L-.0074	L.0013
#2	L-.0069	L-.0002	L-.0003	L.0022	L.2283	L.0033	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	.0944	.0043	L-.0004	L.0010	.0249	.0093	.0000
#1	.0883	.0007	L-.0006	L.0010	.0249	.0099	.0000
#2	.1005	.0079	L-.0002	L.0010	.0249	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0055	.0060	.0000
#1	L-.0078	.0062	.0000
#2	L-.0032	.0057	.0000

Cont From 6480

Analysis Report Fri 11-22-91 03:27:31 PM page 1

Method: EPACLP1 Sample Name: PBW 6641... Operator: WGM
Run Time: 11/22/91 15:25:52
nment: 6670, 6712, (6729) 6642, 6661. WATER, 50/50
..de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0098	L.0046	L-.0106	L-.0000	L.0002	.0079	L.0009
#1	L.0041	L.0015	L-.0095	L.0003	L.0002	.0096	L.0016
#2	.0154	L.0076	L-.0116	L-.0003	L.0002	.0061	L.0002

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0042	L-.0001	L.0006	L-.0002	L-.0011	L.0029	L.0019
#1	L.0046	L-.0010	L-.0000	L-.0005	L-.0012	L-.0019	.0020
#2	L.0038	L.0007	L.0012	L.0002	L-.0009	L.0077	L.0017

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0007	L-.0000	L-.0009	L.0003	L-.0704	L.0029	L-.0007
#1	L-.0265	L-.0002	L-.0009	L-.0003	L-.1622	L.0033	L-.0013
#2	L.0279	L.0002	L-.0009	L.0010	L.0214	L.0025	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	L.0399	.0040	L.0008	L.0000	.0071	.0542	.0003
#1	L.0378	.0067	L.0002	L.0003	.0214	.0535	.0007
#2	L.0420	.0013	L.0014	L-.0003	-.0071	.0548	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0191	.0052	.0000
#1	L-.0333	.0052	.0000
#2	L-.0050	.0052	.0000

Method: EPACLP1 Sample Name: LCSW 6641 Operator: WGM
Run Time: 11/22/91 15:28:40
Comment: WATER 50/50
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	2.010	1.039	Q.0060	2.134	.5122	.0315	.5263
#1	2.003	1.041	Q.0087	2.126	.5109	.0324	.5256
#2	2.016	1.037	Q.0032	2.142	.5136	.0306	.5271

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	50.20	.5187	.4948	.5196	2.039	5.044	25.21
#1	50.18	.5181	.4954	.5180	2.037	5.061	25.20
#2	50.22	.5193	.4942	.5211	2.040	5.028	25.22

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.96	.5150	-.0018	.5233	51.16	Q.0057	.4914
#1	26.86	.5148	-.0015	.5226	51.05	Q.0266	.4910
#2	27.06	.5152	-.0021	.5239	51.28	Q-.0152	.4919

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	47.57	-.0200	.5296	2.993	.1798	.0908	.0003
#1	47.37	-.0187	.5281	2.997	.1869	.0901	.0000
#2	47.77	-.0213	.5312	2.989	.1727	.0914	.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.0219	.0212	.0169
#1	-.0200	.0207	.0168
#2	-.0237	.0218	.0170

Method: EPACLP1 Sample Name: 6641-1 Operator: WGM
Run Time: 11/22/91 15:31:46
mment: WATER, 50/50, DISSOLVED
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0349	L.0046	L.0030	1.098	L-.0002	.3894	L-.0000
#1	.0360	L-.0007	L.0050	1.097	L-.0002	.3841	L-.0001
#2	.0339	L.0100	L.0010	1.098	L-.0002	.3946	L.0000

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.72	L-.0017	L.0018	L.0000	.0352	L.0093	H77.30
#1	27.82	L-.0017	L.0012	L.0002	.0365	L.0019	H77.50
#2	27.62	L-.0017	.0023	L-.0002	.0340	L.0167	H77.10

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	89.15	.5036	.0030	L.0093	2.268	L-.0032	L-.0006
#1	89.18	.5045	L.0027	.0151	2.451	L.0017	L.0000
#2	89.12	.5026	.0033	L.0035	2.084	L-.0082	L-.0013

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	132.5	.0115	.0021	.0209	.3435	15.53	.0003
#1	132.2	.0109	L.0018	.0206	.3524	15.56	.0007
#2	132.8	.0121	.0025	.0213	.3346	15.50	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L.0169	.0243	.4510
#1	L-.0392	.0249	.4506
#2	.0729	.0238	.4515

Method: EPACLP1 Sample Name: CCV 3 Operator: WGM
Run Time: 11/22/91 15:34:14
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.152	5.033	1.044	.5335	.5234	.0122	.5328
#1	5.166	5.061	1.043	.5322	.5229	.0096	.5370
#2	5.138	5.006	1.045	.5347	.5238	.0149	.5286

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.258	5.277	.5137	.5103	5.316	5.116	5.310
#1	5.281	5.293	.5160	.5107	5.323	5.138	5.322
#2	5.235	5.260	.5113	.5100	5.308	5.094	5.297

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.415	.5250	.5211	.5236	25.55	1.051	.5235
#1	5.421	.5255	.5220	.5264	25.61	1.057	.5270
#2	5.409	.5244	.5202	.5207	25.49	1.044	.5200

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	23.34	-.0439	.5149	2.598	.1379	.0262	.5275
#1	23.31	-.0422	.5154	2.608	.1246	.0289	.5282
#2	23.37	-.0455	.5144	2.589	.1513	.0236	.5269

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2593	.0080	.0028
#1	-.2711	.0088	.0029
#2	-.2474	.0073	.0027

Method: EPACLP1 Sample Name: CCB 3 Operator: WGM
Run Time: 11/22/91 15:37:27
nment:
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0027	L-.0015	L-.0068	L.0005	L.0002	.0026	L-.0006
#1	L-.0035	L.0015	L-.0088	L.0008	L.0002	.0009	L-.0019
#2	L-.0019	L-.0046	L-.0047	L.0003	L.0002	.0044	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0029	L-.0004	L-.0003	L-.0003	L-.0009	L-.0055	.0107
#1	.0069	L.0007	L-.0006	L-.0005	L.0000	L-.0064	.0126
#2	L-.0011	L-.0016	L.0000	L-.0002	L-.0019	L-.0045	.0089

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0274	L-.0000	L-.0009	L-.0019	L-.1928	L.0016	L-.0009
#1	L-.0207	L.0002	L-.0009	L-.0016	L.0031	L-.0033	L-.0013
#2	L-.0342	L-.0002	L-.0009	L-.0022	L-.3887	L.0066	L-.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	L.0257	.0012	L-.0018	L.0013	.0142	.0031	-.0003
#1	L.0310	.0001	L-.0022	L.0016	.0107	.0055	-.0007
#2	L.0205	.0022	L-.0014	L.0010	.0178	.0007	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0155	.0044	.0000
#1	L-.0169	.0052	.0000
#2	L-.0141	.0036	.0000

Method: EPACLP1 Sample Name: CCV 4 Operator: WGM
Run Time: 11/22/91 15:45:27
mment:
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.072	5.029	1.012	.5130	.5085	.0096	.4950
#1	5.048	4.988	1.017	.5090	.5048	.0131	.4925
#2	5.096	5.070	1.008	.5170	.5122	.0061	.4975

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	4.968	5.010	.4988	.5106	5.036	4.979	5.012
#1	4.960	4.991	.4973	.5061	5.017	4.951	4.996
#2	4.977	5.030	.5003	.5151	5.055	5.008	5.027

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.049	.5015	.5063	.5051	25.03	1.003	.4992
#1	5.034	.4993	.5056	.5038	24.88	.9887	.4972
#2	5.065	.5038	.5069	.5063	25.18	1.018	.5011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	25.63	-.0533	.5041	2.500	.1130	.0216	.5090
#1	25.41	-.0509	.5027	2.496	.1175	.0187	.5056
#2	25.85	-.0557	.5055	2.503	.1086	.0244	.5124

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2978	.0060	.0026
#1	-.2977	.0062	.0025
#2	-.2978	.0057	.0027

Method: EPACLP1 Sample Name: CCB 4 Operator: WGM
Run Time: 11/22/91 15:48:55
Comment:
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0048	L.0096	L.0070	L-.0002	L.0002	.0009	L.0006
#1	L.0027	L.0084	L-.0021	L.0001	L.0002	-.0026	L.0014
#2	L.0070	.0108	L.0162	L-.0004	L.0002	.0044	L-.0003

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0052	.0023	L-.0003	L.0009	L-.0027	L.0057	.0025
#1	L-.0045	.0030	L-.0000	L.0009	L-.0022	L.0087	.0026
#2	L-.0058	L.0016	L-.0006	L.0009	L-.0032	L.0027	.0023

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0162	L.0002	L-.0003	L-.0010	L-.4536	L.0091	L.0004
#1	L.0235	L.0002	L-.0003	L-.0022	L-.4072	L.0216	L.0004
#2	L.0089	L.0002	L-.0003	L.0003	L-.5000	L-.0035	L.0004

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0051	.0072	L.0000	L.0010	-.0018	.0099	.0000
#1	L.0073	.0055	L.0002	L.0010	.0018	.0112	.0000
#2	L.0030	.0088	L-.0002	L.0010	-.0053	.0086	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0392	.0034	.0000
#1	L-.0196	.0036	.0000
#2	L-.0588	.0031	.0000

Method: EPACLP1 Sample Name: 6641-1-SD Operator: WGM
Run Time: 11/22/91 15:52:09
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.938	.9703	L.0064	5.065	.0977	2.313	.0914
#1	3.946	.9727	L.0040	5.072	.0980	2.325	.0921
#2	3.929	.9680	L.0088	5.057	.0974	2.302	.0906

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.74	.3781	.9333	.4916	1.960	.9366	H74.63
#1	26.73	.3774	.9345	.4927	1.962	.9280	H74.66
#2	26.75	.3788	.9321	.4906	1.958	.9451	H74.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.15	1.434	1.876	.9370	1.300	L-.0068	.0902
#1	86.24	1.435	1.876	.9421	1.250	L-.0135	.0900
#2	86.06	1.433	1.875	.9319	1.349	L-.0001	.0904

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	152.1	.0046	.9305	.9335	.3631	15.58	.0000
#1	151.9	.0076	.9328	.9345	.3631	15.60	.0000
#2	152.3	.0016	.9282	.9325	.3631	15.57	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0110	.0215	.4618
#1	L.0018	.0218	.4624
#2	L-.0237	.0212	.4613

Method: EPACLP1 Sample Name: 6641-1-S Operator: WGM
Run Time: 11/22/91 15:57:11
Comment: DISSOLVED, 50/50
Type: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	3.991	1.015	L.0103	5.058	.0988	2.366	.0966
#1	3.981	1.020	L-.0032	5.033	.0983	2.348	.0965
#2	4.001	1.011	L.0238	5.084	.0993	2.384	.0967

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	27.77	.3954	.9655	.4914	2.009	.9820	H76.41
#1	27.69	.3944	.9646	.4888	2.004	.9837	H76.22
#2	27.85	.3964	.9664	.4940	2.014	.9804	H76.60

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	86.22	1.475	1.944	.9760	2.249	L.0085	.0943
#1	85.76	1.471	1.937	.9769	2.333	L.0030	.0936
#2	86.67	1.479	1.950	.9750	2.166	L.0140	.0950

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti334[illegible]
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
[illegible]ge	148.7	.0046	.9540	.9751	.3960	15.85	.0000
#1	147.6	.0019	.9503	.9725	.4147	15.80	.0000
#2	149.7	.0073	.9577	.9778	.3773	15.89	.0000

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0313	.0243	.4575
#1	L-.0180	.0243	.4557
#2	L-.0446	.0243	.4594

Cont from 6641

Analysis Report Fri 11-22-91 04:01:13 PM page 1

Method: EPACLP1 Sample Name: 6670-2 Operator: WGM
Run Time: 11/22/91 15:59:35
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

PB of 6641 = N.D WGM 11/23/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0551	L.0058	L.0057	.2691	L-.0003	.2109	L.0003
#1	.0583	L.0046	L.0013	.2681	L-.0005	.2109	L.0014
#2	.0519	L.0069	L.0101	.2701	L-.0002	.2109	L-.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	33.48	L-.0019	L.0015	.0122	.9342	L-.0010	49.59
#1	33.61	L-.0016	.0030	.0127	.9337	L.0026	49.58
#2	33.35	L-.0022	L-.0000	.0117	.9348	L-.0047	49.59

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.01	.0571	L.0010	.0111	.5638	L-.0122	L-.0004
#1	53.73	.0573	L.0010	L.0092	.7494	L-.0017	L.0002
#2	54.29	.0569	L.0010	.0130	L.3783	L-.0226	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	262.6	-.0006	L.0013	.0083	.4014	11.55	.0013
#1	260.4	-.0055	L.0013	.0089	.4325	11.52	.0007
#2	264.8	.0043	L.0013	.0076	.3702	11.57	.0020

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0462	.0181	.3921
#1	L-.0543	.0192	.3898
#2	L-.0380	.0171	.3945

Method: EPACLP1 Sample Name: 6670-3 Operator: WGM
Run Time: 11/22/91 16:01:45
Comment: DISSOLVED, 50/50
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.5086	L.0053	L-.0053	.1792	L-.0000	.3062	L.0016
#1	.5377	L.0084	L-.0098	.1809	L.0002	.3124	L.0023
#2	.4795	L.0022	L-.0008	.1774	L-.0002	.3001	L.0008

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	26.05	L.0018	.0023	.0057	1.552	L.0081	33.82
#1	25.99	.0023	L.0011	.0052	1.570	L.0061	33.85
#2	26.11	L.0014	.0035	.0062	1.534	L.0101	33.80

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.64	.9948	L.0004	.0155	3.251	L.0164	L-.0007
#1	35.81	.9957	L.0016	.0130	3.062	L.0072	L-.0014
#2	35.47	.9938	L-.0009	.0181	3.440	L.0257	L-.0001

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	126.2	.0110	.0029	.0092	.2385	13.00	.0252
#1	127.6	.0070	.0021	.0089	.2385	13.14	.0262
#2	124.8	.0151	.0037	.0095	.2385	12.86	.0242

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0210	.0166	.3050
#1	L-.0247	.0161	.3073
#2	L-.0173	.0171	.3027

cont From 6610

Analysis Report Fri 11-22-91 04:06:06 PM page 1

Method: EPACLP1 Sample Name: 6712-2 Operator: WGM
Run Time: 11/22/91 16:04:27
mment: DISSOLVED, 50/50 PB ~ 6641 = N.D. 11/23/91
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.2673	.0127	L-.0006	.1213	L-.0002	.5959	L.0004
#1	.2774	.0115	L-.0094	.1218	L-.0002	.6011	L.0009
#2	.2571	.0138	L.0082	.1208	L-.0002	.5906	L-.0001

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	14.11	.0088	L-.0000	.0094	.5713	.0229	33.83
#1	14.15	.0076	L-.0006	.0092	.5727	.0209	33.89
#2	14.08	.0099	L.0006	.0096	.5700	.0249	33.77

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	35.54	.1250	.0079	.0301	5.332	L.0008	L-.0014
#1	35.55	.1256	.0072	.0263	5.314	L-.0050	L-.0016
#2	35.53	.1245	.0085	.0339	5.351	L.0067	L-.0011

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	90.89	.0078	.0060	.0093	.2705	14.55	.0147
#1	90.86	.0082	.0060	.0090	.2723	14.60	.0138
#2	90.93	.0073	.0060	.0096	.2688	14.49	.0157

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0868	.0168	.4130
#1	L-.1178	.0166	.4135
#2	L-.0558	.0171	.4125

cont from 6712

Analysis Report Fri 11-22-91 04:09:53 PM page 1

Method: EPACLP1 Sample Name: 6729-1 Operator: WGM
Run Time: 11/22/91 16:08:14
nment: DISSOLVED, 50/50
de: CONC Corr. Factor: 1

PB of 6641 = N.D.
WGM 11/24/91

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0437	.0248	L.0056	1.858	L-.0002	1.103	L.0021
#1	.0440	.0233	L-.0026	1.858	L-.0002	1.107	L.0015
#2	.0434	.0264	L.0137	1.859	L-.0002	1.100	L.0026

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	92.05	.0027	.0051	L.0005	1.454	.0368	H104.0
#1	92.16	.0023	.0054	L.0006	1.455	.0322	H104.1
#2	91.95	.0031	.0048	L.0003	1.453	.0414	H104.0

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	126.6	.8637	.0075	.0130	16.09	L.0029	L-.0007
#1	126.6	.8641	.0066	L.0085	16.11	L.0159	L-.0005
#2	126.7	.8633	.0085	.0174	16.08	L-.0100	L-.0009

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	149.4	.0090	.0068	.0082	.5331	23.74	.0036
#1	149.5	.0130	.0068	.0082	.5268	23.75	.0033
#2	149.4	.0049	.0068	.0082	.5393	23.73	.0039

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0500	.0546	1.409
#1	L-.0706	.0549	1.408
#2	L-.0295	.0544	1.410

Method: EPACLP1 Sample Name: 6729-2 Operator: WGM
Run Time: 11/22/91 16:10:14
mment: DISSOLVED, 50/50
de: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0532	.0167	L.0261	.6563	L.0002	.9423	L.0020
#1	.0535	.0194	L.0291	.6548	L.0002	.9458	.0030
#2	.0530	.0139	L.0231	.6578	L.0002	.9388	L.0011

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.12	L-.0004	.0021	.0227	1.674	.0219	H85.99
#1	54.04	L.0006	.0030	.0228	1.674	.0255	H85.91
#2	54.20	L-.0014	L.0012	.0225	1.675	L.0183	H86.07

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	100.5	.6898	.0160	L.0070	18.44	L-.0072	L-.0000
#1	100.2	.6889	.0147	L.0079	18.43	L-.0114	L.0004
#2	100.8	.6907	.0172	L.0060	18.44	L-.0030	L-.0005

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
vge	129.1	.0072	L.0019	.0065	.8285	16.70	.0013
#1	129.0	.0082	.0021	.0069	.8241	16.69	.0013
#2	129.2	.0061	L.0017	.0062	.8330	16.71	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0417	.0394	1.134
#1	L-.0513	.0394	1.132
#2	L-.0322	.0394	1.136

Method: EPACLP1 Sample Name: 6729-3 Operator: WGM
Run Time: 11/22/91 16:12:42
Comment: DISSOLVED, 50/50
e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	.0326	L-.0001	L.0072	.6681	L-.0000	.9677	L.0013
#1	.0669	.0202	L.0238	.6643	L-.0002	.9703	L.0017
#2	L-.0017	L-.0203	L-.0095	.6718	L.0002	.9651	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	54.32	L-.0026	L-.0027	.0161	1.708	L.0182	H86.27
#1	54.23	L-.0017	.0036	.0197	1.701	L.0117	H86.09
#2	54.40	L-.0034	L-.0090	.0124	1.716	.0247	H86.44

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	101.8	.6956	.0160	L.0085	18.43	L-.0088	L-.0059
#1	101.5	.6945	.0160	L.0047	18.25	L-.0172	L.0008
#2	102.2	.6967	.0160	.0124	18.62	L-.0003	L-.0127

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	131.5	.0021	L.0008	.0072	.8036	16.99	.0013
#1	130.8	.0040	L.0017	.0089	.7867	16.97	.0013
#2	132.3	.0001	L-.0002	.0055	.8205	17.00	.0013

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	.0815	.0383	1.152
#1	L-.0415	.0378	1.146
#2	.2045	.0388	1.158

cont to 6642

Analysis Report QC Standard Fri 11-22-91 04:22:46 PM page 1

Method: EPACLP1 Sample Name: CCV Operator: WGM
Run Time: 11/22/91 16:21:08
Comment:
Mode: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.098	5.071	1.009	.5175	.5114	.0122	.4982
#1	5.089	5.046	1.010	.5175	.5106	.0131	.4954
#2	5.107	5.095	1.009	.5175	.5122	.0114	.5009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.027	5.052	.5042	.5114	5.076	5.042	5.047
#1	5.021	5.043	.5015	.5099	5.069	5.027	5.045
#2	5.034	5.061	.5069	.5130	5.083	5.058	5.050

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	5.100	.5071	.5100	.5079	25.03	.9923	.5044
#1	5.098	.5071	.5106	.5063	24.89	.9953	.5029
#2	5.101	.5071	.5094	.5095	25.17	.9894	.5059

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	25.40	-.0449	.5058	2.516	.0988	.0240	.5131
#1	25.41	-.0416	.5048	2.514	.0961	.0236	.5128
#2	25.39	-.0482	.5068	2.517	.1015	.0244	.5134

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	-.2896	.0065	.0026
#1	-.3024	.0062	.0025
#2	-.2769	.0067	.0027

Method: EPACLP1 Sample Name: CCB 5 Operator: WGM
Run Time: 11/22/91 16:35:32
C ment:
M e: CONC Corr. Factor: 1

Elem	Al3082	Sb2068	As1936	Ba4934	Be3130	B_2496	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0016	L.0003	L-.0169	L-.0007	L-.0002	.0009	L.0017
#1	L-.0016	L-.0048	L-.0216	L-.0009	L-.0002	-.0009	L.0024
#2	L.0048	L.0053	L-.0122	L-.0004	L-.0002	.0026	L.0009

Elem	Ca3179	Cr2677	Co2286	Cu3247	Fe2599	Pb2203	Mg2795
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L-.0096	L.0009	L-.0012	L.0000	L-.0052	L.0014	L.0017
#1	L-.0112	L-.0004	L-.0012	L-.0002	L-.0056	L.0034	L.0014
#2	L-.0081	.0022	L-.0012	L.0002	L-.0047	L-.0006	L.0020

Elem	Mg3832	Mn2576	Mo2020	Ni2316	K_7665	Se1960	Ag3280
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avge	L.0056	L-.0000	L-.0012	L-.0026	L-.8123	L.0049	L.0000
#1	L.0007	L-.0002	L-.0015	L-.0029	L-.8216	L-.0102	L-.0000
#2	L.0105	L.0002	L-.0009	L-.0022	L-.8030	L.0200	L.0000

Elem	Na5889	Sn1899	V_2924	Zn2138	P_2149	Si2881	Ti3349
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
e	L-.0076	.0064	L.0002	L-.0003	-.0080	.0068	-.0003
#1	L-.0060	.0067	L-.0006	L-.0003	-.0107	.0055	.0000
#2	L-.0092	.0061	L.0010	L-.0003	-.0053	.0081	-.0007

Elem	Tl1908	Li6707	Sr4215
Units	ppm	ppm	ppm
Avge	L-.0041	.0039	.0001
#1	L-.0077	.0036	.0000
#2	L-.0004	.0041	.0002

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\BSB\1125MB.D
Operator: [BSB1]TPDEAN
Date Acquired: 25 Nov 91 1:19 pm
Method File: H20-8240.M
Sample Name: METHOD BLANK
Misc Info: SYSTEM BLANK
Vial Number: 1

Quantitation Settings:
Reference Peak Window: 5 Percent
Non-Reference Peak Window: 5 Percent
Correlation Window: 0.03 Minutes
Default Multiplier: 1
Default Sample Amount: 0
Peak Type Decoding: * -> Time Reference Peak
m -> Manually re-integrated
00X -> Compound references ISTD X

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k	#	Compound	Ret Time	Amount	Peak Type
	1	DICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
	2	CHLOROMETHANE	3.50	0.0 PPB	001#
	3	VINYL CHLORIDE	***** NOT FOUND *****		001
	4	BROMOMETHANE	4.78	0.2 PPB	001#
	5	CHLOROETHANE	***** NOT FOUND *****		001
	6	TRICHLOROFLUOROMETHANE	5.89	0.1 PPB	001#
	7	TRICHLOROTRIFLUOROETHANE	7.40	0.9 PPB	001
	8	ACETONE	7.40	0.9 PPB	001
	9	1,1-DICHLOROETHENE	7.54	0.0 PPB	001#
	10	CARBON DISULFIDE	8.77	0.1 PPB	001#
	11	METHYLENE CHLORIDE	8.87	0.1 PPB	001#
	12	trans-1,2-DICHLOROETHENE	9.57	0.1 PPB	001#
	13	1,1-DICHLOROETHANE	10.69	0.1 PPB	001!
	14	2-BUTANONE (MEK)	11.57	1.4 PPB	001
	15	cis-1,2-DICHLOROETHENE	11.94	0.2 PPB	001#
	16	CHLOROFORM	12.18	0.0 PPB	001#
	17	BROMOCHLOROMETHANE	12.54	50.0 PPB	*ISTD001!
	18	1,1,1-TRICHLOROETHANE	13.03	0.2 PPB	001#
	19	CARBON TETRACHLORIDE	13.84	0.2 PPB	001#
	20	SURR-1,2-DICHLOROETHANE-D4	13.70	45.0 PPB	001#
	21	BENZENE	13.61	0.0 PPB	002#
	22	1,2-DICHLOROETHANE	***** NOT FOUND *****		002
	23	2-CHLOROETHYL VINYL ETHER	14.14	~~34.4 PPB~~ NR	002#
	24	1,4-DIFLUOROBENZENE	14.60	50.0 PPB	*ISTD002!

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\BSB\1125MB.D
Operator: [BSB1]TPDEAN
Date Acquired: 25 Nov 91 1:19 pm
Method File: H20-8240.M
Sample Name: METHOD BLANK
Misc Info: SYSTEM BLANK
Vial Number: 1

Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.47	0.1 PPB	002#
27	BROMODICHLOROMETHANE	15.76	0.0 PPB	002#
28	2-HEXANONE	16.89	0.5 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.24	0.0 PPB	002#
30	SURR-TOLUENE-D8	17.74	46.3 PPB	002
31	TOLUENE	***** NOT FOUND *****		002
32	trans-1,3-DICHLOROPROPENE	18.43	0.3 PPB	002#
33	1,1,2-TRICHLOROETHANE	18.80	0.1 PPB	003#
34	4-METHYL-2-PENTANONE	18.75	0.2 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	21.02	50.0 PPB	*ISTD003
38	CHLOROBENZENE	***** NOT FOUND *****		003
39	ETHYLBENZENE	21.48	0.3 PPB	003#
40	P&M XYLENE	21.48	0.2 PPB	003#
41	0 XYLENE	***** NOT FOUND *****		003
42	STYRENE	22.70	0.0 PPB	003#
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	***** NOT FOUND *****		003
45	SURR-BROMOFLUOROBENZENE	23.80	45.7 PPB	003#
46	1,3-DICHLOROBENZENE	26.63	0.1 PPB	003#
47	1,4-DICHLOROBENZENE	26.65	0.0 PPB	003#
48	1,2-DICHLOROBENZENE	27.48	0.0 PPB	003#

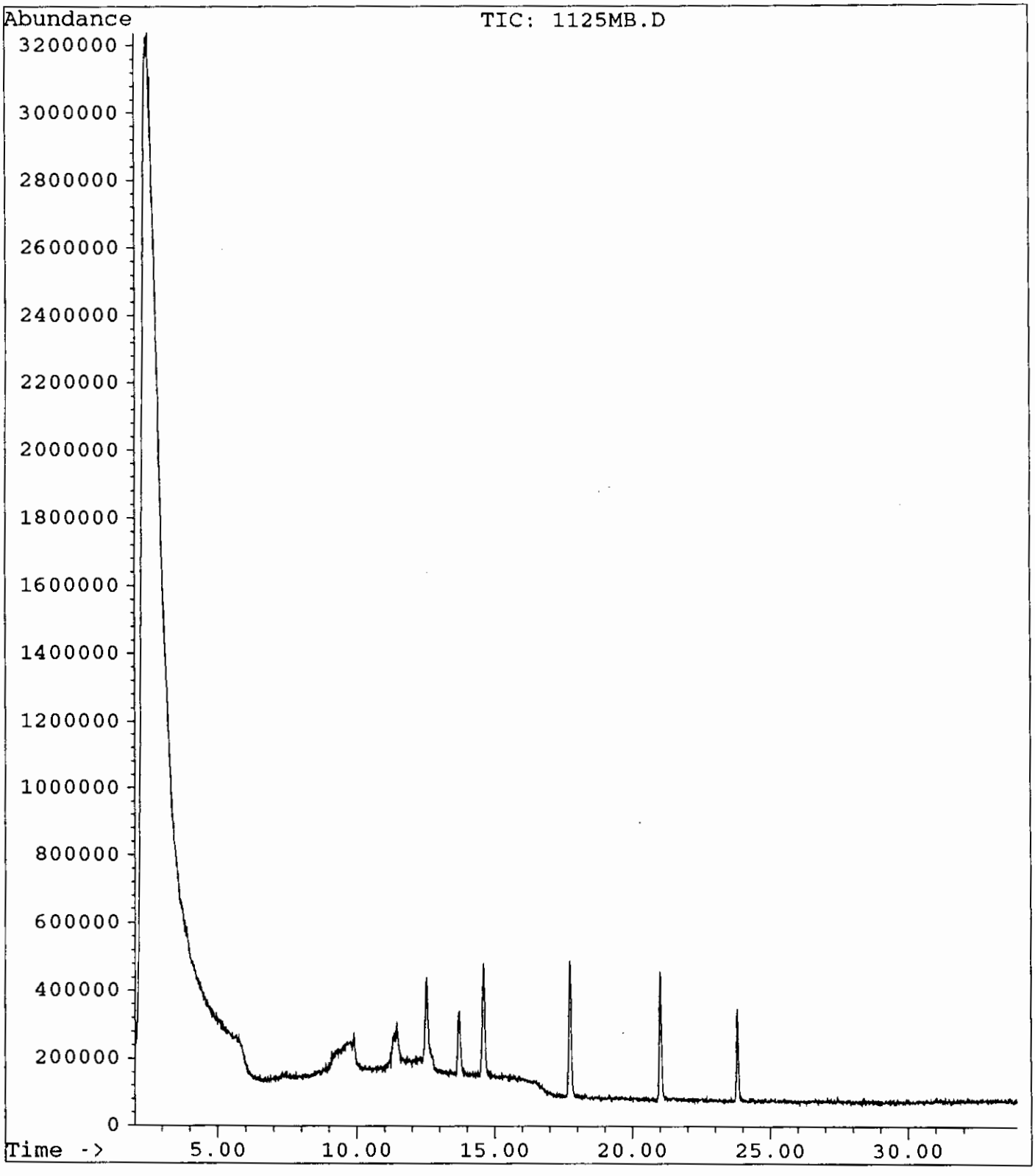
END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

11/26/91

12/11/91

00095

File: C:\CHEMPC\DATA\1125MB.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 1:19 pm
Method File: H20-8240.M
Sample Name: METHOD BLANK
Misc Info: SYSTEM BLANK
ALS vial: 1



Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\6729-1.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:06 pm
Method File: H20-8240.M
Sample Name: SWB-1
Misc Info:
Vial Number : 1

Ret Time	Signal Descr	Area	% Pk	% LPk
2.324	TIC	76725285	100.000	100.000
21.431	TIC	7177974	100.000	100.000
23.276	TIC	4051306	100.000	100.000
24.205	TIC	6831549	100.000	100.000
24.473	TIC	4487017	100.000	100.000
25.501	TIC	21170801	100.000	100.000
26.609	TIC	11344673	100.000	100.000
27.075	TIC	4371766	100.000	100.000
27.326	TIC	28316747	100.000	100.000
28.203	TIC	14909973	100.000	100.000
28.427	TIC	5417826	100.000	100.000
28.652	TIC	14101156	100.000	100.000
29.108	TIC	13931602	100.000	100.000
29.296	TIC	10593663	100.000	100.000
30.164	TIC	4865627	100.000	100.000
30.388	TIC	13011829	100.000	100.000
30.584	TIC	9130662	100.000	100.000
32.138	TIC	14053096	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 13:12:39 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\6729-1.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:06 pm
Method File: H20-8240.M
Sample Name: SWB-1
Misc Info:
Vial Number: 1

NR surrogate out

Quantitation Settings:
Reference Peak Window: 5 Percent
Non-Reference Peak Window: 5 Percent
Correlation Window: 0.03 Minutes
Default Multiplier: 1
Default Sample Amount: 0
Peak Type Decoding: * -> Time Reference Peak
m -> Manually re-integrated
00X -> Compound references ISTD X

#	Compound	Ret Time	Amount		Peak Type
1	DICHLOROFLUOROMETHANE	2.88	0.4 PPB		001#
2	CHLOROMETHANE	3.40	0.3 PPB		001#
3	VINYL CHLORIDE	3.72	0.3 PPB		001#
4	BROMOMETHANE	4.93	0.1 PPB		001#
5	CHLOROETHANE	5.12	0.1 PPB		001#
6	TRICHLOROFLUOROMETHANE	***** NOT FOUND *****			001
7	TRICHLOROTRIFLUOROETHANE	7.41	59.5 PPB		001m
8	ACETONE	7.32	27.6 PPB		001m
9	1,1-DICHLOROETHENE	7.58	0.8 PPB		001#
10	CARBON DISULFIDE	8.61	0.4 PPB		001
11	METHYLENE CHLORIDE	8.78	0.3 PPB		001
12	trans-1,2-DICHLOROETHENE	9.48	0.4 PPB		001#
13	1,1-DICHLOROETHANE	10.71	0.0 PPB		001!
14	2-BUTANONE (MEK)	11.56	13.1 PPB		001m
15	cis-1,2-DICHLOROETHENE	11.84	0.4 PPB		001#
16	CHLOROFORM	12.17	0.2 PPB		001#
17	BROMOCHLOROMETHANE	12.50	50.0 PPB		*ISTD001!
18	1,1,1-TRICHLOROETHANE	13.03	0.2 PPB		001#
19	CARBON TETRACHLORIDE	13.57	0.2 PPB		001#
20	SURR-1,2-DICHLOROETHANE-D4	13.66	73.2 PPB	out ↓	001m
21	BENZENE	13.85	13.1 PPB		002m
22	1,2-DICHLOROETHANE	13.83	0.1 PPB		002#
23	2-CHLOROETHYL VINYL ETHER	14.37	~~56.0 PPB~~	NR	002#
24	1,4-DIFLUOROBENZENE	14.53	50.0 PPB		*ISTD002!

W00098

Calibration Last Updated: Mon Nov 25 13:12:39 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\6729-1.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:06 pm
Method File: H20-8240.M
Sample Name: SWB-1
Misc Info:
Vial Number: 1

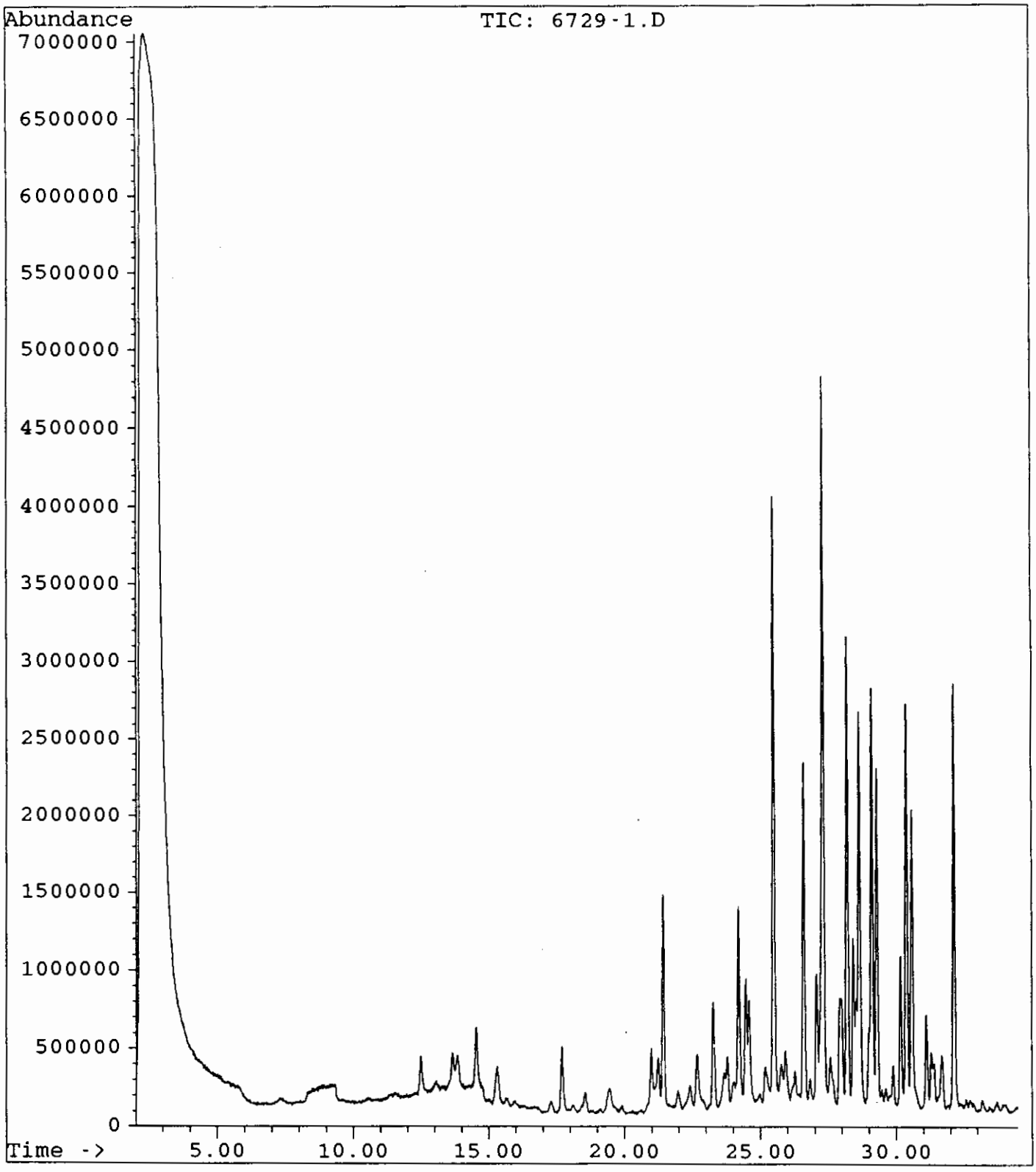
NR surrogates out

Pk #	Compound	Ret Time	Amount		Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****			002
26	1,2-DICHLOROPROPANE	15.52	0.0 PPB		002#
27	BROMODICHLOROMETHANE	15.99	0.1 PPB		002#
28	2-HEXANONE	16.83	1.3 PPB		002m
29	cis-1,3-DICHLOROPROPENE	17.17	0.1 PPB		002#
30	SURR-TOLUENE-D8	17.69	29.5 PPB	out ↓	002m
31	TOLUENE	17.86	0.7 PPB		002m
32	trans-1,3-DICHLOROPROPENE	18.62	1.2 PPB		002#
33	1,1,2-TRICHLOROETHANE	18.61	0.2 PPB		003#
34	4-METHYL-2-PENTANONE	18.55	~~79.1 PPB~~	H.C's not target	003m
35	TETRACHLOROETHENE	***** NOT FOUND *****			003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****			003
37	CHLOROBENZENE-D5	20.99	50.0 PPB		*ISTD003
38	CHLOROBENZENE	21.06	~~6.2 PPB~~	H.C's not target	003m
39	ETHYLBENZENE	21.25	23.7 PPB		003
40	P&M XYLENE	21.44	167.5 PPB		003
41	0 XYLENE	22.39	8.0 PPB		003m
42	STYRENE	22.51	0.1 PPB		003#
43	BROMOFORM	***** NOT FOUND *****			003
44	1,1,2,2-TETRACHLOROETHANE	23.65	0.7 PPB		003m
45	SURR-BROMOFLUOROBENZENE	23.78	56.0 PPB		003m
46	1,3-DICHLOROBENZENE	26.65	0.6 PPB		003#
47	1,4-DICHLOROBENZENE	26.65	0.6 PPB		003#
48	1,2-DICHLOROBENZENE	27.49	~~2.5 PPB~~	H.C's not target	003m

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

TPD 11/26/91

File: C:\CHEMPC\DATA\6729-1.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:06 pm
Method File: H20-8240.M
Sample Name: SWB-1
Misc Info:
ALS vial: 1



DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\1125WMB2.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:53 pm
Method File: H20-8240.M
Sample Name: WATER BLK 2
Misc Info:
Vial Number: 1

NR (system blk to clean out carryover from previous smpl)

Quantitation Settings:

Reference Peak Window:	5 Percent
Non-Reference Peak Window:	5 Percent
Correlation Window:	0.03 Minutes
Default Multiplier:	1
Default Sample Amount:	0
Peak Type Decoding:	* -> Time Reference Peak
	m -> Manually re-integrated
	00X -> Compound references ISTD X

#	Compound	Ret Time	Amount		Peak Type
1	DICHLOROFLUOROMETHANE	2.95	0.3 PPB		001#
2	CHLOROMETHANE	3.39	0.2 PPB		001#
3	VINYL CHLORIDE	***** NOT FOUND *****			001
4	BROMOMETHANE	***** NOT FOUND *****			001
5	CHLOROETHANE	4.99	0.1 PPB		001#
6	TRICHLOROFLUOROMETHANE	***** NOT FOUND *****			001
7	TRICHLOROTRIFLUOROETHANE	7.44	~~37.3~~ PPB	17.7	001m
8	ACETONE	7.32	0.4 PPB		001
9	1,1-DICHLOROETHENE	7.56	0.5 PPB		001#
10	CARBON DISULFIDE	8.65	0.4 PPB		001#
11	METHYLENE CHLORIDE	8.83	0.7 PPB		001#
12	trans-1,2-DICHLOROETHENE	9.50	0.8 PPB		001#
13	1,1-DICHLOROETHANE	10.66	0.1 PPB		001!
14	2-BUTANONE (MEK)	11.58	2.6 PPB		001#
15	cis-1,2-DICHLOROETHENE	11.85	0.5 PPB		001#
16	CHLOROFORM	12.30	0.1 PPB	124406 / 261479 = .476	001#
17	BROMOCHLOROMETHANE	12.51	50.0 PPB	ISTD	001!
18	1,1,1-TRICHLOROETHANE	13.04	0.3 PPB		001#
19	CARBON TETRACHLORIDE	13.56	0.8 PPB		001#
20	SURR-1,2-DICHLOROETHANE-D4	13.66	~~100.9~~ PPB	48.0	001#
21	BENZENE	13.90	0.1 PPB		002
22	1,2-DICHLOROETHANE	13.82	0.1 PPB		002#
23	2-CHLOROETHYL VINYL ETHER	14.63	~~16.9 PPB~~	NR	002#
24	1,4-DIFLUOROBENZENE	14.56	50.0 PPB		*ISTD002!

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\1125WMB2.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:53 pm
Method File: H20-8240.M
Sample Name: WATER BLK 2
Misc Info:
Vial Number: 1

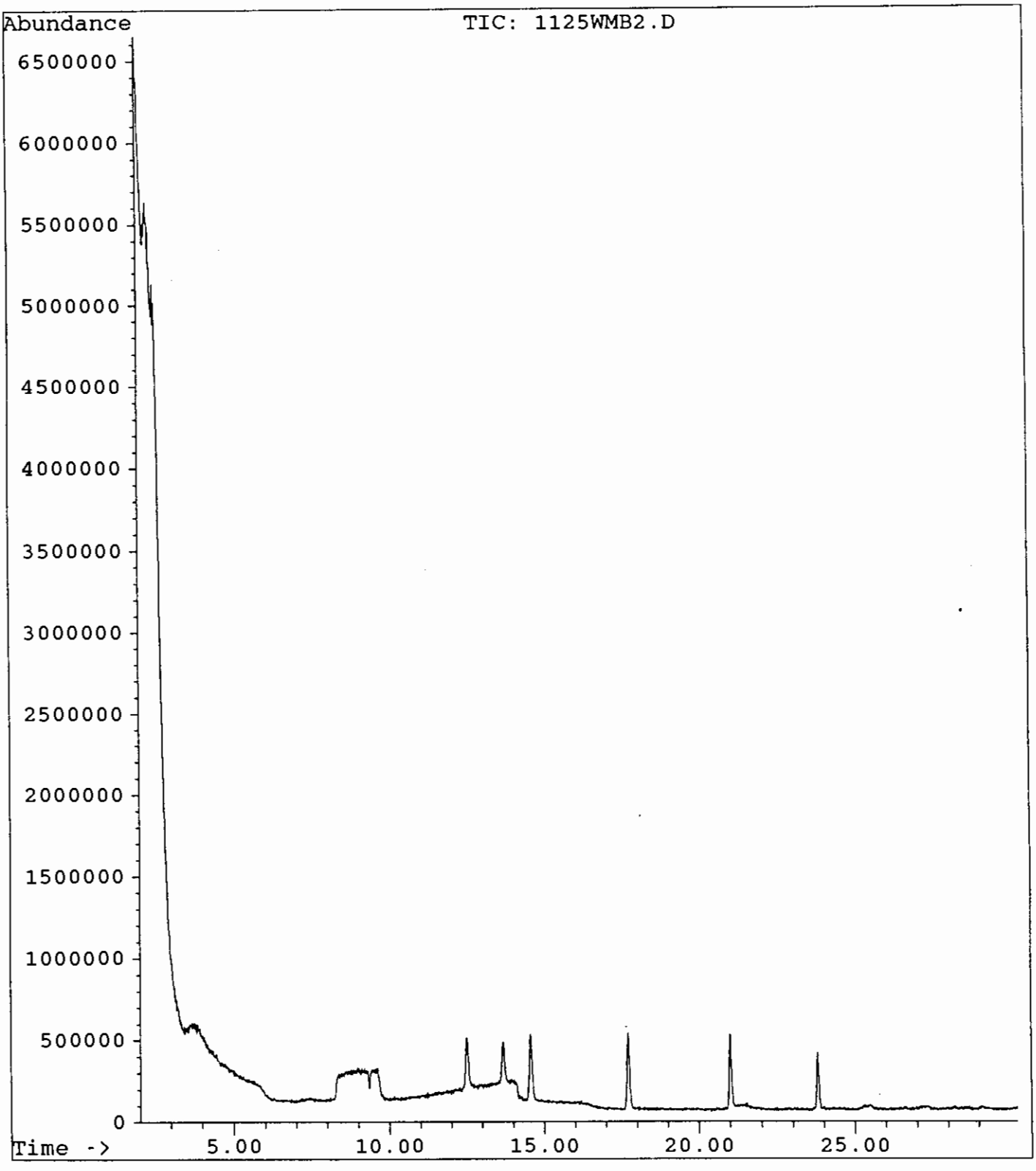
NR.
(used to clean out previous sample carry over)

Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.52	0.1 PPB	002#
27	BROMODICHLOROMETHANE	16.41	0.1 PPB	002#
28	2-HEXANONE	16.86	0.1 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.21	0.0 PPB	002#
30	SURR-TOLUENE-D8	17.72	49.4 PPB	002
31	TOLUENE	18.23	0.0 PPB	002
32	trans-1,3-DICHLOROPROPENE	18.61	0.2 PPB	002#
33	1,1,2-TRICHLOROETHANE	18.30	0.1 PPB	003#
34	4-METHYL-2-PENTANONE	18.74	0.1 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	21.01	50.0 PPB	*ISTD003
38	CHLOROBENZENE	***** NOT FOUND *****		003
39	ETHYLBENZENE	21.45	0.2 PPB	003#
40	P&M XYLENE	21.51	0.1 PPB	003
41	0 XYLENE	22.67	0.1 PPB	003#
42	STYRENE	***** NOT FOUND *****		003
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.32	0.0 PPB	003#
45	SURR-BROMOFLUOROBENZENE	23.80	51.3 PPB	003
46	1,3-DICHLOROBENZENE	26.86	0.0 PPB	003#
47	1,4-DICHLOROBENZENE	26.86	0.0 PPB	003#
48	1,2-DICHLOROBENZENE	***** NOT FOUND *****		003

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

TPD
6/26/91

File: C:\CHEMPC\DATA\1125WMB2.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 2:53 pm
Method File: H20-8240.M
Sample Name: WATER BLK 2
Misc Info:
ALS vial: 1



Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\2501004.D
Operator:
Date Acquired: 25 Nov 91 6:05 pm
Method File: H20-8240.M
Sample Name: 6729-1
Misc Info: SWB-1
Vial Number : 25

Ret Time	Signal Descr	Area	% Pk	% LPk
2.395	TIC	69853059	100.000	100.000
2.572	TIC	65886316	100.000	100.000
3.034	TIC	4561079	100.000	100.000
21.434	TIC	5466720	100.000	100.000
24.196	TIC	4746548	100.000	100.000
25.490	TIC	15326409	100.000	100.000
26.597	TIC	8687265	100.000	100.000
27.312	TIC	21595800	100.000	100.000
28.197	TIC	11987328	100.000	100.000
28.412	TIC	4394264	100.000	100.000
28.636	TIC	11067262	100.000	100.000
29.101	TIC	12827422	100.000	100.000
29.289	TIC	8319045	100.000	100.000
30.146	TIC	4086058	100.000	100.000
30.361	TIC	10447587	100.000	100.000
30.567	TIC	7422895	100.000	100.000
32.130	TIC	11864203	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501004.D
Operator:
Date Acquired: 25 Nov 91 6:05 pm
Method File: H20-8240.M
Sample Name: 6729-1R
Misc Info: SWB-1
Vial Number: 25 (see original data for comparison)

Quantitation Settings:
Reference Peak Window: 5 Percent
Non-Reference Peak Window: 5 Percent
Correlation Window: 0.03 Minutes
Default Multiplier: 1
Default Sample Amount: 0
Peak Type Decoding: * -> Time Reference Peak
m -> Manually re-integrated
00X -> Compound references ISTD X

#	Compound	Ret Time	Amount		Peak Type
1	DICHLOROFLUOROMETHANE	***** NOT FOUND *****			001
2	CHLOROMETHANE	3.42	0.0 PPB		001#
3	VINYL CHLORIDE	3.66	0.0 PPB		001#
4	BROMOMETHANE	***** NOT FOUND *****			001
5	CHLOROETHANE	***** NOT FOUND *****			001
6	TRICHLOROFLUOROMETHANE	6.03	0.1 PPB		001#
7	TRICHLOROTRIFLUOROETHANE	***** NOT FOUND *****			001
8	ACETONE	7.37	13.2 PPB	NR	001m
9	1,1-DICHLOROETHENE	7.57	0.1 PPB		001#
10	CARBON DISULFIDE	8.72	0.2 PPB		001
11	METHYLENE CHLORIDE	8.82	0.1 PPB		001#
12	trans-1,2-DICHLOROETHENE	9.53	0.8 PPB		001#
13	1,1-DICHLOROETHANE	10.40	0.1 PPB		001!
14	2-BUTANONE (MEK)	11.57	5.9 PPB		001m
15	cis-1,2-DICHLOROETHENE	11.85	0.2 PPB		001#
16	CHLOROFORM	12.18	0.0 PPB		001#
17	BROMOCHLOROMETHANE	12.50	50.0 PPB		*ISTD001!
18	1,1,1-TRICHLOROETHANE	13.06	0.1 PPB		001#
19	CARBON TETRACHLORIDE	13.57	0.1 PPB		001#
20	SURR-1,2-DICHLOROETHANE-D4	13.66	52.3 PPB		001m
21	BENZENE	13.87	12.1 PPB		002m
22	1,2-DICHLOROETHANE	13.84	0.1 PPB		002#
23	2-CHLOROETHYL VINYL ETHER	14.43	~~52.8 PPB~~	NR	002#
24	1,4-DIFLUOROBENZENE	14.55	50.0 PPB		*ISTD002!

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501004.D
Operator:
Date Acquired: 25 Nov 91 6:05 pm
Method File: H20-8240.M
Sample Name: 6729-1R
Misc Info: SWB-1
Vial Number: 25

Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.51	0.1 PPB	002#
27	BROMODICHLOROMETHANE	15.79	0.1 PPB	002#
28	2-HEXANONE	16.87	0.5 PPB	002m
29	cis-1,3-DICHLOROPROPENE	17.18	0.0 PPB	002#
30	SURR-TOLUENE-D8	17.72	48.1 PPB	002
31	TOLUENE	17.86	0.7 PPB	002m
32	trans-1,3-DICHLOROPROPENE	18.58	0.7 PPB	002#
33	1,1,2-TRICHLOROETHANE	18.62	0.5 PPB	003#
34	4-METHYL-2-PENTANONE	18.69	0.6 PPB	003m
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****	202406 / 524410*	~~003~~ ISTD 003#
37	CHLOROBENZENE-D5	21.01	50.0 PPB	
38	CHLOROBENZENE	21.08	~~*11.9 PPB~~	003m
39	ETHYLBENZENE	21.26	~~44.1 PPB~~ 17.	003
40	P&M XYLENE	21.43	~~289.5 PPB~~ 110.	003#
41	O XYLENE	22.40	~~15.5 PPB~~ 6.0	003m
42	STYRENE	***** NOT FOUND *****		003
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.71	0.4 PPB	003m
45	SURR-BROMOFLUOROBENZENE	23.79	~~135.7 PPB~~ 52.4	003m
46	1,3-DICHLOROBENZENE	26.57	0.2 PPB	003#
47	1,4-DICHLOROBENZENE	26.63	0.6 PPB	003#
48	1,2-DICHLOROBENZENE	27.53	0.1 PPB	003m

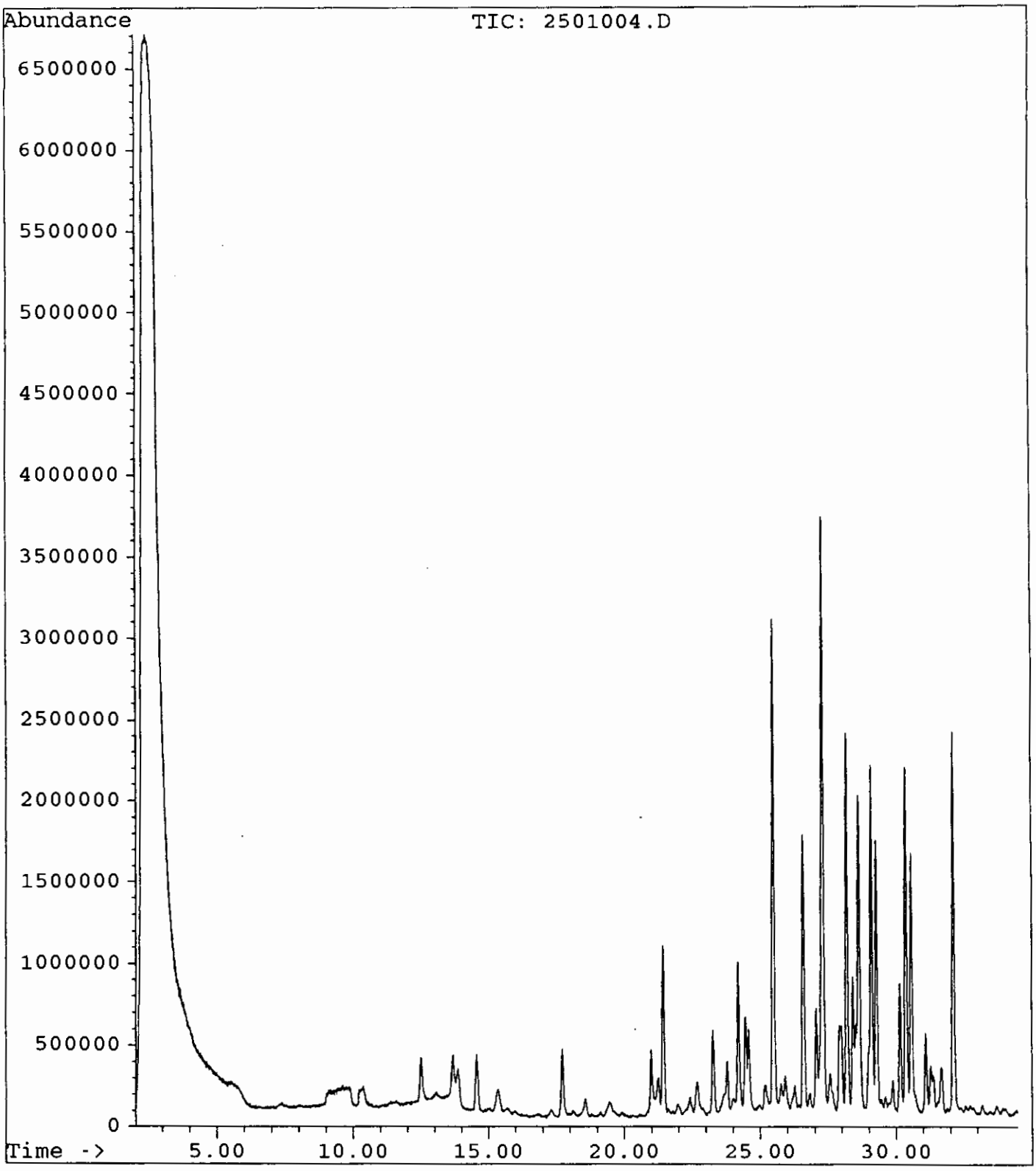
END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

VPP 4/26/91

* Hydro Carbon, ~~sp~~ spectra doesn't match all ions.

RAV 4/28/91

File: C:\CHEMPC\DATA\2501004.D
Operator:
Date Acquired: 25 Nov 91 6:05 pm
Method File: H20-8240.M
Sample Name: 6729-1R
Misc Info: SWB-1
ALS vial: 25



Area Percent Report
Sorted By Retention Time

Data: C:\CHEMPC\DATA\2501005.D
Operator:
Date Acquired: 25 Nov 91 6:44 pm
Method File: H20-8240.M
Sample Name: 6729-2
Misc Info: SWB-2
Vial Number : 25

Ret Time	Signal Descr	Area	% Pk	% LPk
2.377	TIC	75772063	100.000	100.000
2.671	TIC	55183676	100.000	100.000
27.312	TIC	4880314	100.000	100.000
28.195	TIC	4320809	100.000	100.000
28.642	TIC	5354664	100.000	100.000
29.097	TIC	3883114	100.000	100.000
30.364	TIC	5620404	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501005.D
Operator:
Date Acquired: 25 Nov 91 6:44 pm
Method File: H20-8240.M
Sample Name: 6729-2
Misc Info: SWB-2
Vial Number: 25

NR sum. out

Quantitation Settings:

Reference Peak Window:	5 Percent
Non-Reference Peak Window:	5 Percent
Correlation Window:	0.03 Minutes
Default Multiplier:	1
Default Sample Amount:	0
Peak Type Decoding:	* -> Time Reference Peak
	m -> Manually re-integrated
	00X -> Compound references ISTD X

#	Compound	Ret Time	Amount	Peak Type
1	DICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
2	CHLOROMETHANE	3.49	0.1 PPB	001#
3	VINYL CHLORIDE	3.85	0.1 PPB	001#
4	BROMOMETHANE	***** NOT FOUND *****		001
5	CHLOROETHANE	5.01	0.1 PPB	001#
6	TRICHLOROFLUOROMETHANE	6.00	0.2 PPB	001#
7	TRICHLOROTRIFLUOROETHANE	***** NOT FOUND *****		001
8	ACETONE	7.30	8.6 PPB	001m
9	1,1-DICHLOROETHENE	7.61	0.4 PPB	001#
10	CARBON DISULFIDE	8.62	0.2 PPB	001
11	METHYLENE CHLORIDE	8.85	0.1 PPB	001#
12	trans-1,2-DICHLOROETHENE	9.51	0.1 PPB	001
13	1,1-DICHLOROETHANE	***** NOT FOUND *****		001!
14	2-BUTANONE (MEK)	11.59	4.7 PPB	001m
15	cis-1,2-DICHLOROETHENE	11.89	0.2 PPB	001#
16	CHLOROFORM	12.19	0.1 PPB	001#
17	BROMOCHLOROMETHANE	12.52	50.0 PPB	*ISTD001!
18	1,1,1-TRICHLOROETHANE	13.09	0.1 PPB	001#
19	CARBON TETRACHLORIDE	13.33	0.3 PPB	001#
20	SURR-1,2-DICHLOROETHANE-D4	13.69	48.5 PPB	001m
21	BENZENE	13.88	0.2 PPB	002m
22	1,2-DICHLOROETHANE	14.07	0.1 PPB	002#
23	2-CHLOROETHYL VINYL ETHER	***** NOT FOUND *****		002
24	1,4-DIFLUOROBENZENE	14.59	50.0 PPB	*ISTD002!

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501005.D
Operator:
Date Acquired: 25 Nov 91 6:44 pm
Method File: H20-8240.M
Sample Name: 6729-2
Misc Info: SWB-2
Vial Number: 25

NR surrog. out

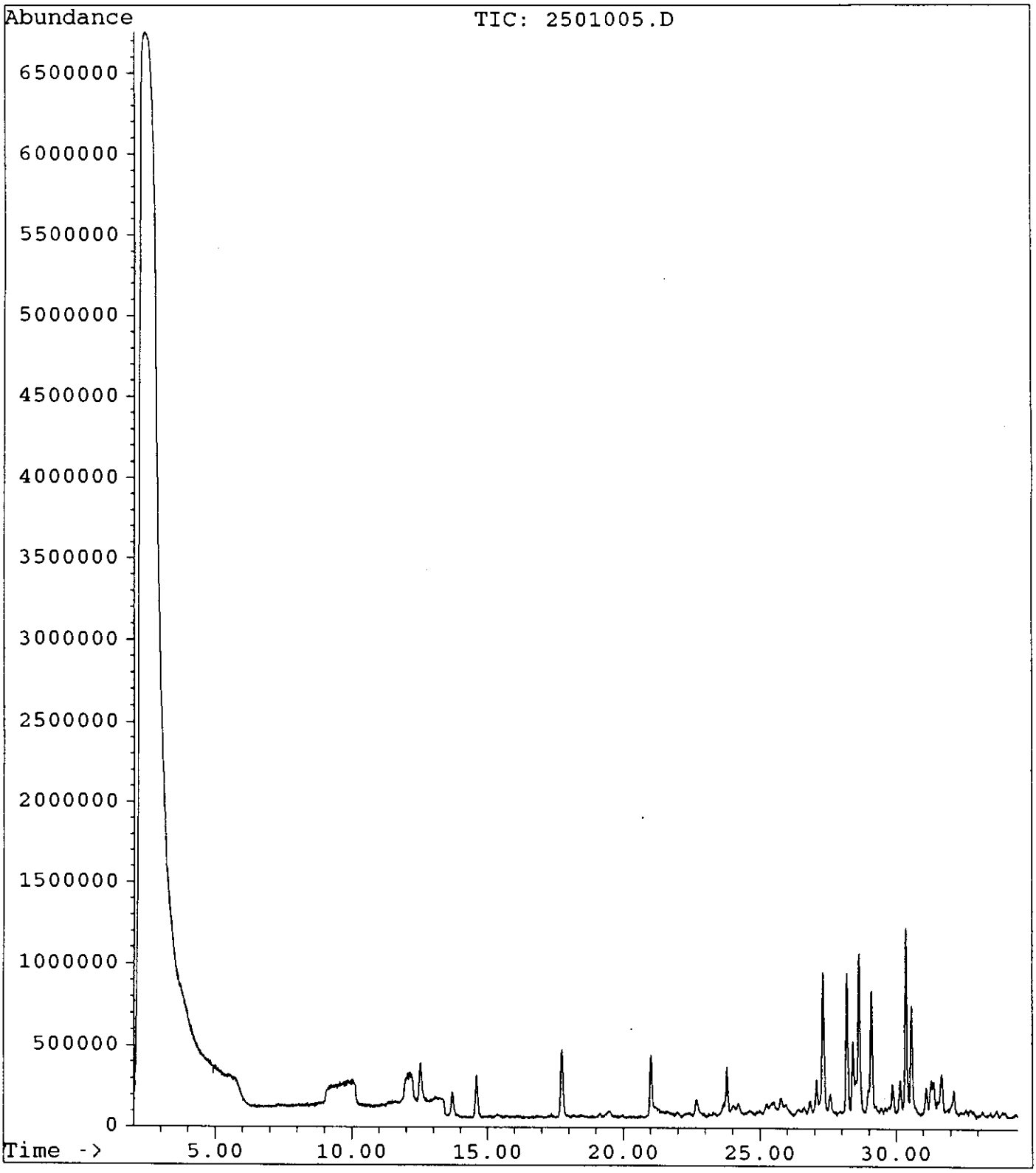
Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.58	0.2 PPB	002#
27	BROMODICHLOROMETHANE	16.04	0.1 PPB	002#
28	2-HEXANONE	16.88	0.4 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.23	0.1 PPB	002#
30	SURR-TOLUENE-D8	17.75	69.3 PPB out ↑	002m
31	TOLUENE	17.91	0.3 PPB	002m
32	trans-1,3-DICHLOROPROPENE	18.65	0.3 PPB	002#
33	1,1,2-TRICHLOROETHANE	18.66	0.1 PPB	003#
34	4-METHYL-2-PENTANONE	18.73	0.2 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	21.01	50.0 PPB	*ISTD003
38	CHLOROBENZENE	21.09	0.3 PPB	003m
39	ETHYLBENZENE	21.33	0.1 PPB	003m
40	P&M XYLENE	21.44	0.8 PPB	003m
41	0 XYLENE	22.41	0.1 PPB	003#
42	STYRENE	22.36	0.1 PPB	003#
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.64	0.3 PPB	003#
45	SURR-BROMOFLUOROBENZENE	23.79	51.7 PPB	003#
46	1,3-DICHLOROBENZENE	***** NOT FOUND *****		003
47	1,4-DICHLOROBENZENE	***** NOT FOUND *****		003
48	1,2-DICHLOROBENZENE	***** NOT FOUND *****		003

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

JPP 1/26/91

0110

File: C:\CHEMPC\DATA\2501005.D
Operator:
Date Acquired: 25 Nov 91 6:44 pm
Method File: H20-8240.M
Sample Name: 6729-2
Misc Info: SWB-2
ALS vial: 25



Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\2501006.D
Operator:
Date Acquired: 25 Nov 91 7:25 pm
Method File: H20-8240.M
Sample Name: 6729-3
Misc Info: XDUP-1
Vial Number : 25

Ret Time	Signal Descr	Area	% Pk	% LPk
2.341	TIC	58503745	100.000	100.000
27.303	TIC	4277094	100.000	100.000
28.195	TIC	3984937	100.000	100.000
28.641	TIC	5005186	100.000	100.000
29.088	TIC	3368481	100.000	100.000
30.363	TIC	5089984	100.000	100.000
30.569	TIC	2940780	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501006.D
Operator:
Date Acquired: 25 Nov 91 7:25 pm
Method File: H20-8240.M
Sample Name: 6729-3
Misc Info: XDUP-1 (6 of 6729-2)
Vial Number: 25

Quantitation Settings:

Reference Peak Window:	5 Percent
Non-Reference Peak Window:	5 Percent
Correlation Window:	0.03 Minutes
Default Multiplier:	1
Default Sample Amount:	0
Peak Type Decoding:	* -> Time Reference Peak
	m -> Manually re-integrated
	00X -> Compound references ISTD X

#	Compound	Ret Time	Amount		Peak Type
1	DICHLOROFLUOROMETHANE	2.94	0.3 PPB		001#
2	CHLOROMETHANE	3.44	0.0 PPB		001#
3	VINYL CHLORIDE	***** NOT FOUND *****			001
4	BROMOMETHANE	***** NOT FOUND *****			001
5	CHLOROETHANE	***** NOT FOUND *****			001
6	TRICHLOROFLUOROMETHANE	***** NOT FOUND *****			001
7	TRICHLOROTRIFLUOROETHANE	7.39	~~0.5 PPB~~		001
8	ACETONE	7.27	10.9 PPB	NR	001m
9	1,1-DICHLOROETHENE	7.59	~~0.2 PPB~~		001#
10	CARBON DISULFIDE	8.78	0.2 PPB		001
11	METHYLENE CHLORIDE	8.81	0.1 PPB		001#
12	trans-1,2-DICHLOROETHENE	9.43	0.3 PPB		001
13	1,1-DICHLOROETHANE	10.55	0.1 PPB		001!
14	2-BUTANONE (MEK)	11.57	3.0 PPB		001m
15	cis-1,2-DICHLOROETHENE	11.84	0.2 PPB		001#
16	CHLOROFORM	12.19	0.1 PPB		001#
17	BROMOCHLOROMETHANE	12.49	50.0 PPB		*ISTD001!
18	1,1,1-TRICHLOROETHANE	13.05	0.1 PPB		001#
19	CARBON TETRACHLORIDE	13.45	0.2 PPB		001#
20	SURR-1,2-DICHLOROETHANE-D4	13.68	52.8 PPB		001m
21	BENZENE	13.88	0.4 PPB		002m
22	1,2-DICHLOROETHANE	14.18	0.1 PPB		002#
23	2-CHLOROETHYL VINYL ETHER	14.42	~~77.2 PPB~~	NR	002#
24	1,4-DIFLUOROBENZENE	14.57	50.0 PPB		*ISTD002!

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501006.D
Operator:
Date Acquired: 25 Nov 91 7:25 pm
Method File: H20-8240.M
Sample Name: 6729-3
Misc Info: XDUP-1
Vial Number: 25 (6729-2)

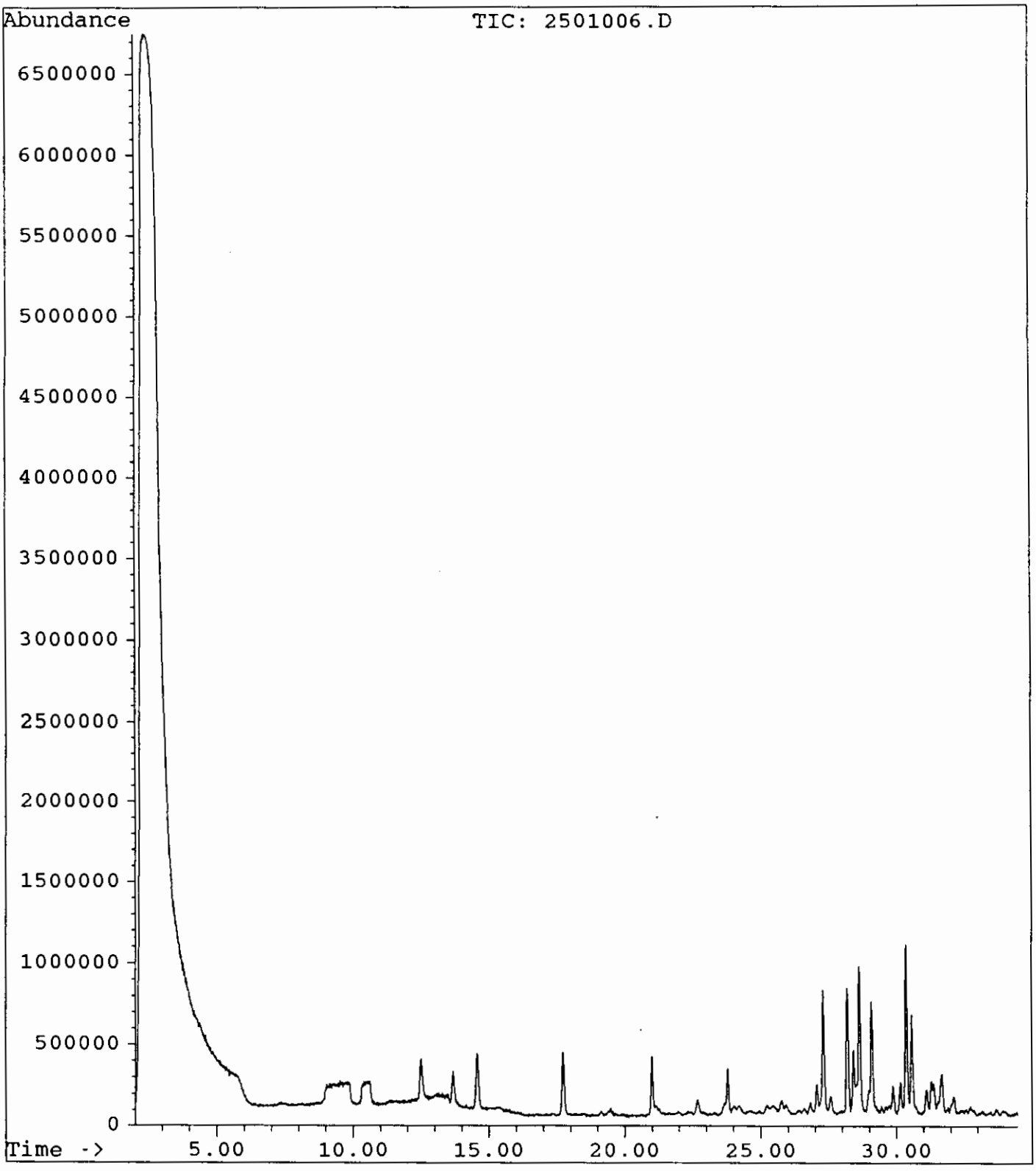
Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.54	0.1 PPB	002#
27	BROMODICHLOROMETHANE	16.00	0.0 PPB	002#
28	2-HEXANONE	16.86	0.4 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.26	0.1 PPB	002
30	SURR-TOLUENE-D8	17.71	47.6 PPB	002
31	TOLUENE	17.89	0.3 PPB	002m
32	trans-1,3-DICHLOROPROPENE	18.61	0.2 PPB	002m
33	1,1,2-TRICHLOROETHANE	18.54	0.1 PPB	003#
34	4-METHYL-2-PENTANONE	18.72	0.1 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	20.99	50.0 PPB	*ISTD003
38	CHLOROBENZENE	21.10	0.5 PPB	003#
39	ETHYLBENZENE	21.42	0.3 PPB	003#
40	P&M XYLENE	21.47	0.3 PPB	003#
41	0 XYLENE	22.44	0.2 PPB	003#
42	STYRENE	***** NOT FOUND *****		003
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.62	0.1 PPB	003#
45	SURR-BROMOFLUOROBENZENE	23.79	53.8 PPB	003m
46	1,3-DICHLOROBENZENE	***** NOT FOUND *****		003
47	1,4-DICHLOROBENZENE	***** NOT FOUND *****		003
48	1,2-DICHLOROBENZENE	27.51	0.1 PPB	003#

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

11/26/91

12/11/91

File: C:\CHEMPC\DATA\2501006.D
Operator:
Date Acquired: 25 Nov 91 7:25 pm
Method File: H20-8240.M
Sample Name: 6729-3
Misc Info: XDUP-1
ALS vial: 25



Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\2501007.D
Operator:
Date Acquired: 25 Nov 91 8:05 pm
Method File: H20-8240.M
Sample Name: 6729-4
Misc Info: FB-4
Vial Number : 25

Ret Time	Signal Descr	Area	% Pk	% LPk
2.439	TIC	47074702	100.000	100.000
2.483	TIC	7603762	100.000	100.000
2.510	TIC	12409914	100.000	100.000
2.572	TIC	6425120	100.000	100.000
2.634	TIC	10634697	100.000	100.000
2.705	TIC	19191471	100.000	100.000
2.892	TIC	5515454	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501007.D
Operator:
Date Acquired: 25 Nov 91 8:05 pm
Method File: H20-8240.M
Sample Name: 6729-4
Misc Info: FB-4
Vial Number: 25

Quantitation Settings:

Reference Peak Window:	5 Percent
Non-Reference Peak Window:	5 Percent
Correlation Window:	0.03 Minutes
Default Multiplier:	1
Default Sample Amount:	0
Peak Type Decoding:	* -> Time Reference Peak
	m -> Manually re-integrated
	00X -> Compound references ISTD X

#	Compound	Ret Time	Amount	Peak Type
1	DICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
2	CHLOROMETHANE	3.45	0.1 PPB	001#
3	VINYL CHLORIDE	***** NOT FOUND *****		001
4	BROMOMETHANE	4.92	0.1 PPB	001#
5	CHLOROETHANE	***** NOT FOUND *****		001
6	TRICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
7	TRICHLOROTRIFLUOROETHANE	7.44	2.7 PPB	001m
8	ACETONE	7.36	0.7 PPB	001#
9	1,1-DICHLOROETHENE	7.58	0.2 PPB	001#
10	CARBON DISULFIDE	8.86	0.2 PPB	001
11	METHYLENE CHLORIDE	8.82	0.1 PPB	001#
12	trans-1,2-DICHLOROETHENE	9.53	0.3 PPB	001#
13	1,1-DICHLOROETHANE	10.57	0.0 PPB	001!
14	2-BUTANONE (MEK)	11.46	1.3 PPB	001m
15	cis-1,2-DICHLOROETHENE	11.86	0.1 PPB	001#
16	CHLOROFORM	12.22	5.4 PPB	001m
17	BROMOCHLOROMETHANE	12.51	50.0 PPB	*ISTD001!
18	1,1,1-TRICHLOROETHANE	13.05	0.1 PPB	001#
19	CARBON TETRACHLORIDE	13.35	0.1 PPB	001#
20	SURR-1,2-DICHLOROETHANE-D4	13.68	51.0 PPB	001m
21	BENZENE	13.88	0.1 PPB	002
22	1,2-DICHLOROETHANE	13.88	0.1 PPB	002#
23	2-CHLOROETHYL VINYL ETHER	***** NOT FOUND *****		002
24	1,4-DIFLUOROBENZENE	14.59	50.0 PPB	*ISTD002!

0117

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501007.D
Operator:
Date Acquired: 25 Nov 91 8:05 pm
Method File: H20-8240.M
Sample Name: 6729-4
Misc Info: FB-4
Vial Number: 25

Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	15.39	0.1 PPB	002#
26	1,2-DICHLOROPROPANE	15.83	0.0 PPB	002#
27	BROMODICHLOROMETHANE	16.02	0.1 PPB	002#
28	2-HEXANONE	16.89	0.4 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.17	0.1 PPB	002#
30	SURR-TOLUENE-D8	17.72	46.4 PPB	002m
31	TOLUENE	17.90	0.4 PPB	002m
32	trans-1,3-DICHLOROPROPENE	18.64	0.3 PPB	002m
33	1,1,2-TRICHLOROETHANE	18.45	0.2 PPB	003#
34	4-METHYL-2-PENTANONE	18.76	0.1 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	21.01	50.0 PPB	*ISTD003
38	CHLOROBENZENE	***** NOT FOUND *****		003
39	ETHYLBENZENE	21.43	0.4 PPB	003#
40	P&M XYLENE	21.43	0.3 PPB	003#
41	0 XYLENE	***** NOT FOUND *****		003
42	STYRENE	***** NOT FOUND *****		003
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.76	0.1 PPB	003#
45	SURR-BROMOFLUOROBENZENE	23.80	49.5 PPB	003#
46	1,3-DICHLOROBENZENE	***** NOT FOUND *****		003
47	1,4-DICHLOROBENZENE	***** NOT FOUND *****		003
48	1,2-DICHLOROBENZENE	***** NOT FOUND *****		003

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

TOM
11/26/91

Rev 12/11/91

011118

Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\2501008.D
Operator:
Date Acquired: 25 Nov 91 8:45 pm
Method File: H20-8240.M
Sample Name: 6729-5
Misc Info: TB-1
Vial Number : 25

Ret Time	Signal Descr	Area	% Pk	% LPk
2.377	TIC	24273776	100.000	100.000
2.643	TIC	4269578	100.000	100.000
2.901	TIC	1350054	100.000	100.000
3.052	TIC	3186462	100.000	100.000
12.504	TIC	1685909	100.000	100.000
14.569	TIC	1531923	100.000	100.000
17.736	TIC	2162930	100.000	100.000
21.018	TIC	1894221	100.000	100.000
23.795	TIC	1292413	100.000	100.000

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501008.D
Operator:
Date Acquired: 25 Nov 91 8:45 pm
Method File: H20-8240.M
Sample Name: 6729-5
Misc Info: TB-1
Vial Number: 25

NR surr. out

Quantitation Settings:
Reference Peak Window: 5 Percent
Non-Reference Peak Window: 5 Percent
Correlation Window: 0.03 Minutes
Default Multiplier: 1
Default Sample Amount: 0
Peak Type Decoding: * -> Time Reference Peak
m -> Manually re-integrated
00X -> Compound references ISTD X

#	Compound	Ret Time	Amount	Peak Type
1	DICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
2	CHLOROMETHANE	3.44	0.3 PPB	001#
3	VINYL CHLORIDE	3.82	0.1 PPB	001#
4	BROMOMETHANE	5.00	0.4 PPB	001#
5	CHLOROETHANE	***** NOT FOUND *****		001
6	TRICHLOROFLUOROMETHANE	***** NOT FOUND *****		001
7	TRICHLOROTRIFLUOROETHANE	7.35	1.0 PPB	001
8	ACETONE	7.41	1.2 PPB	001
9	1,1-DICHLOROETHENE	7.60	0.4 PPB	001m
10	CARBON DISULFIDE	8.68	0.3 PPB	001#
11	METHYLENE CHLORIDE	8.87	0.4 PPB	001m
12	trans-1,2-DICHLOROETHENE	9.68	0.8 PPB	001
13	1,1-DICHLOROETHANE	***** NOT FOUND *****		001!
14	2-BUTANONE (MEK)	11.49	3.6 PPB	001m
15	cis-1,2-DICHLOROETHENE	11.84	~~1.0 PPB~~ 0.3	001#
16	CHLOROFORM	12.22	5.6 ~~17.4 PPB~~	~~001m~~
17	BROMOCHLOROMETHANE	12.53	50.0 PPB	001!
18	1,1,1-TRICHLOROETHANE	13.07	0.9 PPB	001#
19	CARBON TETRACHLORIDE	13.80	0.4 PPB	001#
20	SURR-1,2-DICHLOROETHANE-D4	13.67	~~174.0 PPB~~ 56.0	001m
21	BENZENE	13.89	0.2 PPB	002
22	1,2-DICHLOROETHANE	13.87	0.1 PPB	002#
23	2-CHLOROETHYL VINYL ETHER	14.54	NR ~~36.7 PPB~~	002#
24	1,4-DIFLUOROBENZENE	14.59	50.0 PPB	002!

70245 / 218387 = 0.322 ISTD

51666 / 525596 ISTD

DIRT8240

Calibration Last Updated: Mon Nov 25 15:28:15 1991
Internal Standard Report - Summary

Information from Data File:
File: C:\CHEMPC\DATA\2501008.D
Operator:
Date Acquired: 25 Nov 91 8:45 pm
Method File: H20-8240.M
Sample Name: 6729-5
Misc Info: TB-1
Vial Number: 25

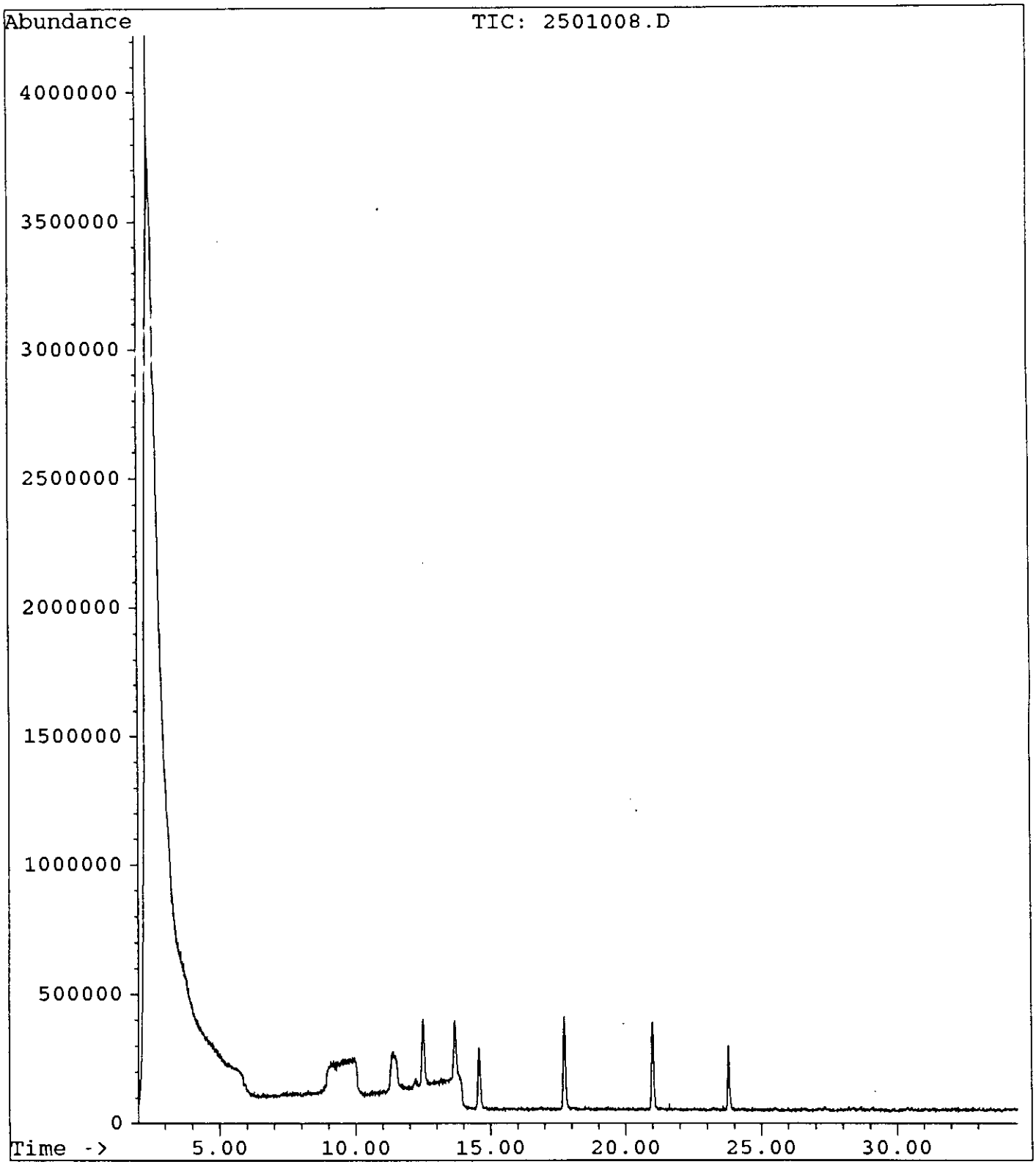
NR surr out

Pk #	Compound	Ret Time	Amount	Peak Type
25	TRICHLOROETHENE	***** NOT FOUND *****		002
26	1,2-DICHLOROPROPANE	15.37	0.1 PPB	002#
27	BROMODICHLOROMETHANE	16.10	0.1 PPB	002#
28	2-HEXANONE	16.88	0.2 PPB	002#
29	cis-1,3-DICHLOROPROPENE	17.15	0.1 PPB	002#
30	SURR-TOLUENE-D8	17.74	62.8 PPB out ↗	002m
31	TOLUENE	17.87	0.3 PPB	002m
32	trans-1,3-DICHLOROPROPENE	18.64	1.1 PPB	002#
33	1,1,2-TRICHLOROETHANE	18.62	0.1 PPB	003#
34	4-METHYL-2-PENTANONE	18.74	0.1 PPB	003#
35	TETRACHLOROETHENE	***** NOT FOUND *****		003
36	DIBROMOCHLOROMETHANE	***** NOT FOUND *****		003
37	CHLOROBENZENE-D5	21.02	50.0 PPB	*ISTD003
38	CHLOROBENZENE	***** NOT FOUND *****		003
39	ETHYLBENZENE	21.68	0.1 PPB	003#
40	P&M XYLENE	21.68	0.1 PPB	003#
41	0 XYLENE	22.77	0.1 PPB	003#
42	STYRENE	22.49	0.0 PPB	003#
43	BROMOFORM	***** NOT FOUND *****		003
44	1,1,2,2-TETRACHLOROETHANE	23.35	0.1 PPB	003#
45	SURR-BROMOFLUOROBENZENE	23.79	48.9 PPB	003m
46	1,3-DICHLOROBENZENE	***** NOT FOUND *****		003
47	1,4-DICHLOROBENZENE	***** NOT FOUND *****		003
48	1,2-DICHLOROBENZENE	***** NOT FOUND *****		003

END OF REPORT
Qualifiers Not Satisfied
! Qualifiers Not Used

DPH
11/26/91

File: C:\CHEMPC\DATA\2501008.D
Operator:
Date Acquired: 25 Nov 91 8:45 pm
Method File: H20-8240.M
Sample Name: 6729-5
Misc Info: TB-1
ALS vial: 25



C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 18:00
Output File: ^F3793::D1 Injected at: 911127 17:37
Data File: >F3793::D5 Dilution Factor: 1.00000
Name: K6729-2 SWB-2 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Date: 911127 11:46

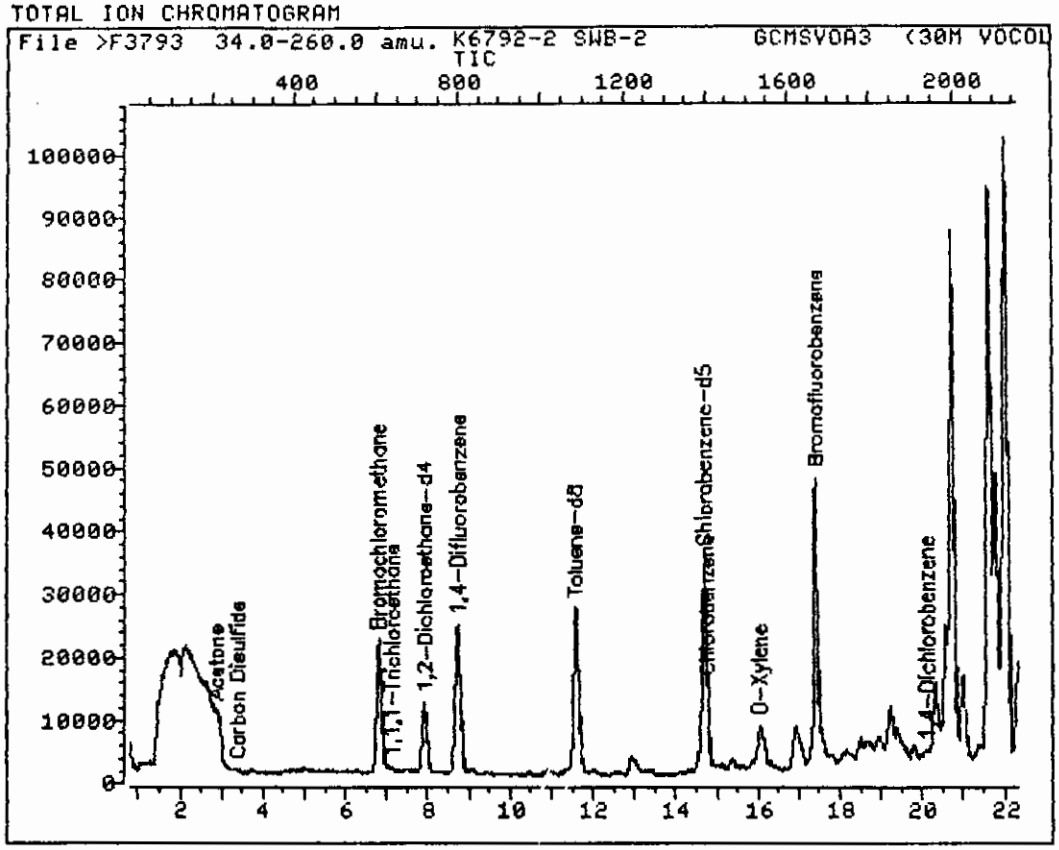
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	19850	50.00	UG/L	91
9)	Acetone	2.84	43.0	1777	14.50	UG/L	76
11)	Carbon Disulfide	3.37	76.0	1624	1.26	UG/L	100
19)	1,1,1-Trichloroethane	7.12	97.0	753	.902	UG/L	95
21)	1,2-Dichloroethane-d4	7.91	65.0	26351	43.03	UG/L	87
22)	*1,4-Difluorobenzene	8.73	114.0	75384	50.00	UG/L	93
31)	Toluene-d8	11.56	98.2	74599	50.21	UG/L	93
33)	*Chlorobenzene-d5	14.68	117.0	64220	50.00	UG/L	90
43)	O-Xylene	16.03	91.0	789	.450	UG/L	82
46)	Bromofluorobenzene	17.41	174.0	39581	51.11	UG/L	98
48)	1,4-Dichlorobenzene	20.11	146.0	100	.0847	UG/L	51

(Compound is ISTD

86.1 - 100.4 - 102.2

12/4/91

TOTAL ION CHROMATOGRAM



Data File: >F3793::D5 Quant Output File: ^F3793::D1
Name: K6792-2 SWB-2 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: 911127 11:46

Operator ID: JEFF-2
Quant Time : 911127 18:00
Injected at: 911127 17:37

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 18:28
Output File: ^F3794::D1 Injected at: 911127 18:04
Data File: >F3794::D5 Dilution Factor: 1.00000
Name: K6729-5 TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

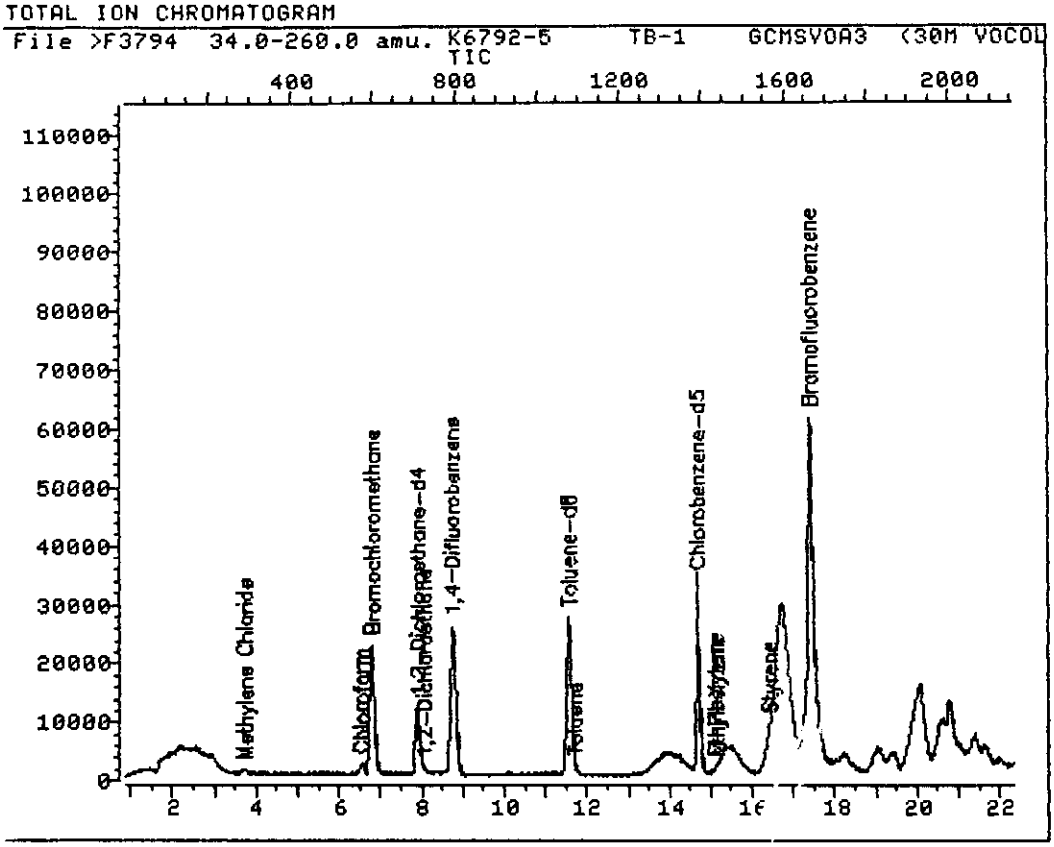
ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Date: 911127 11:46

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	19574	50.00	UG/L	87
12)	Methylene Chloride	3.72	83.9	1109	2.01	UG/L	90
18)	Chloroform	6.52	82.9	5753	5.16	UG/L	93
21)	1,2-Dichloroethane-d4	7.91	65.0	26764	44.32	UG/L	91
22)	*1,4-Difluorobenzene	8.74	114.0	76836	50.00	UG/L	96
24)	1,2-Dichloroethane	8.07	62.0	973	1.55	UG/L	76
31)	Toluene-d8	11.57	98.2	74749	49.36	UG/L	93
32)	Toluene	11.71	91.0	934	.607	UG/L	93
33)	*Chlorobenzene-d5	14.69	117.0	65091	50.00	UG/L	89
40)	Ethylbenzene	15.11	91.0	332	.186	UG/L	67
41)	Styrene	16.41	104.0	302	.237	UG/L	80
✓	M+P-Xylene	15.11	91.0	332	.188	UG/L	67
✓	Bromofluorobenzene	17.41	174.0	41533	52.91	UG/L	98

* Compound is ISTD

88.6 - 98.7 - 105.8

TOTAL ION CHROMATOGRAM



Data File: >F3794::D5 Quant Output File: ^F3794::D1
Name: K6792-5 TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: 911127 11:46

Operator ID: JEFF-2
Quant Time : 911127 18:28
Injected at: 911127 18:04

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 18:55
Output File: ^F3795::D1 Injected at: 911127 18:31
Data File: >F3795::D5 Dilution Factor: 1.00000
Name: K6729-5 MS TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

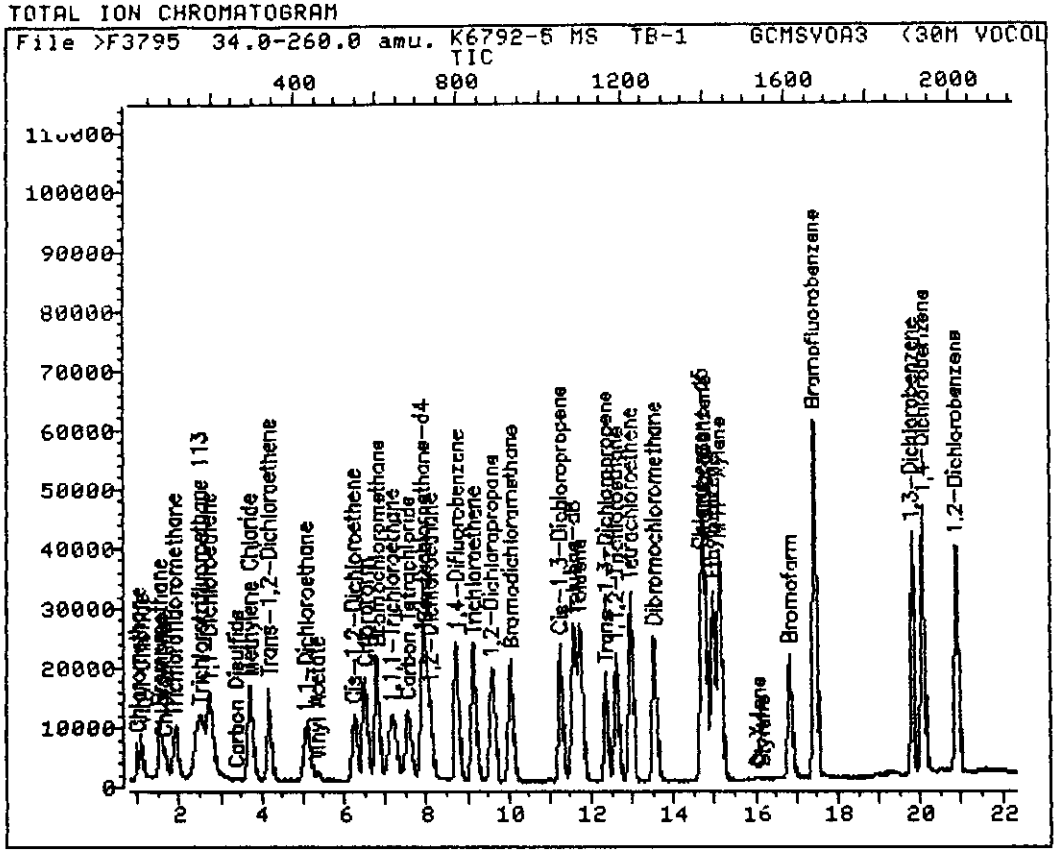
ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Date: 911127 11:46

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.81	127.9	19147	50.00	UG/L	97
2)	Chloromethane	1.00	50.0	13339	48.24	UG/L	88
3)	Vinyl Chloride	1.10	62.0	17837	46.20	UG/L	94
4)	Bromomethane	1.52	94.0	20127	47.14	UG/L	89
5)	Chloroethane	1.63	64.0	13542	47.27	UG/L	97
6)	Trichlorofluoromethane	1.88	101.0	34217	48.91	UG/L	93
7)	Trichlorotrifluoroethane 113	2.50	101.0	39199	47.50	UG/L	80
8)	1,1-Dichloroethene	2.72	96.0	21936	48.78	UG/L	92
11)	Carbon Disulfide	3.38	76.0	692	.558	UG/L	100
12)	Methylene Chloride	3.70	83.9	26546	49.23	UG/L	92
13)	Vinyl Acetate	5.33	86.0	700	42.78	UG/L	100
1	Trans-1,2-Dichloroethene	4.17	96.0	24294	48.80	UG/L	90
1	Cis-1,2-Dichloroethene	6.22	96.0	19140	47.52	UG/L	91
17)	1,1-Dichloroethane	5.05	63.0	52561	48.66	UG/L	92
18)	Chloroform	6.52	82.9	58929	54.02	UG/L	90
19)	1,1,1-Trichloroethane	7.16	97.0	39760	49.35	UG/L	98
20)	Carbon Tetrachloride	7.55	116.9	37422	48.34	UG/L	85
21)	1,2-Dichloroethane-d4	7.91	65.0	26176	44.31	UG/L	81
22)	*1,4-Difluorobenzene	8.73	114.0	73139	50.00	UG/L	95
23)	Benzene	7.97	78.0	73752	52.90	UG/L	90
24)	1,2-Dichloroethane	8.09	62.0	30205	50.66	UG/L	96
25)	Trichloroethene	9.14	130.0	31307	52.62	UG/L	90
26)	1,2-Dichloropropane	9.58	63.0	34767	51.68	UG/L	99
27)	Bromodichloromethane	10.05	82.9	52559	52.76	UG/L	92
29)	Cis-1,3-Dichloropropene	11.25	75.0	48505	50.67	UG/L	95
31)	Toluene-d8	11.57	98.2	74323	51.56	UG/L	99
32)	Toluene	11.72	91.0	78896	53.83	UG/L	89
33)	*Chlorobenzene-d5	14.68	117.0	64937	50.00	UG/L	93
34)	Trans-1,3-Dichloropropene	12.35	75.0	32500	47.67	UG/L	92
35)	1,1,2-Trichloroethane	12.60	97.0	25902	50.90	UG/L	98
37)	Tetrachloroethene	12.95	163.9	30072	51.49	UG/L	93
38)	Dibromochloromethane	13.52	128.9	48373	52.19	UG/L	95
39)	Chlorobenzene	14.76	112.0	63861	52.40	UG/L	94
40)	Ethylbenzene	14.95	91.0	92402	51.84	UG/L	99
41)	Styrene	16.15	104.0	316	.249	UG/L	91
42)	M+P-Xylene	15.11	91.0	88899	50.55	UG/L	70
43)	O-Xylene	16.04	91.0	931	.525	UG/L	82
4	Bromoform	16.83	172.9	35894	49.87	UG/L	94
45	1,1,2,2-Tetrachloroethane	17.43	82.9	44620	49.80	UG/L	93
46)	Bromofluorobenzene	17.41	174.0	40626	51.88	UG/L	95
47)	1,3-Dichlorobenzene	19.79	146.0	59965	52.07	UG/L	95
48)	1,4-Dichlorobenzene	20.08	146.0	64164	53.74	UG/L	92

49)	1,2-Dichlorobenzene	20.85	146.0	56712	51.79 UG/L	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >F3795::D5 Quant Output File: ^F3795::D1
Name: K6792-5 MS TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: 911127 11:46

Operator ID: JEFF-2
Quant Time : 911127 18:55
Injected at: 911127 18:31

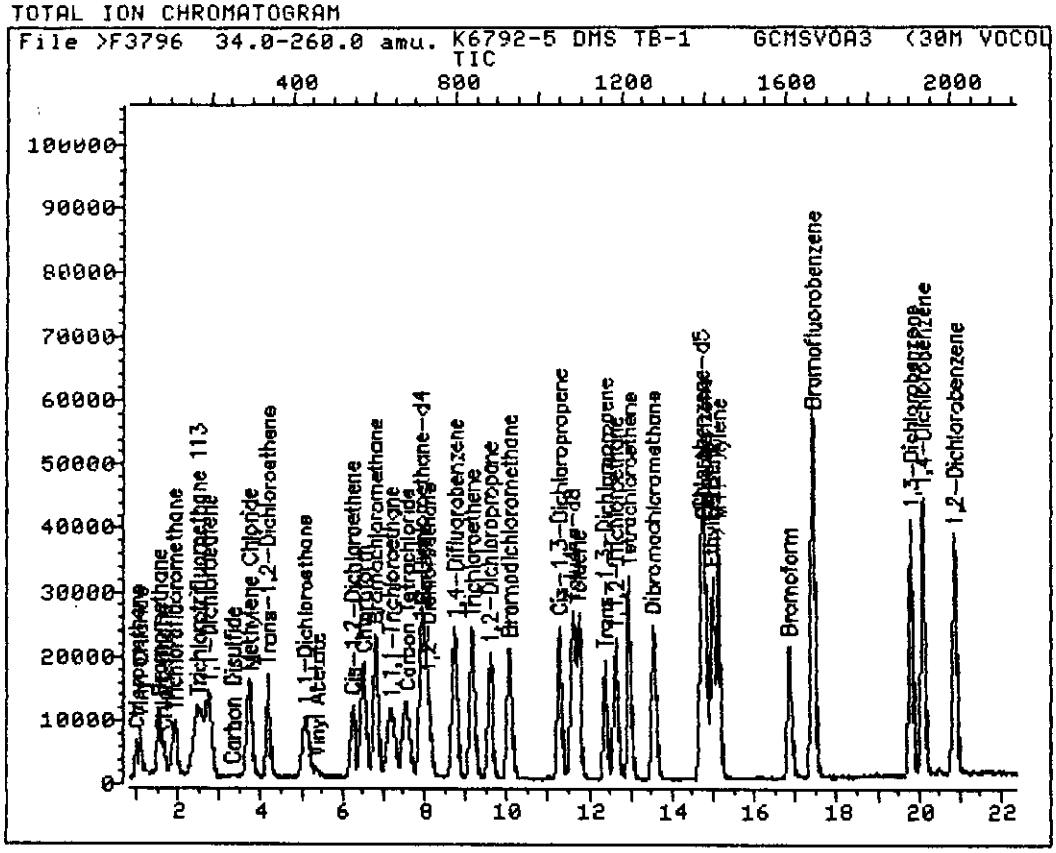
Operator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 19:22
Output File: ^F3796::D1 Injected at: 911127 18:58
Data File: >F3796::D5 Dilution Factor: 1.00000
Name: K6729-5 DMS TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Date: 911127 11:46

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	20305	50.00	UG/L	94
2)	Chloromethane	.99	50.0	12263	41.82	UG/L	94
3)	Vinyl Chloride	1.09	62.0	17169	41.93	UG/L	96
4)	Bromomethane	1.52	94.0	20465	45.20	UG/L	88
5)	Chloroethane	1.63	64.0	13151	43.29	UG/L	97
6)	Trichlorofluoromethane	1.90	101.0	34262	46.18	UG/L	99
7)	Trichlorotrifluoroethane 113	2.46	101.0	40052	45.77	UG/L	81
8)	1,1-Dichloroethene	2.72	96.0	22165	46.48	UG/L	98
11)	Carbon Disulfide	3.31	76.0	320	.243	UG/L	100
12)	Methylene Chloride	3.71	83.9	27141	47.47	UG/L	94
13)	Vinyl Acetate	5.36	86.0	713	41.09	UG/L	100
)	Trans-1,2-Dichloroethene	4.16	96.0	24584	46.57	UG/L	91
)	Cis-1,2-Dichloroethene	6.22	96.0	19959	46.73	UG/L	88
17)	1,1-Dichloroethane	5.06	63.0	53181	46.43	UG/L	95
18)	Chloroform	6.50	82.9	60100	51.95	UG/L	97
19)	1,1,1-Trichloroethane	7.17	97.0	40084	46.92	UG/L	96
20)	Carbon Tetrachloride	7.57	116.9	38454	46.84	UG/L	82
21)	1,2-Dichloroethane-d4	7.90	65.0	28057	44.79	UG/L	83
22)	*1,4-Difluorobenzene	8.74	114.0	76060	50.00	UG/L	90
23)	Benzene	7.97	78.0	74759	51.57	UG/L	87
24)	1,2-Dichloroethane	8.09	62.0	31149	50.24	UG/L	95
25)	Trichloroethene	9.14	130.0	32434	52.42	UG/L	91
26)	1,2-Dichloropropane	9.58	63.0	35536	50.80	UG/L	94
27)	Bromodichloromethane	10.05	82.9	52658	50.83	UG/L	90
29)	Cis-1,3-Dichloropropene	11.26	75.0	48846	49.07	UG/L	97
31)	Toluene-d8	11.58	98.2	74016	49.37	UG/L	92
32)	Toluene	11.72	91.0	78181	51.29	UG/L	94
33)	*Chlorobenzene-d5	14.69	117.0	64414	50.00	UG/L	89
34)	Trans-1,3-Dichloropropene	12.35	75.0	32923	48.68	UG/L	89
35)	1,1,2-Trichloroethane	12.61	97.0	26171	51.85	UG/L	97
37)	Tetrachloroethene	12.95	163.9	29940	51.68	UG/L	98
38)	Dibromochloromethane	13.52	128.9	47565	51.73	UG/L	99
39)	Chlorobenzene	14.77	112.0	62072	51.35	UG/L	95
40)	Ethylbenzene	14.95	91.0	90869	51.40	UG/L	97
42)	M+P-Xylene	15.11	91.0	89278	51.18	UG/L	71
44)	Bromoform	16.83	172.9	34851	48.81	UG/L	99
45)	1,1,2,2-Tetrachloroethane	17.43	82.9	45033	50.67	UG/L	95
	Bromofluorobenzene	17.40	174.0	39236	50.51	UG/L	99
47)	1,3-Dichlorobenzene	19.79	146.0	57439	50.28	UG/L	93
48)	1,4-Dichlorobenzene	20.07	146.0	61157	51.64	UG/L	96
49)	1,2-Dichlorobenzene	20.85	146.0	54365	50.05	UG/L	91

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >F3796::D5 Quant Output File: ^F3796::D1
Name: K6792-5 DMS TB-1 Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

Id File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: 911127 11:46

Operator ID: JEFF-2
Quant Time : 911127 19:22
Injected at: 911127 18:58

GC/MS TUNING AND MASS CALIBRATION

Bromofluorobenzene (BFB)

Case No. _____ Laboratory Name _____

Instrument ID MSVOA #2 Date 11/25/91 Time 8:52 am

Data Release Authorized By: _____

m/e	ION ABUNDANCE CRITERIA	%RELATIVE ABUNDANCE
50	15.0 - 40.0% of the base peak	21.4%
75	30.0 - 60.0% of the base peak	41.2%
95	Base peak, 100% relative abundance	100%
96	5.0 - 9.0% of the base peak	9.0%
173	Less than 1.0% of the base peak	0
174	Greater than 50.0% of the base peak	80.0%
175	5.0 - 9.0% of mass 174	(7.5)[1]
176	Greater than 95.0%, but less than 101.0% of mass 174	(95)[1]
177	5.0 - 9.0% of mass 176	(8.1)[2]

THIS PERFORMANCE TUNE APPLIES TO THE FOLLO[illegible] SAMPLES, BLANKS AND STANDARDS.

[1]Value in parenthesis is % mass 174.
[2]Value in parenthesis is % mass 176.

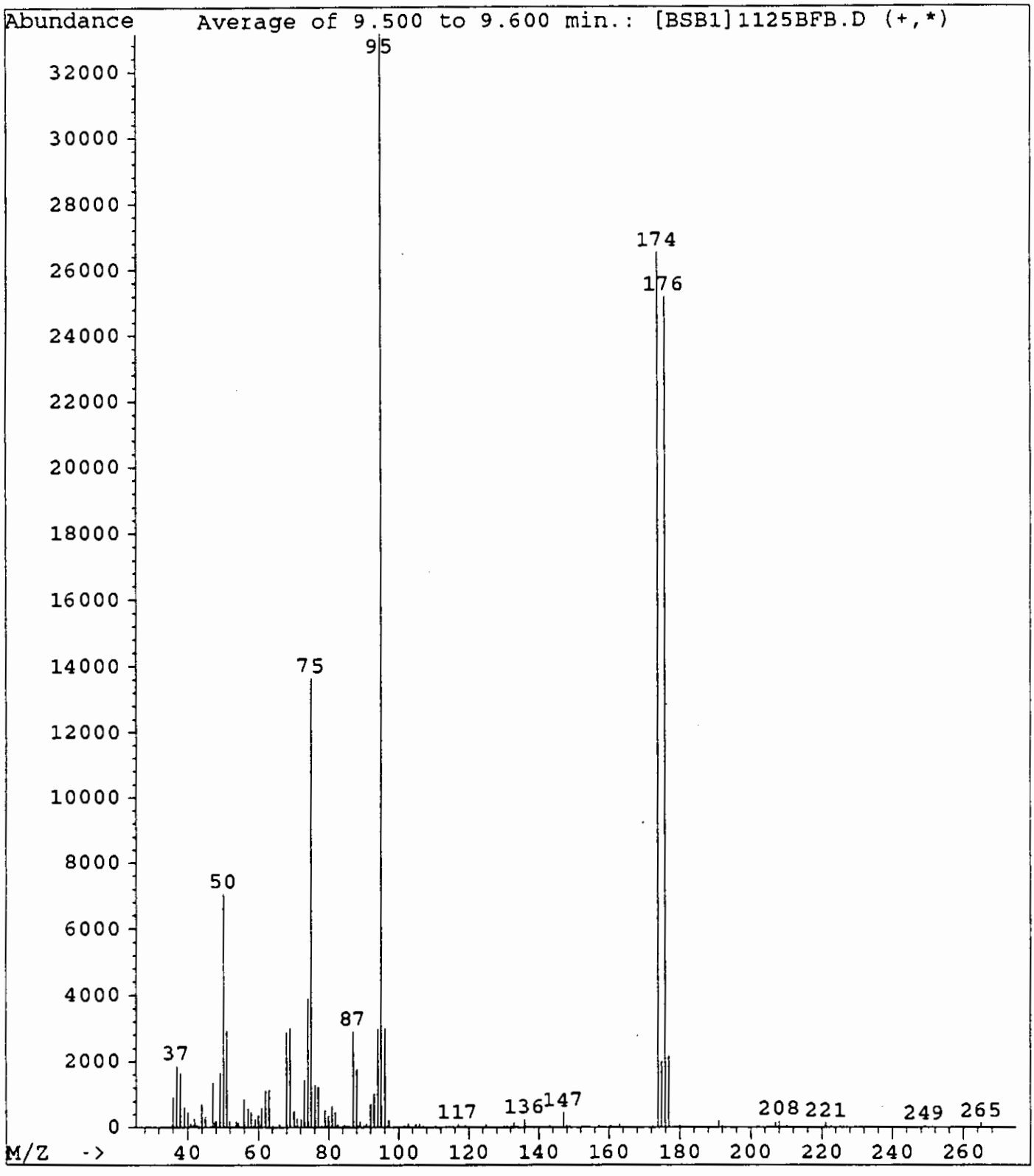
SAMPLE ID	LAB [illegible]	[illegible]E OF ANALYSIS	TIME OF ANALYSIS
	WMB[illegible]	QA [illegible]-/91	
	672[illegible]		
	W[illegible]		
~~SWB1~~	[illegible] Documentation		
~~-2~~			
SWB-1			
-2			
X-DUP1			
FB-4			
TB-1			

FORM V

Revision 0
Date September 1986

00134

File: C:\CHEMPC\DATA\BSB\1125BFB.D
Operator: [BSB1]TPDEAN
Date Acquired: 25 Nov 91 8:59 am
Method File: AUTOBFB.M
Sample Name: 50 NG BFB
Misc Info: TUNE VERIFICATION
ALS vial: 1



Average of 9.500 to 9.600 min.: [BSB1]1125BFB.D
50 NG BFB
Modified:added scaled

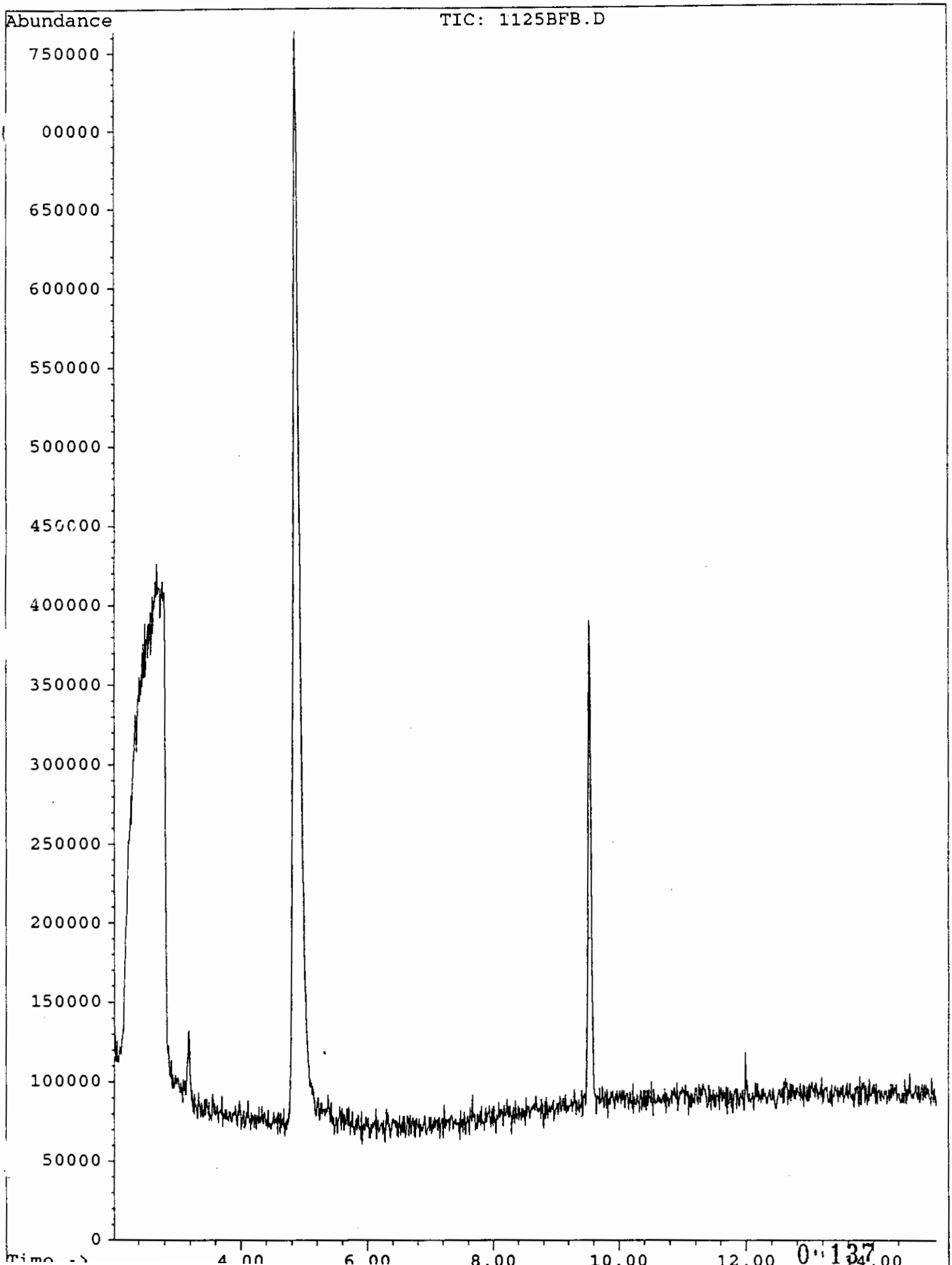
m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
35.55	102	42.60	80	51.95	213	60.65	107
36.00	938	43.05	58	52.60	75	61.00	612
37.00	1880	44.00	723	53.75	211	62.05	1140
37.95	1652	45.00	350	54.40	158	63.05	1162
38.25	23	46.60	63	54.90	29	64.05	66
39.05	637	47.05	1386	56.00	885	64.80	44
40.05	469	47.70	198	57.05	604	66.00	100
40.85	128	48.10	200	58.00	464	68.00	2898
41.15	73	49.05	1665	58.55	68	69.00	3013
41.70	95	50.05 21.4	7084	59.10	263	70.10	502
42.00	278	51.05	2950	60.00	376	70.40	67

Average of 9.500 to 9.600 min.: [BSB1]1125BFB.D
50 NG BFB
Modified:added scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
71.05	272	79.65	48	88.60	44	96.85	71
71.30	43	79.90	364	88.90	181	97.15	225
72.15	256	80.95	669	90.00	77	101.55	66
73.10	1471	81.90	477	90.80	112	101.85	47
74.05	3904	82.60	105	91.30	56	102.80	135
75.00 41.2	13652	83.95	77	91.60	58	104.90	111
76.05	1296	84.45	84	92.00	730	105.85	123
76.95	1238	85.25	74	92.95	1050	106.85	55
78.00	65	85.85	52	94.05	2978	110.55	57
78.90	536	87.00	2919	95.00 100.	33175	116.95	124
79.15	64	87.95	1767	96.05 9.0	3001	119.00	95

rage of 9.500 to 9.600 min.: [BSB1]1125BFB.D
50 NG BFB
Modified:added scaled

m/z	abund.	m/z	abund.	m/z	abund.	m/z	abund.
124.85	101	152.45	72	178.95	59	221.05	171
129.95	64	153.55	57	179.85	85	222.65	42
130.95	55	157.05	83	186.85	3	248.95	72
132.35	65	160.50	84	191.00	224	264.95	155
133.00	144	161.50	9	192.00	59		
133.75	59	163.00	125	192.95	16		
135.95	257	172.35	53	204.80	58		
143.10	64	173.90 80.0	26554	207.00	171		
147.00	471	174.90 7.5	2000	207.95	221		
147.90	66	175.90 95.0	25214	209.00	44		
148.75	57	176.90 8.1	2160	210.00	66		


Abundance
TIC: 1125BFB.D
750000
00000
650000
600000
550000
500000
450000
400000
350000
300000
250000
200000
150000
100000
50000
0
Time -->
4.00
6.00
8.00
10.00
12.00
14.00

Continuing Calibration Check
Volatile HSL Compounds

Case No: _____ Calibration Date: 11/25/91

Laboratory Name _____ Time: 11:16 am

Contract No: _____ Laboratory ID: _____

Instrument ID: MSVOA #2 Initial Calibration Date: 10/25/91

Minimum RF for SPCC is 0.300 (0.25 for Bromoform) Maximum %D for CCC is 25%

Compound	$\overline{RF}$	RF_{50}	%D	CCC	SPCC
Chloromethane	2.736	3,884	42.		••
Bromomethane	~~2.65~~ 1.859	2.222	19.		
Vinyl Chloride	2.695	2.808	4.2	•	
Chloroethane	2.068	2.240	7.3		
Methylene Chloride	2.597	2.046	29.		
Acetone	1.440	1.732	20.		
Carbon Disulfide	2.515	1.168	55.		
1, 1-Dichloroethene	1.761	1.532	13.	•	
1, 1-Dichloroethane	3.297	3.430	4.0		••
Trans-1, 2-Dichloroethene	1.535	1.351	—		
Chloroform	3.023	2.607	14.	•	
1, 2-Dichloroethane	.650	0.447	24.		
2-Butanone	2.050	2.754	36.		
1, 1, 1-Trichloroethane	1.555	1.251	19.		
Carbon Tetrachloride	1.151	0.949	15.		
Vinyl Acetate	—	—	—		
Bromodichloromethane	.563	.474	15.		
1, 2-Dichloropropane	.557	.543	2.0	•	
Trans-1, 3-Dichloropropene		.117			
Trichloroethene	.306	.308	—		
Dibromochloromethane	.401	.345	11.		
1, 1, 2-Trichloroethane	.457	.475	—		
Benzene	1.540	1.653	10.		
cis-1, 3-Dichloropropene	.515	.691	16.		
2-Chloroethylvinylether	—	—	—		
Bromoform	.390	.267	7.9		••
4-Methyl-2-Pentanone	.612	.746	22.		
2-Hexanone	.744	.864	16.		
Tetrachloroethene	.256	.273	6.6		
1, 1, 2, 2-Tetrachloroethane	.754	.744	1.3		••
Toluene	1.643	1.231	25.	•	
Chlorobenzene	1.154	1.120	3.4		••
Ethylbenzene	.502	.486	3.2	•	
Styrene	1.215	1.053	13.		
Total Xylenes	.542	.621	5.4		

RF_{50} -Response Factor from daily standard file at 50 ug/l
$\overline{RF}$ -Average Response Factor from initial calibration Form VI

%D -Percent Difference
CCC -Calibration Check Compounds (•)
SPCC -System Performance Check Compounds (••)

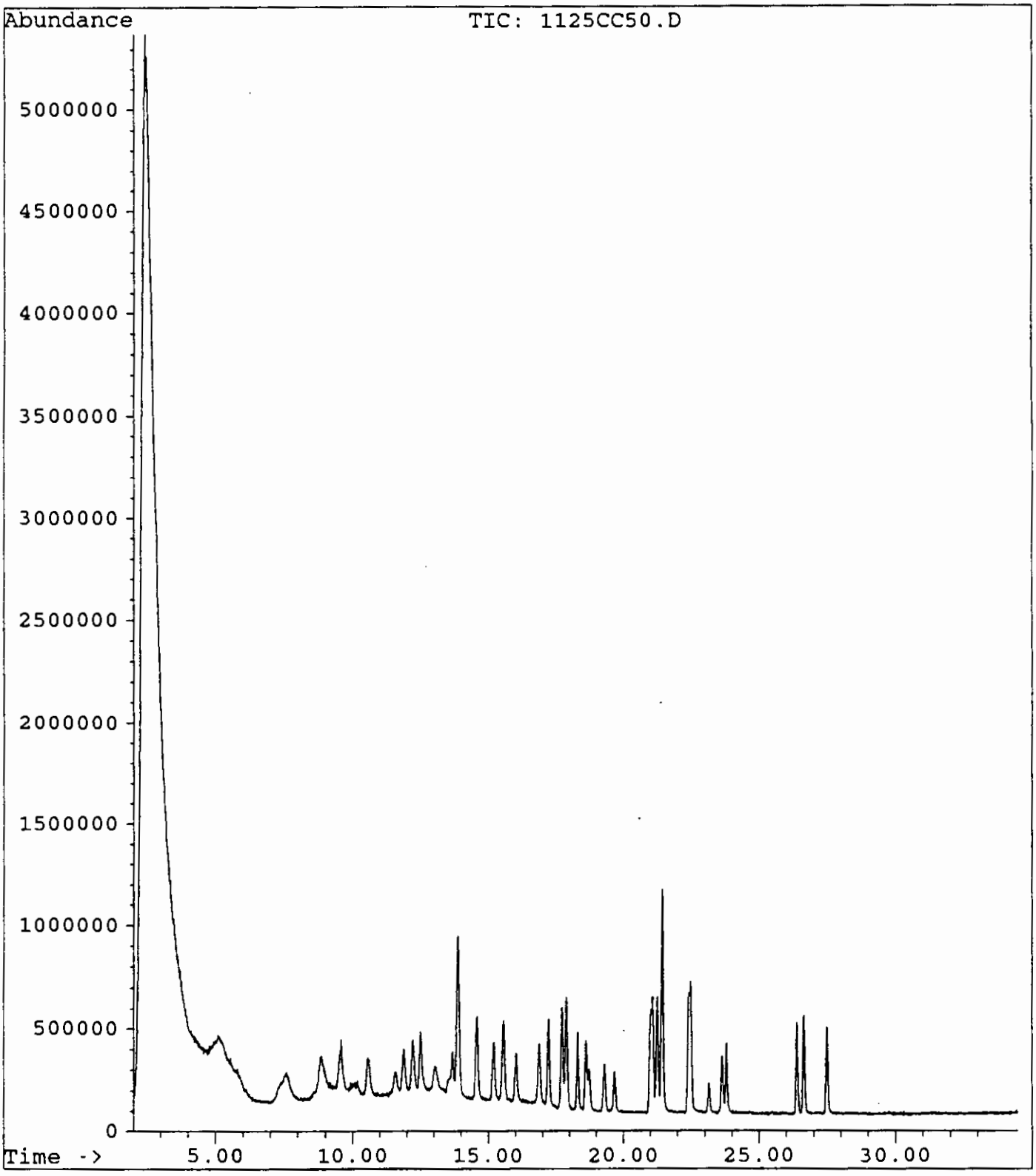
Form VII

Area Percent Report
Sorted By Retention Time

Data File: C:\CHEMPC\DATA\1125CC50.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 11:16 am
Method File: H20-8240.M
Sample Name: 50 PPB CONTINUING
Misc Info: CONTINUING CALIBRATION VERIFICATION
Vial Number : 1

Ret Time	Signal Descr	Area	% Pk	% LPk
2.413	TIC	46547117	100.000	100.000
13.889	TIC	5510951	100.000	100.000
14.584	TIC	2499852	100.000	100.000
15.564	TIC	2694070	100.000	100.000
17.718	TIC	3085861	100.000	100.000
17.879	TIC	3277522	100.000	100.000
21.080	TIC	2378564	100.000	100.000
21.259	TIC	2990661	100.000	100.000
21.437	TIC	5792748	100.000	100.000
22.433	TIC	2714421	100.000	100.000
22.478	TIC	2910960	100.000	100.000

File: C:\CHEMPC\DATA\1125CC50.D
Operator: TPDEAN
Date Acquired: 25 Nov 91 11:16 am
Method File: H20-8240.M
Sample Name: 50 PPB CONTINUING
Misc Info: CONTINUING CALIBRATION VERIFICATION
ALS vial: 1



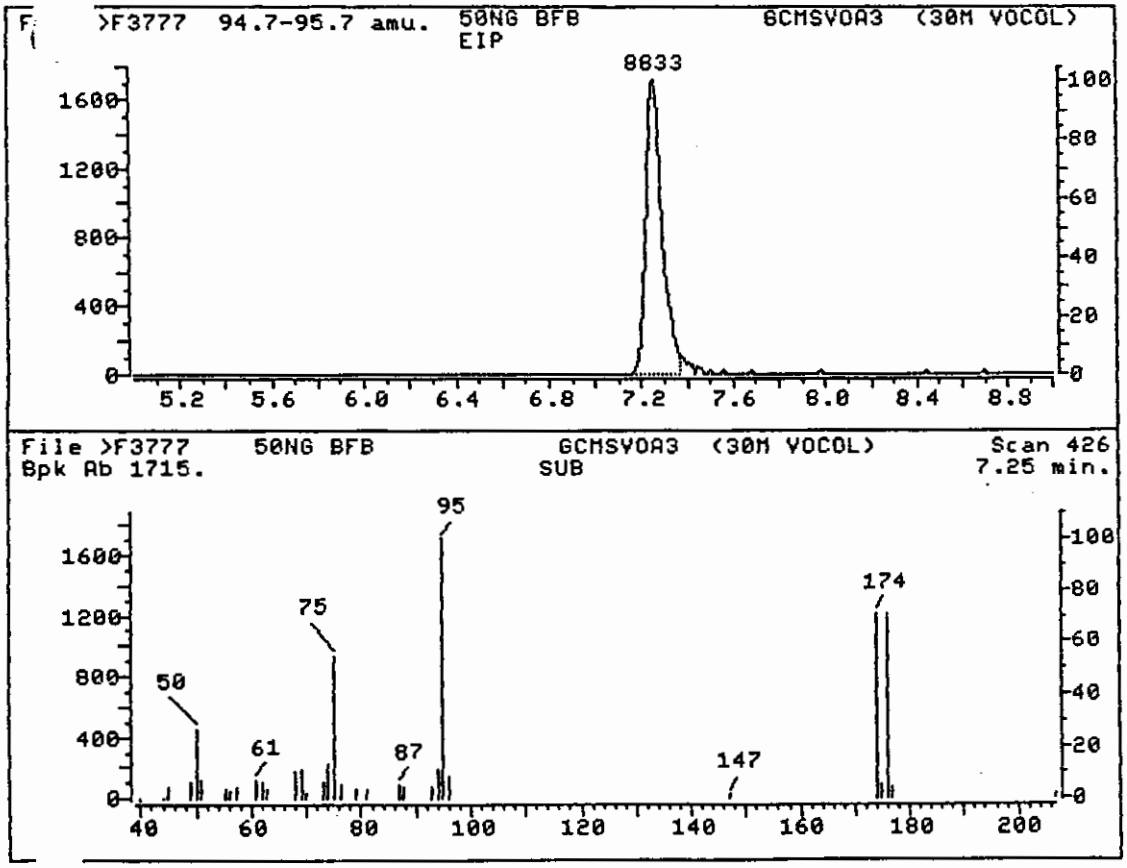
GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	26.47	26.47	Ok
75	30-60% of mass 95	54.58	54.58	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	8.28	8.28	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	70.61	70.61	Ok
175	5-9% of mass 174	5.07	7.18	Ok
176	95-101% of mass 174	70.26	99.50	Ok
177	5-9% of mass 176	4.84	6.89	Ok

Injection Date: 11/27/91
Injection Time: 08:39
Data File: >F3777
Scan: 426

FMGR : AL, Move cursor; then press carriage return :



Continuing Calibration Check
HSL Compounds

C[illegible] No: Calibration Date: 11/27/91

Contractor: Columbia Analytical Time: 11:46

Contract No: Laboratory ID: >F3783

Instrument ID: GCMSV0A3 Initial Calibration Date: 11/27/91

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Chloromethane	.78581	.72203	8.12		**
Vinyl Chloride	1.09358	1.00823	7.80	*	
Bromomethane	1.23507	1.11501	9.72		
Chloroethane	.81468	.74803	8.18		
Trichlorofluoromethane	1.98194	1.82704	7.82		
Trichlorotrifluoroethane 113	2.26263	2.15493	4.76		
1,1-Dichloroethene	1.25623	1.17421	6.53	*	
Acetone	.23856	.30877	29.43		
Carbon Disulfide	3.15417	3.23790	2.65		
Methylene Chloride	1.45583	1.40799	3.29		
Vinyl Acetate	.03396	.04273	25.83		
Trans-1,2-Dichloroethene	1.38624	1.30002	6.22		
Cis-1,2-Dichloroethene	1.09175	1.05185	3.65		
[illegible] anone	.08236	.11355	37.87		
[illegible] Dichloroethane	3.08191	2.82073	8.47		**
Chloroform	3.03879	2.84866	6.26	*	
1,1,1-Trichloroethane	2.24500	2.10381	6.29		
Carbon Tetrachloride	2.15737	2.02147	6.30		
1,2-Dichloroethane-d4	1.40631	1.54250	9.68		
Benzene	.97444	.95302	2.20		
1,2-Dichloroethane	.38207	.40758	6.68		
Trichloroethene	.41408	.40673	1.77		
1,2-Dichloropropane	.46909	.45989	1.96	*	
Bromodichloromethane	.67625	.68099	.70		
2-Chloroethylvinyl ether	.17399	.20098	15.51		
Cis-1,3-Dichloropropene	.63933	.65443	2.36		
4-Methyl-2-pentanone	.08884	.12152	36.78		
Toluene-d8	.98711	.98547	.17		
Toluene	1.02869	1.00204	2.59	*	
Trans-1,3-Dichloropropene	.48345	.52497	8.59		
1,1,2-Trichloroethane	.34384	.39182	13.96		
2-Hexanone	.07697	.11006	43.00		

RF - Response Factor from daily standard file at 50.00 UG/L

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

[illegible]f - % Difference from original average or curve

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

Continuing Calibration Check
HSL Compounds

No:

Calibration Date: 11/27/91

Contractor: Columbia Analytical

Time: 11:46

Contract No:

Laboratory ID: >F3783

Instrument ID: GCMSV0A3

Initial Calibration Date: 11/27/91

Minimum $\overline{RF}$ for SPCC is 0.300

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Tetrachloroethene	.45689	.44970	1.57		
Dibromochloromethane	.64980	.71366	9.83		
Chlorobenzene	.94638	.93838	.84		**
Ethylbenzene	1.46376	1.37233	6.25	*	
Styrene	.87137	.97787	12.22		
M+P-Xylene	1.38737	1.35411	2.40		
O-Xylene	1.23284	1.36428	10.66		
Bromoform	.44532	.55418	24.45		**
1,1,2,2-Tetrachloroethane	.52889	.68985	30.43		**
Bromofluorobenzene	.57979	.60300	4.00		
1,3-Dichlorobenzene	.85367	.88672	3.87		
1,4-Dichlorobenzene	.88821	.91930	3.50		
1,2-Dichlorobenzene	.75278	.84308	12.00		

RF - Response Factor from daily standard file at 50.00 UG/L

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

f - % Difference from original average or curve

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

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 13:50
Output File: ^F3783::D1 Injected at: 911127 11:46
Data File: >F3783::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: <none>

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	19189	50.00	UG/L	94
2)	Chloromethane	.98	50.0	13855	45.94	UG/L	96
3)	Vinyl Chloride	1.08	62.0	19347	46.10	UG/L	93
4)	Bromomethane	1.50	94.0	21396	45.14	UG/L	82
5)	Chloroethane	1.61	64.0	14354	45.91	UG/L	96
6)	Trichlorofluoromethane	1.89	101.0	35059	46.09	UG/L	94
7)	Trichlorotrifluoroethane 113	2.50	101.0	41351	47.62	UG/L	80
8)	1,1-Dichloroethene	2.70	96.0	22532	46.74	UG/L	94
9)	Acetone	2.86	43.0	5925	64.72	UG/L	89
10)	Dimethyl Ketone	2.89	58.0	1691	60.22	UG/L	85
11)	Carbon Disulfide	3.35	76.0	62132	51.33	UG/L	100
)	Methylene Chloride	3.70	83.9	27018	48.36	UG/L	93
)	Vinyl Acetate	5.34	86.0	820	62.92	UG/L	100
14)	Trans-1,2-Dichloroethene	4.17	96.0	24946	46.89	UG/L	89
15)	Cis-1,2-Dichloroethene	6.21	96.0	20184	48.17	UG/L	87
16)	2-Butanone	6.22	72.0	2179	68.93	UG/L	100
17)	1,1-Dichloroethane	5.05	63.0	54127	45.76	UG/L	92
18)	Chloroform	6.51	82.9	54663	46.87	UG/L	97
19)	1,1,1-Trichloroethane	7.14	97.0	40370	46.86	UG/L	91
20)	Carbon Tetrachloride	7.55	116.9	38790	46.85	UG/L	89
21)	1,2-Dichloroethane-d4	7.91	65.0	29599	54.84	UG/L	87
22)	*1,4-Difluorobenzene	8.74	114.0	78730	50.00	UG/L	93
23)	Benzene	7.98	78.0	75031	48.90	UG/L	87
24)	1,2-Dichloroethane	8.09	62.0	32089	53.34	UG/L	97
25)	Trichloroethene	9.14	130.0	32022	49.11	UG/L	97
26)	1,2-Dichloropropane	9.58	63.0	36207	49.02	UG/L	87
27)	Bromodichloromethane	10.04	82.9	53614	50.35	UG/L	90
28)	2-Chloroethylvinyl ether	10.99	63.0	15823	57.76	UG/L	82
29)	Cis-1,3-Dichloropropene	11.25	75.0	51523	51.18	UG/L	96
30)	4-Methyl-2-pentanone	11.36	58.0	9567	68.39	UG/L	75
31)	Toluene-d8	11.58	98.2	77586	49.92	UG/L	92
32)	Toluene	11.72	91.0	78891	48.70	UG/L	90
33)	*Chlorobenzene-d5	14.69	117.0	67061	50.00	UG/L	91
34)	Trans-1,3-Dichloropropene	12.37	75.0	35205	54.29	UG/L	87
35)	1,1,2-Trichloroethane	12.62	97.0	26276	56.98	UG/L	99
36)	2-Hexanone	13.36	58.0	7381	71.50	UG/L	97
)	Tetrachloroethene	12.96	163.9	30157	49.21	UG/L	94
)	Dibromochloromethane	13.53	128.9	47859	54.91	UG/L	98
39)	Chlorobenzene	14.76	112.0	62929	49.58	UG/L	96
40)	Ethylbenzene	14.95	91.0	92030	46.88	UG/L	95

C rator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 13:50
Output File: ^F3783::D1 Injected at: 911127 11:46
Data File: >F3783::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: <none>

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.17	104.0	65577	56.11	UG/L	83
42)	M+P-Xylene	15.12	91.0	90808	48.80	UG/L	69
43)	O-Xylene	16.04	91.0	91490	55.33	UG/L	86
44)	Bromoform	16.84	172.9	37164	62.22	UG/L	99
45)	1,1,2,2-Tetrachloroethane	17.45	82.9	46262	65.22	UG/L	98
46)	Bromofluorobenzene	17.42	174.0	40438	52.00	UG/L	96
47)	1,3-Dichlorobenzene	19.80	146.0	59464	51.94	UG/L	92
48)	1,4-Dichlorobenzene	20.08	146.0	61649	51.75	UG/L	91
49)	1,2-Dichlorobenzene	20.87	146.0	56538	56.00	UG/L	91

Compound is ISTD

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSVOA3

Contractor: Columbia Analytical Calibration Date: 11/27/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3779	>F3778	>F3780	>F3781	>F3782				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Chloromethane	.91980	.88645	.71631	.68662	.71988	.78581	13.809		**
Vinyl Chloride	1.27609	1.17482	.98807	.98758	1.04132	1.09358	11.657	*	
Bromomethane	1.38283	1.26872	1.16664	1.18270	1.17447	1.23507	7.472		
Chloroethane	.94082	.87256	.75165	.74921	.75919	.81468	10.736		
Trichlorofluoromethane	2.21407	2.01395	1.86197	1.89338	1.92633	1.98194	7.146		
Trichlorotrifluoroethane 113	2.53697	2.31223	2.12163	2.12595	2.21640	2.26263	7.605		
1,1-Dichloroethene	1.41860	1.28478	1.17260	1.18337	1.22180	1.25623	8.027	*	
Acetone	.35361	.30380	.18084	.16977	.18477	.23856	35.352		
Carbon Disulfide	4.22406	3.31422	2.69952	2.67462	2.85840	3.15417	20.635		
Methylene Chloride	1.66771	1.48761	1.34955	1.36672	1.40754	1.45583	8.921		
Vinyl Acetate	.01655	.03491	.03866	.03925	.04043	.03396	29.302		
Trans-1,2-Dichloroethene	1.54741	1.42594	1.30284	1.30385	1.35115	1.38624	7.438		
Cis-1,2-Dichloroethene	1.23927	1.10751	1.02710	1.02272	1.06213	1.09175	8.171		
2-Butanone	.11568	.08149	.07104	.06861	.07500	.08236	23.374		
1,1-Dichloroethane	3.50447	3.19242	2.84746	2.87953	2.98567	3.08191	8.826		**
Chloroform	3.36837	3.10051	2.85993	2.89917	2.96596	3.03879	6.768	*	
1,1,1-Trichloroethane	2.55903	2.26781	2.11388	2.11638	2.16789	2.24500	8.298		
Carbon Tetrachloride	2.37358	2.16463	2.04441	2.08353	2.12072	2.15737	5.970		
1,2-Dichloroethane-d4	1.56485	1.46176	1.31147	1.37290	1.32057	1.40631	7.598		
Benzene	1.03668	.94484	.94323	.96034	.98713	.97444	4.002		
1,2-Dichloroethane	.41471	.36633	.37091	.37282	.38559	.38207	5.128		
Trichloroethene	.42792	.38658	.41297	.41380	.42914	.41408	4.141		
1,2-Dichloropropane	.49476	.45237	.45776	.45801	.48255	.46909	3.946	*	
Bromodichloromethane	.68760	.64576	.67017	.67354	.70417	.67625	3.208		
2-Chloroethylvinyl ether	.19137	.16747	.16906	.16449	.17756	.17399	6.242		
Cis-1,3-Dichloropropene	.65958	.61049	.62809	.63350	.66497	.63933	3.549		
4-Methyl-2-pentanone	.11209	.08610	.08502	.06919	.09180	.08884	17.417		
Toluene-d8	.99960	.95009	.97741	.98180	1.02663	.98711	2.870		
Toluene	1.05595	.97494	1.02134	1.02669	1.06452	1.02869	3.428	*	
Trans-1,3-Dichloropropene	.48916	.45828	.47676	.48309	.50996	.48345	3.889		
1,1,2-Trichloroethane	.34506	.32128	.34151	.34928	.36207	.34384	4.308		
2-Hexanone	.08873	.07201	.07134	.07252	.08024	.07697	9.747		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - 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: GCMSV0A3

Contractor: Columbia Analytical Calibration Date: 11/27/91

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.300 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>F3779	>F3778	>F3780	>F3781	>F3782				
Compound	RF 20.00	RF 50.00	RF 100.00	RF 150.00	RF 200.00	$\overline{RF}$	% RSD	CCC	SPCC
Tetrachloroethene	.46846	.43689	.45372	.45153	.47384	.45689	3.210		
Dibromochloromethane	.62474	.59034	.65859	.66536	.70998	.64980	6.927		
Chlorobenzene	.97655	.90428	.93401	.94036	.97668	.94638	3.253		**
Ethylbenzene	1.56612	1.40298	1.43038	1.42165	1.49766	1.46376	4.609	*	
Styrene	1.06694	.84965	.79816	.79514	.84697	.87137	12.893		
M+P-Xylene	1.40869	1.32838	1.37642	1.39308	1.43027	1.38737	2.775		
O-Xylene	1.58860	1.23665	1.10961	1.08845	1.14090	1.23284	16.774		
Bromoform	.40690	.39654	.47307	.46728	.48283	.44532	9.063		**
1,1,2,2-Tetrachloroethane	.53266	.49358	.54529	.53574	.53718	.52889	3.835		**
Bromofluorobenzene	.58373	.56208	.59215	.57315	.58784	.57979	2.096		
1,3-Dichlorobenzene	.91460	.83742	.86101	.83608	.81922	.85367	4.354		
1,4-Dichlorobenzene	.95005	.85541	.89253	.87652	.86654	.88821	4.184		
1,2-Dichlorobenzene	.82460	.74363	.77858	.72746	.68963	.75278	6.818		

RF - Response Factor (Subscript is amount in UG/L)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

00147

Operator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 10:18
Output File: ^F3779::D1 Injected at: 911127 09:54
Data File: >F3779::D5 Dilution Factor: 1.00000
Name: 20PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	16770	50.00	UG/L	90
2)	Chloromethane	.98	50.0	6170	22.40	UG/L	88
3)	Vinyl Chloride	1.08	62.0	8560	22.39	UG/L	94
4)	Bromomethane	1.50	94.0	9276	22.19	UG/L	93
5)	Chloroethane	1.61	64.0	6311	21.87	UG/L	92
6)	Trichlorofluoromethane	1.90	101.0	14852	22.08	UG/L	89
7)	Trichlorotrifluoroethane 113	2.49	101.0	17018	22.40	UG/L	70
8)	1,1-Dichloroethene	2.70	96.0	9516	22.74	UG/L	93
9)	Acetone	2.82	43.0	2372M	30.69	UG/L	90
10)	Dimethyl Ketone	2.84	58.0	500	20.37	UG/L	51
11)	Carbon Disulfide	3.34	76.0	28335	27.21	UG/L	100
12)	Methylene Chloride	3.69	83.9	11187	22.34	UG/L	89
13)	Vinyl Acetate	5.33	86.0	111M	7.05	UG/L	100
14)	Trans-1,2-Dichloroethene	4.15	96.0	10380	22.44	UG/L	88
15)	Cis-1,2-Dichloroethene	6.20	96.0	8313	22.88	UG/L	88
16)	2-Butanone	6.22	72.0	776	25.12	UG/L	78
17)	1,1-Dichloroethane	5.05	63.0	23508	22.85	UG/L	94
18)	Chloroform	6.49	82.9	22595	22.17	UG/L	94
19)	1,1,1-Trichloroethane	7.17	97.0	17166	22.98	UG/L	97
20)	Carbon Tetrachloride	7.55	116.9	15922	22.54	UG/L	93
21)	1,2-Dichloroethane-d4	7.90	65.0	10497	21.44	UG/L	85
22)	*1,4-Difluorobenzene	8.73	114.0	74582	50.00	UG/L	93
23)	Benzene	7.95	78.0	30927	21.99	UG/L	87
24)	1,2-Dichloroethane	8.09	62.0	12372	20.87	UG/L	91
25)	Trichloroethene	9.16	130.0	12766	21.36	UG/L	86
26)	1,2-Dichloropropane	9.56	63.0	14760	22.05	UG/L	95
27)	Bromodichloromethane	10.04	82.9	20513	20.78	UG/L	93
28)	2-Chloroethylvinyl ether	10.98	63.0	5709	20.50	UG/L	75
29)	Cis-1,3-Dichloropropene	11.26	75.0	19677	21.16	UG/L	94
30)	4-Methyl-2-pentanone	11.40	58.0	3344^	24.80	UG/L	75
31)	Toluene-d8	11.59	98.2	29821	20.80	UG/L	93
32)	Toluene	11.73	91.0	31502	21.53	UG/L	86
33)	*Chlorobenzene-d5	14.70	117.0	63394	50.00	UG/L	86
34)	Trans-1,3-Dichloropropene	12.36	75.0	12404	20.05	UG/L	88
35)	1,1,2-Trichloroethane	12.60	97.0	8750	19.97	UG/L	94
36)	2-Hexanone	13.44	58.0	2250	21.40	UG/L	90
37)	Tetrachloroethene	12.94	163.9	11879	20.74	UG/L	93
38)	Dibromochloromethane	13.54	128.9	15842	19.27	UG/L	97
39)	Chlorobenzene	14.77	112.0	24763	21.13	UG/L	97
40)	Ethylbenzene	14.96	91.0	39713	22.35	UG/L	99

C rator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 10:18
Output File: ^F3779::D1 Injected at: 911127 09:54
Data File: >F3779::D5 Dilution Factor: 1.00000
Name: 20PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.17	104.0	27055	25.73	UG/L	86
42)	M+P-Xylene	15.11	91.0	35721	20.92	UG/L	70
43)	O-Xylene	16.03	91.0	40283	26.55	UG/L	87
44)	Bromoform	16.86	172.9	10318	17.60	UG/L	99
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	13507	18.64	UG/L	93
46)	Bromofluorobenzene	17.42	174.0	14802	19.67	UG/L	99
47)	1,3-Dichlorobenzene	19.80	146.0	23192	20.86	UG/L	90
48)	1,4-Dichlorobenzene	20.09	146.0	24091	21.21	UG/L	93
49)	1,2-Dichlorobenzene	20.87	146.0	20910	21.57	UG/L	93

* Compound is ISTD

Operator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 09:31
Output File: ^F3778::D1 Injected at: 911127 09:08
Data File: >F3778::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.81	127.9	17561	50.00	UG/L	98
2)	Chloromethane	1.00	50.0	15567	53.98	UG/L	90
3)	Vinyl Chloride	1.10	62.0	20631	51.53	UG/L	92
4)	Bromomethane	1.52	94.0	22280	50.89	UG/L	94
5)	Chloroethane	1.64	64.0	15323	50.70	UG/L	91
6)	Trichlorofluoromethane	1.91	101.0	35367	50.21	UG/L	96
7)	Trichlorotrifluoroethane 113	2.50	101.0	40605	51.03	UG/L	66
8)	1,1-Dichloroethene	2.73	96.0	22562	51.49	UG/L	94
9)	Acetone	2.83	43.0	5335	65.92	UG/L	78
10)	Dimethyl Ketone	2.87	58.0	1387	53.97	UG/L	91
11)	Carbon Disulfide	3.37	76.0	58201	53.38	UG/L	100
12)	Methylene Chloride	3.69	83.9	26124	49.81	UG/L	82
13)	Vinyl Acetate	5.37	86.0	613	37.16	UG/L	100
14)	Trans-1,2-Dichloroethene	4.16	96.0	25041	51.69	UG/L	93
15)	Cis-1,2-Dichloroethene	6.24	96.0	19449	51.13	UG/L	86
16)	2-Butanone	6.25	72.0	1431M	44.23	UG/L	85
17)	1,1-Dichloroethane	5.07	63.0	56062	52.05	UG/L	95
18)	Chloroform	6.52	82.9	54448	51.01	UG/L	95
19)	1,1,1-Trichloroethane	7.17	97.0	39825	50.91	UG/L	94
20)	Carbon Tetrachloride	7.55	116.9	38013	51.39	UG/L	93
21)	1,2-Dichloroethane-d4	7.91	65.0	25670	50.07	UG/L	89
22)	*1,4-Difluorobenzene	8.74	114.0	78538	50.00	UG/L	92
23)	Benzene	7.97	78.0	74206	50.10	UG/L	89
24)	1,2-Dichloroethane	8.09	62.0	28771	46.09	UG/L	96
25)	Trichloroethene	9.17	130.0	30361	48.23	UG/L	98
26)	1,2-Dichloropropane	9.60	63.0	35528	50.40	UG/L	9
27)	Bromodichloromethane	10.06	82.9	50717	48.79	UG/L	9
28)	2-Chloroethylvinyl ether	10.98	63.0	13153	44.85	UG/L	7
29)	Cis-1,3-Dichloropropene	11.26	75.0	47947	48.95	UG/L	9
30)	4-Methyl-2-pentanone	11.37	58.0	6762	47.62	UG/L	9
31)	Toluene-d8	11.59	98.2	74618	49.42	UG/L	9
32)	Toluene	11.73	91.0	76570	49.69	UG/L	8
33)	*Chlorobenzene-d5	14.71	117.0	65772	50.00	UG/L	8
34)	Trans-1,3-Dichloropropene	12.38	75.0	30142	46.97	UG/L	8
35)	1,1,2-Trichloroethane	12.62	97.0	21131	46.49	UG/L	9
36)	2-Hexanone	13.39	58.0	4736	43.41	UG/L	8
37)	Tetrachloroethene	12.96	163.9	28735	48.34	UG/L	9
38)	Dibromochloromethane	13.54	128.9	38828	45.52	UG/L	9
39)	Chlorobenzene	14.78	112.0	59476	48.92	UG/L	9
40)	Ethylbenzene	14.97	91.0	92277	50.06	UG/L	9

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Operator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 09:31
Output File: ^F3778::D1 Injected at: 911127 09:08
Data File: >F3778::D5 Dilution Factor: 1.00000
Name: 50PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.18	104.0	55883	51.23	UG/L	81
42)	M+P-Xylene	15.14	91.0	87370	49.31	UG/L	70
43)	O-Xylene	16.03	91.0	81337	51.67	UG/L	87
44)	Bromoform	16.85	172.9	26081	42.87	UG/L	92
45)	1,1,2,2-Tetrachloroethane	17.45	82.9	32464	43.18	UG/L	95
46)	Bromofluorobenzene	17.42	174.0	36969	47.36	UG/L	92
47)	1,3-Dichlorobenzene	19.80	146.0	55079	47.74	UG/L	94
48)	1,4-Dichlorobenzene	20.09	146.0	56262	47.74	UG/L	95
49)	1,2-Dichlorobenzene	20.87	146.0	48910	48.64	UG/L	87

* Compound is ISTD

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 10:46
Output File: ^F3780::D1 Injected at: 911127 10:22
Data File: >F3780::D5 Dilution Factor: 1.00000
Name: 100PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	19116	50.00	UG/L	93
2)	Chloromethane	.99	50.0	27386	87.23	UG/L	94
3)	Vinyl Chloride	1.08	62.0	37776	86.68	UG/L	97
4)	Bromomethane	1.52	94.0	44603	93.58	UG/L	89
5)	Chloroethane	1.62	64.0	28737	87.36	UG/L	96
6)	Trichlorofluoromethane	1.90	101.0	71187	92.84	UG/L	97
7)	Trichlorotrifluoroethane 113	2.48	101.0	81114	93.65	UG/L	76
8)	1,1-Dichloroethene	2.72	96.0	44831	93.98	UG/L	94
9)	Acetone	2.85	43.0	6914	78.48	UG/L	95
10)	Dimethyl Ketone	2.84	58.0	1955	69.89	UG/L	80
11)	Carbon Disulfide	3.36	76.0	103208	86.96	UG/L	100
)	Methylene Chloride	3.70	83.9	51596	90.37	UG/L	87
)	Vinyl Acetate	5.33	86.0	1478	82.31	UG/L	100
14)	Trans-1,2-Dichloroethene	4.16	96.0	49810	94.46	UG/L	94
15)	Cis-1,2-Dichloroethene	6.22	96.0	39268	94.83	UG/L	86
16)	2-Butanone	6.24	72.0	2716M	77.13	UG/L	88
17)	1,1-Dichloroethane	5.07	63.0	108864	92.85	UG/L	95
18)	Chloroform	6.52	82.9	109341	94.10	UG/L	94
19)	1,1,1-Trichloroethane	7.18	97.0	80818	94.90	UG/L	91
20)	Carbon Tetrachloride	7.57	116.9	78162	97.07	UG/L	87
21)	1,2-Dichloroethane-d4	7.91	65.0	50140	89.84	UG/L	89
22)	*1,4-Difluorobenzene	8.73	114.0	78591	50.00	UG/L	93
23)	Benzene	7.97	78.0	148258	100.02	UG/L	89
24)	1,2-Dichloroethane	8.10	62.0	58300	93.34	UG/L	97
25)	Trichloroethene	9.15	130.0	64912	103.05	UG/L	98
26)	1,2-Dichloropropane	9.58	63.0	71952	101.99	UG/L	98
27)	Bromodichloromethane	10.05	82.9	105339	101.27	UG/L	92
28)	2-Chloroethylvinyl ether	10.99	63.0	26573	90.55	UG/L	80
29)	Cis-1,3-Dichloropropene	11.27	75.0	98725	100.73	UG/L	95
30)	4-Methyl-2-pentanone	11.33	58.0	13364	94.04	UG/L	79
31)	Toluene-d8	11.58	98.2	153631	101.67	UG/L	92
32)	Toluene	11.73	91.0	160536	104.11	UG/L	90
33)	*Chlorobenzene-d5	14.69	117.0	67914	50.00	UG/L	92
34)	Trans-1,3-Dichloropropene	12.37	75.0	64757	97.72	UG/L	89
35)	1,1,2-Trichloroethane	12.62	97.0	46387	98.83	UG/L	99
36)	2-Hexanone	13.35	58.0	9690	86.02	UG/L	99
37)	Tetrachloroethene	12.97	163.9	61628	100.41	UG/L	98
)	Dibromochloromethane	13.53	128.9	89455	101.56	UG/L	98
39)	Chlorobenzene	14.77	112.0	126865	101.05	UG/L	96
40)	Ethylbenzene	14.96	91.0	194285	102.08	UG/L	99

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 10:46
Output File: ^F3780::D1 Injected at: 911127 10:22
Data File: >F3780::D5 Dilution Factor: 1.00000
Name: 100PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.18	104.0	108413	96.25	UG/L	83
42)	M+P-Xylene	15.12	91.0	186957	102.20	UG/L	68
43)	O-Xylene	16.04	91.0	150716	92.72	UG/L	90
44)	Bromoform	16.84	172.9	64256	102.29	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	74066	95.42	UG/L	98
46)	Bromofluorobenzene	17.42	174.0	80430	99.79	UG/L	93
47)	1,3-Dichlorobenzene	19.80	146.0	116949	98.18	UG/L	94
48)	1,4-Dichlorobenzene	20.09	146.0	121231	99.62	UG/L	92
49)	1,2-Dichlorobenzene	20.87	146.0	105753	101.85	UG/L	92

* Compound is ISTD

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 11:14
Output File: ^F3781::D1 Injected at: 911127 10:51
Data File: >F3781::D5 Dilution Factor: 1.00000
Name: 150PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	19142	50.00	UG/L	89
2)	Chloromethane	.99	50.0	39430	125.42	UG/L	92
3)	Vinyl Chloride	1.09	62.0	56713	129.95	UG/L	97
4)	Bromomethane	1.50	94.0	67918	142.31	UG/L	87
5)	Chloroethane	1.62	64.0	43024	130.61	UG/L	95
6)	Trichlorofluoromethane	1.87	101.0	108729	141.61	UG/L	95
7)	Trichlorotrifluoroethane 113	2.47	101.0	122085	140.76	UG/L	75
8)	1,1-Dichloroethene	2.71	96.0	67956	142.27	UG/L	93
9)	Acetone	2.85	43.0	9749	110.51	UG/L	97
10)	Dimethyl Ketone	2.88	58.0	2718	97.03	UG/L	99
11)	Carbon Disulfide	3.35	76.0	153593	129.24	UG/L	100
12)	Methylene Chloride	3.69	83.9	78485	137.28	UG/L	92
13)	Vinyl Acetate	5.35	86.0	2254	125.35	UG/L	100
14)	Trans-1,2-Dichloroethene	4.15	96.0	74875	141.80	UG/L	96
15)	Cis-1,2-Dichloroethene	6.22	96.0	58731	141.64	UG/L	85
16)	2-Butanone	6.24	72.0	3940	111.73	UG/L	78
17)	1,1-Dichloroethane	5.07	63.0	165360	140.84	UG/L	95
18)	Chloroform	6.51	82.9	166488	143.09	UG/L	94
19)	1,1,1-Trichloroethane	7.17	97.0	121535	142.52	UG/L	98
20)	Carbon Tetrachloride	7.55	116.9	119649	148.39	UG/L	84
21)	1,2-Dichloroethane-d4	7.92	65.0	78840	141.07	UG/L	90
22)	*1,4-Difluorobenzene	8.74	114.0	79127	50.00	UG/L	93
23)	Benzene	7.97	78.0	227967	152.75	UG/L	88
24)	1,2-Dichloroethane	8.10	62.0	88501	140.73	UG/L	94
25)	Trichloroethene	9.16	130.0	98228	154.89	UG/L	96
26)	1,2-Dichloropropane	9.61	63.0	108724	153.07	UG/L	98
27)	Bromodichloromethane	10.07	82.9	159885	152.66	UG/L	93
28)	2-Chloroethylvinyl ether	10.99	63.0	39046	132.15	UG/L	74
29)	Cis-1,3-Dichloropropene	11.27	75.0	150381	152.39	UG/L	95
30)	4-Methyl-2-pentanone	11.32	58.0	16424	114.79	UG/L	75
31)	Toluene-d8	11.58	98.2	233061	153.20	UG/L	95
32)	Toluene	11.74	91.0	243717	156.98	UG/L	91
33)	*Chlorobenzene-d5	14.71	117.0	66944	50.00	UG/L	91
34)	Trans-1,3-Dichloropropene	12.37	75.0	97020	148.53	UG/L	89
35)	1,1,2-Trichloroethane	12.62	97.0	70146	151.62	UG/L	97
36)	2-Hexanone	13.31	58.0	14564	131.17	UG/L	95
37)	Tetrachloroethene	12.97	163.9	90682	149.89	UG/L	96
38)	Dibromochloromethane	13.53	128.9	133626	153.90	UG/L	99
39)	Chlorobenzene	14.78	112.0	188854	152.61	UG/L	94
40)	Ethylbenzene	14.97	91.0	285513	152.18	UG/L	99

Operator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 11:14
Output File: ^F3781::D1 Injected at: 911127 10:51
Data File: >F3781::D5 Dilution Factor: 1.00000
Name: 150PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.20	104.0	159689	143.83	UG/L	83
42)	M+P-Xylene	15.14	91.0	279776	155.15	UG/L	70
43)	O-Xylene	16.05	91.0	218595	136.42	UG/L	88
44)	Bromoform	16.84	172.9	93844	151.56	UG/L	95
45)	1,1,2,2-Tetrachloroethane	17.45	82.9	107594	140.62	UG/L	97
46)	Bromofluorobenzene	17.43	174.0	115106	144.89	UG/L	92
47)	1,3-Dichlorobenzene	19.81	146.0	167912	143.00	UG/L	94
48)	1,4-Dichlorobenzene	20.10	146.0	176034	146.75	UG/L	95
49)	1,2-Dichlorobenzene	20.88	146.0	146098	142.74	UG/L	89

* Compound is ISTD

C rator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 11:42
Output File: ^F3782::D1 Injected at: 911127 11:18
Data File: >F3782::D5 Dilution Factor: 1.00000
Name: 200PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.80	127.9	18740	50.00	UG/L	91
2)	Chloromethane	.99	50.0	53962	175.33	UG/L	95
3)	Vinyl Chloride	1.09	62.0	78057	182.70	UG/L	98
4)	Bromomethane	1.51	94.0	88038	188.42	UG/L	88
5)	Chloroethane	1.62	64.0	56909	176.47	UG/L	97
6)	Trichlorofluoromethane	1.89	101.0	144398	192.10	UG/L	95
7)	Trichlorotrifluoroethane 113	2.48	101.0	166141	195.66	UG/L	79
8)	1,1-Dichloroethene	2.71	96.0	91586	195.85	UG/L	92
9)	Acetone	2.87	43.0	13850	160.37	UG/L	93
10)	Dimethyl Ketone	2.86	58.0	3953	144.14	UG/L	86
11)	Carbon Disulfide	3.35	76.0	214266	184.16	UG/L	100
	Methylene Chloride	3.70	83.9	105509	188.51	UG/L	90
( )	Vinyl Acetate	5.34	86.0	3031	172.18	UG/L	100
14)	Trans-1,2-Dichloroethene	4.16	96.0	101282	195.93	UG/L	92
15)	Cis-1,2-Dichloroethene	6.23	96.0	79617	196.13	UG/L	86
16)	2-Butanone	6.25	72.0	5622	162.85	UG/L	87
17)	1,1-Dichloroethane	5.07	63.0	223806	194.71	UG/L	93
18)	Chloroform	6.52	82.9	222328	195.18	UG/L	94
19)	1,1,1-Trichloroethane	7.17	97.0	162505	194.65	UG/L	96
20)	Carbon Tetrachloride	7.55	116.9	158969	201.38	UG/L	86
21)	1,2-Dichloroethane-d4	7.91	65.0	98990	180.92	UG/L	87
22)	*1,4-Difluorobenzene	8.74	114.0	76646	50.00	UG/L	94
23)	Benzene	7.97	78.0	302639	209.35	UG/L	89
24)	1,2-Dichloroethane	8.08	62.0	118217	194.06	UG/L	96
25)	Trichloroethene	9.15	130.0	131567	214.17	UG/L	97
26)	1,2-Dichloropropane	9.58	63.0	147942	215.03	UG/L	96
27)	Bromodichloromethane	10.05	82.9	215887	212.80	UG/L	90
28)	2-Chloroethylvinyl ether	10.99	63.0	54436	190.20	UG/L	80
29)	Cis-1,3-Dichloropropene	11.27	75.0	203868	213.28	UG/L	95
30)	4-Methyl-2-pentanone	11.33	58.0	28143	203.06	UG/L	82
31)	Toluene-d8	11.58	98.2	314749	213.59	UG/L	96
32)	Toluene	11.74	91.0	326364	217.02	UG/L	90
33)	*Chlorobenzene-d5	14.69	117.0	65310	50.00	UG/L	92
34)	Trans-1,3-Dichloropropene	12.37	75.0	133222	209.06	UG/L	90
35)	1,1,2-Trichloroethane	12.61	97.0	94586	209.56	UG/L	91
36)	2-Hexanone	13.30	58.0	20961	193.50	UG/L	98
)	Tetrachloroethene	12.96	163.9	123787	209.74	UG/L	97
( )	Dibromochloromethane	13.53	128.9	185475	218.97	UG/L	99
39)	Chlorobenzene	14.77	112.0	255149	211.33	UG/L	95
40)	Ethylbenzene	14.96	91.0	391249	213.76	UG/L	99

C rator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 11:42
Output File: ^F3782::D1 Injected at: 911127 11:18
Data File: >F3782::D5 Dilution Factor: 1.00000
Name: 200PPB 8240 STD Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911001 09:25 Last Qcal Time: 911126 09:18

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Styrene	16.18	104.0	221263	204.28	UG/L	81
42)	M+P-Xylene	15.12	91.0	373645	212.39	UG/L	71
43)	O-Xylene	16.04	91.0	298049	190.66	UG/L	85
44)	Bromoform	16.83	172.9	126134	208.81	UG/L	98
45)	1,1,2,2-Tetrachloroethane	17.44	82.9	140332	188.00	UG/L	97
46)	Bromofluorobenzene	17.42	174.0	153567	198.13	UG/L	95
47)	1,3-Dichlorobenzene	19.80	146.0	214013	186.83	UG/L	89
48)	1,4-Dichlorobenzene	20.08	146.0	226376	193.44	UG/L	95
49)	1,2-Dichlorobenzene	20.86	146.0	180158	180.43	UG/L	89

* Compound is ISTD

C ator ID: JEFF-2 Quant Rev: 7 Quant Time: 911127 13:52
Output File: ^F3784::D1 Injected at: 911127 12:23
Data File: >F3784::D5 Dilution Factor: 1.00000
Name: METHOD BLANK Instrument ID: GCMSVOA3
Misc: GCMSVOA3 (30M VOCOL)

ID File: ID_824::D1
Title: EPA METHOD 8240 VOLATILES GCMSVOA3
Last Calibration: 911127 12:21 Last Qcal Time: <none>

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	6.79	127.9	18214	50.00	UG/L	90
12)	Methylene Chloride	3.69	83.9	681	1.28	UG/L	92
21)	1,2-Dichloroethane-d4	7.89	65.0	25528	49.83	UG/L	88
22)	*1,4-Difluorobenzene	8.73	114.0	81344	50.00	UG/L	92
31)	Toluene-d8	11.57	98.2	75848	47.23	UG/L	92
33)	*Chlorobenzene-d5	14.69	117.0	66777	50.00	UG/L	90
46)	Bromofluorobenzene	17.41	174.0	38461	49.67	UG/L	97

* Compound is ISTD

99.7 - 94.5 - 99.3

QUANT REPORT

Operator ID: CHIEF Date Acquired: 24 Oct 91 12:07 pm
Data File: C:\CHEMPC\DATA\150PPB.D
Name: CALIBRATION STD
Misc: 150 PPB 8240 STANDARD
Method: H20-8240.M
Title: DIRT8240
Last Calibration: Thu Oct 24 15:49:43 1991

Calibration Files
Level 1=50PPB.D Level 2=100PPB.D Level 3=150PPB.D
Level 4=200PPB.D Level 5=~~1009CC50.D~~ 20ppb.D
TPO 12/5/91

	Compound	1	2	3	4	5	Avg	%RSD
~~*1)~~	~~DICHLOROFLUOROMETHANE~~	~~0.697~~	~~0.518~~	~~0.456~~	~~0.403~~	~~1.216~~	~~0.658~~	~~50.30~~
2)	CHLOROMETHANE	2.165	2.240	2.343	2.072	1.777	2.119	10.17
3)	VINYL CHLORIDE	1.715	1.856	1.863	1.934	1.459	1.765	10.70
4)	BROMOMETHANE	1.433	1.496	1.509	1.430	1.492	1.472	2.55
5)	CHLOROETHANE	1.673	1.757	1.701	1.621	1.960	1.742	7.54
6)	TRICHLOROFLUOROMETHANE	0.900	0.994	0.980	1.003	0.859	0.947	6.76
7)	TRICHLOROTRIFLUOROETHANE	0.261	0.303	0.286	0.287	0.137	0.255	26.52
8)	ACETONE	1.427	1.046	1.031	0.870	1.524	1.180	23.81
9)	1,1-DICHLOROETHENE	1.178	1.373	1.335	1.407	1.169	1.292	8.63
10)	CARBON DISULFIDE	2.113	2.333	2.360	2.417	1.846	2.214	10.65
11)	METHYLENE CHLORIDE	2.123	2.289	2.427	2.227	1.911	2.195	8.80
12)	trans-1,2-DICHLOROETHENE	1.231	1.450	1.438	1.393	1.086	1.320	11.91
13)	1,1-DICHLOROETHANE	2.969	2.464	3.165	3.131	2.157	2.777	16.05
14)	2-BUTANONE (MEK)	1.916	1.705	1.834	1.401	2.145	1.800	15.25
15)	cis-1,2-DICHLOROETHENE	1.478	1.634	1.799	1.466	1.542	1.584	8.67
16)	CHLOROFORM	2.325	2.522	2.718	2.530	2.231	2.465	7.74
17)	BROMOCHLOROMETHANE	----------ISTD----------						
18)	1,1,1-TRICHLOROETHANE	1.170	1.284	1.343	1.331	1.018	1.229	11.10
19)	CARBON TETRACHLORIDE	0.877	0.937	0.915	0.902	0.835	0.893	4.39
20)	SURR-1,2-DICHLOROETHANE-D4	1.425	1.486	1.509	1.662	1.518	1.520	5.74
21)	1,2-DICHLOROETHANE	0.403	0.457	0.506	0.458	0.393	0.443	10.42
22)	BENZENE	1.408	1.410	1.454	1.224	0.979	1.295	15.27
23)	2-CHLOROETHYL VINYL ETHER	0.001	0.001	0.000	0.001	0.003	0.001	84.21
24)	1,4-DIFLUOROBENZENE	----------ISTD----------						
25)	TRICHLOROETHENE	0.225	0.259	0.270	0.260	0.201	0.243	11.96
26)	1,2-DICHLOROPROPANE	0.479	0.516	0.541	0.465	0.440	0.488	8.22
27)	BROMODICHLOROMETHANE	0.407	0.429	0.482	0.438	0.372	0.426	9.46
28)	2-HEXANONE	0.692	0.624	0.685	0.522	0.530	0.611	13.40
29)	cis-1,3-DICHLOROPROPENE	0.643	0.676	0.732	0.655	0.569	0.655	9.00
30)	SURR-TOLUENE-D8	1.298	1.268	1.280	1.327	1.293	1.293	1.70
31)	TOLUENE	1.195	1.331	1.386	1.317	1.059	1.257	10.42
32)	trans-1,3-DICHLOROPROPENE	0.074	0.072	0.074	0.067	0.073	0.072	3.84
33)	1,1,2-TRICHLOROETHANE	0.374	0.407	0.455	0.369	0.339	0.389	11.38
34)	4-METHYL-2-PENTANONE	0.561	0.534	0.571	0.422	0.571	0.532	11.89
35)	TETRACHLOROETHENE	0.203	0.235	0.243	0.223	0.169	0.215	13.77
36)	DIBROMOCHLOROMETHANE	0.340	0.341	0.380	0.321	0.326	0.342	6.79
37)	CHLOROBENZENE-D5	----------ISTD----------						
38)	CHLOROBENZENE	0.874	0.965	1.062	0.928	0.764	0.919	11.99
39)	ETHYLBENZENE	0.385	0.429	0.464	0.413	0.363	0.411	9.51

* non target analyte.

QUANT REPORT

Operator ID: CHIEF Date Acquired: 24 Oct 91 12:07 pm
Data File: C:\CHEMPC\DATA\150PPB.D
Name: CALIBRATION STD
Misc: 150 PPB 8240 STANDARD
Method: H20-8240.M
Title: DIRT8240
Last Calibration: Thu Oct 24 15:49:43 1991

Calibration Files
Level 1=50PPB.D Level 2=100PPB.D Level 3=150PPB.D
Level 4=200PPB.D Level 5=~~1009CC50.D~~ 200PPB.D WD 12/5/91

	Compound	1	2	3	4	5	Avg	%RSD
40)	P&M XYLENE	0.448	0.519	0.569	0.514	0.424	0.495	11.80
41)	O XYLENE	0.481	0.528	0.580	0.512	0.461	0.512	9.01
42)	STYRENE	0.919	1.064	1.164	1.026	0.862	1.007	11.86
43)	BROMOFORM	0.216	0.223	0.261	0.212	0.185	0.219	12.49
44)	1,1,2,2-TETRACHLOROETHANE	0.523	0.525	0.612	0.496	0.448	0.521	11.50
45)	SURR-BROMOFLUOROBENZENE	0.466	0.480	0.497	0.486	0.459	0.478	3.16
46)	1,3-DICHLOROBENZENE	0.464	0.512	0.588	0.520	0.434	0.504	11.63
47)	1,4-DICHLOROBENZENE	0.464	0.518	0.585	0.511	0.454	0.507	10.28
48)	1,2-DICHLOROBENZENE	0.437	0.490	0.556	0.477	0.414	0.475	11.51

COLUMBIA ANALYTICAL SERVICES, INC.

Work Request #: K91-6729C Date Extracted: 11/21/91

Analyst: Brian Cole Method: 8270/3510

BNA Water/BNA TCLP/TCLP SVO

Lab ID	Client ID	Sample Vol	SS	pH		Surr		Matrix Spike		Emuls		F Sol	F Vol
				A	B	A	B	A	B	A	B		
6729-1	SWB-1	970ml	Yes	≤2	≥12	Yes		NO	NO	Yes	Yes	DCM	1ml
-2	SWB-2	700ml	NO	≤2	≥12	Yes		NO	NO	slight	Yes	DCM	1ml
-3	X-Dup	720ml	NO	≤2	≥12	Yes		NO	NO	NO	Yes	DCM	1ml
-1ms	SWB-1	450ml	Yes	≤2	≥12	Yes		Yes	Yes	slight	Yes	DCM	1ml
-1DMS	SWB-1	450ml	Yes	≤2	≥12	Yes		Yes	Yes	slight	Yes	DCM	1ml
BNA 11	21 WB_2	1000 ml		≤2	≥12	Yes		NO	NO			DCM	1ml
BNA 11	21 WB_2 LCS	1000ml		≤2	≥12	Yes		Yes	Yes			DCM	1ml
	Brian Cole	11/21/91										DCM	1ml

Comments: Blank and LCS batched with K91-6793, K91-6765. 6729-2,3 was not Sketon do to a 1½ inch layer of sediment in each. ~~6729-1~~ 11/21/91 ~~6729-2~~ 6729-1 was a very nasty sample.

BN Surrogate ID: Combined Surr. 5-17-F 50ppm, 1.0 pipet Solution Concentration: 50mg/ml

Acid Surrogate ID: 100ppm, 1.0 pipet Solution Concentration: 100mg/ml

BN Spike ID: 5-17-E, 200ppm, 200µl eppendorf Sample Concentration: 40 µg/l

Acid Spike ID: 5-17-D, 1000ppm, 100µl eppendorf Sample Concentration: 100 µg/l (Based on 1.0

Vial: 2ml Extract Storage: L.S. AJ BJ

Reviewed by: _____ Date: 11/25 Fl: 01 1f6.1

COLUMBIA ANALYTICAL SERVICES, INC.

Work Request #: K91-6729C Date Extracted: 11/21/91

Analyst: Brian Cole Method: 8270/3510

BNA Water/BNA TCLP/TCLP SVO

Lab ID	Client ID	Sample Vol	SS	pH		Surr		Matrix Spike		Emuls		F Sol	F Vol
				A	B	A	B	A	B	A	B		
6729-1	SWB-1	970ml	Yes	≤2	≥12	Yes		NO	NO	Yes	Yes	DCM	1ml
-2	SWB-2	700ml	NO	≤2	≥12	Yes		NO	NO	slight	Yes	DCM	1ml
-3	x-Dup	720ml	NO	≤2	≥12	Yes		NO	NO	NO	Yes	DCM	1ml
-1 ms	SWB-1	450ml	Yes	≤2	≥12	Yes		Yes	Yes	slight	Yes	DCM	1ml
-1 Dms	SWB-1	450ml	Yes	≤2	≥12	Yes		Yes	Yes	Slight	Yes	DCM	1ml
BNA 11	21 WB_2	1000 ml		≤2	≥12	Yes		NO	NO			DCM	1ml
BNA 11	21 WB_2 LCS	1000ml		≤2	≥12	Yes		Yes	Yes			DCM	1ml
	Brian Cole	11/21/91										DCM	1ml
												Lavone Sprague 11-22	

Comments: Blank and LCS batched with K91-6793, K91-6765. 6729-2,3 was not skaken do to a 1½ inch layer of sediment in each. ~~6729-2~~ 11/21/91 11/21/91 6729-1 was a very nasty sample.

BN Surrogate ID: Combined Surr. 5-17-F { 50ppm, 1.0 pipet Solution Concentration: 50ug/ml

Acid Surrogate ID: 100ppm, 1.0 pipet Solution Concentration: 100ug/ml

BN Spike ID: 5-17-E, 200ppm, 200µl eppendorf Sample Concentration: 40 ug/l

Acid Spike ID: 5-17-D, 1000ppm, 100µl eppendorf Sample Concentration: 100 ug/l (Based on 1.0

Vial: 2ml Extract Storage: L.S. ~~NJ~~ BJ

Reviewed by Date 11/25 Filename: O:/BNA/PCH/10-29-91

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 22:44
Output File: ^B3413::D1 Injected at: 911125 22:01
Data File: >B3413::D4 Dilution Factor: 1.00000
me: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:56 Last Qcal Date: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.87	152.0	61395	40.00	ug/mL	95
4)	2-Fluorophenol	6.93	112.0	6678	4.37	ug/mL	89
6)	Phenol-d6	9.29	99.0	5504	2.45	ug/mL	89
7)	Phenol	9.32	94.0	2192M	.745	ug/mL	71
11)	1,4-Dichlorobenzene	9.90	146.0	37M	.0148	ug/mL	
12)	Benzyl Alcohol	10.43	108.0	366M	.313	ug/mL	72
13)	1,2-Dichlorobenzene	10.35	146.0	433M	.152	ug/mL	
14)	2-Methylphenol	10.76	107.0	2654M	1.42	ug/mL	81
15)	Bis(2-Chloroisopropyl)ether	10.84	45.0	432M	.0933	ug/mL	
16)	4-Methylphenol	11.13	107.0	4056M	1.64	ug/mL	87
20)	*d8-Naphthalene	13.04	136.0	217275	40.00	ug/mL	86
28)	1,2,4-Trichlorobenzene	12.95	180.0	756M	.374	ug/mL	
29)	Naphthalene	13.08	128.0	270351	46.65	ug/mL	96
30)	4-Chloroaniline	13.37	127.0	404M	.172	ug/mL	67
31)	2-Methylnaphthalene	14.83	142.0	56673	16.36	ug/mL	94
32)	*d10-Acenaphthene	17.49	164.0	116729	40.00	ug/mL	85
39)	2-Fluorobiphenyl	15.86	172.0	17688	3.97	ug/mL	93
43)	3-Nitroaniline	17.50	138.0	47M	.0666	ug/mL	85
44)	Acenaphthene	17.57	154.0	2309	.614	ug/mL	89
47)	Dibenzofuran	17.98	168.0	2399	.454	ug/mL	92
48)	2,4-Dinitrotoluene	18.19	165.0	479M	.416	ug/mL	
49)	2,6-Dinitrotoluene	17.23	165.0	37M	.0370	ug/mL	94
50)	Diethylphthalate	18.94	149.0	7523M	1.96	ug/mL	
52)	Fluorene	18.84	166.0	2934	.739	ug/mL	95
56)	*d10-Phenanthrene	21.19	188.0	137223	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	3835	7.21	ug/mL	87
62)	Phenanthrene	21.24	178.0	9310	2.07	ug/mL	97
63)	Anthracene	21.35	178.0	3334	.786	ug/mL	97
64)	Di-n-Butylphthalate	23.03	149.0	157250	37.56	ug/mL	97
65)	Fluoranthene	24.27	202.0	3832	1.25	ug/mL	95
66)	*d12-Chrysene	27.99	240.0	71480	40.00	ug/mL	99
67)	Pyrene	24.82	202.0	3128	.765	ug/mL	79
68)	Terphenyl-d14	25.36	244.0	7707	3.55	ug/mL	90
69)	Butylbenzylphthalate	26.79	149.0	480M	.389	ug/mL	
71)	Benzo(a)Anthracene	27.94	228.0	863M	.372	ug/mL	
72)	Bis(2-Ethylhexyl)Phthalate	28.51	149.0	5916	3.65	ug/mL	94
73)	Chrysene	28.06	228.0	1088M	.466	ug/mL	
74)	*d12-Perylene	33.57	264.0	62492	40.00	ug/mL	94
75)	Di-n-octylphthalate	30.74	149.0	521M	.216	ug/mL	
76)	Benzo(b)fluoranthene	31.83	252.0	42M	.0199	ug/mL	
	Benzo(k)fluoranthene	31.91	252.0	54M	.0245	ug/mL	

* Compound is ISTD

MRL = $\frac{1000}{970 mL} \times 10 \times \begin{matrix} 5 = 51.5 = 52 \\ 10 = 103 = 100 \\ 20 = 206 = 210 \end{matrix}$

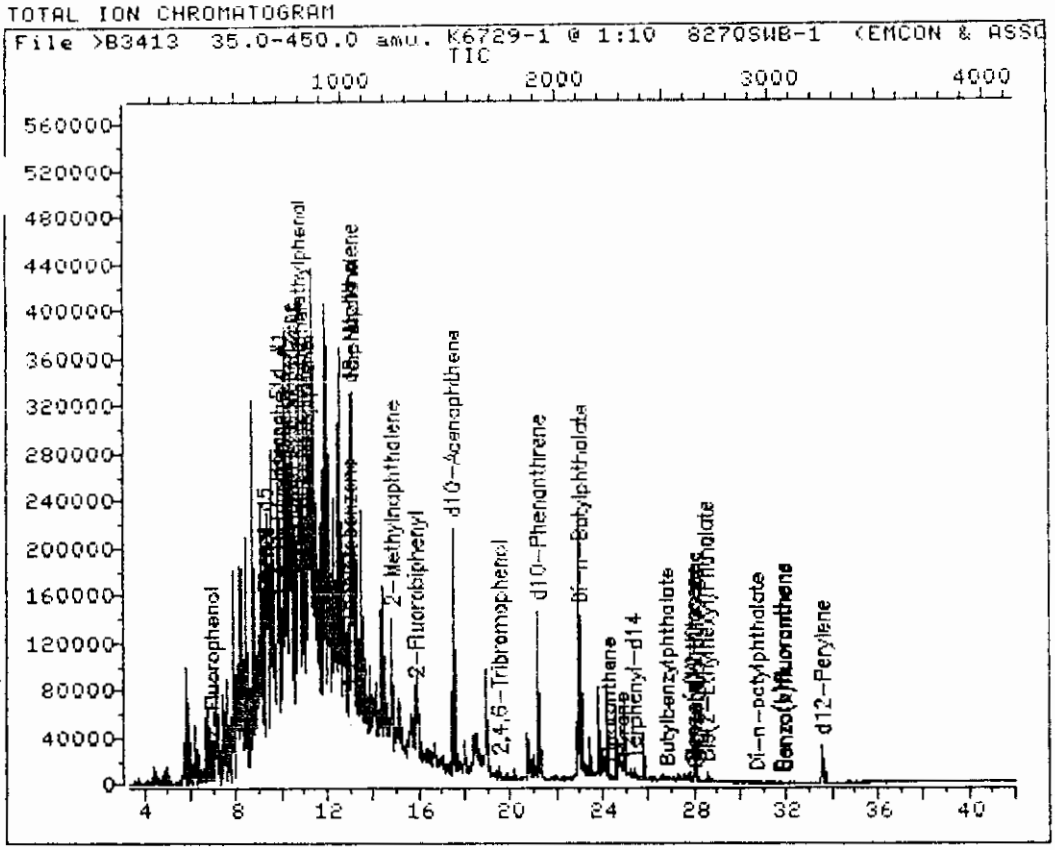
29) $\frac{1000}{970} \times 10 \times 46.65 = 481 = 480$

33) ↓ ↓ × 16.76 = 169 = 170

SURR'S DILUTED OUT of CALIB. RANGE

NITRO-PS NOT SPIKED BY

TOTAL ION CHROMATOGRAM

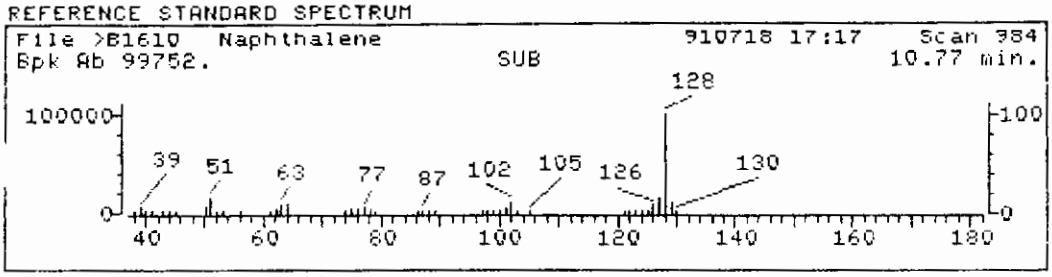


Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12

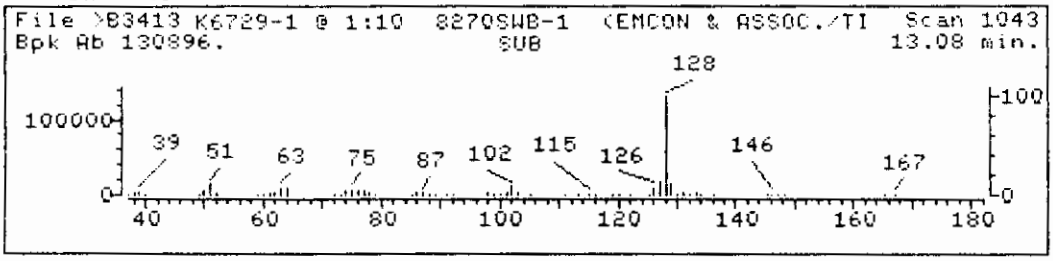
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911125 22:44
Injected at: 911125 22:01

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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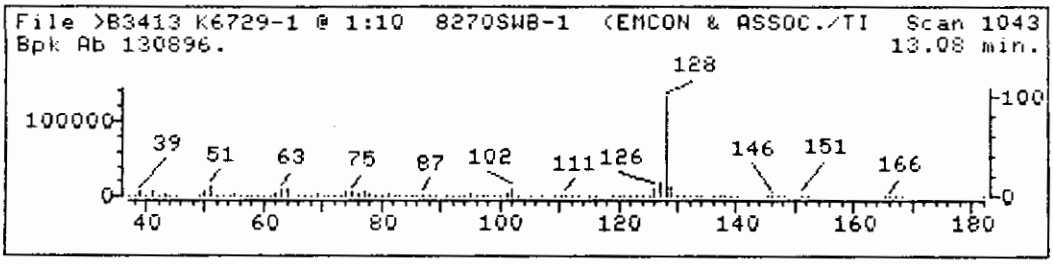
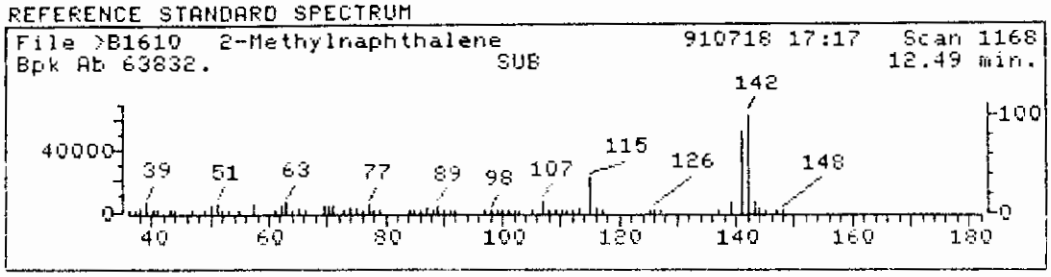


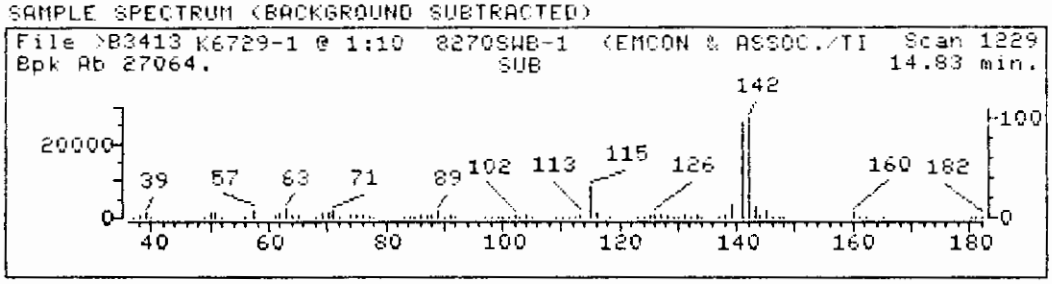
Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1043
Retention Time: 13.08 min.
Quant Ion : 128.0
Area : 270351
Concentration : 46.65 ug/mL
q-value : 96

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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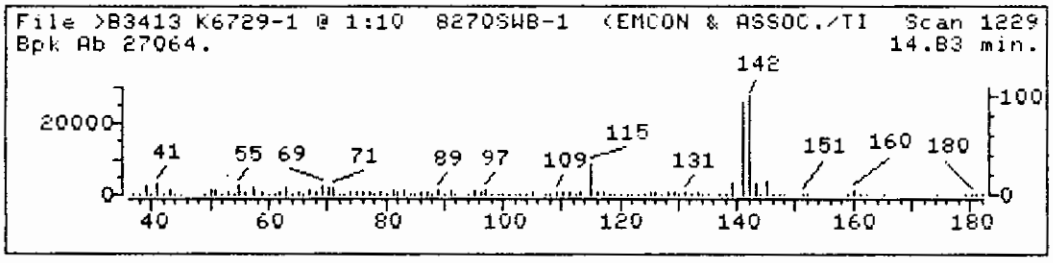
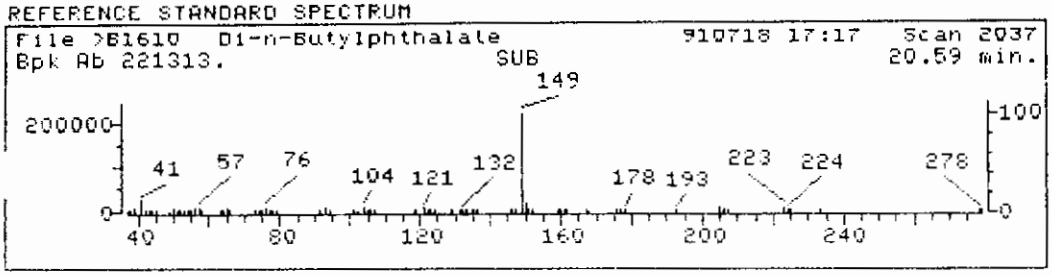


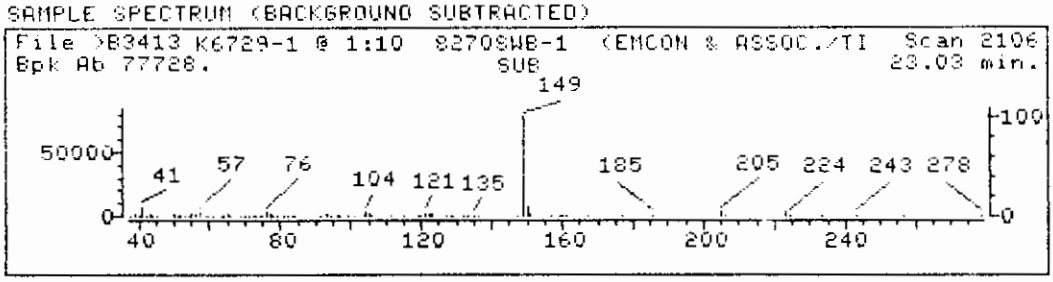
Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1229
Retention Time: 14.83 min.
Quant Ion : 142.0
Area : 56673
Concentration : 16.36 ug/mL
q-value : 94

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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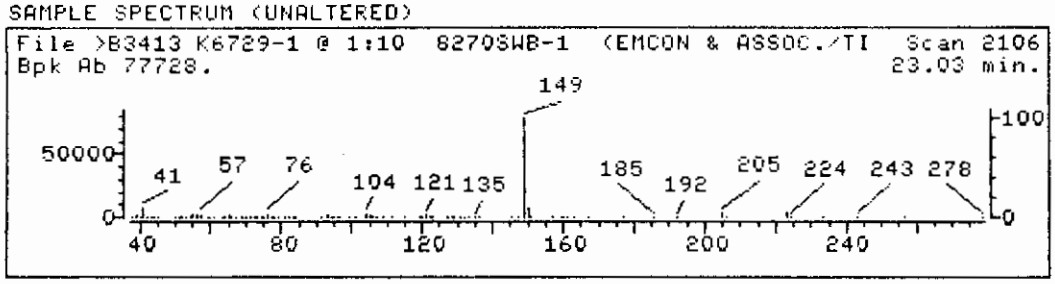


Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 64
Compound Name : Di-n-Butylphthalate
Scan Number : 2106
Retention Time: 23.03 min.
Quant Ion : 149.0
Area : 157250
Concentration : 37.56 ug/mL
q-value : 97

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 14:05
Output File: ^B3423::D1 Injected at: 911126 13:22
Data File: >B3423::D4 Dilution Factor: 1.00000
me: K6729-1MS Ø 1:5 Instrument ID: GCMSBNA1
misc: SWB-1 (EMCON & ASSOC.) BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	65825 ✓	40.00	ug/mL	92
4)	2-Fluorophenol	6.93	112.0	23195	14.63	ug/mL	82
6)	Phenol-d6	9.28	99.0	25792	10.81	ug/mL	83
7)	Phenol	9.31	94.0	31039	10.15	ug/mL	81
9)	2-Chlorophenol	9.43	128.0	38002	16.01	ug/mL	95
11)	1,4-Dichlorobenzene	9.89	146.0	18243	6.98	ug/mL	98
~~12)~~	~~Benzyl Alcohol~~ KY	~~10.74~~	~~108.0~~	~~1667~~	NR ~~1.29~~	~~ug/mL~~	~~80~~
17)	N-Nitroso-Di-n-propylamine INTERFERENCE PRESENT	11.10	70.0	21985 ✓	11.33	ug/mL	91
20)	*d8-Naphthalene	13.02	136.0	248090 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.32	82.0	16697	7.31	ug/mL	93
~~22)~~	~~Isophorone~~ KY	~~12.07~~	~~82.0~~	~~5430~~	NR ~~1.09~~	~~ug/mL~~	~~85~~
~~24)~~	~~2,4-Dimethylphenol~~ KY	~~12.41~~	~~122.0~~	~~7694~~	NR ~~3.28~~	~~ug/mL~~	~~84~~
28)	1,2,4-Trichlorobenzene INTERFERENCE PRESENT	12.94	180.0	18628	8.34	ug/mL	94
29)	Naphthalene	13.06	128.0	180884	27.35	ug/mL	97
?)	4-Chloro-3-methylphenol	14.66	107.0	25330	11.58	ug/mL	95
?)	2-Methylnaphthalene	14.81	142.0	21986	5.68	ug/mL	98
34)	*d10-Acenaphthene	17.49	164.0	125824 ✓	40.00	ug/mL	85
39)	2-Fluorobiphenyl	15.86	172.0	44325	9.13	ug/mL	94
44)	Acenaphthene	17.56	154.0	28597	6.98	ug/mL	92
~~46)~~	~~4-Nitrophenol~~ OK JAK KY 12/4/91	~~18.05~~	~~65.0~~	~~2050~~ M NR	3.19	~~ug/mL~~	~~90~~
~~47)~~	~~Dibenzofuran~~ KY	~~17.97~~	~~168.0~~	533	NR ~~.0916~~	~~ug/mL~~	~~81~~
48)	2,4-Dinitrotoluene	18.16	165.0	6256	<PQL 4.67 NR	ug/mL	78
~~49)~~	~~2,6-Dinitrotoluene~~ KY	~~17.68~~	~~165.0~~	~~323~~	NR ~~.280~~	~~ug/mL~~	~~79~~
~~52)~~	~~Fluorene~~ KY	~~18.84~~	~~166.0~~	~~672~~	NR ~~.159~~	~~ug/mL~~	~~85~~
56)	*d10-Phenanthrene	21.18	188.0	140688 ✓	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	9953	17.84	ug/mL	96
61)	Pentachlorophenol	20.92	266.0	8855	13.80	ug/mL	95
~~62)~~	~~Phenanthrene~~ KY	~~21.24~~	~~178.0~~	~~1499~~	NR ~~.344~~	~~ug/mL~~	~~85~~
~~63)~~	~~Anthracene~~ KY	~~21.24~~	~~178.0~~	~~1499~~	NR ~~.350~~	~~ug/mL~~	~~85~~
64)	Di-n-Butylphthalate	23.03	149.0	42503	7.90	ug/mL	98
66)	*d12-Chrysene	27.98	240.0	66710 ✓	40.00	ug/mL	98
67)	Pyrene	24.80	202.0	20699	6.26	ug/mL	96
68)	Terphenyl-d14	25.35	244.0	17299	8.68	ug/mL	90
74)	*d12-Perylene	33.55	264.0	58907 ✓	40.00	ug/mL	91

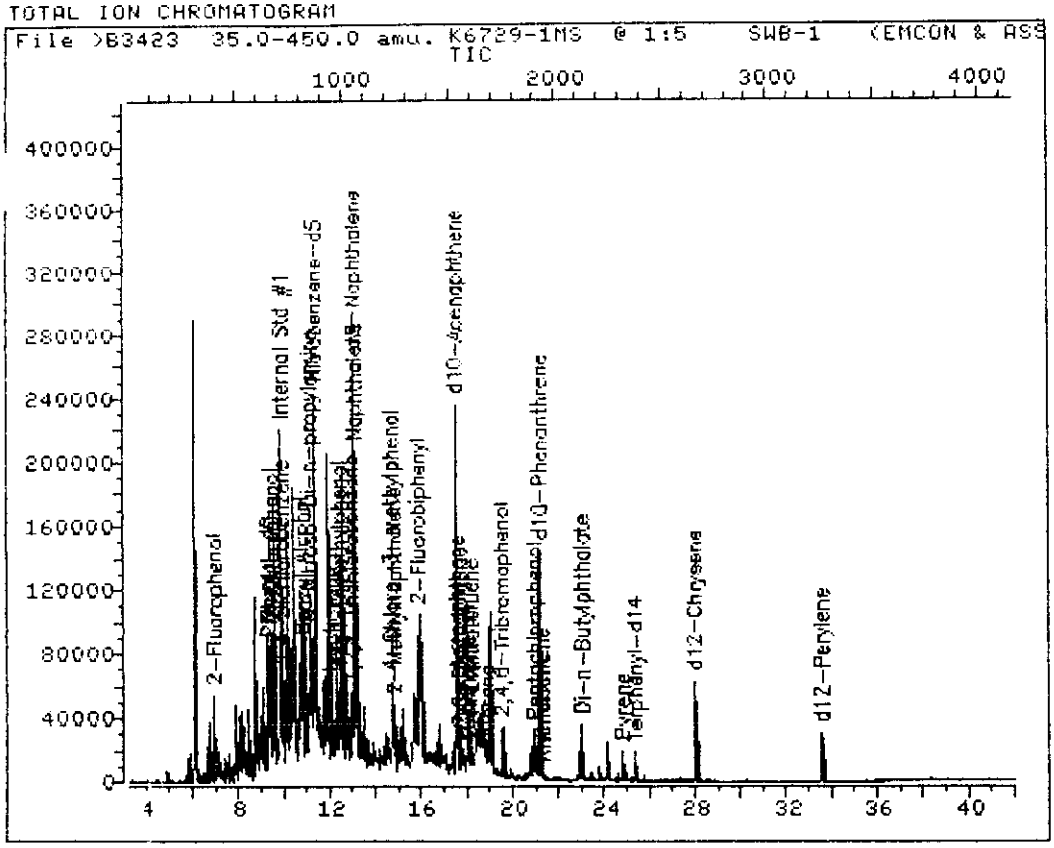
* Compound is ISTD

✓KY 12/2/91

Compound (46), 4-Nitrophenol, is less than MRL but was reported for spike recovery calculation purposes. JAK 12/4/91

See [illegible] 9 (48) 2,4-Dinitrotoluene JAK 12/4/91

TOTAL ION CHROMATOGRAM



Data File: >B3423::D4 Quant Output File: ^B3423::D1
Name: K6729-1MS @ 1:5 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC.) BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 14:05
Injected at: 911126 13:22

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911127 16:22
Output File: ^B3445::D1 Injected at: 911127 15:39
Data File: >B3445::D4 Dilution Factor: 1.00000
Name: K6729-10MS ReR 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 @ 1:5 BTL# 5

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911127 11:19

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.73	152.0	58690 ✓	40.00	ug/mL	95
4)	2-Fluorophenol	6.81	112.0	20450	14.49	ug/mL	89
6)	Phenol-d6	9.17	99.0	22199	10.35	ug/mL	89
7)	Phenol	9.20	94.0	26709	9.79	ug/mL	82
9)	2-Chlorophenol	9.31	128.0	34150	15.88	ug/mL	96
11)	1,4-Dichlorobenzene	9.77	146.0	17282	7.28	ug/mL	93
~~12)~~	~~Benzyl Alcohol~~ KY	~~10.64~~	~~108.0~~	~~1448~~	~~1.26~~	~~ug/mL~~	~~83~~
~~16)~~	~~4-Methylphenol~~ KY	~~11.01~~	~~107.0~~	~~3993~~	~~1.71~~	~~ug/mL~~	~~82~~
17)	N-Nitroso-Di-n-propylamine	10.99	70.0	20600	11.92	ug/mL	84
20)	*d8-Naphthalene	12.90	136.0	222577 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.21	82.0	14011	7.02	ug/mL	91
~~22)~~	~~Isophorone~~ KY	~~11.95~~	~~82.0~~	~~5319~~	~~1.24~~	~~ug/mL~~	~~86~~
~~23)~~	~~2-Nitrophenol~~ KY	~~12.47~~	~~139.0~~	~~261^~~	~~.153~~	~~ug/mL~~	~~79~~
~~24)~~	~~2,4-Dimethylphenol~~ KY	~~12.29~~	~~122.0~~	~~6612~~	~~3.24~~	~~ug/mL~~	~~93~~
~~)~~	~~bis(2-Chloroethoxy)methane~~ KY	~~12.55~~	~~93.0~~	~~218^~~	~~.0816~~	~~ug/mL~~	~~78~~
)	1,2,4-Trichlorobenzene	12.83	180.0	16780	8.61	ug/mL	97
29)	Naphthalene	12.95	128.0	164162	NR 27.61	ug/mL	97
32)	4-Chloro-3-methylphenol	14.55	107.0	23247	12.06	ug/mL	94
~~35)~~	~~2-Methylnaphthalene~~ KY	~~14.70~~	~~142.0~~	~~20238~~	~~5.77~~	~~ug/mL~~	~~97~~
34)	*d10-Acenaphthene	17.36	164.0	111548 ✓	40.00	ug/mL	84
39)	2-Fluorobiphenyl	15.74	172.0	35310	8.35	ug/mL	94
~~41)~~	~~Dimethylphthalate~~ KY	~~16.95~~	~~163.0~~	~~266^~~	~~.0740~~	~~ug/mL~~	~~68~~
44)	Acenaphthene	17.44	154.0	25228	6.98	ug/mL	92
46)	4-Nitrophenol Estimated conc., <MRL	17.92	65.0	1826 save NR	3.17	ug/mL	96
48)	2,4-Dinitrotoluene	18.05	165.0	5783	5.25	ug/mL	80
~~52)~~	~~Fluorene~~ KY	~~18.70~~	~~166.0~~	~~613~~	~~.166~~	~~ug/mL~~	~~92~~
56)	*d10-Phenanthrene	21.05	188.0	126185 ✓	40.00	ug/mL	97
58)	2,4,6-Tribromophenol	19.37	329.8	8728	16.92	ug/mL	92
61)	Pentachlorophenol	20.79	266.0	8950	13.46	ug/mL	99
~~62)~~	~~Phenanthrene~~ KY	~~21.10~~	~~178.0~~	~~1347~~	~~.333~~	~~ug/mL~~	~~88~~
~~63)~~	~~Anthracene~~ KY	~~21.10~~	~~178.0~~	~~1347~~	~~.354~~	~~ug/mL~~	~~88~~
64)	Di-n-Butylphthalate	22.90	149.0	37562 NR	9.25	ug/mL	99
66)	*d12-Chrysene	27.82	240.0	56679 ✓	40.00	ug/mL	98
67)	Pyrene	24.66	202.0	18822	6.63	ug/mL	96
68)	Terphenyl-d14	25.22	244.0	14733	8.94	ug/mL	88
74)	*d12-Perylene	33.28	264.0	48323 ✓	40.00	ug/mL	93

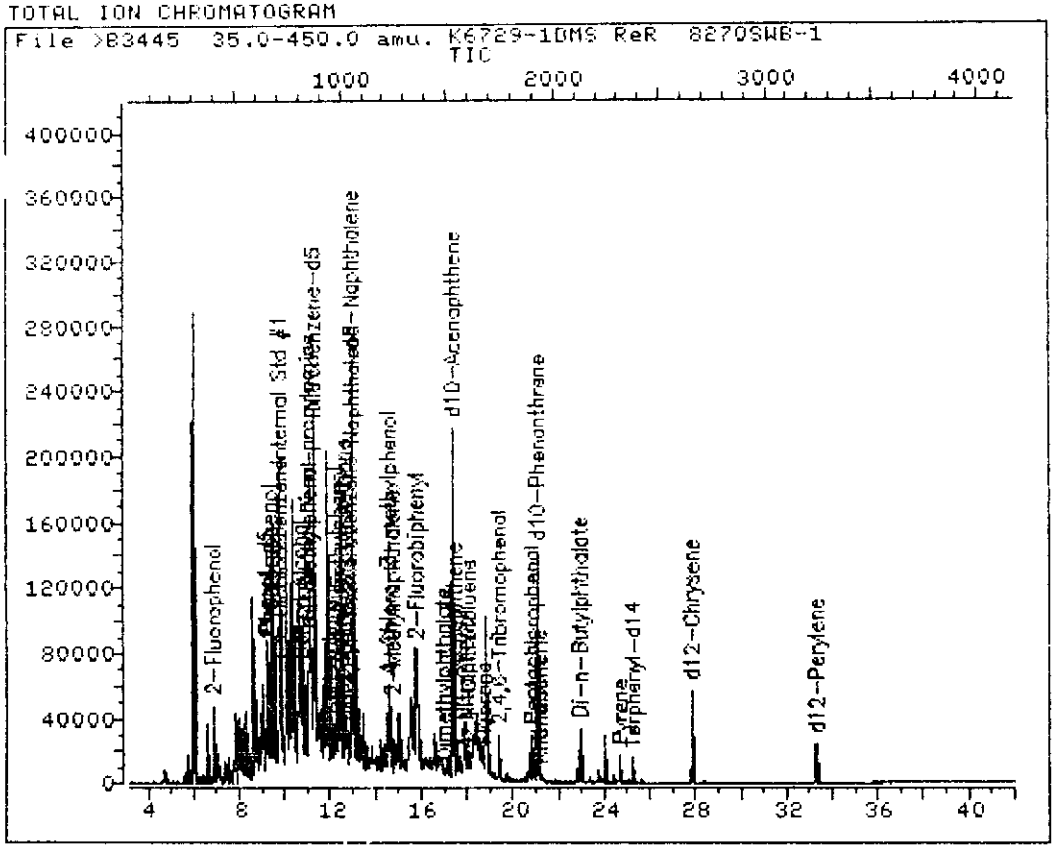
* Compound is ISTD

1.8
0.9
3.7
2.3
1.3
4.6

/KY 12/3

Compound (46), 4-Nitrophenol, is <MRL, but was rpt'd. for spike recovery calc. purposes. JAM 12/4/91

TOTAL ION CHROMATOGRAM



Data File: >B3445::D4 Quant Output File: ^B3445::D1
Name: K6729-1DMS ReR 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 BTL# 5

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911127 11:19

Operator ID: KEN-1
Quant Time : 911127 16:22
Injected at: 911127 15:39

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 14:57
Output File: ^B3424::D1 Injected at: 911126 14:13
Data File: >B3424::D4 Dilution Factor: 1.00000
Name: K6729-1DMS @ 1:5 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC.) BTL# 5

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	304020	40.00	ug/mL	94
4)	2-Fluorophenol	6.93	112.0	23560	3.19	ug/mL	88
6)	Phenol-d6	9.28	99.0	25870	2.35	ug/mL	90
7)	Phenol	9.30	94.0	31548	2.23	ug/mL	83
9)	2-Chlorophenol	9.43	128.0	38963	3.55	ug/mL	99
11)	1,4-Dichlorobenzene	9.88	146.0	88637	7.34	ug/mL	95
12)	Benzyl Alcohol	10.74	108.0	1624	.272	ug/mL	89
16)	4-Methylphenol	11.12	107.0	5063	.419	ug/mL	83
17)	N-Nitroso-Di-n-propylamine	11.10	70.0	23552	2.63	ug/mL	91
19)	Nitrobenzene	11.61	77.0	978	.0796	ug/mL	82
20)	*d8-Naphthalene	13.02	136.0	256247	40.00	ug/mL	84
21)	Nitrobenzene-d5	11.32	82.0	16273	6.90	ug/mL	91
22)	Isophorone	12.06	82.0	5638	1.10	ug/mL	84
24)	2,4-Dimethylphenol	12.40	122.0	8161	3.37	ug/mL	95
6)	bis(2-Chloroethoxy)methane	12.87	93.0	270	.0872	ug/mL	86
28)	1,2,4-Trichlorobenzene	12.94	180.0	19129	8.29	ug/mL	95
29)	Naphthalene	13.07	128.0	186735	27.33	ug/mL	96
32)	4-Chloro-3-methylphenol	14.66	107.0	26901	11.90	ug/mL	94
33)	2-Methylnaphthalene	14.82	142.0	22367	5.60	ug/mL	99
34)	*d10-Acenaphthene	17.48	164.0	125444	40.00	ug/mL	86
39)	2-Fluorobiphenyl	15.85	172.0	39847	8.24	ug/mL	93
44)	Acenaphthene	17.56	154.0	28852	7.07	ug/mL	95
46)	4-Nitrophenol	18.05	65.0	6835	10.67	ug/mL	83
47)	Dibenzofuran	17.96	168.0	566	.0975	ug/mL	67
48)	2,4-Dinitrotoluene	18.16	165.0	6969	5.22	ug/mL	74
52)	Fluorene	18.83	166.0	732	.174	ug/mL	87
56)	*d10-Phenanthrene	21.18	188.0	140985	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.50	329.8	10118	18.09	ug/mL	96
61)	Pentachlorophenol	20.91	266.0	9737	15.14	ug/mL	96
62)	Phenanthrene	21.23	178.0	1665	.381	ug/mL	95
63)	Anthracene	21.23	178.0	1665	.388	ug/mL	95
64)	Di-n-Butylphthalate	23.02	149.0	47285	8.77	ug/mL	95
66)	*d12-Chrysene	27.96	240.0	68628	40.00	ug/mL	96
67)	Pyrene	24.80	202.0	21907	6.44	ug/mL	98
68)	Terphenyl-d14	25.34	244.0	17691	8.63	ug/mL	87
74)	*d12-Perylene	33.55	264.0	62230	40.00	ug/mL	94

* Compound is ISTD

REANALYSIS RUNNING 11/27/91

NR ✓ 12/4/91

QUANT REPORT

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 23:35
Output File: ^B3414::D1 Injected at: 911125 22:52
Data File: >B3414::D4 Dilution Factor: 1.00000
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Desc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	68696	40.00	ug/mL	95
4)	2-Fluorophenol	6.95	112.0	88832	51.93	ug/mL	95
6)	Phenol-d6	9.30	99.0	88644	35.22	ug/mL	91
~~7)~~	~~Phenol~~	~~9.33~~	~~94.0~~	~~740M~~	~~.225~~	~~ug/mL~~	
~~11)~~	~~1,4-Dichlorobenzene~~	~~9.89~~	~~146.0~~	~~291M~~	~~.104~~	~~ug/mL~~	
~~13)~~	~~1,2-Dichlorobenzene~~	~~10.34~~	~~146.0~~	~~841M~~	~~.264~~	~~ug/mL~~	
~~14)~~	~~2-Methylphenol~~	~~10.73~~	~~107.0~~	~~54M~~	~~.0258~~	~~ug/mL~~	
~~15)~~	~~bis(2-Chloroisopropyl)ether~~	~~10.81~~	~~45.0~~	~~48M~~	~~.00926~~	~~ug/mL~~	86
~~16)~~	~~4-Methylphenol~~	~~11.17~~	~~107.0~~	~~960M~~	~~.347~~	~~ug/mL~~	
20)	*d8-Naphthalene	13.03	136.0	228171	40.00	ug/mL	84
21)	Nitrobenzene-d5	11.35	82.0	62086	29.81	ug/mL	82
~~22)~~	~~Isophorone~~	~~12.00~~	~~82.0~~	~~1922M~~	~~.431~~	~~ug/mL~~	97
~~24)~~	~~2,4-Dimethylphenol~~	~~12.47~~	~~122.0~~	~~502M~~	~~.238~~	~~ug/mL~~	
~~25)~~	~~Benzoic Acid~~	~~12.92~~	~~122.0~~	~~2552M~~	~~1.95~~	~~ug/mL~~	
~~26)~~	~~bis(2-Chloroethoxy)methane~~	~~12.36~~	~~93.0~~	~~2327^~~	~~.841~~	~~ug/mL~~	77
~~28)~~	~~1,2,4-Trichlorobenzene~~	~~12.95~~	~~180.0~~	~~93M~~	~~.0462~~	~~ug/mL~~	
29)	Naphthalene	13.07	128.0	89129	14.64	ug/mL	97
33)	2-Methylnaphthalene	14.83	142.0	48910	13.45	ug/mL	99
34)	*d10-Acenaphthene	17.49	164.0	119422	40.00	ug/mL	88
~~38)~~	~~2-Chloronaphthalene~~	~~16.05~~	~~162.0~~	~~45M~~	~~.0103~~	~~ug/mL~~	
39)	2-Fluorobiphenyl	15.87	172.0	175007	38.38	ug/mL	93
~~42)~~	~~Acenaphthylene~~	~~17.05~~	~~152.0~~	~~1361M~~	~~.235~~	~~ug/mL~~	88
~~44)~~	~~Acenaphthene~~	~~17.57~~	~~154.0~~	~~2458M~~	~~.639~~	~~ug/mL~~	90
~~47)~~	~~Dibenzofuran~~	~~17.97~~	~~168.0~~	~~1094~~	~~.202~~	~~ug/mL~~	80
~~48)~~	~~2,4-Dinitrotoluene~~	~~18.22~~	~~165.0~~	~~1781M~~	~~1.51~~	~~ug/mL~~	75
~~49)~~	~~2,6-Dinitrotoluene~~	~~17.27~~	~~165.0~~	~~468M~~	~~.457~~	~~ug/mL~~	93
~~52)~~	~~Fluorene~~	~~18.85~~	~~166.0~~	~~2188~~	~~.538~~	~~ug/mL~~	81
56)	*d10-Phenanthrene	21.20	188.0	140959	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.52	329.8	49195	90.09	ug/mL	96
~~62)~~	~~Phenanthrene~~	~~21.24~~	~~178.0~~	~~3800~~	~~.822~~	~~ug/mL~~	94
~~63)~~	~~Anthracene~~	~~21.36~~	~~178.0~~	~~1293M~~	~~.297~~	~~ug/mL~~	94
~~64)~~	~~Di-n-Butylphthalate~~	~~23.03~~	~~149.0~~	~~5444~~	~~1.27~~	~~ug/mL~~	92
~~65)~~	~~Fluoranthene~~	~~24.27~~	~~202.0~~	~~1061~~	~~.338~~	~~ug/mL~~	95
66)	*d12-Chrysene	27.99	240.0	91063	40.00	ug/mL	99
~~67)~~	~~Pyrene~~	~~24.81~~	~~202.0~~	~~1070M~~	~~.205~~	~~ug/mL~~	
68)	Terphenyl-d14	25.36	244.0	106997	38.68	ug/mL	88
~~71)~~	~~Benzo(a)Anthracene~~	~~27.94~~	~~228.0~~	~~100M~~	~~.0339~~	~~ug/mL~~	
~~72)~~	~~Bis(2-Ethylhexyl)Phthalate~~	~~28.51~~	~~149.0~~	~~5980~~	2.89	~~ug/mL~~	~~93~~
~~73)~~	~~Chrysene~~	~~28.05~~	~~228.0~~	~~198M~~	~~.0666~~	~~ug/mL~~	
74)	*d12-Perylene	33.58	264.0	82097	40.00	ug/mL	93

29) $\frac{1000}{700\,mL} \times 14.64 = 20.9 = 21$

33) [illegible] $\times 13.45 = 19.2 = 19$

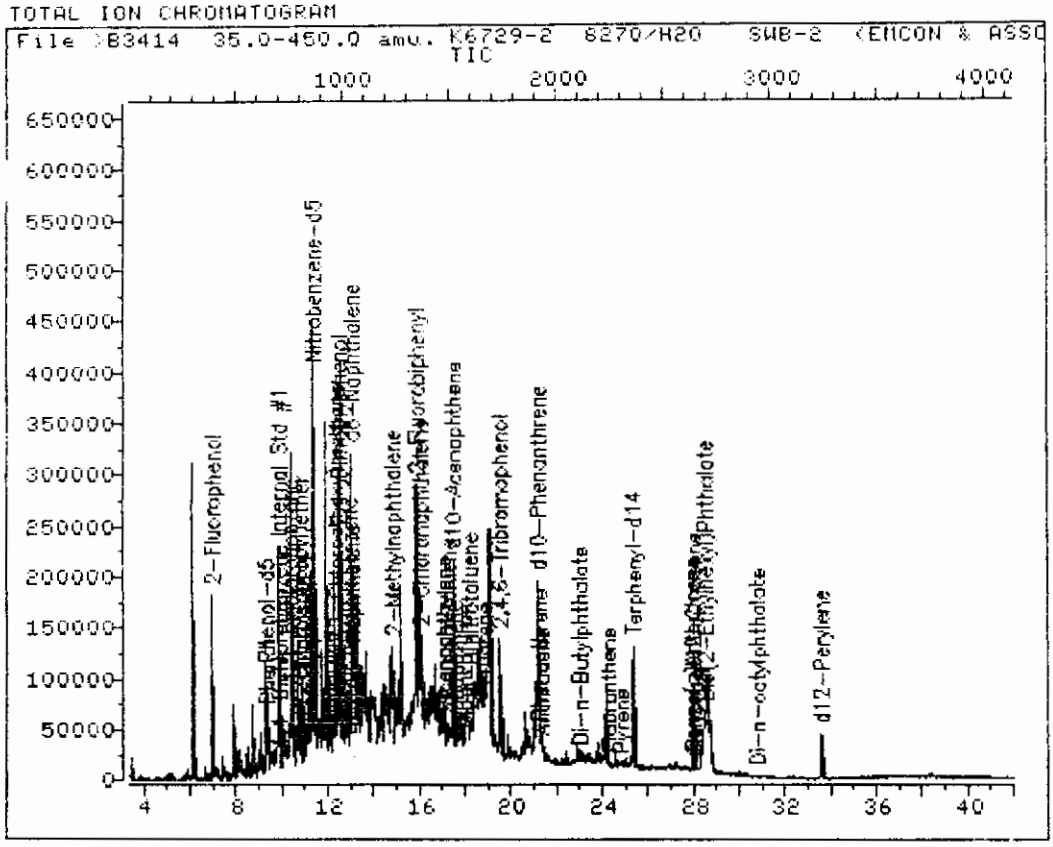
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 23:35
Output File: ^B3414::D1 Injected at: 911125 22:52
Data File: >B3414::D4 Dilution Factor: 1.00000
e: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
75)	~~Di-n-octylphthalate~~	~~30.00~~	~~149.0~~	~~201M~~	~~.0634~~	~~ug/mL~~	

* Compound is ISTD

TOTAL ION CHROMATOGRAM

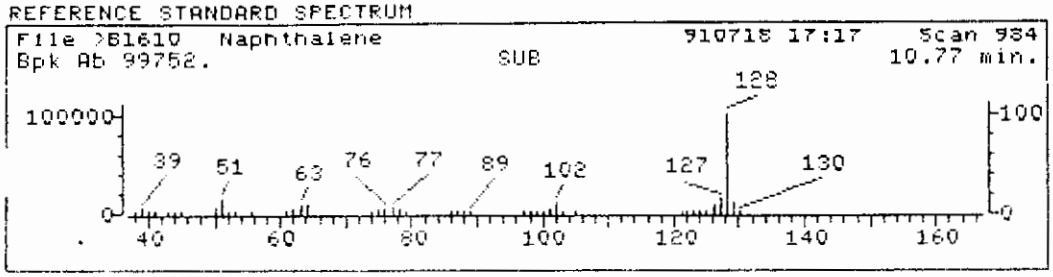


Data File: >B3414::D4 Quant Output File: ^B3414::D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

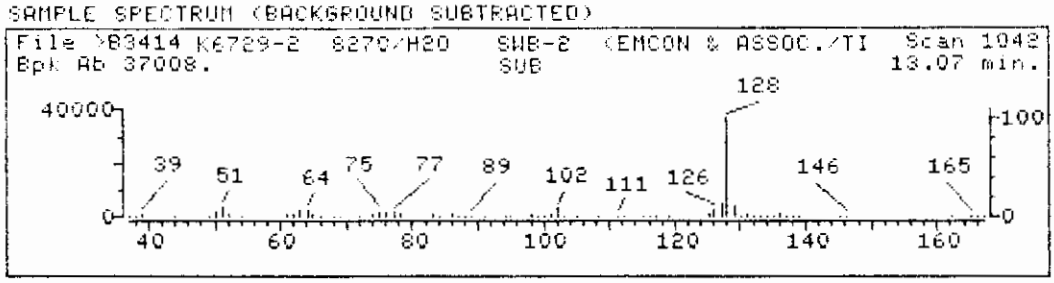
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911125 23:35
Injected at: 911125 22:52

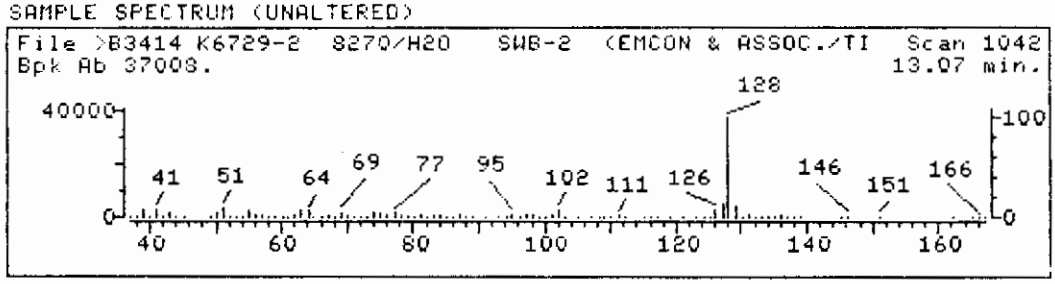
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



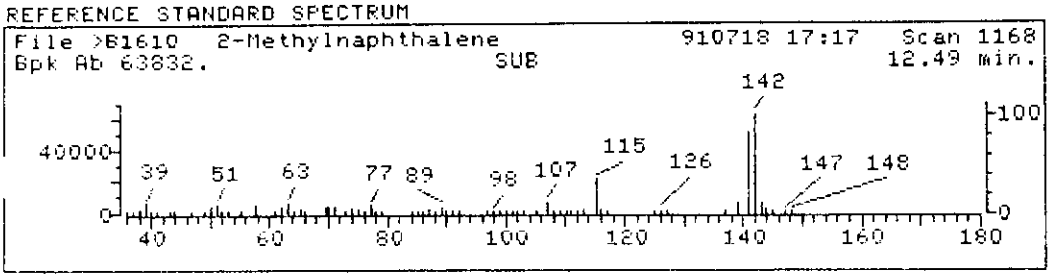
SAMPLE SPECTRUM (UNALTERED)



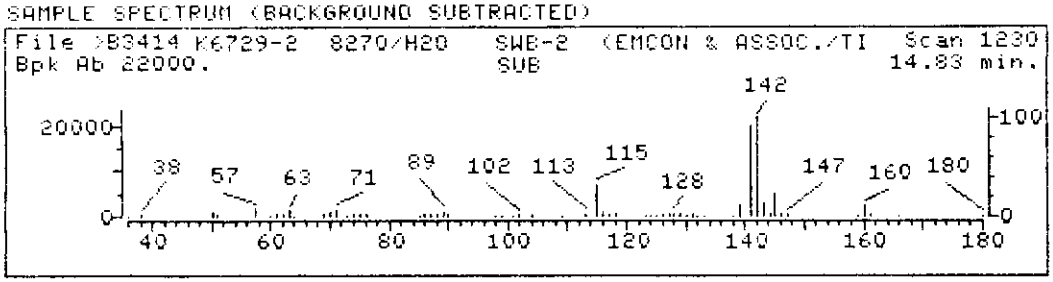
Data File: >B3414::D4 Quant Output File: ^B3414::D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13
Quant Time: 911125 23:35 Quant ID File: ID_BDA::D1
Injected at: 911125 22:52 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1043
Retention Time: 13.07 min.
Quant Ion : 128.0
Area : 89129
Concentration : 14.64 ug/mL
q-value : 97

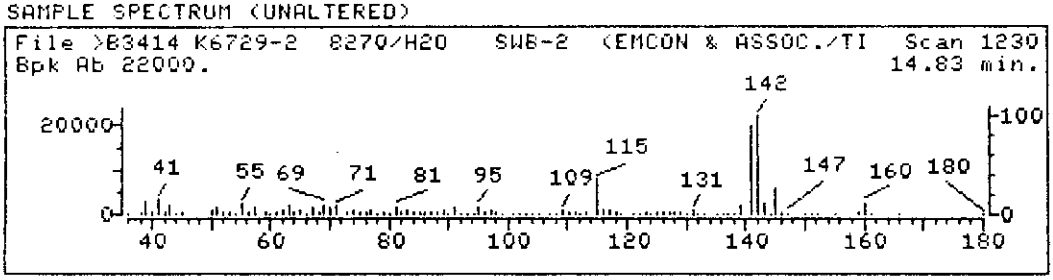
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >B3414::D4 Quant Output File: ^B3414:.D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13
Quant Time: 911125 23:35 Quant ID File: ID_BDA::D1
Injected at: 911125 22:52 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1230
Retention Time: 14.83 min.
Quant Ion : 142.0
Area : 48910
Concentration : 13.45 ug/mL
q-value : 99

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 15:48
Output File: ^B3425::D1 Injected at: 911126 15:05
Data File: >B3425::D4 Dilution Factor: 1.00000
Name: K6729-3 8270/H20 Instrument ID: GCMSBNA1
Misc: X-DUP (EMCON & ASSOC.) BTL# 6

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area		Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.84	152.0	66522 ✓		40.00	ug/mL	93
4)	2-Fluorophenol	6.95	112.0	95144		59.38	ug/mL	87
6)	Phenol-d6	9.30	99.0	93218		38.67	ug/mL	88
~~7)~~	~~Phenol~~	~~9.32~~	~~94.0~~	~~519^~~	NR	~~.168~~	~~ug/mL~~	~~75~~
~~9)~~	~~2-Chlorophenol~~	~~9.43~~	~~128.0~~	~~331M~~		~~.138~~	~~ug/mL~~	
~~11)~~	~~1,4-Dichlorobenzene~~	~~9.88~~	~~146.0~~	~~264M~~		~~.0999~~	~~ug/mL~~	
~~13)~~	~~1,2-Dichlorobenzene~~	~~10.33~~	~~146.0~~	~~742~~		~~.251~~	~~ug/mL~~	~~86~~
~~14)~~	~~2-Methylphenol~~	~~10.76~~	~~107.0~~	~~34M~~		~~.0171~~	~~ug/mL~~	
~~16)~~	~~4-Methylphenol~~	~~11.13~~	~~107.0~~	~~626M~~	NR	~~.237~~	~~ug/mL~~	~~84~~
20)	*d8-Naphthalene	13.02	136.0	235601 ✓		40.00	ug/mL	86
21)	Nitrobenzene-d5	11.34	82.0	63691		29.35	ug/mL	86
~~22)~~	~~Isophorone~~	~~11.99~~	~~82.0~~	~~1361M~~	NR	~~.288~~	~~ug/mL~~	~~97~~
~~24)~~	~~2,4-Dimethylphenol~~	~~12.44~~	~~122.0~~	~~484M~~		~~.217~~	~~ug/mL~~	~~90~~
~~25)~~	~~Benzoic Acid~~	~~12.92~~	~~122.0~~	~~1214M~~		~~.969~~	~~ug/mL~~	
~~8)~~	~~1,2,4-Trichlorobenzene~~	~~12.94~~	~~180.0~~	~~35M~~	NR	~~.0165~~	~~ug/mL~~	
9)	Naphthalene ✓	13.06	128.0	85317		13.58	ug/mL	97
33)	2-Methylnaphthalene ✓	14.81	142.0	45641		12.43	ug/mL	94
34)	*d10-Acenaphthene ✓	17.48	164.0	119405 ✓		40.00	ug/mL	82
~~38)~~	~~2-Chloronaphthalene~~	~~16.06~~	~~162.0~~	~~161M~~	NR	~~.0362~~	~~ug/mL~~	
39)	2-Fluorobiphenyl	15.86	172.0	178121		38.68	ug/mL	94
~~42)~~	~~Acenaphthylene~~	~~17.08~~	~~152.0~~	~~143M~~	NR	~~.0251~~	~~ug/mL~~	
~~44)~~	~~Acenaphthene~~	~~17.56~~	~~154.0~~	~~1690~~		~~.435~~	~~ug/mL~~	~~94~~
~~47)~~	~~Dibenzofuran~~	~~17.96~~	~~168.0~~	~~801~~		~~.145~~	~~ug/mL~~	~~93~~
~~49)~~	~~2,6-Dinitrotoluene~~	~~17.22~~	~~165.0~~	~~88M~~		~~.0805~~	~~ug/mL~~	~~75~~
~~50)~~	~~Diethylphthalate~~	~~18.88~~	~~149.0~~	~~550~~		~~.124~~	~~ug/mL~~	~~74~~
~~52)~~	~~Fluorene~~	~~18.83~~	~~166.0~~	~~1533M~~	NR	~~.382~~	~~ug/mL~~	~~79~~
56)	*d10-Phenanthrene	21.18	188.0	118178 ✓		40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	44759		95.48	ug/mL	91
~~62)~~	~~Phenanthrene~~	~~21.23~~	~~178.0~~	~~2044~~	NR	~~.558~~	~~ug/mL~~	~~78~~
~~63)~~	~~Anthracene~~	~~21.34~~	~~178.0~~	~~671M~~		~~.187~~	~~ug/mL~~	~~78~~
~~64)~~	~~Di-n-Butylphthalate~~	~~23.02~~	~~149.0~~	~~3401~~		~~.753~~	~~ug/mL~~	~~86~~
~~65)~~	~~Fluoranthene~~	~~24.25~~	~~202.0~~	~~339M~~	NR	~~.120~~	~~ug/mL~~	
66)	*d12-Chrysene	27.97	240.0	59095 ✓		40.00	ug/mL	95
~~67)~~	~~Pyrene~~	~~24.81~~	~~202.0~~	~~190M~~	NR	~~.0649~~	~~ug/mL~~	
68)	Terphenyl-d14	25.35	244.0	78407		44.40	ug/mL	87
74)	*d12-Perylene	33.55	264.0	52642 ✓		40.00	ug/mL	94

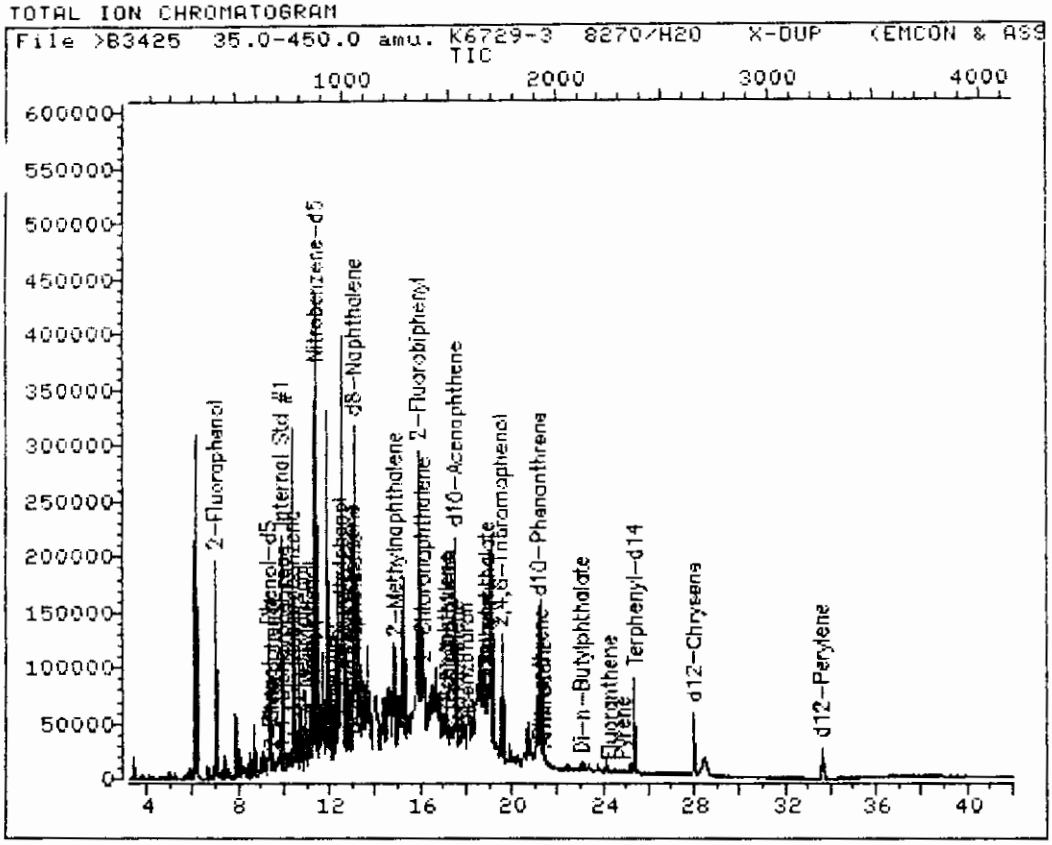
* Compound is ISTD

MRL = $\frac{1000}{720}$ ML × 5 = 7
10 = 14
20 = 28
30 = 42
50 = 69

✓ KY 12/2/91
JAR 12/4/91

39) $13.58 \times \frac{1000}{720} = 18.8 = 19$

TOTAL ION CHROMATOGRAM

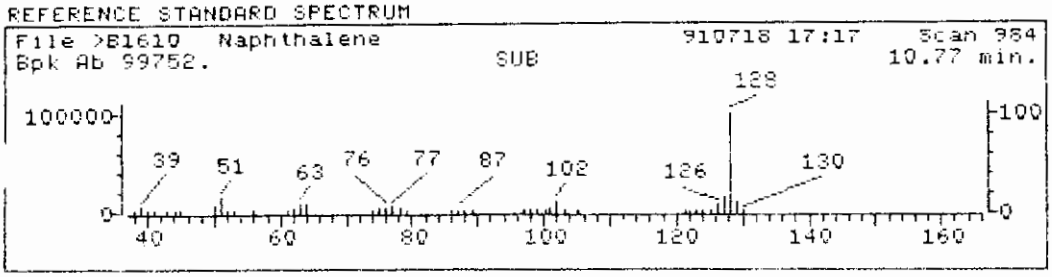


Data File: >B3425::D4 Quant Output File: ^B3425::D1
Name: K6729-3 8270/H20 Instrument ID: GCMSBNA1
Misc: X-DUP (EMCON & ASSOC.) BTL# 6

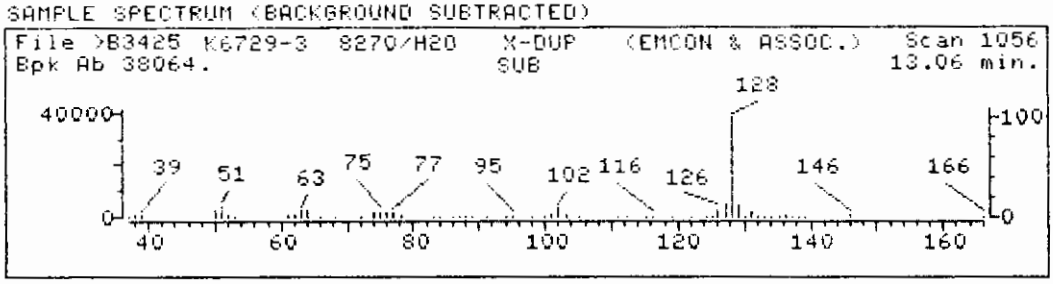
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 15:48
Injected at: 911126 15:05

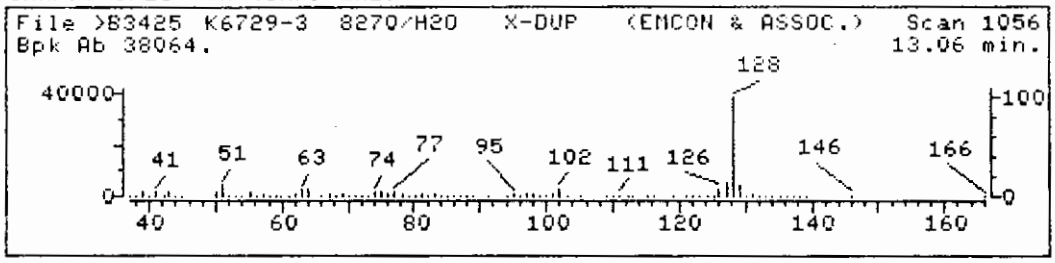
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

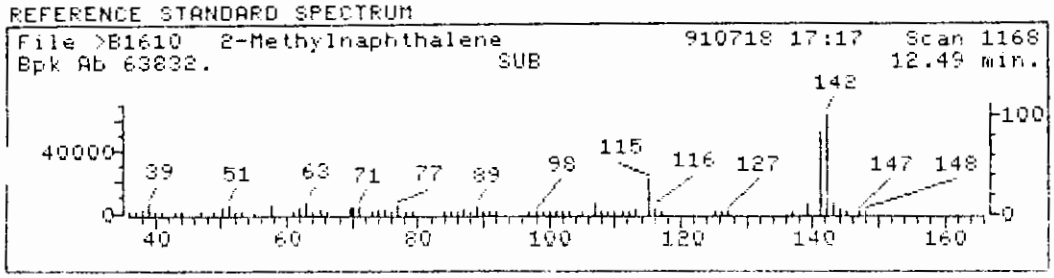


Data File: >B3425::D4
Name: K6729-3 8270/H20
Misc: X-DUP (EMCON & ASSOC.)
Quant Time: 911126 15:48
Injected at: 911126 15:05
Last Qcal Time: 911126 09:51

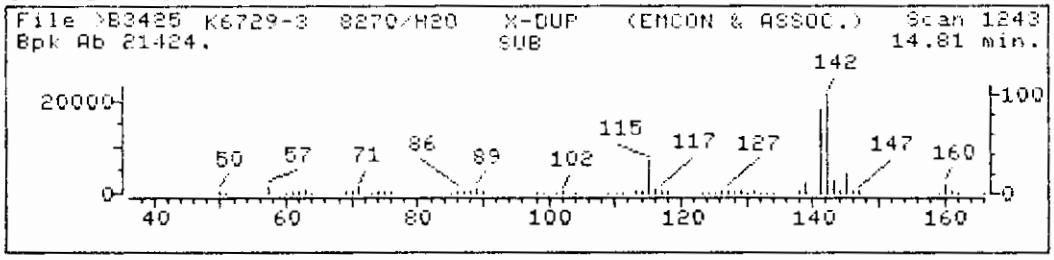
Quant Output File: ^B3425::D1
Instrument ID: GCMSBNA1
BTL# 6
Quant ID File: ID_BDA::D1
Last Calibration: 911113 08:36

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1056
Retention Time: 13.06 min.
Quant Ion : 128.0
Area : 85317
Concentration : 13.58 ug/mL
q-value : 97

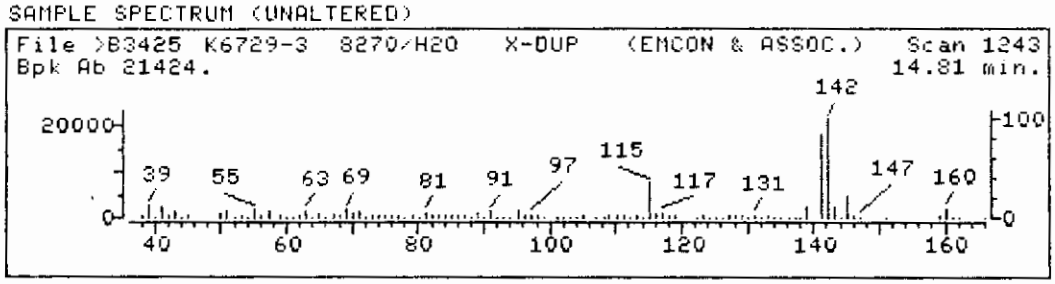
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

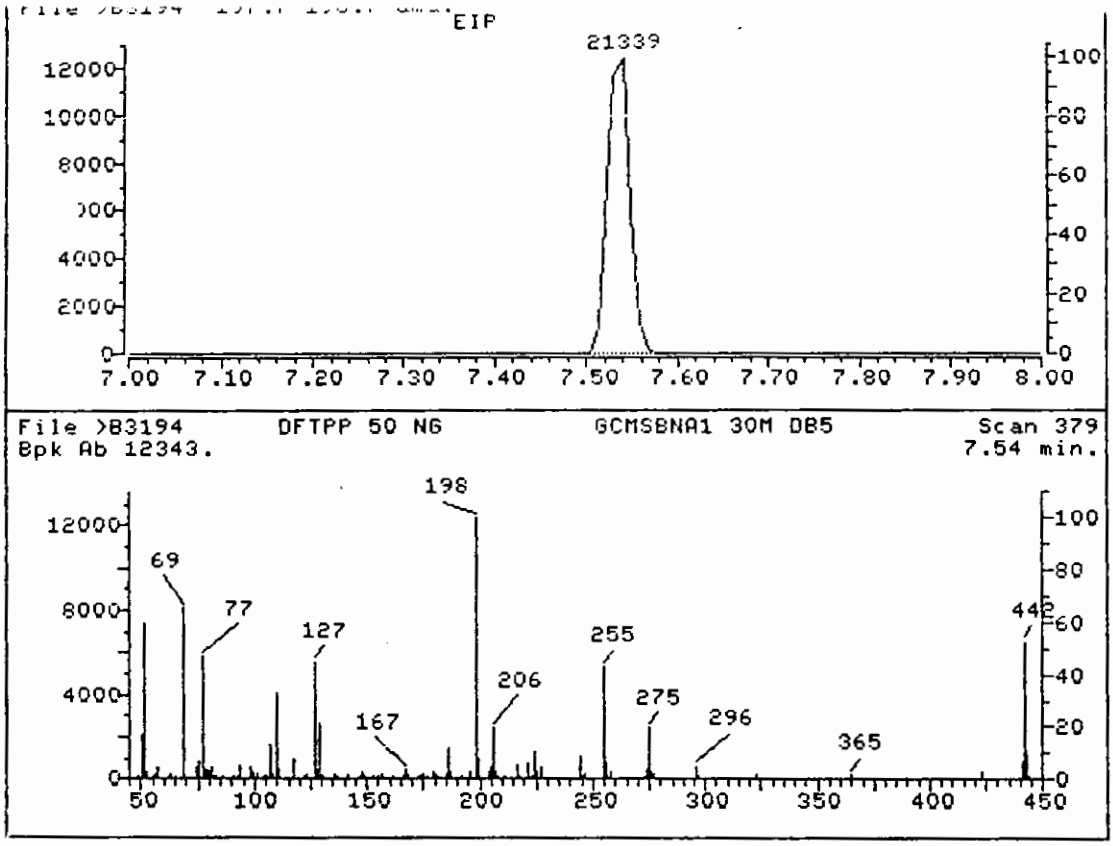


SAMPLE SPECTRUM (UNALTERED)



Data File: >B3425::D4 Quant Output File: ^B3425::D1
Name: K6729-3 8270/H20 Instrument ID: GCMSBNA1
Misc: X-DUP (EMCON & ASSOC.) BTL# 6
Quant Time: 911126 15:48 Quant ID File: ID_BDA::D1
Injected at: 911126 15:05 Last Calibration: 911113 08:36
Last Qcal Time: 911126 09:51

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1243
Retention Time: 14.81 min.
Quant Ion : 142.0
Area : 45641
Concentration : 12.43 ug/mL
q-value : 94

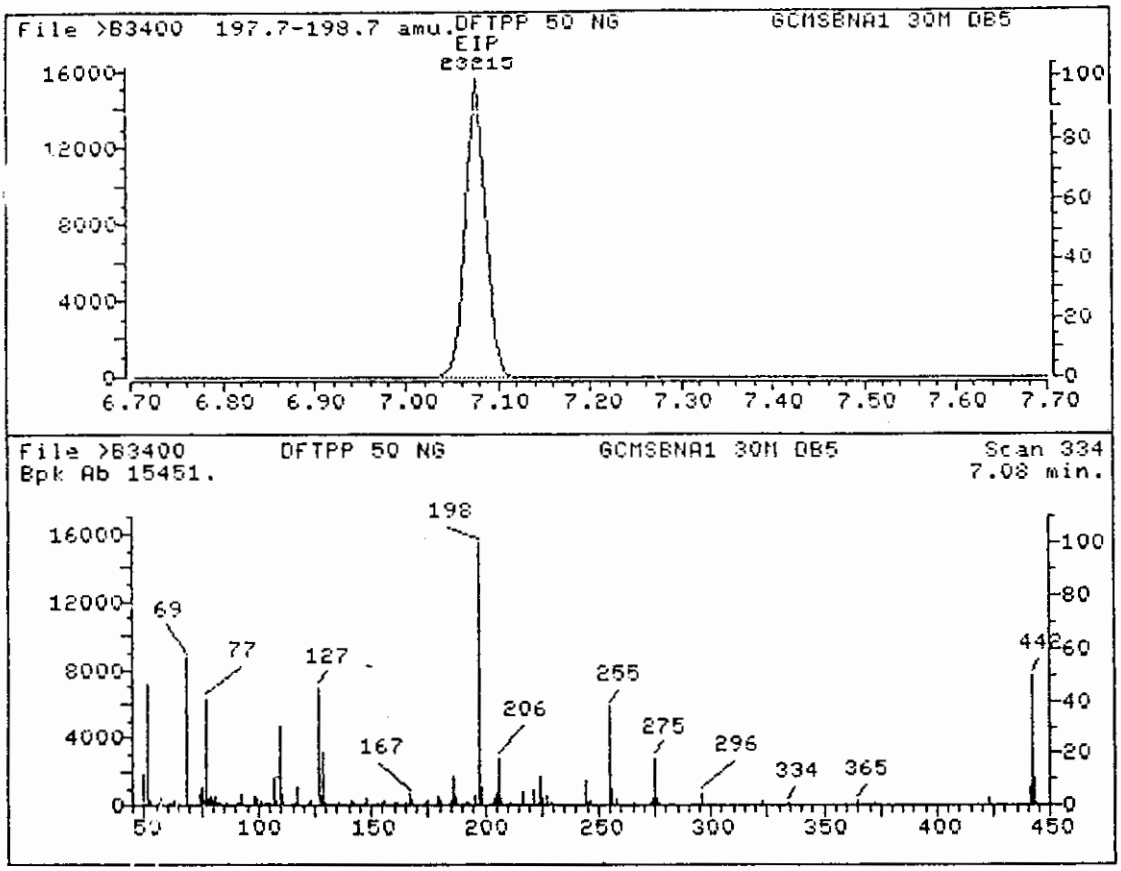


GC/MS PERFORMANCE STANDARD

Decafluorotriphenylpho[illegible] (DFTPP)

m/z	Ion Abundance Criteria	ance riate ak	Status
51	30-60% of mass 198	.43	Ok
68	Less than 2% of mass 69	.00	Ok
69	(reference only)	.60	Ok
70	Less than 2% of mass 69	.00	Ok
127	40-60% of mass 198	.76	Ok
197	Less than 1% of mass 198	.00	Ok
198	Base peak, 100% relative abundanc	.00	Ok
199	5-9% of mass 198	.44	Ok
275	10-30% of mass 198	.10	Ok
365	Greater than 1% of mass 198	.67	Ok
441	0-100% of mass 443	.96	Ok
442	Greater than 40% of mass 198	.60	Ok
443	17-23% of mass 442	.41	Ok

Injection Date: 11/12/91
Injection Time: 14:17
Data File: >B3194
Scan: 379

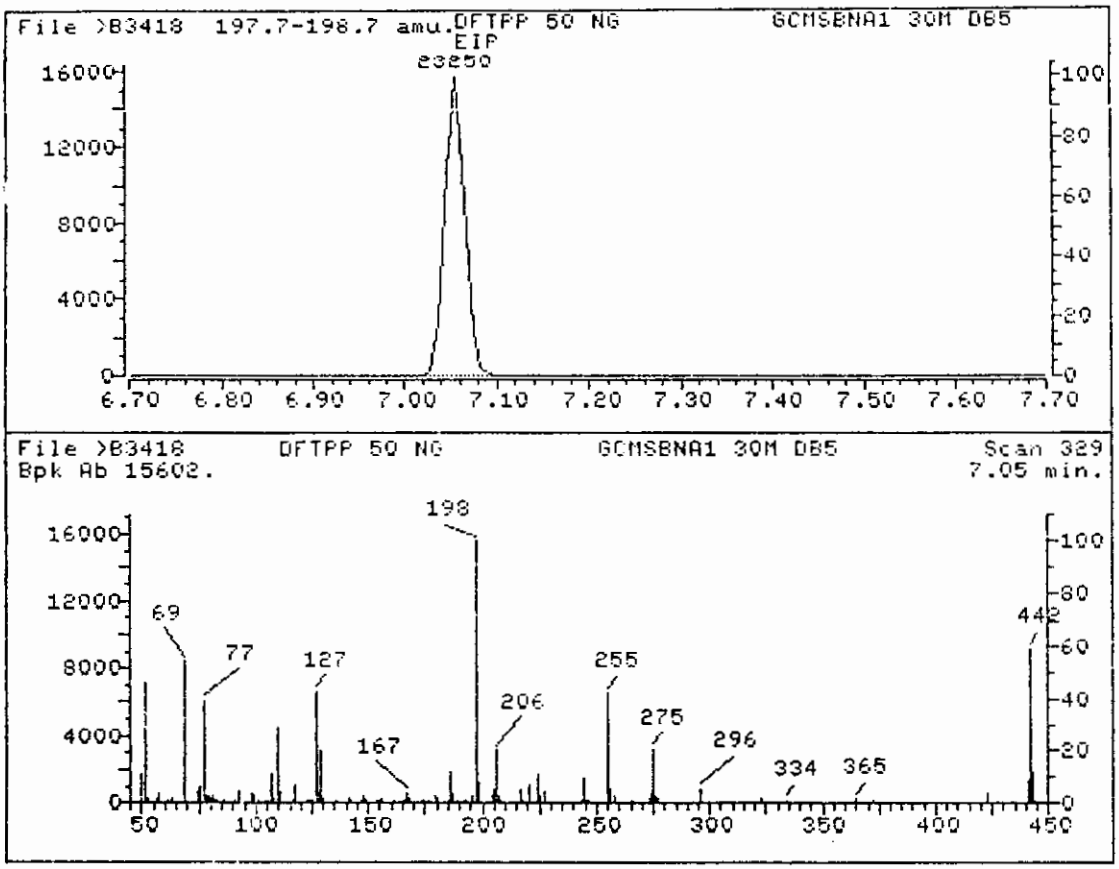


GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	46.09	46.09	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	56.16	56.16	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	45.08	45.08	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.55	6.55	Ok
275	10-30% of mass 198	18.00	18.00	Ok
365	Greater than 1% of mass 198	1.84	1.84	Ok
441	0-100% of mass 443	6.87	68.92	Ok
442	Greater than 40% of mass 198	49.45	49.45	Ok
443	17-23% of mass 442	9.97	20.17	Ok

Injection Date: 11/25/91
Injection Time: 11:22
Data File: >B3400
Scan: 334

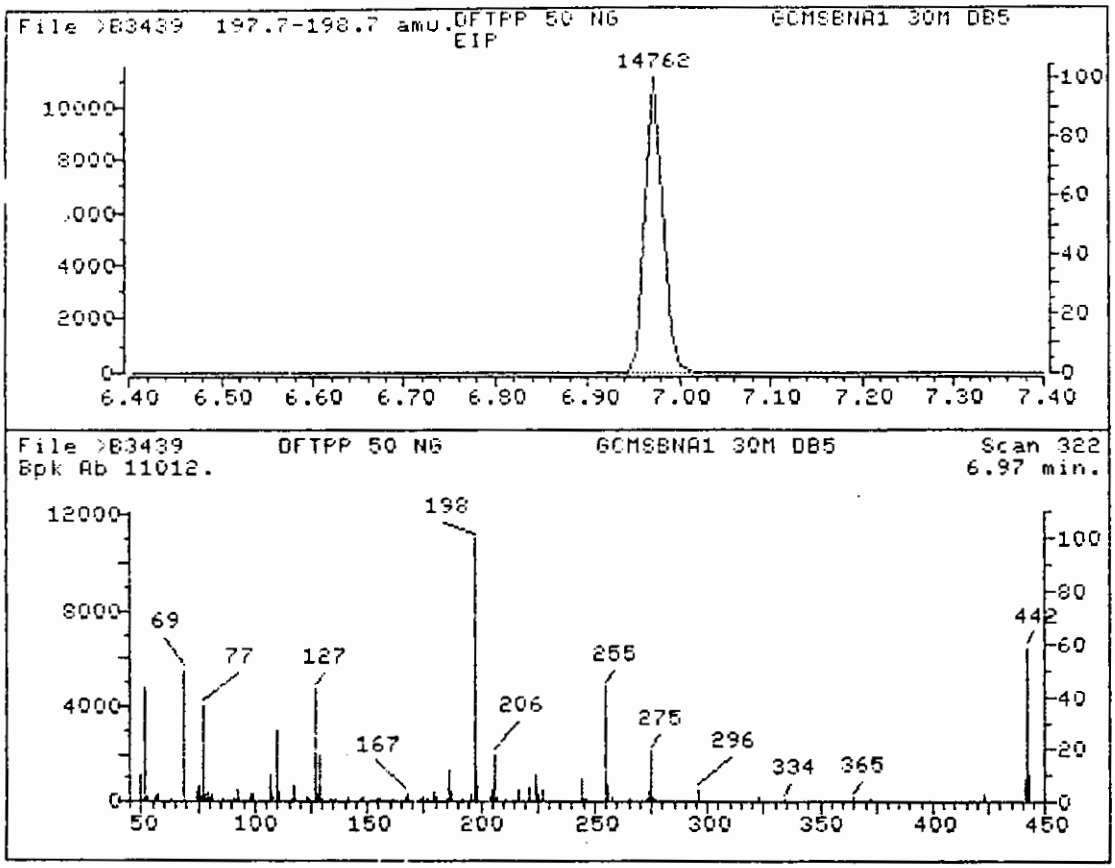


GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	45.47	45.47	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	53.86	53.86	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	42.42	42.42	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	7.59	7.59	Ok
275	10-30% of mass 198	20.75	20.75	Ok
365	Greater than 1% of mass 198	1.86	1.86	Ok
441	0-100% of mass 443	8.56	73.39	Ok
442	Greater than 40% of mass 198	58.75	58.75	Ok
443	17-23% of mass 442	11.66	19.85	Ok

Injection Date: 11/26/91
Injection Time: 09:34
Data File: >B3418
Scan: 329



GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
51	30-60% of mass 198	43.27	43.27	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	50.02	50.02	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	42.65	42.65	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.47	6.47	Ok
275	10-30% of mass 198	19.42	19.42	Ok
365	Greater than 1% of mass 198	1.87	1.87	Ok
441	0-100% of mass 443	8.74	83.87	Ok
442	Greater than 40% of mass 198	58.30	58.30	Ok
443	17-23% of mass 442	10.42	17.87	Ok

Injection Date: 11/27/91
Injection Time: 11:02
Data File: >B3439
Scan: 322

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSBNA1

tractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

ontract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
N-Nitroso-Dimethylamine	1.26158	1.19563	1.10632	1.16948	1.08554	.429	1.16371	6.082		
Pyridine	1.79459	1.83164	1.78906	1.80605	1.79023	.424	1.80232	.983		(Conc=22.0,55.0,88.0,132.
2-Fluorophenol	1.17602	1.13823	1.05138	1.03670	.95074	.724	1.07061	8.298		
Aniline	2.09626	2.09146	1.90892	2.05317	1.87982	.940	2.00593	5.170		
Phenol-d6	1.65271	1.60944	1.47648	1.47741	1.30496	.944	1.50420	9.061		
Phenol	2.20371	2.12722	1.88999	1.81208	1.77800	.947	1.96220	9.778	*	
bis(2-Chloroethyl)ether	1.60488	1.50917	1.26012	1.17454	.99838	.959	1.30942	18.884		
2-Chlorophenol	1.75493	1.58178	1.36464	1.28185	1.16090	.961	1.42882	16.682		
1,3-Dichlorobenzene	1.72470	1.63799	1.47025	1.41891	1.28500	.991	1.50739	11.632		
1,4-Dichlorobenzene	1.76758	1.66418	1.48285	1.42426	1.26207	1.004	1.52019	13.122	*	
Benzyl Alcohol	.79188	.72340	.71130	.81694	.71625	1.049	.75195	6.501		
1,2-Dichlorobenzene	1.98131	1.73887	1.53636	1.52870	1.35750	1.046	1.62855	14.678		
2-Methylphenol	1.43710	1.35168	1.21022	1.19258	1.01805	1.080	1.24193	12.965		
bis(2-Chloroisopropyl)ether	4.00890	4.02670	3.65001	3.68715	3.15651	1.084	3.70585	9.541		
Methylphenol	1.92981	1.59425	1.52648	1.44999	1.65342	1.119	1.63079	11.258		
Nitroso-Di-n-propylamine	1.50043	1.44104	1.39885	1.42371	1.26654	1.125	1.40611	6.155		**
exachloroethane	.76864	.64676	.57186	.57561	.45729	1.116	.60403	18.930		
Nitrobenzene	1.83119	1.77582	1.66692	1.77742	1.60605	1.145	1.73148	5.318		
Nitrobenzene-d5	.45712	.44855	.40221	.42129	.39625	.876	.42509	6.385		
Isophorone	.92091	.91012	.86500	.91087	.83219	.926	.88782	4.267		
2-Nitrophenol	.32945	.31798	.30399	.28908	.26916	.937	.30193	7.870	*	
2,4-Dimethylphenol	.37414	.36869	.35429	.36480	.35020	.953	.36243	2.751		
Benzoic Acid	.22567	.28164	.26331	.28086	.24816	.990	.25993	9.090		
bis(2-Chloroethoxy)methane	.58339	.53659	.48938	.47554	.44124	.971	.50523	10.984		
2,4-Dichlorophenol	.38758	.35470	.35640	.34266	.34408	.981	.35708	5.074	*	
1,2,4-Trichlorobenzene	.36924	.32681	.32045	.29862	.29454	.994	.32193	9.264		
Naphthalene	1.20790	1.13330	1.00339	.95293	.82925	1.004	1.02536	14.561		
4-Chloroaniline	.44322	.43660	.42762	.42249	.41019	1.023	.42802	2.986		
Hexachlorobutadiene	.25000	.22646	.22199	.20132	.18976	1.041	.21791	10.731	*	
4-Chloro-3-methylphenol	.38076	.36476	.35682	.35719	.33308	1.117	.35852	4.802	*	

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSBNA1

ıtractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

ıontract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Methylnaphthalene	.65705	.62675	.59380	.55042	.50597	1.133	.58680	10.238		
Hexachlorocyclopentadiene	.54333	.54827	.53393	.50500	.50827	.885	.52776	3.789		**
2,4,6-Trichlorophenol	.57911	.55416	.54641	.50284	.49605	.898	.53572	6.594	*	
2,4,5-Trichlorophenol	.56550	.53084	.54648	.50377	.49605	.901	.52853	5.486		
2-Chloronaphthalene	1.48324	1.33879	1.29182	1.17441	1.10607	.920	1.27887	11.485		
2-Fluorobiphenyl	1.58556	1.40948	1.33918	1.21561	1.15833	.909	1.34163	12.561		
2-Nitroaniline	.38482	.45053	.45783	.46103	.42603	.943	.43605	7.282		
Dimethylphthalate	1.66672	1.52634	1.49109	1.21846	1.03754	.976	1.38803	18.333		
Acenaphthylene	2.24089	2.09640	1.97723	1.61400	1.35668	.978	1.84704	19.492		
3-Nitroaniline	.24771	.30702	.33738	.30723	.26178	1.002	.29222	12.563		
Acenaphthene	1.38335	1.28187	1.20257	1.04683	.91805	1.005	1.16654	15.904	*	
2,4-Dinitrophenol	.17900	.29138	.33406	.32674	.30241	1.017	.28672	21.861		**
4-Nitrophenol	.19764	.26335	.28050	.28010	.24917	1.029	.25415	13.445		**
Dibenzofuran	1.78608	1.70375	1.69460	1.53396	1.42643	1.028	1.62896	8.930		
4-Dinitrotoluene	.43341	.49431	.52817	.49436	.44327	1.039	.47871	8.253		
6-Dinitrotoluene	.34810	.37814	.39936	.38106	.35538	.985	.37241	5.561		
iethylphthalate	1.63076	1.47682	1.38615	1.12486	.86174	1.078	1.29607	23.490		
4-Chlorophenyl-phenylether	.85534	.79774	.79591	.67329	.58904	1.080	.74227	14.600		
Fluorene	1.45389	1.33639	1.25933	1.09423	.97671	1.076	1.22411	15.539		
4-Nitroaniline	.20444	.26651	.30074	.29153	.25462	1.090	.26357	14.383		
4,6-Dinitro-2-methylphenol	.26681	.37986	.40197	.35432	.30846	1.096	.34228	15.974		
N-Nitrosodiphenylamine	.95191	.94932	.98619	.82556	.69484	1.099	.88156	13.717	*	
Azobenzene	.31706	.28958	.27446	.28807	.27676	.913	.28918	5.862		
2,4,6-Tribromophenol	.14652	.15040	.15665	.16243	.16736	.922	.15667	5.433		
4-Bromophenyl-phenylether	.32328	.29567	.29060	.28891	.28600	.951	.29689	5.108		
Hexachlorobenzene	.35620	.33618	.31598	.31851	.31627	.965	.32863	5.341		
Pentachlorophenol	.20480	.24037	.23762	.24127	.23741	.987	.23229	6.656	*	
Phenanthrene	1.30649	1.24641	1.17086	1.14342	1.07176	1.003	1.18779	7.675		
Anthracene	1.22280	1.16628	1.14762	1.08551	1.01133	1.008	1.12671	7.189		
Di-n-Butylphthalate	1.75163	1.73281	1.52180	1.33813	1.13322	1.083	1.49552	17.648		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Initial Calibration Data
HSL Compounds

Case No: Instrument ID: GCMSBNA1

ntractor: COLUMBIA ANALYTICAL Calibration Date: 11/13/91

ontract No:

Minimum $\overline{RF}$ for SPCC is .050 Maximum % RSD for CCC is 30.0%

Laboratory ID:	>B3199	>B3195	>B3198	>B3196	>B3197					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
Fluoranthene	1.16751	1.22230	1.08394	1.04138	.90082	1.143	1.08319	11.444	*	
Pyrene	2.52497	2.28495	2.19712	1.86689	1.96845	.885	2.16848	12.035		
Terphenyl-d14	1.46097	1.38260	1.38065	1.17490	1.22994	.903	1.32581	8.962		
Butylbenzylphthalate	1.01291	.93708	.86322	.76635	.73906	.952	.86372	13.284		
3,3'-Dichlorobenzidine	.26304	.32237	.35838	.41830	.39917	1.000	.35225	17.644		
Benzo(a)Anthracene	1.29891	1.29813	1.28465	1.32424	1.30259	.998	1.30170	1.100		
Bis(2-Ethylhexyl)Phthalate	1.43615	1.37109	1.25285	1.11010	1.09430	1.018	1.25290	12.176		
Chrysene	1.28149	1.21571	1.25652	1.27919	1.27330	1.003	1.26124	2.161		
Di-n-octylphthalate	2.38608	2.50689	2.21469	1.86961	1.88973	.915	2.17340	13.234	*	
Benzo(b)fluoranthene	1.35099	1.37142	1.44444	1.31394	1.41917	.952	1.37999	3.794		
Benzo(k)fluoranthene	1.32404	1.31203	1.31648	1.21760	1.27083	.955	1.28823	3.461		
Benzo(a)pyrene	1.17181	1.19388	1.22634	1.21876	1.26951	.993	1.21646	3.038	*	
Indeno(1,2,3-cd)pyrene	1.03833	1.09239	1.18150	1.22267	1.28742	1.121	1.16446	8.577		
Dibenz(a,h)anthracene	1.00079	1.04006	1.10369	1.18640	1.22288	1.125	1.11076	8.473		
nzo(g,h,i)Perylene	1.07276	1.10564	1.20099	1.22647	1.29215	1.153	1.17960	7.607		

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

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

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

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Output File: ^B3199::D1 Injected at: 911112 18:17
Data File: >B3199::D4 Dilution Factor: 1.00000
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	50091	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.44	42.0	31597	21.10	ug/mL	83
3)	Pyridine	4.47	79.0	49441M	21.55	ug/mL	92
4)	2-Fluorophenol	7.54	112.0	29454	20.66	ug/mL	91
5)	Aniline	9.77	93.0	52502	20.05	ug/mL	90
6)	Phenol-d6	9.80	99.0	41393	20.54	ug/mL	89
7)	Phenol	9.83	94.0	55193	20.72	ug/mL	83
8)	bis(2-Chloroethyl)ether	9.98	93.0	40195	21.27	ug/mL	82
9)	2-Chlorophenol	10.00	128.0	43953	22.19	ug/mL	99
10)	1,3-Dichlorobenzene	10.32	146.0	43198	21.06	ug/mL	95
11)	1,4-Dichlorobenzene	10.45	146.0	44270	21.24	ug/mL	95
12)	Benzyl Alcohol	10.89	108.0	19833	21.89	ug/mL	96
13)	1,2-Dichlorobenzene	10.90	146.0	49623	22.79	ug/mL	97
14)	2-Methylphenol	11.23	107.0	35993	21.26	ug/mL	95
15)	bis(2-Chloroisopropyl)ether	11.29	45.0	100405	19.91	ug/mL	88
16)	4-Methylphenol	11.61	107.0	48333	24.21	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.65	70.0	37579	20.82	ug/mL	90
18)	Hexachloroethane	11.63	117.0	19251	23.77	ug/mL	94
19)	Nitrobenzene	11.91	77.0	45863	20.62	ug/mL	95
20)	*d8-Naphthalene	13.56	136.0	186038	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.86	82.0	42521	20.38	ug/mL	98
22)	Isophorone	12.53	82.0	85662	20.24	ug/mL	85
23)	2-Nitrophenol	12.71	139.0	30645	20.72	ug/mL	97
24)	2,4-Dimethylphenol	12.90	122.0	34802	20.30	ug/mL	87
25)	Benzoic Acid	13.24	122.0	20992	16.03	ug/mL	95
26)	bis(2-Chloroethoxy)methane	13.15	93.0	54266	21.74	ug/mL	98
27)	2,4-Dichlorophenol	13.28	162.0	36052	21.85	ug/mL	89
28)	1,2,4-Trichlorobenzene	13.48	180.0	34346	22.60	ug/mL	96
29)	Naphthalene	13.61	128.0	112358	21.32	ug/mL	98
30)	4-Chloroaniline	13.87	127.0	41228	20.30	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	23255	22.08	ug/mL	95
32)	4-Chloro-3-methylphenol	15.15	107.0	35418	20.88	ug/mL	95
33)	2-Methylnaphthalene	15.37	142.0	61118	20.97	ug/mL	98
34)	*d10-Acenaphthene	18.05	164.0	95812	40.00	ug/mL	87
35)	Hexachlorocyclopentadiene	15.97	237.0	26029	19.82	ug/mL	96
36)	2,4,6-Trichlorophenol	16.19	196.0	27743	20.90	ug/mL	96
37)	2,4,5-Trichlorophenol	16.27	196.0	27091	21.31	ug/mL	98
38)	2-Chloronaphthalene	16.59	162.0	71056	22.16	ug/mL	97
39)	2-Fluorobiphenyl	16.41	172.0	75958	22.50	ug/mL	94
40)	2-Nitroaniline	17.00	65.0	18435	17.08	ug/mL	78

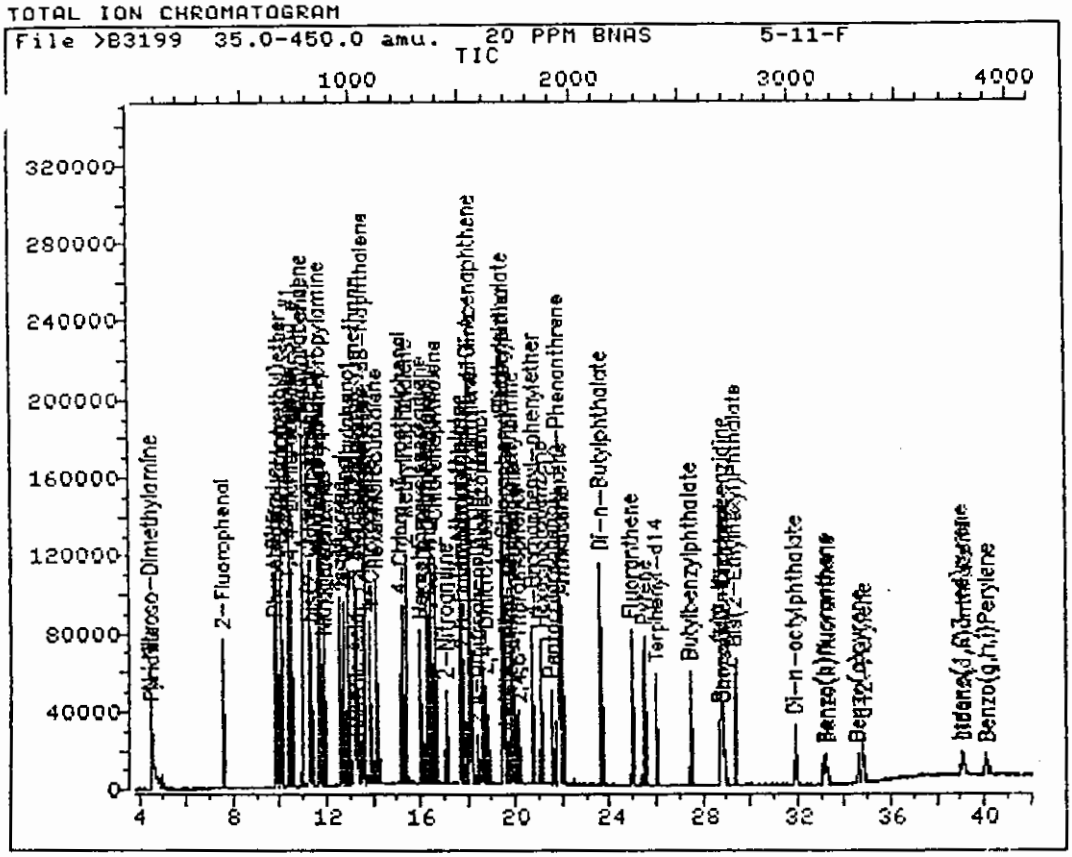
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 19:01
Data File: ^B3199::D1 Injected at: 911112 18:17
Data File: >B3199::D4 Dilution Factor: 1.00000
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	79846	21.84	ug/mL	74
42)	Acenaphthylene	17.65	152.0	107352	21.38	ug/mL	93
43)	3-Nitroaniline	18.07	138.0	11867	16.14	ug/mL	95
44)	Acenaphthene	18.14	154.0	66271	21.58	ug/mL	93
45)	2,4-Dinitrophenol	18.34	184.0	8575	12.29	ug/mL	97
46)	4-Nitrophenol	18.55	65.0	9468	15.01	ug/mL	40
47)	Dibenzofuran	18.55	168.0	85564	20.97	ug/mL	95
48)	2,4-Dinitrotoluene	18.74	165.0	20763	17.54	ug/mL	93
49)	2,6-Dinitrotoluene	17.77	165.0	16676	18.41	ug/mL	91
50)	Diethylphthalate	19.43	149.0	78123	22.08	ug/mL	96
51)	4-Chlorophenyl-phenylether	19.49	204.0	40976	21.44	ug/mL	93
52)	Fluorene	19.42	166.0	69650	21.76	ug/mL	94
53)	4-Nitroaniline	19.64	138.0	9794	15.34	ug/mL	93
4)	4,6-Dinitro-2-methylphenol	19.75	198.0	12782	14.05	ug/mL	94
55)	N-Nitrosodiphenylamine	19.83	169.0	45602	20.05	ug/mL	96
56)	*d10-Phenanthrene	21.79	188.0	142587	40.00	ug/mL	99
57)	Azobenzene	19.88	182.0	22604	21.90	ug/mL	90
58)	2,4,6-Tribromophenol	20.09	329.8	10446	19.48	ug/mL	93
59)	4-Bromophenyl-phenylether	20.72	248.0	23048	21.87	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	25395	21.19	ug/mL	99
61)	Pentachlorophenol	21.51	266.0	14601	17.04	ug/mL	98
62)	Phenanthrene	21.85	178.0	93144	20.96	ug/mL	99
63)	Anthracene	21.96	178.0	87178	20.97	ug/mL	99
64)	Di-n-Butylphthalate	23.61	149.0	124880	20.22	ug/mL	97
65)	Fluoranthene	24.90	202.0	83236	19.10	ug/mL	94
66)	*d12-Chrysene	28.77	240.0	66468	40.00	ug/mL	98
67)	Pyrene	25.46	202.0	83915	22.10	ug/mL	98
68)	Terphenyl-d14	25.98	244.0	48554	21.13	ug/mL	91
69)	Butylbenzylphthalate	27.41	149.0	33663	21.62	ug/mL	87
70)	3,3'-Dichlorobenzidine	28.78	252.0	8742	16.32	ug/mL	88
71)	Benzo(a)Anthracene	28.73	228.0	43168	20.01	ug/mL	96
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	47729	20.95	ug/mL	90
73)	Chrysene	28.86	228.0	42589	21.08	ug/mL	97
74)	*d12-Perylene	34.81	264.0	46825	40.00	ug/mL	93
75)	Di-n-octylphthalate	31.85	149.0	55864	19.04	ug/mL	87
76)	Benzo(b)fluoranthene	33.10	252.0	31630	19.70	ug/mL	96
77)	Benzo(k)fluoranthene	33.22	252.0	30999	20.18	ug/mL	98
78)	Benzo(a)pyrene	34.54	252.0	27435	19.63	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	38.99	276.0	24310	19.01	ug/mL	96
80)	Dibenz(a,h)anthracene	39.14	278.0	23431	19.24	ug/mL	97
81)	Benzo(g,h,i)Perylene	40.09	276.0	25116	19.41	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3199::D4 Quant Output File: ^B3199::D1
Name: 20 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-11-F BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 19:01
Injected at: 911112 18:17

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
Output File: ^B3195::D1 Injected at: 911112 14:37
Data File: >B3195::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.41	152.0	45924	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	4.46	42.0	68635M	49.90	ug/mL	
3)	Pyridine	4.43	79.0	115660M	74.20	ug/mL	
4)	2-Fluorophenol	7.53	112.0	65340M	63.41	ug/mL	
5)	Aniline	9.77	93.0	120060	55.18	ug/mL	89
6)	Phenol-d6	9.81	99.0	92390	61.88	ug/mL	87
7)	Phenol	9.84	94.0	122113	58.17	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.97	93.0	86634	62.34	ug/mL	77
9)	2-Chlorophenol	9.99	128.0	90802	52.48	ug/mL	96
10)	1,3-Dichlorobenzene	10.31	146.0	94029	52.42	ug/mL	94
11)	1,4-Dichlorobenzene	10.45	146.0	95552	53.79	ug/mL	94
12)	Benzyl Alcohol	10.90	108.0	41527	44.03	ug/mL	96
13)	1,2-Dichlorobenzene	10.89	146.0	99820	47.23	ug/mL	93
14)	2-Methylphenol	11.24	107.0	77593M	49.79	ug/mL	
15)	bis(2-Chloroisopropyl)ether	11.29	45.0	231153	50.41	ug/mL	87
16)	4-Methylphenol	11.62	107.0	91518M	44.19	ug/mL	
17)	N-Nitroso-Di-n-propylamine	11.67	70.0	82723M	47.42	ug/mL	
18)	Hexachloroethane	11.62	117.0	37127	44.64	ug/mL	94
19)	Nitrobenzene	11.91	77.0	101941M	48.89	ug/mL	
20)	*d8-Naphthalene	13.56	136.0	169863	40.00	ug/mL	88
21)	Nitrobenzene-d5	11.87	82.0	95241	58.43	ug/mL	96
22)	Isophorone	12.54	82.0	193245M	52.38	ug/mL	
23)	2-Nitrophenol	12.71	139.0	67516	52.47	ug/mL	95
24)	2,4-Dimethylphenol	12.91	122.0	78284	49.10	ug/mL	89
25)	Benzoic Acid	13.36	122.0	59801M	62.37	ug/mL	97
26)	bis(2-Chloroethoxy)methane	13.16	93.0	113934	51.67	ug/mL	97
27)	2,4-Dichlorophenol	13.29	162.0	75313	45.10	ug/mL	92
28)	1,2,4-Trichlorobenzene	13.49	180.0	69392	44.08	ug/mL	97
29)	Naphthalene	13.62	128.0	240632	53.42	ug/mL	97
30)	4-Chloroaniline	13.87	127.0	92702	47.80	ug/mL	96
31)	Hexachlorobutadiene	14.12	225.0	48084	43.63	ug/mL	98
32)	4-Chloro-3-methylphenol	15.15	107.0	77449M	55.74	ug/mL	
33)	2-Methylnaphthalene	15.37	142.0	133076M	37.47	ug/mL	98
34)	*d10-Acenaphthene	18.06	164.0	84764	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.97	237.0	58092	50.69	ug/mL	93
36)	2,4,6-Trichlorophenol	16.20	196.0	58716	50.01	ug/mL	98
37)	2,4,5-Trichlorophenol	16.27	196.0	56245M	48.28	ug/mL	93
38)	2-Chloronaphthalene	16.60	162.0	141851	52.94	ug/mL	98
39)	2-Fluorobiphenyl	16.41	172.0	149341	52.78	ug/mL	95
40)	2-Nitroaniline	17.01	65.0	47736	48.81	ug/mL	82

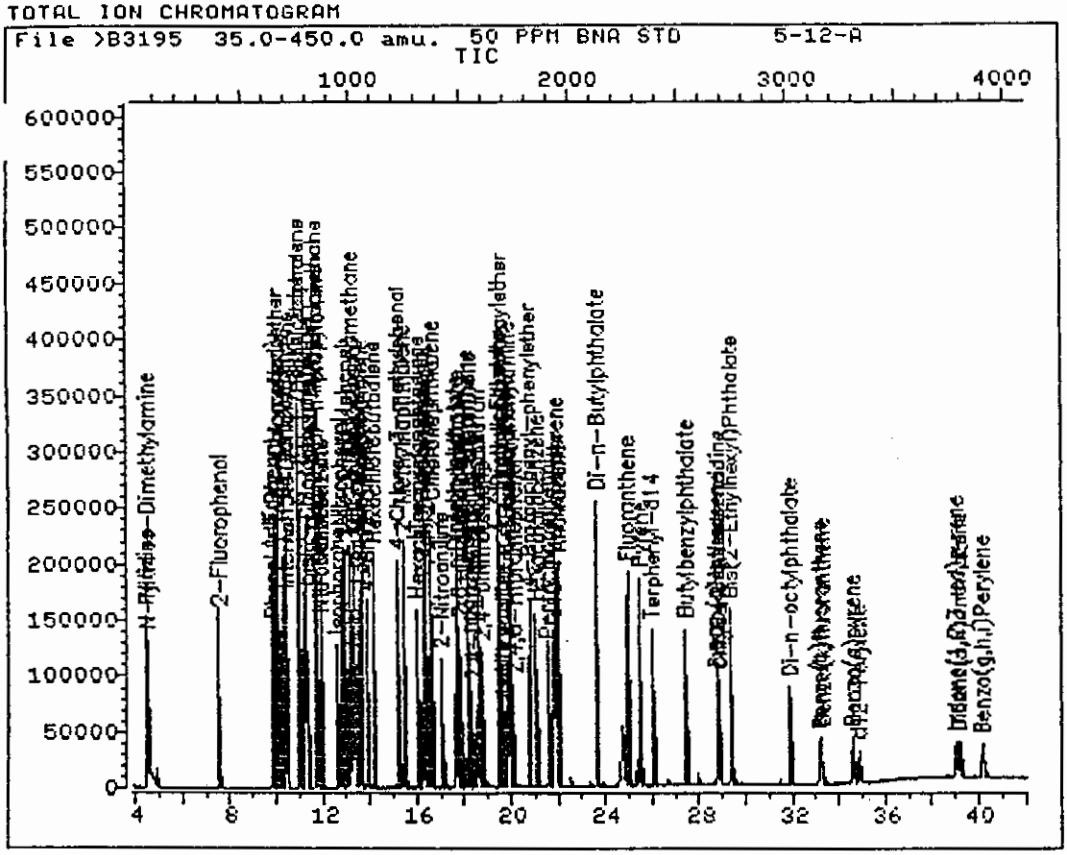
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 15:33
tput File: ^B3195::D1 Injected at: 911112 14:37
ta File: >B3195::D3 Dilution Factor: 1.00000
ame: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.62	163.0	161723	46.79	ug/mL	75
42)	Acenaphthylene	17.66	152.0	222124	50.27	ug/mL	91
43)	3-Nitroaniline	18.08	138.0	32530	49.97	ug/mL	95
44)	Acenaphthene	18.14	154.0	135821	53.54	ug/mL	94
45)	2,4-Dinitrophenol	18.35	184.0	30873	56.03	ug/mL	98
46)	4-Nitrophenol	18.56	65.0	27903	46.40	ug/mL	57
47)	Dibenzofuran	18.55	168.0	180521	47.16	ug/mL	97
48)	2,4-Dinitrotoluene	18.75	165.0	52375	51.89	ug/mL	92
49)	2,6-Dinitrotoluene	17.77	165.0	40066	50.44	ug/mL	93
50)	Diethylphthalate	19.45	149.0	156477	45.15	ug/mL	93
51)	4-Chlorophenyl-phenylether	19.50	204.0	84525	50.42	ug/mL	93
52)	Fluorene	19.43	166.0	141597	47.08	ug/mL	96
53)	4-Nitroaniline	19.65	138.0	28238	48.42	ug/mL	92
4)	4,6-Dinitro-2-methylphenol	19.77	198.0	40248	53.18	ug/mL	90
55)	N-Nitrosodiphenylamine	19.83	169.0	100585	54.08	ug/mL	97
56)	*d10-Phenanthrene	21.80	188.0	135870	40.00	ug/mL	99
57)	Azobenzene	19.89	182.0	49181	55.87	ug/mL	88
58)	2,4,6-Tribromophenol	20.09	329.8	25544	42.09	ug/mL	95
59)	4-Bromophenyl-phenylether	20.72	248.0	50216	46.69	ug/mL	87
60)	Hexachlorobenzene	21.04	284.0	57096	47.70	ug/mL	98
61)	Pentachlorophenol	21.51	266.0	40823	55.55	ug/mL	98
62)	Phenanthrene	21.86	178.0	211688	52.69	ug/mL	99
63)	Anthracene	21.98	178.0	198078	51.13	ug/mL	97
64)	Di-n-Butylphthalate	23.61	149.0	294296M	58.38	ug/mL	
65)	Fluoranthene	24.91	202.0	207593M	58.96	ug/mL	
66)	*d12-Chrysene	28.78	240.0	72748	40.00	ug/mL	98
67)	Pyrene	25.47	202.0	207782	52.44	ug/mL	97
68)	Terphenyl-d14	25.98	244.0	125727	51.69	ug/mL	87
69)	Butylbenzylphthalate	27.41	149.0	85213M	66.99	ug/mL	
70)	3,3'-Dichlorobenzidine	28.78	252.0	29315	50.93	ug/mL	95
71)	Benzo(a)Anthracene	28.73	228.0	118045	52.39	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.31	149.0	124680M	73.48	ug/mL	
73)	Chrysene	28.87	228.0	110551	49.04	ug/mL	92
74)	*d12-Perylene	34.81	264.0	48894	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.85	149.0	153215M	76.03	ug/mL	
76)	Benzo(b)fluoranthene	33.12	252.0	83818M	48.40	ug/mL	
77)	Benzo(k)fluoranthene	33.24	252.0	80188M	51.38	ug/mL	
78)	Benzo(a)pyrene	34.56	252.0	72967	51.02	ug/mL	98
9)	Indeno(1,2,3-cd)pyrene	39.00	276.0	66764M	55.43	ug/mL	
80)	Dibenz(a,h)anthracene	39.15	278.0	63566M	54.74	ug/mL	
81)	Benzo(g,h,i)Perylene	40.10	276.0	67574M	51.96	ug/mL	

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3195::D3 Quant Output File: ^B3195::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-12-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 15:33
Injected at: 911112 14:37

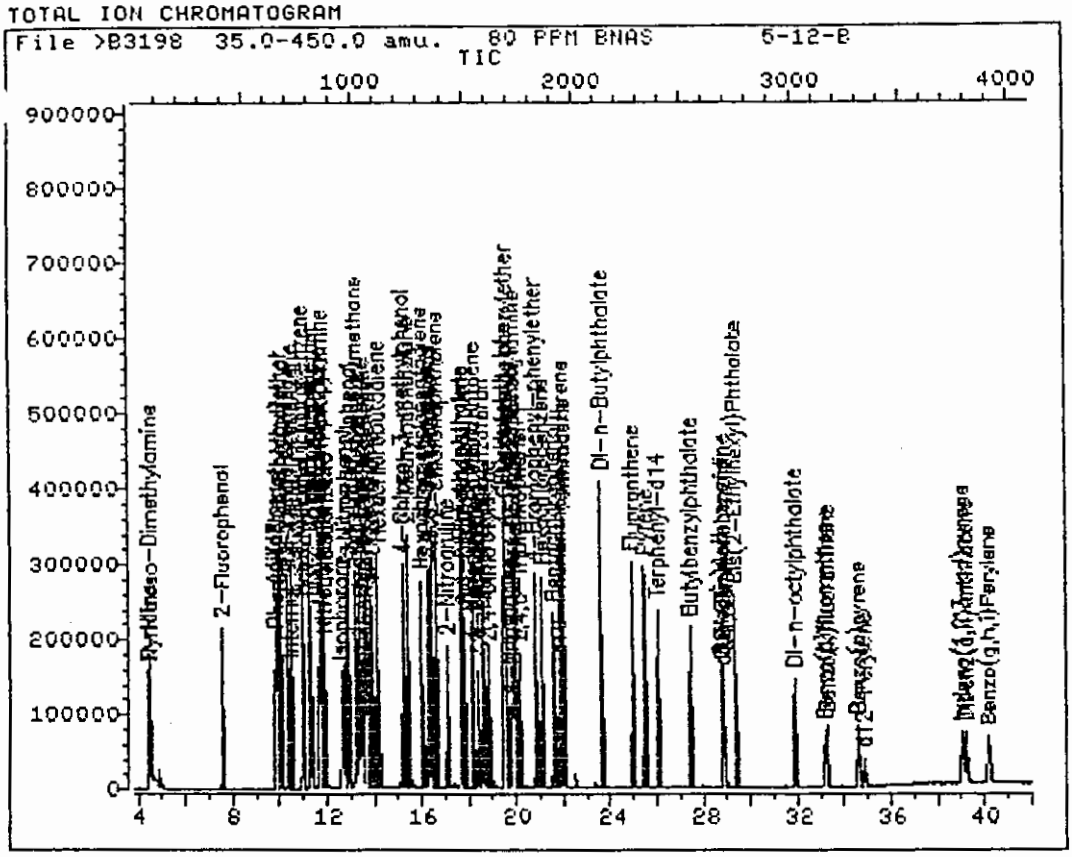
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 18:09
tput File: ^B3198::D1 Injected at: 911112 17:25
ata File: >B3198::D4 Dilution Factor: 1.00000
ame: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.64	163.0	285857	78.15	ug/mL	71
42)	Acenaphthylene	17.68	152.0	369469	73.54	ug/mL	94
43)	3-Nitroaniline	18.10	138.0	64679	87.91	ug/mL	93
44)	Acenaphthene	18.16	154.0	230545	75.05	ug/mL	95
45)	2,4-Dinitrophenol	18.38	184.0	64042	91.72	ug/mL	93
46)	4-Nitrophenol	18.59	65.0	53775	85.21	ug/mL	87
47)	Dibenzofuran	18.57	168.0	324871	79.57	ug/mL	96
48)	2,4-Dinitrotoluene	18.77	165.0	101256	85.48	ug/mL	85
49)	2,6-Dinitrotoluene	17.80	165.0	76562	84.49	ug/mL	91
50)	Diethylphthalate	19.47	149.0	265739	75.09	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.50	204.0	152584	79.82	ug/mL	94
52)	Fluorene	19.44	166.0	241426	75.39	ug/mL	95
53)	4-Nitroaniline	19.69	138.0	57655	90.28	ug/mL	90
54)	4,6-Dinitro-2-methylphenol	19.79	198.0	77061	84.66	ug/mL	88
55)	N-Nitrosodiphenylamine	19.85	169.0	189063	83.11	ug/mL	97
56)	*d10-Phenanthrene	21.81	188.0	168953	40.00	ug/mL	99
57)	Azobenzene	19.90	182.0	92741	75.82	ug/mL	93
58)	2,4,6-Tribromophenol	20.11	329.8	52933	83.32	ug/mL	93
59)	4-Bromophenyl-phenylether	20.73	248.0	98194	78.63	ug/mL	84
60)	Hexachlorobenzene	21.05	284.0	106772	75.19	ug/mL	91
61)	Pentachlorophenol	21.53	266.0	80292	79.09	ug/mL	96
62)	Phenanthrene	21.88	178.0	395640	75.15	ug/mL	99
63)	Anthracene	21.99	178.0	387788	78.72	ug/mL	98
64)	Di-n-Butylphthalate	23.62	149.0	514227	70.26	ug/mL	96
65)	Fluoranthene	24.92	202.0	366270	70.94	ug/mL	92
66)	*d12-Chrysene	28.80	240.0	82567	40.00	ug/mL	97
67)	Pyrene	25.47	202.0	362819	76.92	ug/mL	98
68)	Terphenyl-d14	25.99	244.0	227992	79.89	ug/mL	84
69)	Butylbenzylphthalate	27.41	149.0	142547	73.69	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	59180	88.93	ug/mL	97
71)	Benzo(a)Anthracene	28.74	228.0	212139	79.17	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.32	149.0	206888	73.10	ug/mL	93
73)	Chrysene	28.88	228.0	207494	82.69	ug/mL	93
74)	*d12-Perylene	34.81	264.0	62037	40.00	ug/mL	95
75)	Di-n-octylphthalate	31.87	149.0	274786	70.68	ug/mL	87
76)	Benzo(b)fluoranthene	33.14	252.0	179218	84.26	ug/mL	97
77)	Benzo(k)fluoranthene	33.25	252.0	163366	80.28	ug/mL	97
78)	Benzo(a)pyrene	34.58	252.0	152405	82.31	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	39.03	276.0	146594	86.53	ug/mL	94
80)	Dibenz(a,h)anthracene	39.18	278.0	136939	84.89	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.15	276.0	149012	86.90	ug/mL	85

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3198::D4 Quant Output File: ^B3198::D1
Name: 80 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-B BTL# 3

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 18:09
Injected at: 911112 17:25

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
Output File: ^B3196::D1 Injected at: 911112 15:41
Data File: >B3196::D4 Dilution Factor: 1.00000
Name: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.43	152.0	46445	40.00	ug/mL	95
2)	N-Nitroso-Dimethylamine	4.46	42.0	162950	117.38	ug/mL	90
3)	Pyridine	4.39	79.0	276811M	130.16	ug/mL	93
4)	2-Fluorophenol	7.55	112.0	144448	109.30	ug/mL	91
5)	Aniline	9.81	93.0	286078	117.80	ug/mL	91
6)	Phenol-d6	9.86	99.0	205855	110.16	ug/mL	92
7)	Phenol	9.90	94.0	252486	102.22	ug/mL	87
8)	bis(2-Chloroethyl)ether	10.01	93.0	163654	93.39	ug/mL	68
9)	2-Chlorophenol	10.03	128.0	178606	97.25	ug/mL	97
10)	1,3-Dichlorobenzene	10.34	146.0	197704	103.95	ug/mL	97
11)	1,4-Dichlorobenzene	10.48	146.0	198449	102.70	ug/mL	93
12)	Benzyl Alcohol	10.96	108.0	113828	135.52	ug/mL	92
13)	1,2-Dichlorobenzene	10.91	146.0	213001	105.50	ug/mL	96
4)	2-Methylphenol	11.28	107.0	166168	105.88	ug/mL	90
15)	bis(2-Chloroisopropyl)ether	11.31	45.0	513749^	109.88	ug/mL	87
16)	4-Methylphenol	11.69	107.0	202035	109.14	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.76	70.0	198372	118.56	ug/mL	87
18)	Hexachloroethane	11.64	117.0	80203	106.80	ug/mL	95
19)	Nitrobenzene	11.96	77.0	247657	120.11	ug/mL	90
20)	*d8-Naphthalene	13.59	136.0	185377	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.91	82.0	234293	112.71	ug/mL	93
22)	Isophorone	12.61	82.0	506562M	120.10	ug/mL	89
23)	2-Nitrophenol	12.74	139.0	160767	109.09	ug/mL	93
24)	2,4-Dimethylphenol	12.97	122.0	202879	118.73	ug/mL	88
25)	Benzoic Acid	13.56	122.0	156195M	119.67	ug/mL	89
26)	bis(2-Chloroethoxy)methane	13.21	93.0	264462	106.35	ug/mL	96
27)	2,4-Dichlorophenol	13.34	162.0	190566	115.93	ug/mL	91
28)	1,2,4-Trichlorobenzene	13.51	180.0	166074	109.65	ug/mL	96
29)	Naphthalene	13.65	128.0	529956	100.90	ug/mL	97
30)	4-Chloroaniline	13.91	127.0	234960	116.12	ug/mL	99
31)	Hexachlorobutadiene	14.14	225.0	111962	106.68	ug/mL	96
32)	4-Chloro-3-methylphenol	15.19	107.0	198646	117.51	ug/mL	96
33)	2-Methylnaphthalene	15.40	142.0	306104	105.39	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	101728	40.00	ug/mL	89
35)	Hexachlorocyclopentadiene	15.99	237.0	154117	110.53	ug/mL	90
36)	2,4,6-Trichlorophenol	16.23	196.0	153460	108.89	ug/mL	92
37)	2,4,5-Trichlorophenol	16.31	196.0	153742	113.88	ug/mL	96
38)	2-Chloronaphthalene	16.62	162.0	358412	105.27	ug/mL	96
39)	2-Fluorobiphenyl	16.44	172.0	370986	103.49	ug/mL	93
40)	2-Nitroaniline	17.05	65.0	140698	122.80	ug/mL	81

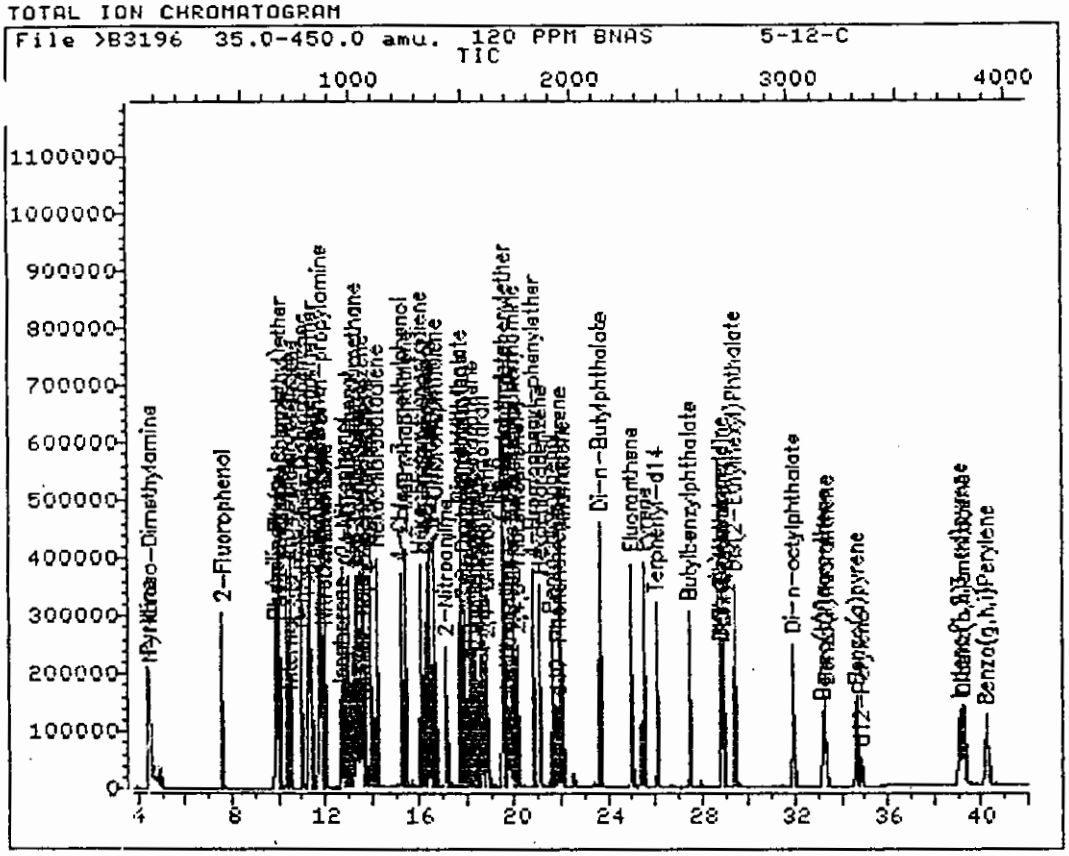
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 16:24
Input File: ^B3196::D1 Injected at: 911112 15:41
Data File: >B3196::D4 Dilution Factor: 1.00000
Name: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	371856	95.80	ug/mL	74
42)	Acenaphthylene	17.69	152.0	492566	92.39	ug/mL	93
43)	3-Nitroaniline	18.13	138.0	93762	120.08	ug/mL	93
44)	Acenaphthene	18.17	154.0	319477	98.00	ug/mL	94
45)	2,4-Dinitrophenol	18.40	184.0	99716	134.56	ug/mL	96
46)	4-Nitrophenol	18.61	65.0	85481	127.63	ug/mL	89
47)	Dibenzofuran	18.58	168.0	468139	108.04	ug/mL	98
48)	2,4-Dinitrotoluene	18.79	165.0	150870	120.01	ug/mL	87
49)	2,6-Dinitrotoluene	17.82	165.0	116294	120.93	ug/mL	92
50)	Diethylphthalate	19.48	149.0	343289	91.40	ug/mL	95
51)	4-Chlorophenyl-phenylether	19.52	204.0	205478	101.28	ug/mL	94
52)	Fluorene	19.45	166.0	333941	98.26	ug/mL	97
53)	4-Nitroaniline	19.71	138.0	88970	131.27	ug/mL	93
54)	4,6-Dinitro-2-methylphenol	19.83	198.0	108133	111.93	ug/mL	91
55)	N-Nitrosodiphenylamine	19.87	169.0	251947	104.36	ug/mL	96
56)	*d10-Phenanthrene	21.81	188.0	157138	40.00	ug/mL	99
57)	Azobenzene	19.92	182.0	135798	119.37	ug/mL	89
58)	2,4,6-Tribromophenol	20.13	329.8	76573	129.60	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	136194	117.25	ug/mL	86
60)	Hexachlorobenzene	21.06	284.0	150151	113.69	ug/mL	88
61)	Pentachlorophenol	21.53	266.0	113738	120.45	ug/mL	96
62)	Phenanthrene	21.89	178.0	539022	110.08	ug/mL	97
63)	Anthracene	22.00	178.0	511726	111.69	ug/mL	99
64)	Di-n-Butylphthalate	23.62	149.0	630812	92.67	ug/mL	97
65)	Fluoranthene	24.93	202.0	490923	102.24	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	89220	40.00	ug/mL	96
67)	Pyrene	25.49	202.0	499691	98.04	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	314474	101.97	ug/mL	83
69)	Butylbenzylphthalate	27.42	149.0	205121	98.14	ug/mL	86
70)	3,3'-Dichlorobenzidine	28.79	252.0	111962	155.71	ug/mL	99
71)	Benzo(a)Anthracene	28.75	228.0	354446	122.41	ug/mL	94
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	297130	97.16	ug/mL	91
73)	Chrysene	28.90	228.0	342387	126.27	ug/mL	92
74)	*d12-Perylene	34.82	264.0	84756	40.00	ug/mL	92
75)	Di-n-octylphthalate	31.88	149.0	475383	89.49	ug/mL	86
76)	Benzo(b)fluoranthene	33.16	252.0	334092	114.97	ug/mL	98
77)	Benzo(k)fluoranthene	33.30	252.0	309596	111.36	ug/mL	96
78)	Benzo(a)pyrene	34.61	252.0	309892	122.50	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	39.06	276.0	310885	134.31	ug/mL	93
80)	Dibenz(a,h)anthracene	39.22	278.0	301663	136.88	ug/mL	96
81)	Benzo(g,h,i)Perylene	40.18	276.0	311852	133.11	ug/mL	86

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3196::D4 Quant Output File: ^B3196::D1
Name: 120 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-12-C BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 16:24
Injected at: 911112 15:41

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
Output File: ^B3197::D1 Injected at: 911112 16:33
Data File: >B3197::D4 Dilution Factor: 1.00000
Name: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	10.44	152.0	51389	40.00	ug/mL	96
2)	N-Nitroso-Dimethylamine	4.52	42.0	223139	145.27	ug/mL	94
3)	Pyridine	4.42	79.0	404792M	172.02	ug/mL	93
4)	2-Fluorophenol	7.58	112.0	195430	133.64	ug/mL	92
5)	Aniline	9.84	93.0	386408	143.81	ug/mL	93
6)	Phenol-d6	9.89	99.0	268243	129.73	ug/mL	94
7)	Phenol	9.93	94.0	365478	133.73	ug/mL	86
8)	bis(2-Chloroethyl)ether	10.04	93.0	205223	105.85	ug/mL	63
9)	2-Chlorophenol	10.06	128.0	238630	117.43	ug/mL	94
10)	1,3-Dichlorobenzene	10.35	146.0	264140	125.52	ug/mL	95
11)	1,4-Dichlorobenzene	10.49	146.0	259427	121.34	ug/mL	95
12)	Benzyl Alcohol	11.01	108.0	147229	158.42	ug/mL	95
13)	1,2-Dichlorobenzene	10.93	146.0	279043	124.91	ug/mL	96
14)	2-Methylphenol	11.30	107.0	209267	120.51	ug/mL	87
15)	bis(2-Chloroisopropyl)ether	11.33	45.0	648840^	125.42	ug/mL	86
16)	4-Methylphenol	11.73	107.0	339870M	165.94	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.80	70.0	260344	140.62	ug/mL	84
18)	Hexachloroethane	11.65	117.0	93998	113.13	ug/mL	90
19)	Nitrobenzene	11.99	77.0	330134	144.70	ug/mL	88
20)	*d8-Naphthalene	13.60	136.0	199594	40.00	ug/mL	87
21)	Nitrobenzene-d5	11.94	82.0	316358	141.34	ug/mL	95
22)	Isophorone	12.65	82.0	664397M	146.30	ug/mL	88
23)	2-Nitrophenol	12.76	139.0	214888	135.43	ug/mL	95
24)	2,4-Dimethylphenol	12.99	122.0	279594	151.98	ug/mL	93
25)	Benzoic Acid	13.56	122.0	198128M	140.98	ug/mL	93
26)	bis(2-Chloroethoxy)methane	13.23	93.0	352279	131.57	ug/mL	98
27)	2,4-Dichlorophenol	13.37	162.0	274704	155.21	ug/mL	88
28)	1,2,4-Trichlorobenzene	13.52	180.0	235151	144.20	ug/mL	96
29)	Naphthalene	13.66	128.0	662054	117.07	ug/mL	96
30)	4-Chloroaniline	13.93	127.0	327483	150.32	ug/mL	98
31)	Hexachlorobutadiene	14.15	225.0	151501	134.07	ug/mL	92
32)	4-Chloro-3-methylphenol	15.21	107.0	265922	146.10	ug/mL	97
33)	2-Methylnaphthalene	15.41	142.0	403951	129.17	ug/mL	99
34)	*d10-Acenaphthene	18.07	164.0	108797	40.00	ug/mL	88
35)	Hexachlorocyclopentadiene	15.99	237.0	221191	148.33	ug/mL	99
36)	2,4,6-Trichlorophenol	16.24	196.0	215874	143.22	ug/mL	91
37)	2,4,5-Trichlorophenol	16.24	196.0	215874	149.51	ug/mL	86
38)	2-Chloronaphthalene	16.64	162.0	481350	132.19	ug/mL	95
39)	2-Fluorobiphenyl	16.45	172.0	504091	131.49	ug/mL	93
40)	2-Nitroaniline	17.07	65.0	185405	151.30	ug/mL	87

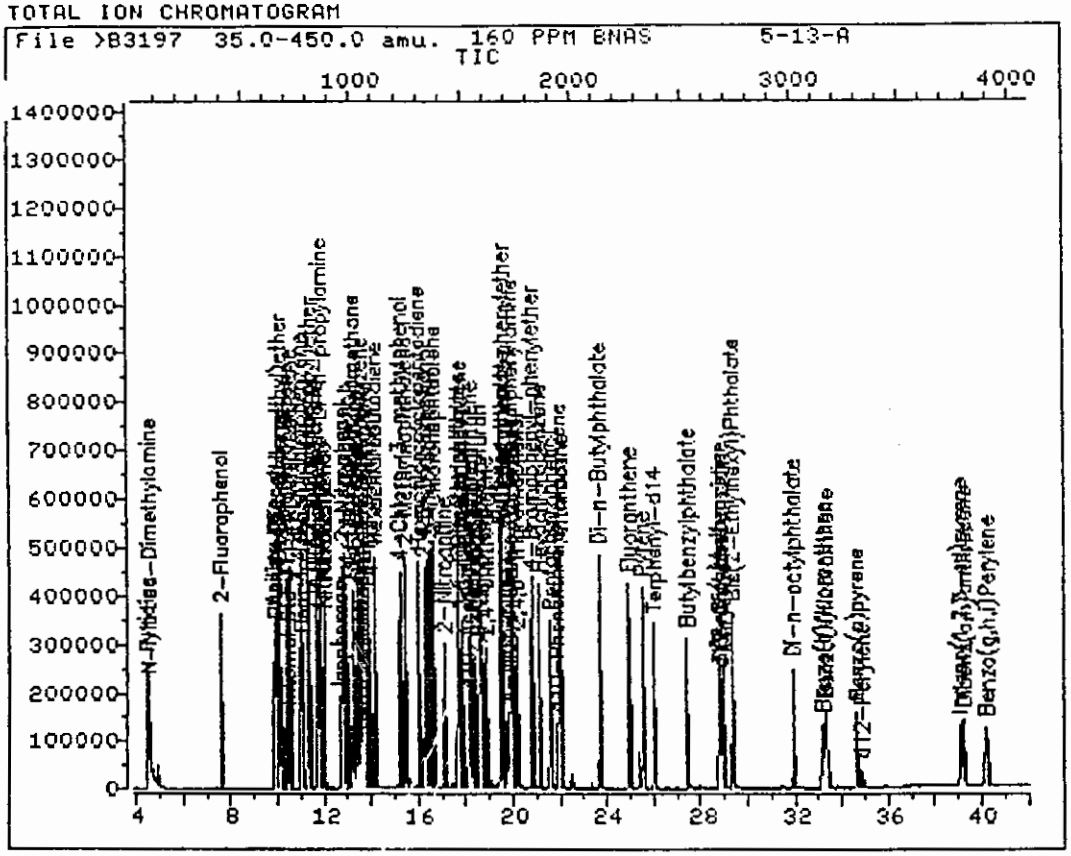
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911112 17:17
tput File: ^B3197::D1 Injected at: 911112 16:33
ata File: >B3197::D4 Dilution Factor: 1.00000
ame: 160 PPM BNAS Instrument ID: GCMSBNA1
Misc: 5-13-A BTL# 2

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.66	163.0	451524	108.76	ug/mL	72
42)	Acenaphthylene	17.70	152.0	590409	103.54	ug/mL	94
43)	3-Nitroaniline	18.14	138.0	113922	136.42	ug/mL	92
44)	Acenaphthene	18.18	154.0	399523	114.59	ug/mL	94
45)	2,4-Dinitrophenol	18.41	184.0	131604	166.06	ug/mL	94
46)	4-Nitrophenol	18.63	65.0	108437	151.39	ug/mL	88
47)	Dibenzofuran	18.59	168.0	620764	133.96	ug/mL	94
48)	2,4-Dinitrotoluene	18.81	165.0	192906	143.48	ug/mL	86
49)	2,6-Dinitrotoluene	17.83	165.0	154657	150.37	ug/mL	90
50)	Diethylphthalate	19.50	149.0	375018	93.36	ug/mL	94
51)	4-Chlorophenyl-phenylether	19.53	204.0	256345	118.14	ug/mL	91
52)	Fluorene	19.46	166.0	425051	116.94	ug/mL	96
53)	4-Nitroaniline	19.74	138.0	110806	152.86	ug/mL	91
54)	4,6-Dinitro-2-methylphenol	19.84	198.0	134239	129.93	ug/mL	87
55)	N-Nitrosodiphenylamine	19.89	169.0	302385	117.11	ug/mL	97
56)	*d10-Phenanthrene	21.83	188.0	154383	40.00	ug/mL	97
57)	Azobenzene	19.93	182.0	170908	152.92	ug/mL	92
58)	2,4,6-Tribromophenol	20.14	329.8	103353	178.04	ug/mL	97
59)	4-Bromophenyl-phenylether	20.74	248.0	176617	154.77	ug/mL	83
60)	Hexachlorobenzene	21.07	284.0	195305	150.52	ug/mL	96
61)	Pentachlorophenol	21.55	266.0	146610	158.03	ug/mL	97
62)	Phenanthrene	21.89	178.0	661848	137.58	ug/mL	99
63)	Anthracene	22.00	178.0	624529	138.74	ug/mL	97
64)	Di-n-Butylphthalate	23.63	149.0	699798	104.64	ug/mL	99
65)	Fluoranthene	24.93	202.0	556287	117.92	ug/mL	90
66)	*d12-Chrysene	28.80	240.0	71019	40.00	ug/mL	95
67)	Pyrene	25.48	202.0	559189	137.84	ug/mL	95
68)	Terphenyl-d14	26.00	244.0	349396	142.33	ug/mL	81
69)	Butylbenzylphthalate	27.42	149.0	209950	126.19	ug/mL	82
70)	3,3'-Dichlorobenzidine	28.79	252.0	113394	198.11	ug/mL	96
71)	Benzo(a)Anthracene	28.75	228.0	370034	160.55	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	29.33	149.0	310864	127.70	ug/mL	93
73)	Chrysene	28.89	228.0	361715	167.58	ug/mL	91
74)	*d12-Perylene	34.82	264.0	62923	40.00	ug/mL	94
75)	Di-n-octylphthalate	31.88	149.0	475631	120.61	ug/mL	87
76)	Benzo(b)fluoranthene	33.16	252.0	357193	165.57	ug/mL	97
77)	Benzo(k)fluoranthene	33.29	252.0	319857	154.98	ug/mL	96
78)	Benzo(a)pyrene	34.60	252.0	319526	170.14	ug/mL	94
79)	Indeno(1,2,3-cd)pyrene	39.06	276.0	324034	188.57	ug/mL	91
80)	Dibenz(a,h)anthracene	39.21	278.0	307788	188.12	ug/mL	98
81)	Benzo(g,h,i)Perylene	40.20	276.0	325225	186.99	ug/mL	84

* Compound is ISTD

TOTAL ION CHROMATOGRAM



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Misc: 5-13-A BTL# 2

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911108 20:15 Last Qcal Time: 911112 14:37

Operator ID: KEN-1
Quant Time : 911112 17:17
Injected at: 911112 16:33

HSL Compounds

Case No: Calibration Date: 11/25/91

Contractor: COLUMBIA ANALYTICAL Time: 11:39

Contract No: Laboratory ID: >B3401

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	.91148	21.67			
Pyridine	1.80232	1.43984	20.11			(Conc=55.00)
2-Fluorophenol	1.07061	.99597	6.97			
Aniline	2.00593	1.94469	3.05			
Phenol-d6	1.50420	1.46568	2.56			
Phenol	1.96220	1.91724	2.29	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.21689	7.07			
2-Chlorophenol	1.42882	1.48187	3.71			
1,3-Dichlorobenzene	1.50739	1.66499	10.46			
1,4-Dichlorobenzene	1.52019	1.63193	7.35	*	✓	
Benzyl Alcohol	.75195	.76252	1.41			
1,2-Dichlorobenzene	1.62855	1.85673	14.01			
2-Methylphenol	1.24193	1.21979	1.78			
bis(2-Chloroisopropyl)ether	3.70585	3.01701	18.59			
4-Methylphenol	1.63079	1.60933	1.32			
N-Nitroso-Di-n-propylamine	1.40611	1.21077	13.89		**	✓
Hexachloroethane	.60403	.71501	18.37			
Nitrobenzene	1.73148	1.64793	4.83			
Nitrobenzene-d5	.42509	.36511	14.11			
Isophorone	.88782	.78099	12.03			
2-Nitrophenol	.30193	.31124	3.08	*	✓	
2,4-Dimethylphenol	.36243	.37041	2.20			
Benzoic Acid	.25993	.22944	11.73			
bis(2-Chloroethoxy)methane	.50523	.48508	3.99			
2,4-Dichlorophenol	.35708	.38122	6.76	*	✓	
1,2,4-Trichlorobenzene	.32193	.35317	9.70			
Naphthalene	1.02536	1.06699	4.06			
4-Chloroaniline	.42802	.43147	.80			
Hexachlorobutadiene	.21791	.21925	.62	*	✓	
4-Chloro-3-methylphenol	.35852	.35387	1.30	*	✓	
2-Methylnaphthalene	.58680	.63770	8.68			
Hexachlorocyclopentadiene	.52776	.56350	6.77		**	✓

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

$\overline{RF}$ - 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: Calibration Date: 11/25/91

Contractor: COLUMBIA ANALYTICAL Time: 11:39

ontract No: Laboratory ID: >B340I

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.58930	10.00	*	
2,4,5-Trichlorophenol	.52853	.57248	8.32		
2-Chloronaphthalene	1.27887	1.45695	13.93		
2-Fluorobiphenyl	1.34163	1.52742	13.85		
2-Nitroaniline	.43605	.36239	16.89		
Dimethylphthalate	1.38803	1.31052	5.58		
Acenaphthylene	1.84704	1.94061	5.07		
3-Nitroaniline	.29222	.24167	17.30		
Acenaphthene	1.16654	1.28845	10.45	*	
2,4-Dinitrophenol	.28672	.20030	30.14		**
4-Nitrophenol	.25415	.20347	19.94		**
Dibenzofuran	1.62896	1.81152	11.21		
2,4-Dinitrotoluene	.47871	.39456	17.58		
2,6-Dinitrotoluene	.37241	.34275	7.96		
Diethylphthalate	1.29607	1.31854	1.73		
4-Chlorophenyl-phenylether	.74227	.76622	3.23		
uorene	1.22411	1.36138	11.21		
4-Nitroaniline	.26357	.20341	22.82		
4,6-Dinitro-2-methylphenol	.34228	.23847	30.33		
N-Nitrosodiphenylamine	.88156	.77697	11.86	*	
Azobenzene	.28918	.36244	25.33		
2,4,6-Tribromophenol	.15667	.15495	1.10		
4-Bromophenyl-phenylether	.29689	.33797	13.84		
Hexachlorobenzene	.32863	.32599	.80		
Pentachlorophenol	.23229	.19239	17.18	*	
Phenanthrene	1.18779	1.31146	10.41		
Anthracene	1.12671	1.23685	9.78		
Di-n-Butylphthalate	1.49552	1.22026	18.41		
Fluoranthene	1.08319	.89205	17.65	*	
Pyrene	2.16848	2.28799	5.51		
Terphenyl-d14	1.32581	1.21512	8.35		
Butylbenzylphthalate	.86372	.68973	20.14		

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/25/91

Contractor: COLUMBIA ANALYTICAL Time: 11:39

ntract No: Laboratory ID: >B3401

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.28412	19.34		
Benzo(a)Anthracene	1.30170	1.29748	.32		
Bis(2-Ethylhexyl)Phthalate	1.25290	.90785	27.54		
Chrysene	1.26124	1.30579	3.53		
Di-n-octylphthalate	2.17340	1.54502	28.91	*	✓
Benzo(b)fluoranthene	1.37999	1.35199	2.03		
Benzo(k)fluoranthene	1.28823	1.41206	9.61		
Benzo(a)pyrene	1.21646	1.21094	.45	*	✓
Indeno(1,2,3-cd)pyrene	1.16446	1.10641	4.99		
Dibenz(a,h)anthracene	1.11076	1.04438	5.98		
Benzo(g,h,i)Perylene	1.17960	1.16965	.84		

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

C ct No: Laboratory ID: >B3419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	.88103	24.29			
Pyridine	1.80232	1.32635	26.41			(Conc=55.00)
2-Fluorophenol	1.07061	.96347	10.01			
Aniline	2.00593	1.89492	5.53			
Phenol-d6	1.50420	1.44940	3.64			
Phenol	1.96220	1.85761	5.33	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.20480	7.99			
2-Chlorophenol	1.42882	1.44209	.93			
1,3-Dichlorobenzene	1.50739	1.59577	5.86			
1,4-Dichlorobenzene	1.52019	1.58867	4.50	*	✓	
Benzyl Alcohol	.75195	.78482	4.37			
1,2-Dichlorobenzene	1.62855	1.78028	9.32			
2-Methylphenol	1.24193	1.19395	3.86			
bis(2-Chloroisopropyl)ether	3.70585	2.91128	21.44			
4-Methylphenol	1.63079	1.59141	2.41			
N-Nitroso-Di-n-propylamine	1.40611	1.17921	16.14		**	✓
H oroethane	.60403	.66751	10.51			
Nit. enzene	1.73148	1.61633	6.65			
Nitrobenzene-d5	.42509	.36837	13.34			
Isophorone	.88782	.80152	9.74			
2-Nitrophenol	.30193	.31687	4.95	*	✓	
2,4-Dimethylphenol	.36243	.37804	4.31			
Benzoic Acid	.25993	.21273	18.16			
bis(2-Chloroethoxy)methane	.50523	.48315	4.37			
2,4-Dichlorophenol	.35708	.39314	10.10	*	✓	
1,2,4-Trichlorobenzene	.32193	.36027	11.91			
Naphthalene	1.02536	1.06650	4.01			
4-Chloroaniline	.42802	.43773	2.27			
Hexachlorobutadiene	.21791	.23929	9.81	*	✓	
4-Chloro-3-methylphenol	.35852	.35276	1.61	*	✓	
2-Methylnaphthalene	.58680	.62355	6.26			
Hexachlorocyclopentadiene	.52776	.54169	2.64		**	✓

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

$\overline{RF}$ - 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: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

C t No: Laboratory ID: >B3419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.60738	13.38	*	
2,4,5-Trichlorophenol	.52853	.56392	6.70		
2-Chloronaphthalene	1.27887	1.48915	16.44		
2-Fluorobiphenyl	1.34163	1.54284	15.00		
2-Nitroaniline	.43605	.36876	15.43		
Dimethylphthalate	1.38803	1.41642	2.05		
Acenaphthylene	1.84704	1.90902	3.36		
3-Nitroaniline	.29222	.24618	15.76		
Acenaphthene	1.16654	1.30203	11.61	*	
2,4-Dinitrophenol	.28672	.16616	42.05		**
4-Nitrophenol	.25415	.20419	19.66		**
Dibenzofuran	1.62896	1.85069	13.61		
2,4-Dinitrotoluene	.47871	.42599	11.01		
2,6-Dinitrotoluene	.37241	.36642	1.61		
Diethylphthalate	1.29607	1.48104	14.27		
4-Chlorophenyl-phenylether	.74227	.81080	9.23		
F e	1.22411	1.34426	9.82		
4-Nitroaniline	.26357	.22351	15.20		
4,6-Dinitro-2-methylphenol	.34228	.23607	31.03		
N-Nitrosodiphenylamine	.88156	.84442	4.21	*	
Azobenzene	.28918	.35557	22.96		
2,4,6-Tribromophenol	.15667	.15866	1.27		
4-Bromophenyl-phenylether	.29689	.33344	12.31		
Hexachlorobenzene	.32863	.34964	6.39		
Pentachlorophenol	.23229	.18242	21.47	*	
Phenanthrene	1.18779	1.23933	4.34		
Anthracene	1.12671	1.21733	8.04		
Di-n-Butylphthalate	1.49552	1.52901	2.24		
Fluoranthene	1.08319	.95927	11.44	*	
Pyrene	2.16848	1.98285	8.56		
Terphenyl-d14	1.32581	1.19528	9.85		
Butylbenzylphthalate	.86372	.80635	6.64		

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

$\overline{RF}$ - 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: Calibration Date: 11/26/91

Contractor: COLUMBIA ANALYTICAL Time: 09:51

C .act No: Laboratory ID: >B3419

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.36274	2.98		
Benzo(a)Anthracene	1.30170	1.31913	1.34		
Bis(2-Ethylhexyl)Phthalate	1.25290	1.20929	3.48		
Chrysene	1.26124	1.30609	3.56		
Di-n-octylphthalate	2.17340	1.98591	8.63	*	✓
Benzo(b)fluoranthene	1.37999	1.37560	.32		
Benzo(k)fluoranthene	1.28823	1.30512	1.31		✓
Benzo(a)pyrene	1.21646	1.20718	.76	*	
Indeno(1,2,3-cd)pyrene	1.16446	1.20086	3.13		
Dibenz(a,h)anthracene	1.11076	1.14727	3.29		
Benzo(g,h,i)Perylene	1.17960	1.24220	5.31		

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

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

%Diff - % Difference from original average or curve

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

HSL Compounds

Case No: Calibration Date: 11/27/91

Contractor: COLUMBIA ANALYTICAL Time: 11:19

ntract No: Laboratory ID: >B3440

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Case No: Calibration Date: 11/27/91

Contractor: COLUMBIA ANALYTICAL Time: 11:19

ntract No: Laboratory ID: >B3440

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC	
N-Nitroso-Dimethylamine	1.16371	.87812	24.54			
Pyridine	1.80232	1.29673	28.05			(Conc=55.00)
2-Fluorophenol	1.07061	.96174	10.17			
Aniline	2.00593	1.89887	5.34			
Phenol-d6	1.50420	1.46203	2.80			
Phenol	1.96220	1.85849	5.29	*	✓	
bis(2-Chloroethyl)ether	1.30942	1.21360	7.32			
2-Chlorophenol	1.42882	1.46612	2.61			
1,3-Dichlorobenzene	1.50739	1.58597	5.08			
1,4-Dichlorobenzene	1.52019	1.61814	6.44	*	✓	
Benzyl Alcohol	.75195	.78379	4.23			
1,2-Dichlorobenzene	1.62855	1.81537	11.47			
2-Methylphenol	1.24193	1.19165	4.05			
bis(2-Chloroisopropyl)ether	3.70585	2.99637	19.15			
4-Methylphenol	1.63079	1.58944	2.54			
N-Nitroso-Di-n-propylamine	1.40611	1.17736 ✓	16.27		**	✓
Hexachloroethane	.60403	.69164	14.50			
Nitrobenzene	1.73148	1.60778	7.14			
Nitrobenzene-d5	.42509	.35865	15.63			
Isophorone	.88782	.76892	13.39			
2-Nitrophenol	.30193	.30686	1.63	*	✓	
2,4-Dimethylphenol	.36243	.36684	1.22			
Benzoic Acid	.25993	.24928	4.10			
bis(2-Chloroethoxy)methane	.50523	.48017	4.96			
2,4-Dichlorophenol	.35708	.38811	8.69	*	✓	
1,2,4-Trichlorobenzene	.32193	.35026	8.80			
Naphthalene	1.02536	1.06843	4.20			
4-Chloroaniline	.42802	.42459	.80			
Hexachlorobutadiene	.21791	.24099	10.59	*	✓	
4-Chloro-3-methylphenol	.35852	.34634	3.40	*	✓	
2-Methylnaphthalene	.58680	.63081 ✓	7.50			
Hexachlorocyclopentadiene	.52776	.58295 ✓	10.46		**	✓

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

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

%Diff - % Difference from original average or curve

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

Case No: Calibration Date: 11/27/91

Contractor: COLUMBIA ANALYTICAL Time: 11:19

tract No: Laboratory ID: >B3440

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2,4,6-Trichlorophenol	.53572	.59619	11.29	* ✓	
2,4,5-Trichlorophenol	.52853	.58271	10.25		
2-Chloronaphthalene	1.27887	1.42382	11.33		
2-Fluorobiphenyl	1.34163	1.51626	13.02		
2-Nitroaniline	.43605	.33826	22.43		
Dimethylphthalate	1.38805	1.27456	8.17		
Acenaphthylene	1.84704	1.87257	1.38		
3-Nitroaniline	.29222	.22843	21.83		
Acenaphthene	1.16654	1.29555	11.06	* ✓	
2,4-Dinitrophenol	.28672	.20164 ✓	29.67	** ✓	
4-Nitrophenol	.25415	.20660 ✓	18.71	** ✓	
Dibenzofuran	1.62896	1.74765	7.29		
2,4-Dinitrotoluene	.47871	.39496	17.49		
2,6-Dinitrotoluene	.37241	.33102	11.12		
Diethylphthalate	1.29607	1.32839	2.49		
4-Chlorophenyl-phenylether	.74227	.75607	1.86		
Fluorene	1.22411	1.32560	8.29		
Nitroaniline	.26357	.19909	24.46		
4,6-Dinitro-2-methylphenol	.34228	.24399	28.72		
N-Nitrosodiphenylamine	.88156	.76634	13.07	* ✓	
Azobenzene	.28918	.34657	19.84		
2,4,6-Tribromophenol	.15667	.16353	4.38		
4-Bromophenyl-phenylether	.29689	.34390	15.83		
Hexachlorobenzene	.32863	.34988	6.47		
Pentachlorophenol	.23229	.21079	9.26	* ✓	
Phenanthrene	1.18779	1.28403	8.10		
Anthracene	1.12671	1.20478	6.93		
Di-n-Butylphthalate	1.49552	1.28746	13.91		
Fluoranthene	1.08319	.96263	11.13	* ✓	
Pyrene	2.16848	2.00400	7.58		
Terphenyl-d14	1.32581	1.16338	12.25		
Butylbenzylphthalate	.86372	.68919	20.21		

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

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

%Diff - % Difference from original average or curve

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

Case No: Calibration Date: 11/27/91

Contractor: COLUMBIA ANALYTICAL Time: 11:19

tract No: Laboratory ID: >83440

Instrument ID: GCMSBNA1 Initial Calibration Date: 11/13/91

Minimum $\overline{RF}$ for SPCC is .050 Maximum % Diff for CCC is 30.0%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
3,3'-Dichlorobenzidine	.35225	.34600	1.78		
Benzo(a)Anthracene	1.30170	1.32595	1.86		
Bis(2-Ethylhexyl)Phthalate	1.25290	.99032	20.96		
Chrysene	1.26124	1.30757	3.67		
Di-n-octylphthalate	2.17340	1.52731	29.73	*	✓
Benzo(b)fluoranthene	1.37999	1.33318	3.39		
Benzo(k)fluoranthene	1.28823	1.35045	4.83		
Benzo(a)pyrene	1.21646	1.24388	2.25	*	✓
Indeno(1,2,3-cd)pyrene	1.16446	1.21783	4.58		
Dibenz(a,h)anthracene	1.11076	1.18790	6.94		
Benzo(g,h,i)Perylene	1.17960	1.32079	11.97		

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

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

%Diff - % Difference from original average or curve

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

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 12:21
Output File: ^B3401::D1 Injected at: 911125 11:39
:a File: >B3401::D3 Dilution Factor: 1.00000
ame: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.13	163.0	234199	46.21	ug/mL	71
42)	Acenaphthylene	17.13	152.0	346802	53.97	ug/mL	90
43)	3-Nitroaniline	17.56	138.0	43188	40.60	ug/mL	86
44)	Acenaphthene	17.62	154.0	230255	52.90	ug/mL	98
45)	2,4-Dinitrophenol	17.82	184.0	35795	40.21	ug/mL	95
46)	4-Nitrophenol	18.09	65.0	36361	62.28	ug/mL	95
47)	Dibenzofuran	18.02	168.0	323732	50.92	ug/mL	85
48)	2,4-Dinitrotoluene	18.23	165.0	70510	37.16	ug/mL	86
49)	2,6-Dinitrotoluene	17.26	165.0	61252	44.20	ug/mL	86
50)	Diethylphthalate	18.94	149.0	235633	39.68	ug/mL	94
51)	4-Chlorophenyl-phenylether	18.97	204.0	136930	47.78	ug/mL	90
52)	Fluorene	18.89	166.0	243289	49.24	ug/mL	95
53)	4-Nitroaniline	19.13	138.0	36351	43.16	ug/mL	89
54)	4,6-Dinitro-2-methylphenol	19.23	198.0	42617	36.18	ug/mL	83
55)	N-Nitrosodiphenylamine	19.31	169.0	138850	39.81	ug/mL	95
56)	*d10-Phenanthrene	21.23	188.0	169524	40.00	ug/mL	99
57)	Azobenzene	19.36	182.0	76803	60.13	ug/mL	94
58)	2,4,6-Tribromophenol	19.56	329.8	32835	51.46	ug/mL	93
59)	4-Bromophenyl-phenylether	20.18	248.0	71618	58.16	ug/mL	88
60)	Hexachlorobenzene	20.49	284.0	69079	48.18	ug/mL	94
61)	Pentachlorophenol	20.96	266.0	40768	53.44	ug/mL	98
62)	Phenanthrene	21.29	178.0	277905	54.84	ug/mL	99
63)	Anthracene	21.40	178.0	262095	53.33	ug/mL	96
64)	Di-n-Butylphthalate	23.07	149.0	258580	39.35	ug/mL	97
65)	Fluoranthene	24.30	202.0	189030	49.39	ug/mL	92
66)	*d12-Chrysene	28.03	240.0	67180	40.00	ug/mL	95
67)	Pyrene	24.85	202.0	192134	52.29	ug/mL	97
68)	Terphenyl-d14	25.39	244.0	102040	45.55	ug/mL	88
69)	Butylbenzylphthalate	26.82	149.0	57920	43.40	ug/mL	85
70)	3,3'-Dichlorobenzidine	28.05	252.0	23859	46.59	ug/mL	97
71)	Benzo(a)Anthracene	27.98	228.0	108956	55.97	ug/mL	95
72)	Bis(2-Ethylhexyl)Phthalate	28.56	149.0	76237	38.55	ug/mL	93
73)	Chrysene	28.09	228.0	109654	57.42	ug/mL	92
74)	*d12-Perylene	33.61	264.0	50649	40.00	ug/mL	95
75)	Di-n-octylphthalate	30.80	149.0	97817	39.66	ug/mL	87
76)	Benzo(b)fluoranthene	31.85	252.0	85596	52.17	ug/mL	99
77)	Benzo(k)fluoranthene	31.96	252.0	89399	57.73	ug/mL	98
78)	Benzo(a)pyrene	33.35	252.0	76666	52.85	ug/mL	97
79)	Indeno(1,2,3-cd)pyrene	37.73	276.0	70048	48.65	ug/mL	96
80)	Dibenz(a,h)anthracene	37.87	278.0	66121	47.92	ug/mL	96
81)	Benzo(g,h,i)Perylene	38.70	276.0	74052	48.95	ug/mL	88

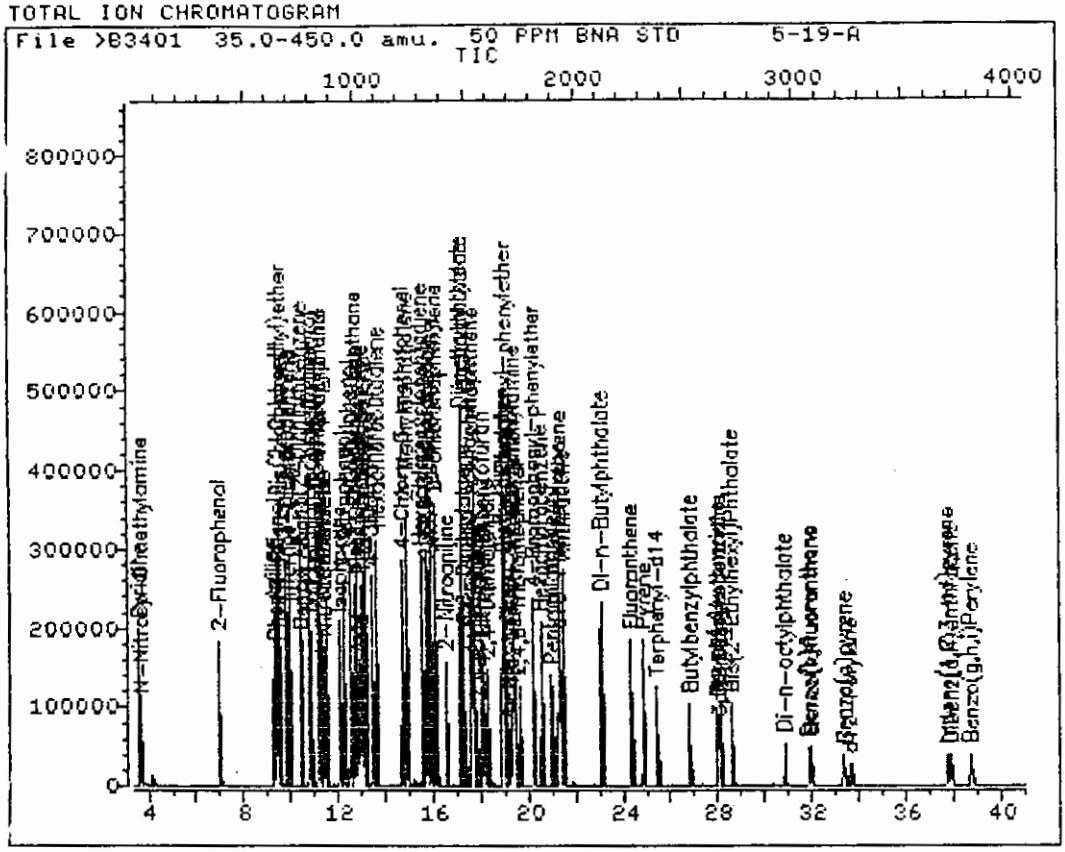
* Compound is ISTD

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 12:21
Output File: ^B3401::D1 Injected at: 911125 11:39
Data File: >B3401::D3 Dilution Factor: 1.00000
File: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.89	152.0	67620	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	3.66	42.0	77043	42.97	ug/mL	87
3)	Pyridine	3.58	79.0	133873	49.50	ug/mL	97
4)	2-Fluorophenol	6.95	112.0	84184	47.82	ug/mL	86
5)	Aniline	9.25	93.0	164375	47.34	ug/mL	87
6)	Phenol-d6	9.34	99.0	123887	46.36	ug/mL	89
7)	Phenol	9.38	94.0	162055	46.67	ug/mL	86
8)	bis(2-Chloroethyl)ether	9.47	93.0	102858	42.65	ug/mL	68
9)	2-Chlorophenol	9.47	128.0	125255	47.02	ug/mL	96
10)	1,3-Dichlorobenzene	9.79	146.0	140733	53.63	ug/mL	95
11)	1,4-Dichlorobenzene	9.93	146.0	137959	53.66	ug/mL	92
12)	Benzyl Alcohol	10.41	108.0	64452	46.27	ug/mL	97
13)	1,2-Dichlorobenzene	10.37	146.0	156940	51.17	ug/mL	94
14)	2-Methylphenol	10.79	107.0	103103	42.40	ug/mL	88
)	bis(2-Chloroisopropyl)ether	10.81	45.0	255013	41.27	ug/mL	89
16)	4-Methylphenol	11.18	107.0	136029	42.84	ug/mL	97
17)	N-Nitroso-Di-n-propylamine	11.19	70.0	102340	42.76	ug/mL	95
18)	Hexachloroethane	11.11	117.0	60436	50.79	ug/mL	98
19)	Nitrobenzene	11.43	77.0	139291	43.18	ug/mL	96
20)	*d8-Naphthalene	13.07	136.0	287287	40.00	ug/mL	84
21)	Nitrobenzene-d5	11.37	82.0	131115	45.25	ug/mL	96
22)	Isophorone	12.04	82.0	280462	44.78	ug/mL	84
23)	2-Nitrophenol	12.22	139.0	111770	51.25	ug/mL	92
24)	2,4-Dimethylphenol	12.47	122.0	133018	50.24	ug/mL	91
25)	Benzoic Acid	12.94	122.0	82394M	42.84	ug/mL	92
26)	bis(2-Chloroethoxy)methane	12.70	93.0	174195	46.39	ug/mL	96
27)	2,4-Dichlorophenol	12.82	162.0	136900	50.89	ug/mL	89
28)	1,2,4-Trichlorobenzene	12.99	180.0	126827	54.75	ug/mL	94
29)	Naphthalene	13.11	128.0	383166	50.88	ug/mL	97
30)	4-Chloroaniline	13.39	127.0	154943	47.88	ug/mL	92
31)	Hexachlorobutadiene	13.63	225.0	78736	51.12	ug/mL	89
32)	4-Chloro-3-methylphenol	14.70	107.0	127077	42.41	ug/mL	98
33)	2-Methylnaphthalene	14.87	142.0	229005	51.47	ug/mL	96
34)	*d10-Acenaphthene	17.54	164.0	142966	40.00	ug/mL	87
35)	Hexachlorocyclopentadiene	15.47	237.0	100702	66.75	ug/mL	97
36)	2,4,6-Trichlorophenol	15.70	196.0	105312	55.60	ug/mL	92
37)	2,4,5-Trichlorophenol	15.78	196.0	102306	52.68	ug/mL	98
38)	2-Chloronaphthalene	16.08	162.0	260368	55.86	ug/mL	94
39)	2-Fluorobiphenyl	15.92	172.0	272961	56.19	ug/mL	94
0)	2-Nitroaniline	16.50	65.0	64761	39.78	ug/mL	95

TOTAL ION CHROMATOGRAM



Data File: >B3401::D3 Quant Output File: ^B3401::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911122 09:14

Operator ID: KEN-1
Quant Time : 911125 12:21
Injected at: 911125 11:39

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 10:35
Output File: ^B3419::D1 Injected at: 911126 09:51
Data File: >B3419::D3 Dilution Factor: 1.00000
me: 50 PPM BNA STD Instrument ID: GCMSBNA1
sc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	67354	40.00	ug/mL	94
2)	N-Nitroso-Dimethylamine	3.63	42.0	74176	48.33	ug/mL	85
3)	Pyridine	3.56	79.0	122836	50.66	ug/mL	96
4)	2-Fluorophenol	6.91	112.0	81117	48.37	ug/mL	87
5)	Aniline	9.21	93.0	159538	48.72	ug/mL	90
6)	Phenol-d6	9.31	99.0	122029	49.44	ug/mL	93
7)	Phenol	9.35	94.0	156397	48.44	ug/mL	84
8)	bis(2-Chloroethyl)ether	9.43	93.0	101435	49.50	ug/mL	79
9)	2-Chlorophenol	9.43	128.0	121413	48.66	ug/mL	91
10)	1,3-Dichlorobenzene	9.75	146.0	134352	47.92	ug/mL	92
11)	1,4-Dichlorobenzene	9.89	146.0	133754	48.67	ug/mL	91
12)	Benzyl Alcohol	10.37	108.0	66076	51.46	ug/mL	98
13)	1.2-Dichlorobenzene	10.33	146.0	149886	47.94	ug/mL	95
14)	2-Methylphenol	10.75	107.0	100522	48.94	ug/mL	86
15)	bis(2-Chloroisopropyl)ether	10.76	45.0	245108	48.25	ug/mL	80
6)	4-Methylphenol	11.14	107.0	133985	49.44	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.14	70.0	99281	48.70	ug/mL	96
18)	Hexachloroethane	11.07	117.0	56199	46.68	ug/mL	98
19)	Nitrobenzene	11.38	77.0	136083	49.04	ug/mL	95
20)	*d8-Naphthalene	13.02	136.0	276146	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.33	82.0	127156	50.45	ug/mL	96
22)	Isophorone	12.00	82.0	276601	51.30	ug/mL	83
23)	2-Nitrophenol	12.17	139.0	109379	50.90	ug/mL	91
24)	2,4-Dimethylphenol	12.42	122.0	130494	51.03	ug/mL	92
25)	Benzoic Acid	12.91	122.0	73429	46.36	ug/mL	92
26)	bis(2-Chloroethoxy)methane	12.65	93.0	166776	49.80	ug/mL	97
27)	2,4-Dichlorophenol	12.78	162.0	135705	51.56	ug/mL	89
28)	1,2,4-Trichlorobenzene	12.94	180.0	124360	51.01	ug/mL	92
29)	Naphthalene	13.08	128.0	368138	49.98	ug/mL	96
30)	4-Chloroaniline	13.35	127.0	151098	50.73	ug/mL	91
31)	Hexachlorobutadiene	13.58	225.0	82598	54.57	ug/mL	98
32)	4-Chloro-3-methylphenol	14.66	107.0	121768	49.84	ug/mL	96
33)	2-Methylnaphthalene	14.82	142.0	215240	48.89	ug/mL	98
34)	*d10-Acenaphthene	17.49	164.0	137507	40.00	ug/mL	84
35)	Hexachlorocyclopentadiene	15.42	237.0	93107	48.06	ug/mL	95
36)	2,4,6-Trichlorophenol	15.66	196.0	104399	51.53	ug/mL	96
37)	2,4,5-Trichlorophenol	15.74	196.0	96929	49.25	ug/mL	91
38)	2-Chloronaphthalene	16.04	162.0	255961	51.11	ug/mL	96
39)	2-Fluorobiphenyl	15.87	172.0	265189	50.50	ug/mL	95
40)	2-Nitroaniline	16.46	65.0	63383	50.88	ug/mL	95

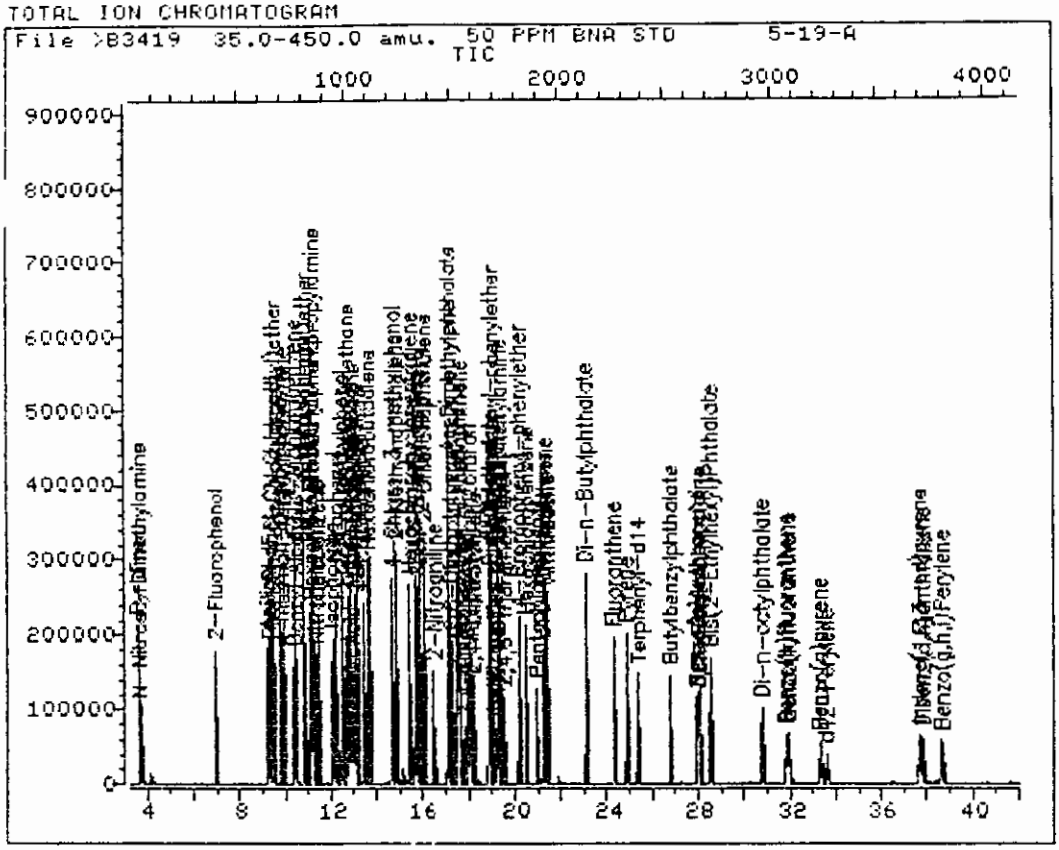
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 10:35
Output File: ^B3419::D1 Injected at: 911126 09:51
Data File: >B3419::D3 Dilution Factor: 1.00000
ıe: 50 PPM BNA STD Instrument ID: GCMSBNA1
. sc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	17.08	163.0	243460	54.04	ug/mL	71
42)	Acenaphthylene	17.09	152.0	328130	49.19	ug/mL	93
43)	3-Nitroaniline	17.52	138.0	42314	50.93	ug/mL	91
44)	Acenaphthene	17.58	154.0	223797	50.53	ug/mL	92
45)	2,4-Dinitrophenol	17.78	184.0	28561	41.48	ug/mL	94
46)	4-Nitrophenol	18.04	65.0	35097	50.18	ug/mL	95
47)	Dibenzofuran	17.98	168.0	318103	51.08	ug/mL	89
48)	2,4-Dinitrotoluene	18.17	165.0	73221	53.98	ug/mL	82
49)	2,6-Dinitrotoluene	17.22	165.0	62982	53.45	ug/mL	85
50)	Diethylphthalate	18.89	149.0	254566	56.16	ug/mL	94
51)	4-Chlorophenyl-phenylether	18.93	204.0	139363	52.91	ug/mL	93
52)	Fluorene	18.84	166.0	231057	49.37	ug/mL	99
53)	4-Nitroaniline	19.09	138.0	38417	54.94	ug/mL	89
54)	4,6-Dinitro-2-methylphenol	19.19	198.0	40576	49.50	ug/mL	81
55)	N-Nitrosodiphenylamine	19.26	169.0	145142	54.34	ug/mL	95
6)	*d10-Phenanthrene	21.18	188.0	174728	40.00	ug/mL	98
57)	Azobenzene	19.31	182.0	77661	49.05	ug/mL	96
58)	2,4,6-Tribromophenol	19.51	329.8	34654	51.20	ug/mL	95
59)	4-Bromophenyl-phenylether	20.13	248.0	72826	49.33	ug/mL	89
60)	Hexachlorobenzene	20.44	284.0	76364	53.63	ug/mL	89
61)	Pentachlorophenol	20.92	266.0	39843	47.41	ug/mL	97
62)	Phenanthrene	21.24	178.0	270682	47.25	ug/mL	98
63)	Anthracene	21.35	178.0	265876	49.21	ug/mL	99
64)	Di-n-Butylphthalate	23.02	149.0	333951	62.65	ug/mL	96
65)	Fluoranthene	24.26	202.0	209514	53.77	ug/mL	93
66)	*d12-Chrysene	27.97	240.0	84582	40.00	ug/mL	97
67)	Pyrene	24.80	202.0	209642	43.33	ug/mL	97
68)	Terphenyl-d14	25.34	244.0	126374	49.18	ug/mL	86
69)	Butylbenzylphthalate	26.77	149.0	85253	58.45	ug/mL	81
70)	3,3'-Dichlorobenzidine	27.99	252.0	38352	63.84	ug/mL	94
71)	Benzo(a)Anthracene	27.92	228.0	139468	50.83	ug/mL	93
72)	Bis(2-Ethylhexyl)Phthalate	28.50	149.0	127855	66.60	ug/mL	91
73)	Chrysene	28.04	228.0	138090	50.01	ug/mL	90
74)	*d12-Perylene	33.54	264.0	73951	40.00	ug/mL	91
75)	Di-n-octylphthalate	30.72	149.0	183575	64.27	ug/mL	87
76)	Benzo(b)fluoranthene	31.78	252.0	127159	50.87	ug/mL	97
77)	Benzo(k)fluoranthene	31.88	252.0	120644	46.21	ug/mL	97
78)	Benzo(a)pyrene	33.26	252.0	111590	49.84	ug/mL	96
79)	Indeno(1,2,3-cd)pyrene	37.65	276.0	111006	54.27	ug/mL	93
80)	Dibenz(a,h)anthracene	37.79	278.0	106052	54.93	ug/mL	96
1)	Benzo(g,h,i)Perylene	38.61	276.0	114827	53.10	ug/mL	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3419::D3 Quant Output File: ^B3419::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911126 10:35
Injected at: 911126 09:51

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911127 12:02
Output File: ^B3440::D1 Injected at: 911127 11:19
Data File: >B3440::D3 Dilution Factor: 1.00000
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.75	152.0	59087	40.00	ug/mL	95
2)	N-Nitroso-Dimethylamine	3.52	42.0	64857	49.84	ug/mL	87
3)	Pyridine	3.46	79.0	105352	53.77	ug/mL	96
4)	2-Fluorophenol	6.81	112.0	71033	49.91	ug/mL	87
5)	Aniline	9.10	93.0	140248	50.10	ug/mL	88
6)	Phenol-d6	9.22	99.0	107984	50.44	ug/mL	90
7)	Phenol	9.25	94.0	137266	50.02	ug/mL	85
8)	bis(2-Chloroethyl)ether	9.32	93.0	89635	50.37	ug/mL	80
9)	2-Chlorophenol	9.33	128.0	108286	50.83	ug/mL	97
10)	1,3-Dichlorobenzene	9.64	146.0	116990	49.63	ug/mL	93
11)	1,4-Dichlorobenzene	9.79	146.0	119514	50.93	ug/mL	93
12)	Benzyl Alcohol	10.27	108.0	57890	49.93	ug/mL	97
13)	1,2-Dichlorobenzene	10.23	146.0	134081	50.99	ug/mL	95
14)	2-Methylphenol	10.65	107.0	88014	49.90	ug/mL	87
15)	bis(2-Chloroisopropyl)ether	10.67	45.0	221308	51.46	ug/mL	87
16)	4-Methylphenol	11.04	107.0	117394	49.94	ug/mL	98
17)	N-Nitroso-Di-n-propylamine	11.04	70.0	86958	49.92	ug/mL	93
18)	Hexachloroethane	10.96	117.0	51084	51.81	ug/mL	92
19)	Nitrobenzene	11.28	77.0	118749	49.74	ug/mL	97
20)	*d8-Naphthalene	12.92	136.0	245399	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.23	82.0	110015	48.68	ug/mL	94
22)	Isophorone	11.90	82.0	235866	47.98	ug/mL	84
23)	2-Nitrophenol	12.07	139.0	94129	48.42	ug/mL	90
24)	2,4-Dimethylphenol	12.33	122.0	112529	48.52	ug/mL	93
25)	Benzoic Acid	12.82	122.0	76465	58.59	ug/mL	89
26)	bis(2-Chloroethoxy)methane	12.55	93.0	147292	49.69	ug/mL	96
27)	2,4-Dichlorophenol	12.67	162.0	119053	49.36	ug/mL	88
28)	1,2,4-Trichlorobenzene	12.84	180.0	107441	48.61	ug/mL	97
29)	Naphthalene	12.97	128.0	327741	50.09	ug/mL	97
30)	4-Chloroaniline	13.25	127.0	130241	48.50	ug/mL	92
31)	Hexachlorobutadiene	13.49	225.0	73922	50.35	ug/mL	98
32)	4-Chloro-3-methylphenol	14.56	107.0	106238	49.09	ug/mL	98
33)	2-Methylnaphthalene	14.71	142.0	193500	50.58	ug/mL	96
34)	*d10-Acenaphthene	17.38	164.0	122097	40.00	ug/mL	82
35)	Hexachlorocyclopentadiene	15.32	237.0	88970	53.81	ug/mL	98
36)	2,4,6-Trichlorophenol	15.55	196.0	90991	49.08	ug/mL	94
37)	2,4,5-Trichlorophenol	15.64	196.0	88934	51.67	ug/mL	92
38)	2-Chloronaphthalene	15.93	162.0	217305	47.81	ug/mL	98
39)	2-Fluorobiphenyl	15.77	172.0	231413	49.14	ug/mL	96
40)	2-Nitroaniline	16.35	65.0	51625	45.86	ug/mL	95

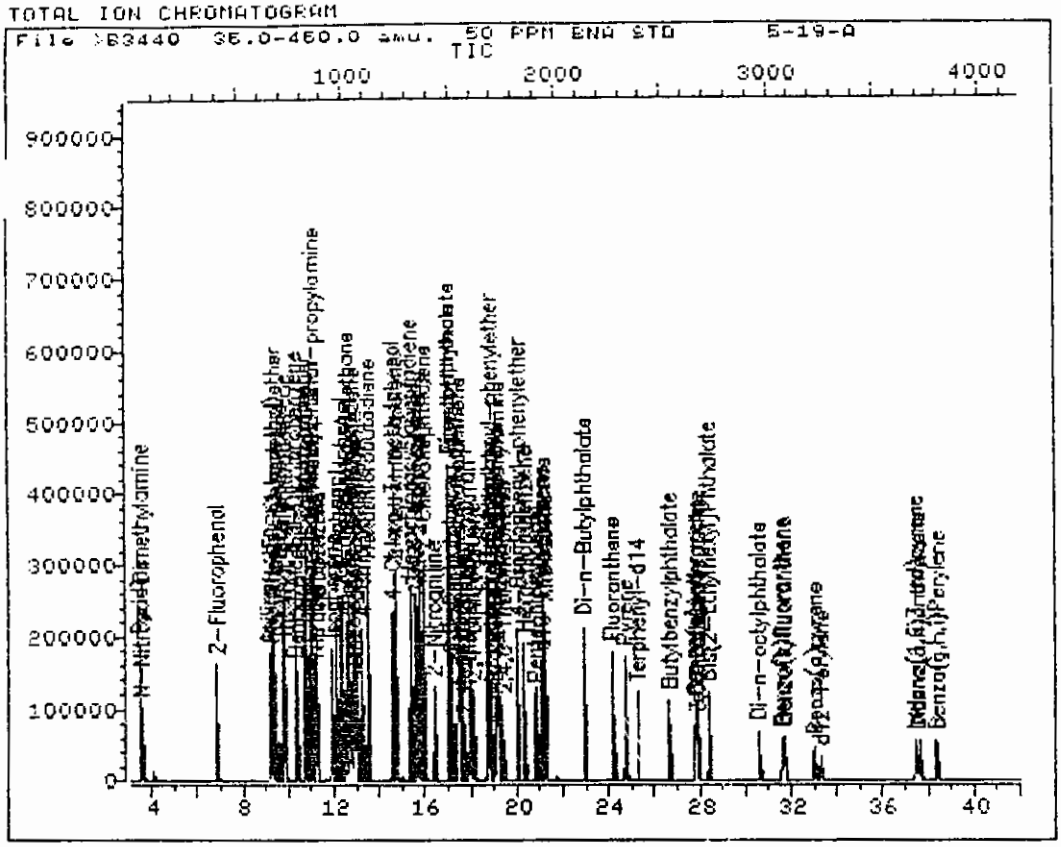
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911127 12:02
Output File: ^B3440::D1 Injected at: 911127 11:19
Data File: >B3440::D3 Dilution Factor: 1.00000
..e: 50 PPM BNA STD Instrument ID: GCMSBNA1
..sc: 5-19-A BTL# 1

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
41)	Dimethylphthalate	16.98	163.0	194525	44.99	ug/mL	72
42)	Acenaphthylene	16.98	152.0	285794	49.05	ug/mL	94
43)	3-Nitroaniline	17.41	138.0	34864M	46.40	ug/mL	
44)	Acenaphthene	17.46	154.0	197728	49.75	ug/mL	91
45)	2,4-Dinitrophenol	17.67	184.0	30774	60.67	ug/mL	94
46)	4-Nitrophenol	17.94	65.0	31532	50.59	ug/mL	95
47)	Dibenzofuran	17.86	168.0	266729	47.22	ug/mL	85
48)	2,4-Dinitrotoluene	18.07	165.0	60280	46.36	ug/mL	83
49)	2,6-Dinitrotoluene	17.12	165.0	50520	45.17	ug/mL	89
50)	Diethylphthalate	18.79	149.0	202740	44.85	ug/mL	95
51)	4-Chlorophenyl-phenylether	18.81	204.0	115393	46.63	ug/mL	94
52)	Fluorene	18.74	166.0	202314	49.31	ug/mL	94
53)	4-Nitroaniline	18.97	138.0	30385	44.54	ug/mL	89
54)	4,6-Dinitro-2-methylphenol	19.08	198.0	37238	51.68	ug/mL	84
55)	N-Nitrosodiphenylamine	19.15	169.0	116959	45.38	ug/mL	94
5)	*d10-Phenanthrene	21.07	188.0	148492	40.00	ug/mL	97
57)	Azobenzene	19.21	182.0	64328	48.73	ug/mL	92
58)	2,4,6-Tribromophenol	19.39	329.8	30354	51.53	ug/mL	97
59)	4-Bromophenyl-phenylether	20.03	248.0	63833	51.57	ug/mL	86
60)	Hexachlorobenzene	20.32	284.0	64943	50.03	ug/mL	97
61)	Pentachlorophenol	20.80	266.0	39125	57.77	ug/mL	95
62)	Phenanthrene	21.13	178.0	238336	51.80	ug/mL	99
63)	Anthracene	21.24	178.0	223625	49.48	ug/mL	99
64)	Di-n-Butylphthalate	22.91	149.0	238971	42.10	ug/mL	96
65)	Fluoranthene	24.14	202.0	178679	50.18	ug/mL	90
66)	*d12-Chrysene	27.83	240.0	71009	40.00	ug/mL	97
67)	Pyrene	24.69	202.0	177878	50.53	ug/mL	99
68)	Terphenyl-d14	25.24	244.0	103263	48.67	ug/mL	87
69)	Butylbenzylphthalate	26.66	149.0	61173	42.74	ug/mL	82
70)	3,3'-Dichlorobenzidine	27.86	252.0	30711	47.69	ug/mL	94
71)	Benzo(a)Anthracene	27.78	228.0	117693	50.26	ug/mL	96
72)	Bis(2-Ethylhexyl)Phthalate	28.36	149.0	87902	40.95	ug/mL	90
73)	Chrysene	27.90	228.0	116062	50.06	ug/mL	92
74)	*d12-Perylene	33.29	264.0	61236	40.00	ug/mL	94
75)	Di-n-octylphthalate	30.55	149.0	116908	38.45	ug/mL	87
76)	Benzo(b)fluoranthene	31.55	252.0	102048	48.46	ug/mL	98
77)	Benzo(k)fluoranthene	31.66	252.0	103370	51.74	ug/mL	98
78)	Benzo(a)pyrene	33.00	252.0	95213	51.52	ug/mL	98
79)	Indeno(1,2,3-cd)pyrene	37.43	276.0	93219	50.71	ug/mL	94
80)	Dibenz(a,h)anthracene	37.57	278.0	90928	51.77	ug/mL	97
1)	Benzo(g,h,i)Perylene	38.37	276.0	101100	53.16	ug/mL	87

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >B3440::D3 Quant Output File: ^B3440::D1
Name: 50 PPM BNA STD Instrument ID: GCMSBNA1
Misc: 5-19-A BTL# 1

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911127 12:02
Injected at: 911127 11:19

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 22:44
Output File: ^B3413::D1 Injected at: 911125 22:01
Data File: >B3413::D4 Dilution Factor: 1.00000
...e: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
...sc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.87	152.0	61395	40.00	ug/mL	95
4)	2-Fluorophenol	6.93	112.0	6678	4.37	ug/mL	89
6)	Phenol-d6	9.29	99.0	5504	2.45	ug/mL	89
7)	Phenol	9.32	94.0	2192M	.745	ug/mL	71
11)	1,4-Dichlorobenzene	9.90	146.0	37M	.0148	ug/mL	
12)	Benzyl Alcohol	10.43	108.0	366M	.313	ug/mL	72
13)	1,2-Dichlorobenzene	10.35	146.0	433M	.152	ug/mL	
14)	2-Methylphenol	10.76	107.0	2654M	1.42	ug/mL	81
15)	Bis(2-Chloroisopropyl)ether	10.84	45.0	432M	.0933	ug/mL	
16)	4-Methylphenol	11.13	107.0	4056M	1.64	ug/mL	87
20)	*d8-Naphthalene	13.04	136.0	217275	40.00	ug/mL	86
20)	1,2,4-Trichlorobenzene	12.95	180.0	756M	.394	ug/mL	
29)	Naphthalene	13.08	128.0	270351	46.65	ug/mL	96
30)	4-Chloroaniline	13.37	127.0	404M	.172	ug/mL	87
3)	2-Methylnaphthalene	14.83	142.0	56673	16.36	ug/mL	94
)	*d10-Acenaphthene	17.49	164.0	116729	40.00	ug/mL	85
39)	2-Fluorobiphenyl	15.86	172.0	17688	3.97	ug/mL	93
43)	3-Nitroaniline	17.58	138.0	47M	.0666	ug/mL	85
44)	Acenaphthene	17.57	154.0	2309	.614	ug/mL	89
47)	Dibenzofuran	17.98	168.0	2399	.454	ug/mL	92
48)	2,4-Dinitrotoluene	18.19	165.0	479M	.416	ug/mL	
49)	2,6-Dinitrotoluene	17.23	165.0	37M	.0370	ug/mL	94
50)	Diethylphthalate	18.94	149.0	7523M	1.96	ug/mL	
52)	Fluorene	18.84	166.0	2934	.739	ug/mL	95
56)	*d10-Phenanthrene	21.19	188.0	137223	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	3835	7.21	ug/mL	87
62)	Phenanthrene	21.24	178.0	9310	2.07	ug/mL	97
63)	Anthracene	21.35	178.0	3334	.786	ug/mL	97
64)	Di-n-Butylphthalate	23.03	149.0	157250	37.56	ug/mL	97
65)	Fluoranthene	24.27	202.0	3832	1.25	ug/mL	95
66)	*d12-Chrysene	27.99	240.0	71480	40.00	ug/mL	99
67)	Pyrene	24.82	202.0	3128	.765	ug/mL	79
68)	Terphenyl-d14	25.36	244.0	7707	3.55	ug/mL	90
69)	Butylbenzylphthalate	26.79	149.0	480M	.389	ug/mL	
71)	Benzo(a)Anthracene	27.94	228.0	863M	.372	ug/mL	
72)	Bis(2-Ethylhexyl)Phthalate	28.51	149.0	5916	3.65	ug/mL	94
73)	Chrysene	28.06	228.0	1088M	.466	ug/mL	
74)	*d12-Perylene	33.57	264.0	62492	40.00	ug/mL	94
75)	Di-n-octylphthalate	30.74	149.0	521M	.216	ug/mL	
76)	Benzo(b)fluoranthene	31.83	252.0	42M	.0199	ug/mL	
)	Benzo(k)fluoranthene	31.91	252.0	54M	.0245	ug/mL	

* Compound is ISTD

29) $\frac{1000}{970} \times 10 \times 46.65 = 481 = 480$

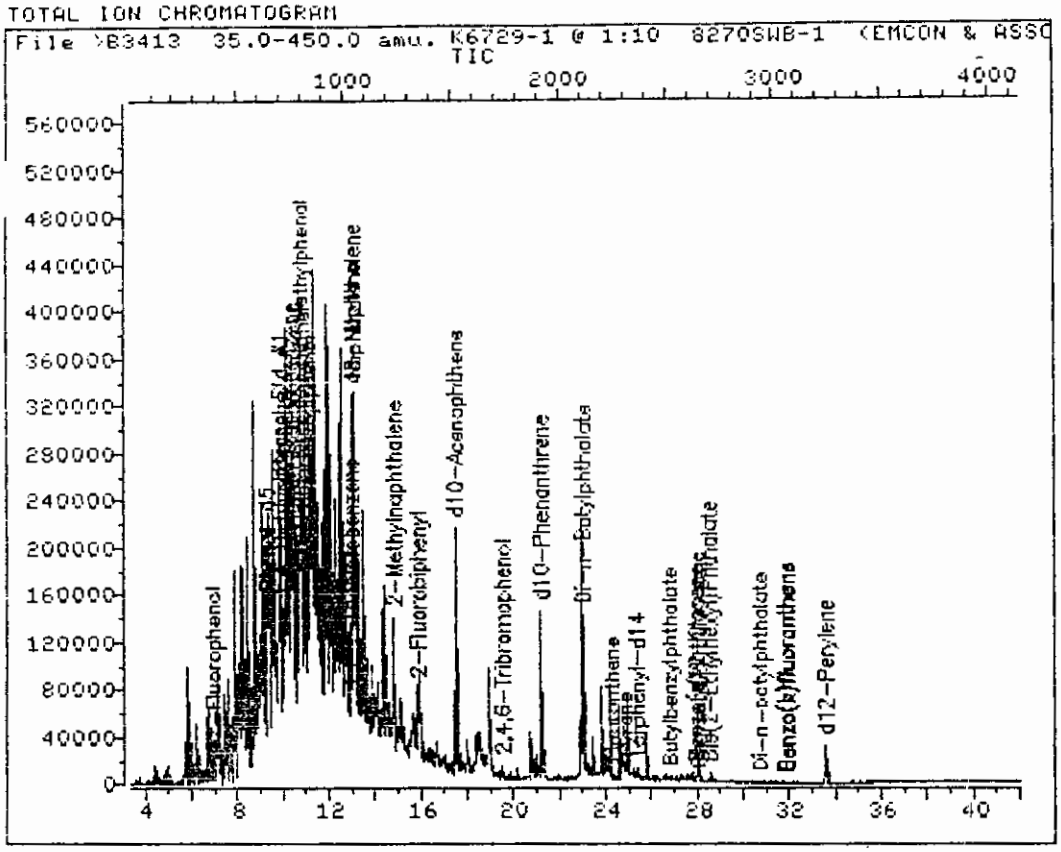
MRL = $\frac{1000}{970 mL} \times 10 \times \begin{matrix} 5 = 51.5 = 52 \\ 10 = 103 = 100 \\ 20 = 206 = 210 \end{matrix}$

33) ↓ ↓ × 16.36 = 169 = 170

↓ SURR'S DILUTED OUT of CALIB. RANGE

NITRO - c/s NOT SPECTRALLY

TOTAL ION CHROMATOGRAM

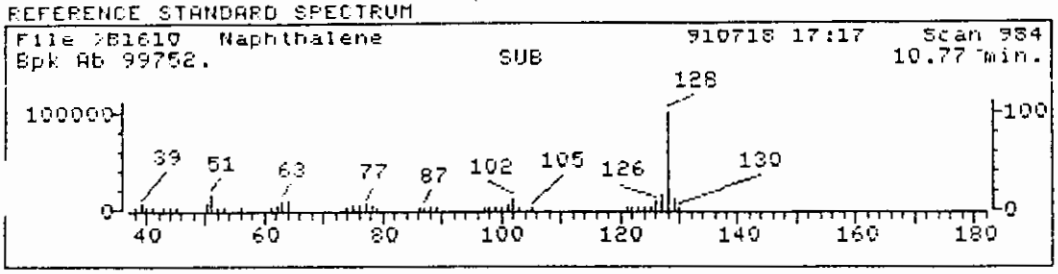


Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12

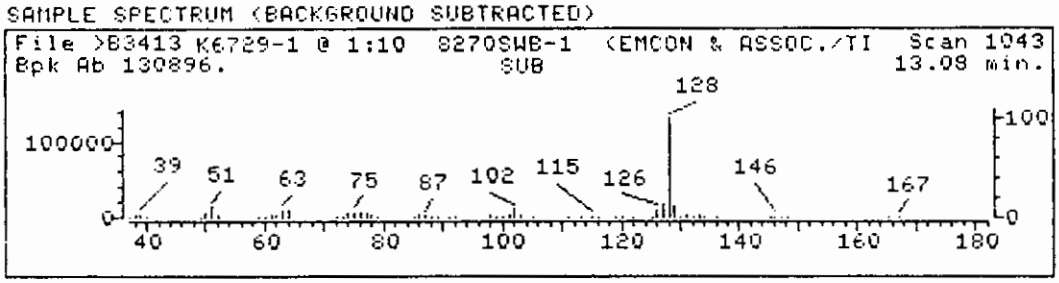
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911125 22:44
Injected at: 911125 22:01

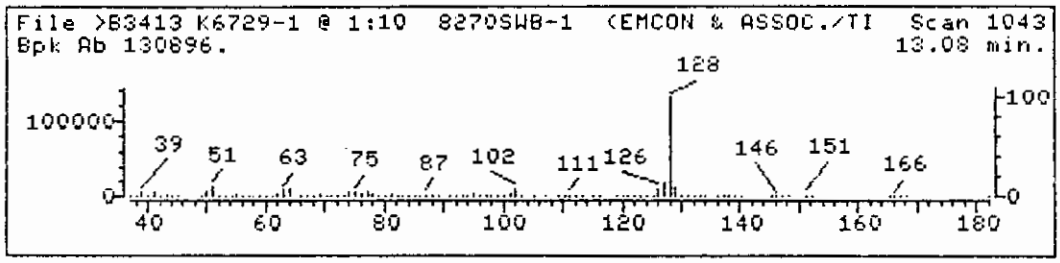
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



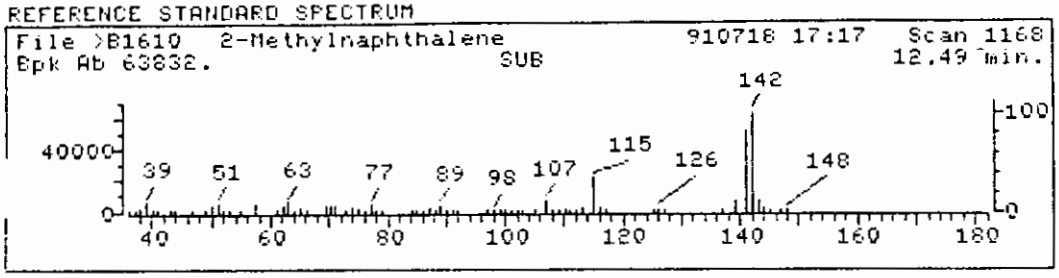
SAMPLE SPECTRUM (UNALTERED)



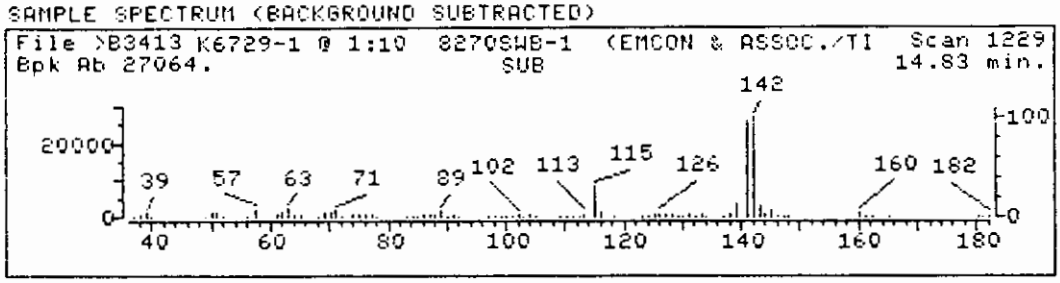
Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1043
Retention Time: 13.08 min.
Quant Ion : 128.0
Area : 270351
Concentration : 46.65 ug/mL
q-value : 96

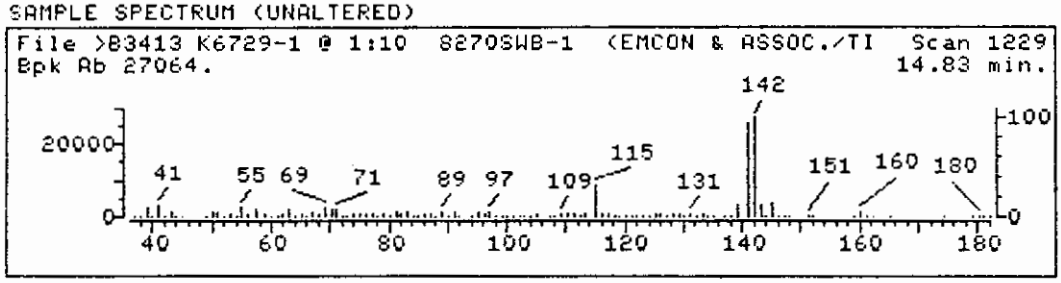
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



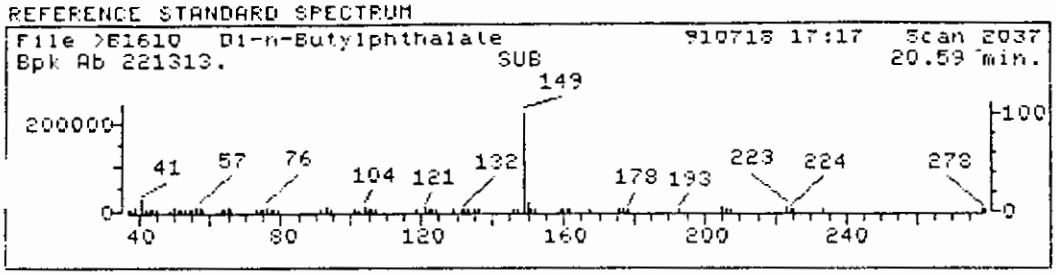
SAMPLE SPECTRUM (UNALTERED)



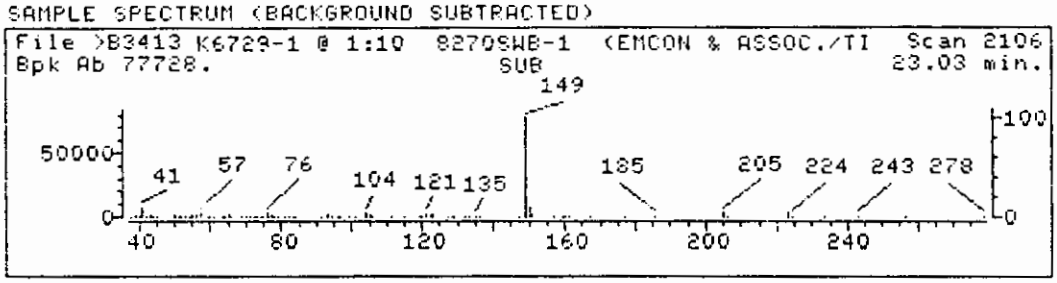
Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1229
Retention Time: 14.83 min.
Quant Ion : 142.0
Area : 56673
Concentration : 16.36 ug/mL
q-value : 94

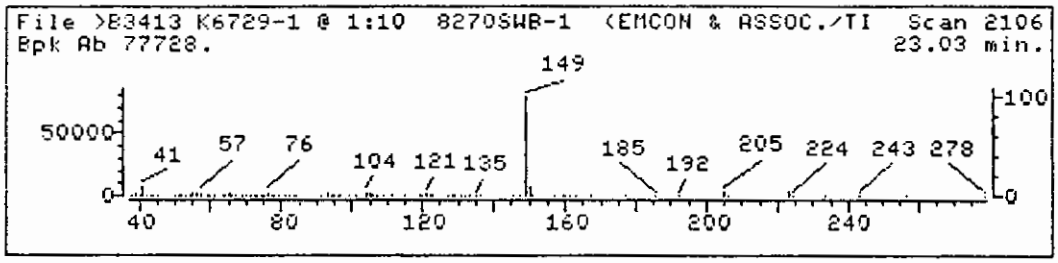
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >B3413::D4 Quant Output File: ^B3413::D1
Name: K6729-1 @ 1:10 8270 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC./TIER III) BTL#12
Quant Time: 911125 22:44 Quant ID File: ID_BDA::D1
Injected at: 911125 22:01 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 64
Compound Name : Di-n-Butylphthalate
Scan Number : 2106
Retention Time: 23.03 min.
Quant Ion : 149.0
Area : 157250
Concentration : 37.56 ug/mL
q-value : 97

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 23:35
Output File: ^B3414::D1 Injected at: 911125 22:52
Data File: >B3414::D4 Dilution Factor: 1.00000
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Sc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	68696	40.00	ug/mL	95
4)	2-Fluorophenol	6.95	112.0	88832	51.93	ug/mL	95
6)	Phenol-d6	9.30	99.0	88644	35.22	ug/mL	91
7)	Phenol	9.33	94.0	740M	.225	ug/mL	
11)	1,4-Dichlorobenzene	9.89	146.0	291M	.104	ug/mL	
13)	1,2-Dichlorobenzene	10.34	146.0	841M	.264	ug/mL	
14)	2-Methylphenol	10.73	107.0	54M	.0258	ug/mL	
15)	bis(2-Chloroisopropyl)ether	10.81	45.0	48M	.00926	ug/mL	86
16)	4-Methylphenol	11.17	107.0	960M	.347	ug/mL	
20)	*d8-Naphthalene	13.03	136.0	228171	40.00	ug/mL	84
21)	Nitrobenzene-d5	11.35	82.0	62086	29.81	ug/mL	82
22)	Isophorone	12.09	82.0	1922M	.431	ug/mL	97
24)	2,4-Dimethylphenol	12.47	122.0	502M	.238	ug/mL	
25)	Benzoic Acid	12.92	122.0	2552M	1.95	ug/mL	
26)	bis(2-Chloroethoxy)methane	12.36	93.0	2327^	.841	ug/mL	77
8)	1,2,4-Trichlorobenzene	12.95	180.0	93M	.0462	ug/mL	
9)	Naphthalene	13.07	128.0	89129	14.64	ug/mL	97
33)	2-Methylnaphthalene	14.83	142.0	48910	13.45	ug/mL	99
34)	*d10-Acenaphthene	17.49	164.0	119422	40.00	ug/mL	88
38)	2-Chloronaphthalene	16.05	162.0	45M	.0103	ug/mL	
39)	2-Fluorobiphenyl	15.87	172.0	175007	38.38	ug/mL	93
42)	Acenaphthylene	17.05	152.0	1361M	.235	ug/mL	88
44)	Acenaphthene	17.57	154.0	2458M	.639	ug/mL	90
47)	Dibenzofuran	17.97	168.0	1094	.202	ug/mL	80
48)	2,4-Dinitrotoluene	18.22	165.0	1781M	1.51	ug/mL	75
49)	2,6-Dinitrotoluene	17.27	165.0	468M	.457	ug/mL	93
52)	Fluorene	18.85	166.0	2188	.538	ug/mL	81
56)	*d10-Phenanthrene	21.20	188.0	140959	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.52	329.8	49195	90.09	ug/mL	96
62)	Phenanthrene	21.24	178.0	3800	.822	ug/mL	94
63)	Anthracene	21.36	178.0	1293M	.297	ug/mL	94
64)	Di-n-Butylphthalate	23.03	149.0	5444	1.27	ug/mL	92
65)	Fluoranthene	24.27	202.0	1061	.338	ug/mL	95
66)	*d12-Chrysene	27.99	240.0	91063	40.00	ug/mL	99
67)	Pyrene	24.81	202.0	1070M	.205	ug/mL	
68)	Terphenyl-d14	25.36	244.0	106997	38.68	ug/mL	88
71)	Benzo(a)Anthracene	27.94	228.0	100M	.0339	ug/mL	
72)	Bis(2-Ethylhexyl)Phthalate	28.51	149.0	5980	2.89	ug/mL	93
73)	Chrysene	28.05	228.0	198M	.0666	ug/mL	
74)	*d12-Perylene	33.58	264.0	82097	40.00	ug/mL	93

29) $\frac{1000}{700\ mL} \times 14.64 = 20.9 = 21$

23) $\sqrt{}$ $\times 13.45 = 19.2 = 19$

0.227

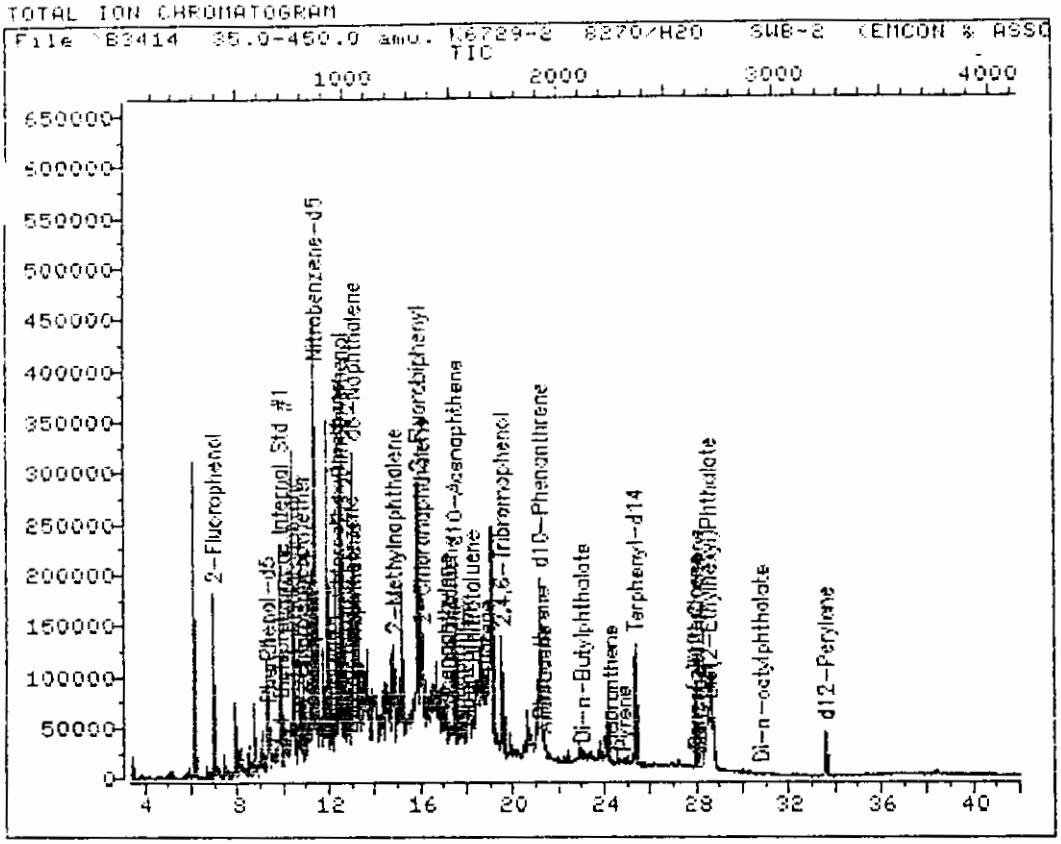
Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911125 23:35
Output File: ^B3414::D1 Injected at: 911125 22:52
I a File: >B3414::D4 Dilution Factor: 1.00000
me: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

	Compound	R.T.	Q ion	Area	Conc	Units	q
75)	~~Di-n-octylphthalate~~	~~36.80~~	~~149.0~~	~~201M~~	~~.0634~~	~~ug/mL~~	

* Compound is ISTD

TOTAL ION CHROMATOGRAM

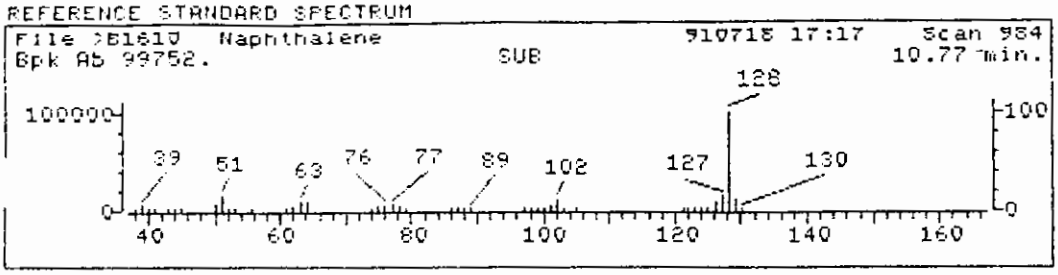


Data File: >B3414::D4 Quant Output File: ^B3414::D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13

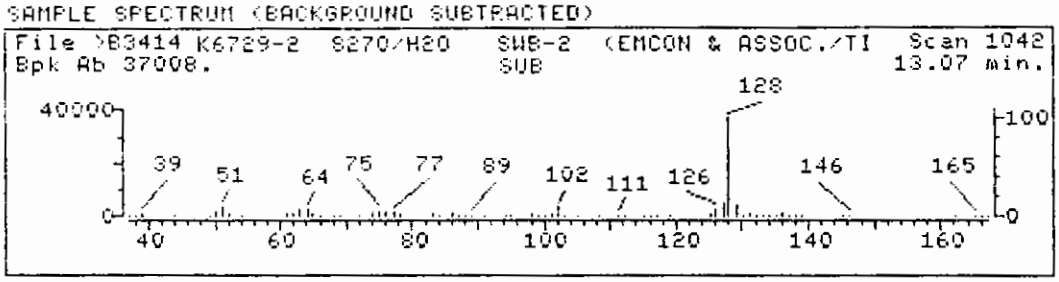
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911125 11:39

Operator ID: KEN-1
Quant Time : 911125 23:35
Injected at: 911125 22:52

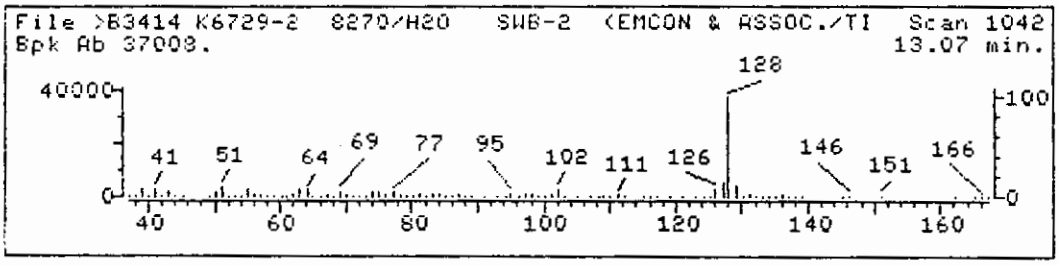
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



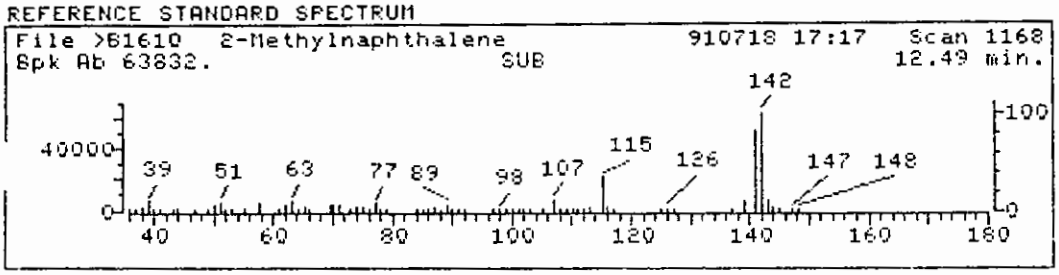
SAMPLE SPECTRUM (UNALTERED)



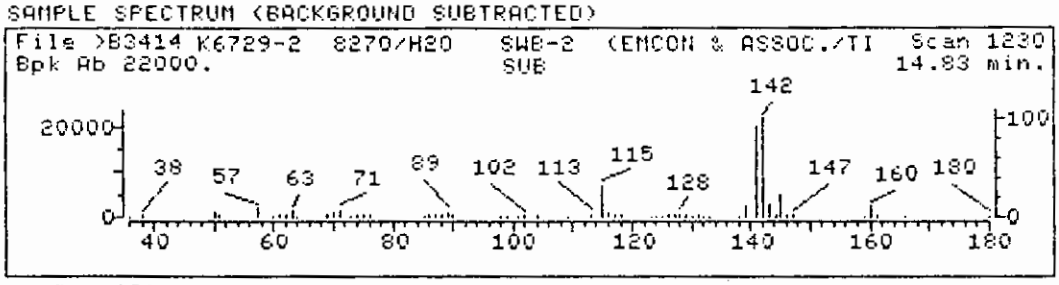
Data File: >B3414::D4 Quant Output File: ^B3414::D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13
Quant Time: 911125 23:35 Quant ID File: ID_BDA::D1
Injected at: 911125 22:52 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1043
Retention Time: 13.07 min.
Quant Ion : 128.0
Area : 89129
Concentration : 14.64 ug/mL
q-value : 97

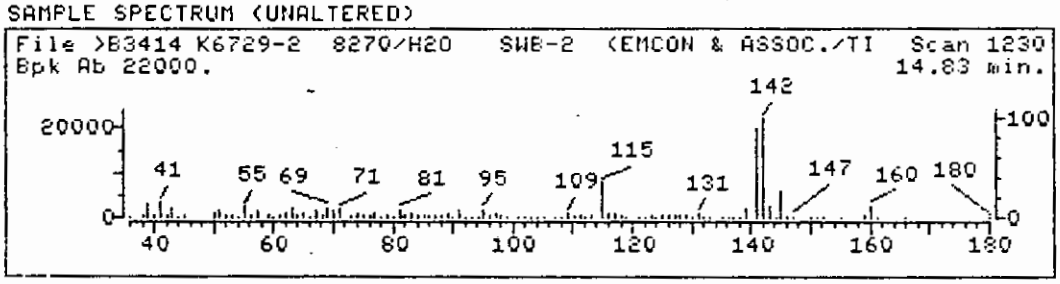
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >B3414::D4 Quant Output File: ^B3414::D1
Name: K6729-2 8270/H20 Instrument ID: GCMSBNA1
Misc: SWB-2 (EMCON & ASSOC./TIER III) BTL#13
Quant Time: 911125 23:35 Quant ID File: ID_BDA::D1
Injected at: 911125 22:52 Last Calibration: 911113 08:36
Last Qcal Time: 911125 11:39

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1230
Retention Time: 14.83 min.
Quant Ion : 142.0
Area : 48910
Concentration : 13.45 ug/mL
q-value : 99

Operator ID: KEN-1
Output File: ^B3425::D1
Data File: >B3425::D4
Name: K6729-3 8270/H2O
Misc: X-DUP (EMCON & ASSOC.)

Quant Rev: 7 Quant Time: 911126 15:48
Injected at: 911126 15:05
Dilution Factor: 1.00000
Instrument ID: GCMSBNA1
BTL# 6

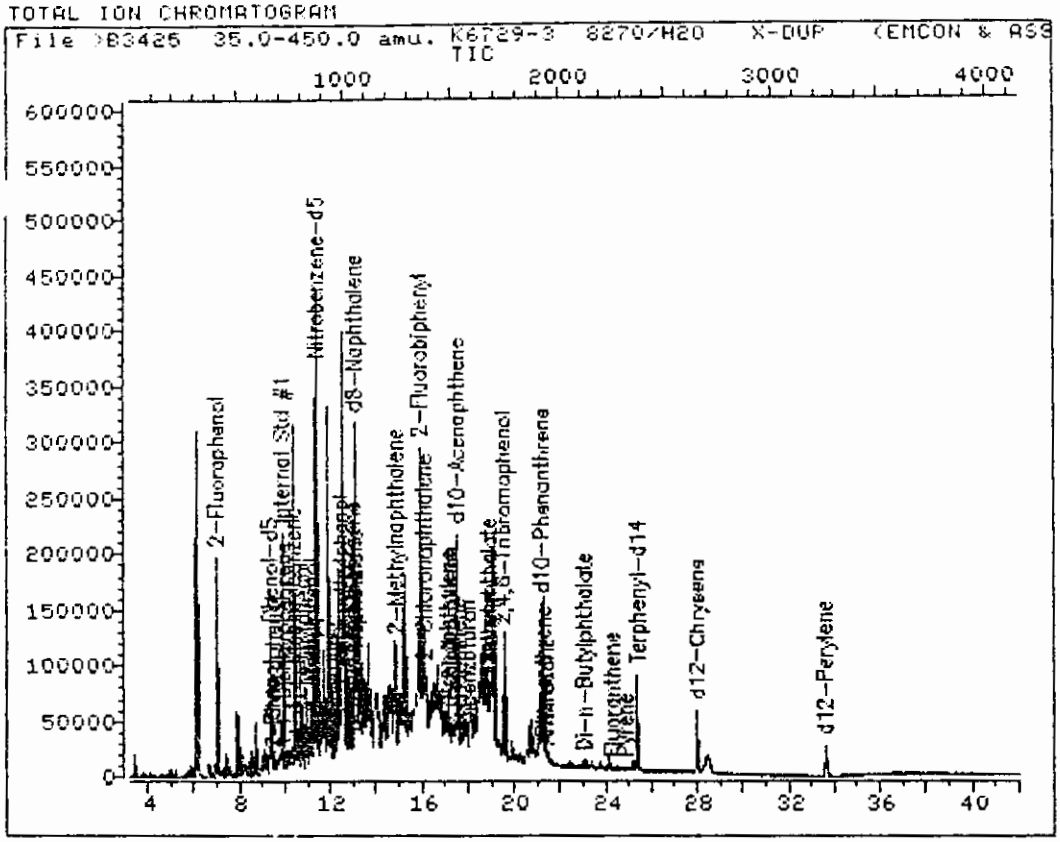
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.84	152.0	66522	40.00	ug/mL	93
4)	2-Fluorophenol	6.95	112.0	95144	59.38	ug/mL	87
6)	Phenol-d6	9.30	99.0	93218	38.67	ug/mL	88
~~7)~~	~~Phenol~~	~~9.32~~	~~94.0~~	~~519^~~	~~.168~~ NR	~~ug/mL~~	~~75~~
~~9)~~	~~2-Chlorophenol~~	~~9.43~~	~~128.0~~	~~331M~~	~~.130~~	~~ug/mL~~	
~~11)~~	~~1,4-Dichlorobenzene~~	~~9.88~~	~~146.0~~	~~264M~~	~~.0999~~	~~ug/mL~~	
~~13)~~	~~1,2-Dichlorobenzene~~	~~10.33~~	~~146.0~~	~~742~~	~~.251~~	~~ug/mL~~	~~86~~
~~14)~~	~~2-Methylphenol~~	~~10.76~~	~~107.0~~	~~34M~~	~~.0171~~	~~ug/mL~~	
~~16)~~	~~4-Methylphenol~~	~~11.13~~	~~107.0~~	~~626M~~ NR	~~.237~~	~~ug/mL~~	~~84~~
20)	*d8-Naphthalene	13.02	136.0	235601	40.00	ug/mL	86
21)	Nitrobenzene-d5	11.34	82.0	63691	29.35	ug/mL	86
~~22)~~	~~Isophorone~~	~~11.99~~	~~82.0~~	~~1361M~~ NR	~~.288~~	~~ug/mL~~	~~87~~
~~24)~~	~~2,4-Dimethylphenol~~	~~12.44~~	~~122.0~~	~~484M~~	~~.217~~	~~ug/mL~~	~~90~~
~~25)~~	~~Benzoic Acid~~	~~12.92~~	~~122.0~~	~~1214M~~	~~.968~~	~~ug/mL~~	
~~8)~~	~~1,2,4-Trichlorobenzene~~	~~12.94~~	~~180.0~~	~~35M~~ NR	~~.0165~~	~~ug/mL~~	
29)	Naphthalene	13.06	128.0	85317	13.58	ug/mL	97
33)	2-Methylnaphthalene	14.81	142.0	45641	12.43	ug/mL	94
34)	*d10-Acenaphthene	17.48	164.0	119405	40.00	ug/mL	82
~~38)~~	~~2-Chloronaphthalene~~	~~16.06~~	~~162.0~~	161M NR	~~.0362~~	~~ug/mL~~	
39)	2-Fluorobiphenyl	15.86	172.0	178121	38.68	ug/mL	94
~~42)~~	~~Acenaphthylene~~	~~17.08~~	~~152.0~~	~~143M~~ NR	~~.0251~~	~~ug/mL~~	
~~44)~~	~~Acenaphthene~~	~~17.56~~	~~154.0~~	~~1690~~	~~.435~~	~~ug/mL~~	~~94~~
~~47)~~	~~Dibenzofuran~~	~~17.96~~	~~168.0~~	~~801~~	~~.145~~	~~ug/mL~~	~~93~~
~~49)~~	~~2,6-Dinitrotoluene~~	~~17.22~~	~~165.0~~	~~88M~~	~~.0805~~	~~ug/mL~~	~~75~~
~~50)~~	~~Diethylphthalate~~	~~18.88~~	~~149.0~~	~~550~~	~~.124~~	~~ug/mL~~	~~74~~
~~52)~~	~~Fluorene~~	~~18.83~~	~~166.0~~	~~1533M~~ NR	~~.382~~	~~ug/mL~~	~~79~~
56)	*d10-Phenanthrene	21.18	188.0	118178	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	44759	95.48	ug/mL	91
~~62)~~	~~Phenanthrene~~	~~21.23~~	~~178.0~~	~~2044~~ NR	~~.558~~	~~ug/mL~~	~~78~~
~~63)~~	~~Anthracene~~	~~21.34~~	~~178.0~~	~~671M~~	~~.187~~	ug/mL	78
~~64)~~	~~Di-n-Butylphthalate~~	~~23.02~~	~~149.0~~	~~3401~~	~~.753~~	~~ug/mL~~	~~86~~
~~65)~~	~~Fluoranthene~~	~~24.25~~	~~202.0~~	~~339M~~ NR	~~.120~~	ug/mL	
66)	*d12-Chrysene	27.97	240.0	59095	40.00	ug/mL	95
~~67)~~	~~Pyrene~~	~~24.81~~	~~202.0~~	~~190M~~ NR	~~.0649~~	~~ug/mL~~	
68)	Terphenyl-d14	25.35	244.0	78407	44.40	ug/mL	87
74)	*d12-Perylene	33.55	264.0	52642	40.00	ug/mL	94

* Compound is ISTD

KY 12/4/91

TOTAL ION CHROMATOGRAM

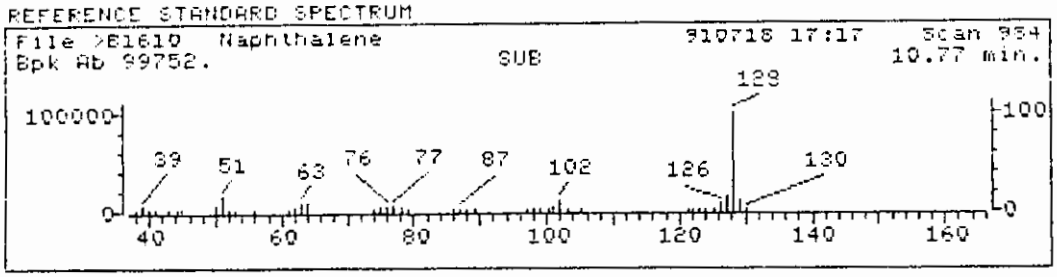


Data File: >B3425::D4 Quant Output File: ^B3425::D1
Name: K6729-3 8270/H2O Instrument ID: GCMSBNA1
Misc: X-DUP (EMCON & ASSOC.) BTL# 6

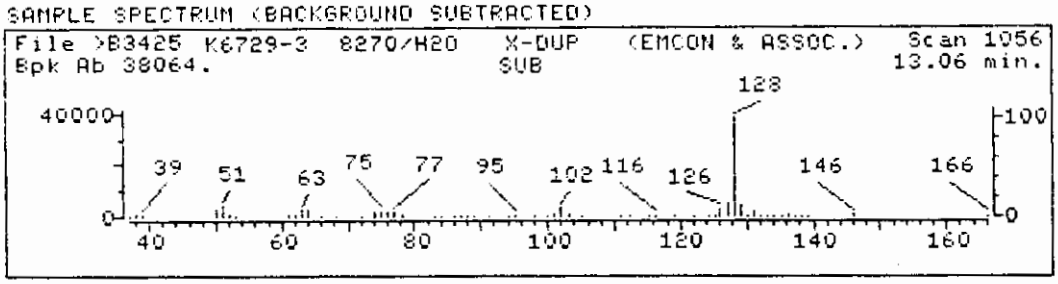
Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 15:48
Injected at: 911126 15:05

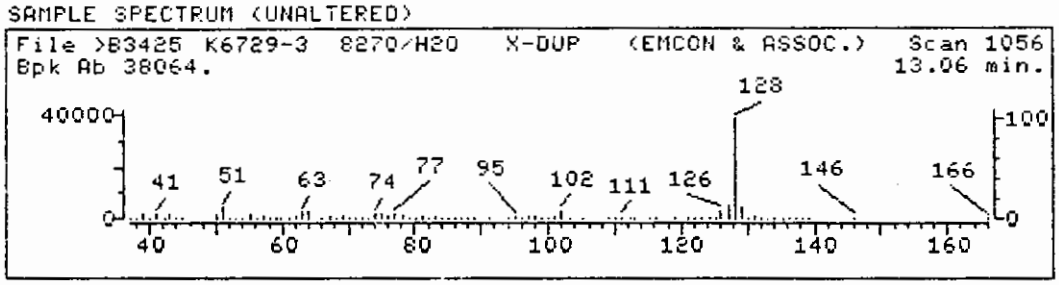
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

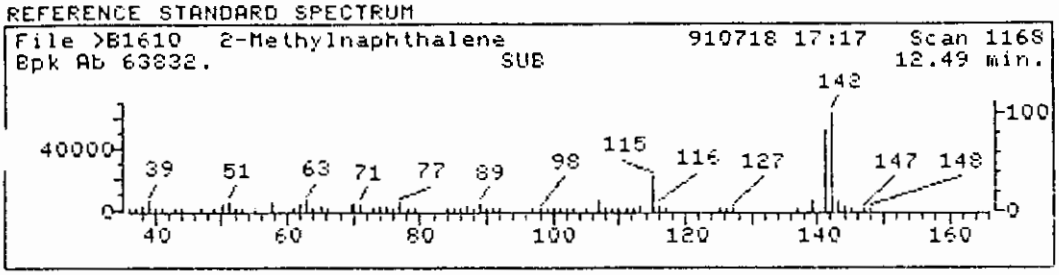


Data File: >B3425::D4
Name: K6729-3 8270/H20
Misc: X-DUP (EMCON & ASSOC.)
Quant Time: 911126 15:48
Injected at: 911126 15:05
Last Qcal Time: 911126 09:51

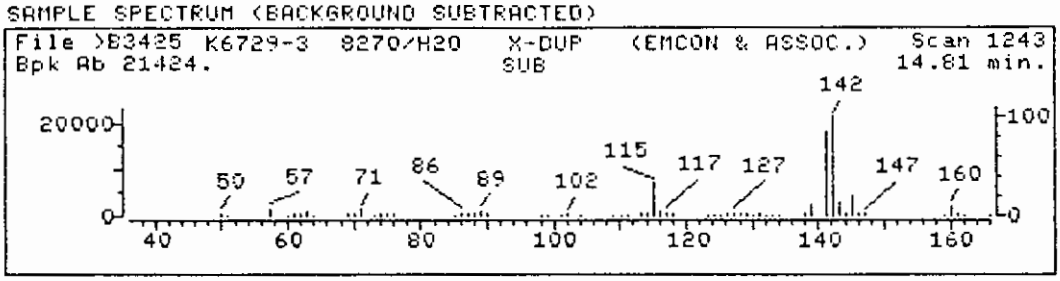
Quant Output File: ^B3425::D1
Instrument ID: GCMSBNA1
BTL# 6
Quant ID File: ID_BDA::D1
Last Calibration: 911113 08:36

Compound No : 29
Compound Name : Naphthalene
Scan Number : 1056
Retention Time: 13.06 min.
Quant Ion : 128.0
Area : 85317
Concentration : 13.58 ug/mL
q-value : 97

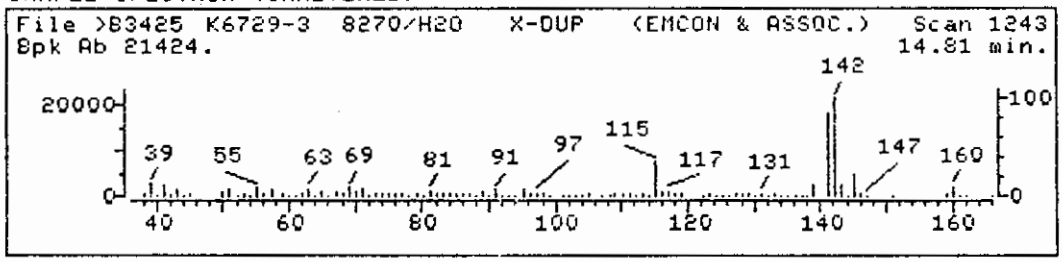
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >B3425::D4 Quant Output File: ^B3425::D1
Name: K6729-3 8270/H20 Instrument ID: GCMSBNA1
Misc: X-DUP (EMCON & ASSOC.) BTL# 6
Quant Time: 911126 15:48 Quant ID File: ID_BDA::D1
Injected at: 911126 15:05 Last Calibration: 911113 08:36
Last Qcal Time: 911126 09:51

Compound No : 33
Compound Name : 2-Methylnaphthalene
Scan Number : 1243
Retention Time: 14.81 min.
Quant Ion : 142.0
Area : 45641
Concentration : 12.43 ug/mL
q-value : 94

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 20:58
Output File: ^B3431::D1 Injected at: 911126 20:14
Data File: >B3431::D4 Dilution Factor: 1.00000
me: BNA1121WB2 8270 Instrument ID: GCMSBNA1
..sc: (6729,6793,6765) K6729-MB Method Blank BTL#12

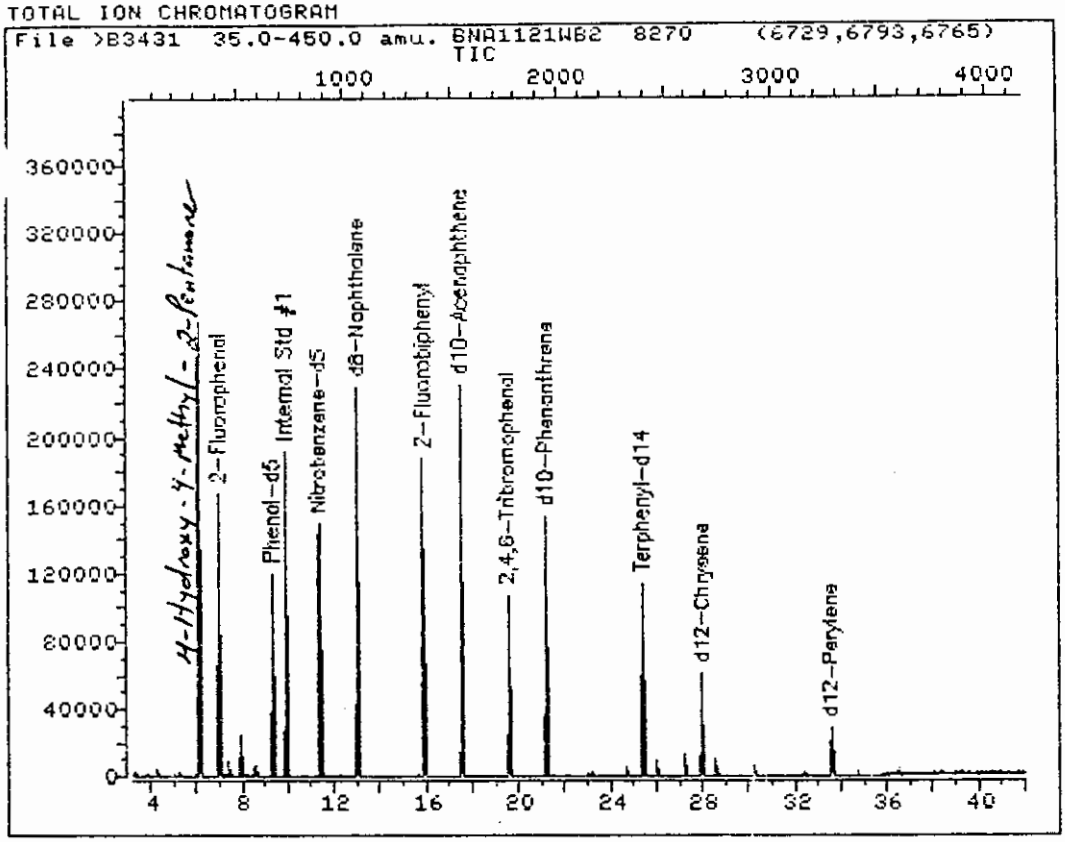
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.83	152.0	61853 ✓	40.00	ug/mL	95
4)	2-Fluorophenol	6.95	112.0	74505	50.01	ug/mL	87
6)	Phenol-d6	9.27	99.0	71248	31.79	ug/mL	91
~~7)~~	~~Phenol~~	~~9.29~~	~~94.0~~	~~246M~~	NR ~~.0856~~	~~ug/mL~~	
~~9)~~	~~2-Chlorophenol~~	~~9.42~~	~~128.0~~	~~201M~~	NR ~~.0901~~	~~ug/mL~~	
20)	*d8-Naphthalene	13.00	136.0	242622 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.30	82.0	93142	41.69	ug/mL	99
~~29)~~	~~Naphthalene~~	~~13.04~~	~~128.0~~	~~691M~~	NR ~~.107~~	~~ug/mL~~	
34)	*d10-Acenaphthene	17.47	164.0	126469 ✓	40.00	ug/mL	84
39)	2-Fluorobiphenyl	15.85	172.0	142905	29.30	ug/mL	95
56)	*d10-Phenanthrene	21.17	188.0	147821 ✓	40.00	ug/mL	97
58)	2,4,6-Tribromophenol	19.50	329.8	38282	65.29	ug/mL	95
~~64)~~	~~Di-n-Butylphthalate~~	~~23.01~~	~~149.0~~	~~2031M~~	NR ~~.359~~	~~ug/mL~~	
66)	*d12-Chrysene	27.95	240.0	65157 ✓	40.00	ug/mL	96
~~?~~)	Terphenyl-d14	25.34	244.0	103174	52.99	ug/mL	85
~~)~~	~~Bis(2-Ethylhexyl)Phthalate~~	~~28.49~~	~~149.0~~	~~113M~~	NR ~~.0574~~	~~ug/mL~~	
74)	*d12-Perylene	33.52	264.0	54472 ✓	40.00	ug/mL	93

* Compound is ISTD

KY 12/2/91 ✓

TOTAL ION CHROMATOGRAM



Data File: >B3431::D4 Quant Output File: ^B3431::D1
Name: BNA1121WB2 8270 Instrument ID: GCMSBNA1
Misc: (6729,6793,6765) K6729-mB BTL#12
Method Blank

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 20:58
Injected at: 911126 20:14

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 14:05
Output File: ^B3423::D1 Injected at: 911126 13:22
Data File: >B3423::D4 Dilution Factor: 1.00000
me: K6729-1MS @ 1:5 Instrument ID: GCMSBNA1
.sc: SWB-1 (EMCON & ASSOC.) BTL# 4

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Ocal Date: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.85	152.0	65825 ✓	40.00	ug/mL	92
4)	2-Fluorophenol	6.93	112.0	23195	14.63	ug/mL	82
6)	Phenol-d6	9.28	99.0	25792	10.81	ug/mL	83
7)	Phenol	9.31	94.0	31039	10.15	ug/mL	81
9)	2-Chlorophenol	9.43	128.0	38002	16.01	ug/mL	95
11)	1,4-Dichlorobenzene	9.89	146.0	18243	6.98	ug/mL	98
~~12)~~	~~Benzyl Alcohol~~ KY	~~10.74~~	~~108.0~~	~~1667~~	NR ~~1.29~~	~~ug/mL~~	~~88~~
17)	N-Nitroso-Di-n-propylamine INTERFERENCES PRESENT	11.10	70.0	21985	11.33	ug/mL	91
20)	*d8-Naphthalene	13.02	136.0	248090 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.32	82.0	16697	7.31	ug/mL	93
~~22)~~	~~Isophorone~~ KY	~~12.07~~	~~82.0~~	~~5430~~	NR ~~1.09~~	~~ug/mL~~	~~85~~
~~24)~~	~~2,4-Dimethylphenol~~ KY	~~12.41~~	~~122.0~~	~~7694~~	NR ~~3.28~~	~~ug/mL~~	~~84~~
28)	1,2,4-Trichlorobenzene INTERFERENCES PRESENT ✓	12.94	180.0	18628	8.34	ug/mL	94
29)	Naphthalene	13.06	128.0	180884	27.35	ug/mL	97
?)	4-Chloro-3-methylphenol	14.66	107.0	25330	11.58	ug/mL	95
)	2-Methylnaphthalene	14.81	142.0	21986	5.68	ug/mL	98
34)	*d10-Acenaphthene	17.49	164.0	125824 ✓	40.00	ug/mL	85
39)	2-Fluorobiphenyl	15.86	172.0	44325	9.13	ug/mL	94
44)	Acenaphthene	17.56	154.0	28597	6.98	ug/mL	92
~~46)~~	~~4-Nitrophenol~~ OK JAR 12/4/91	~~18.05~~	~~65.0~~	~~205~~ OM	~~NR~~ 3.19	~~ug/mL~~	~~90~~
~~47)~~	~~Dibenzofuran~~ KY	~~17.97~~	~~168.0~~	~~533~~	NR ~~.0916~~	~~ug/mL~~	~~81~~
48)	2,4-Dinitrotoluene	18.16	165.0	6256	<PQL 4.67	ug/mL	78
~~49)~~	~~2,6-Dinitrotoluene~~ KY	~~17.68~~	~~165.0~~	~~323~~	NR ~~.280~~	~~ug/mL~~	~~79~~
~~52)~~	~~Fluorene~~ KY	~~18.84~~	~~166.0~~	~~672~~	NR ~~.159~~	~~ug/mL~~	~~85~~
56)	*d10-Phenanthrene	21.18	188.0	140688 ✓	40.00	ug/mL	99
58)	2,4,6-Tribromophenol	19.51	329.8	9953	17.84	ug/mL	96
61)	Pentachlorophenol	20.92	266.0	8855	13.80	ug/mL	95
~~62)~~	~~Phenanthrene~~ KY	~~21.24~~	~~178.0~~	~~1499~~	NR ~~.344~~	~~ug/mL~~	~~85~~
~~63)~~	~~Anthracene~~ KY	~~21.24~~	~~178.0~~	~~1499~~	NR ~~.350~~	~~ug/mL~~	~~85~~
64)	Di-n-Butylphthalate	23.03	149.0	42503	7.90	ug/mL	98
66)	*d12-Chrysene	27.98	240.0	66710 ✓	40.00	ug/mL	98
67)	Pyrene	24.80	202.0	20699	6.26	ug/mL	96
68)	Terphenyl-d14	25.35	244.0	17299	8.68	ug/mL	90
74)	*d12-Perylene	33.55	264.0	58907 ✓	40.00	ug/mL	91

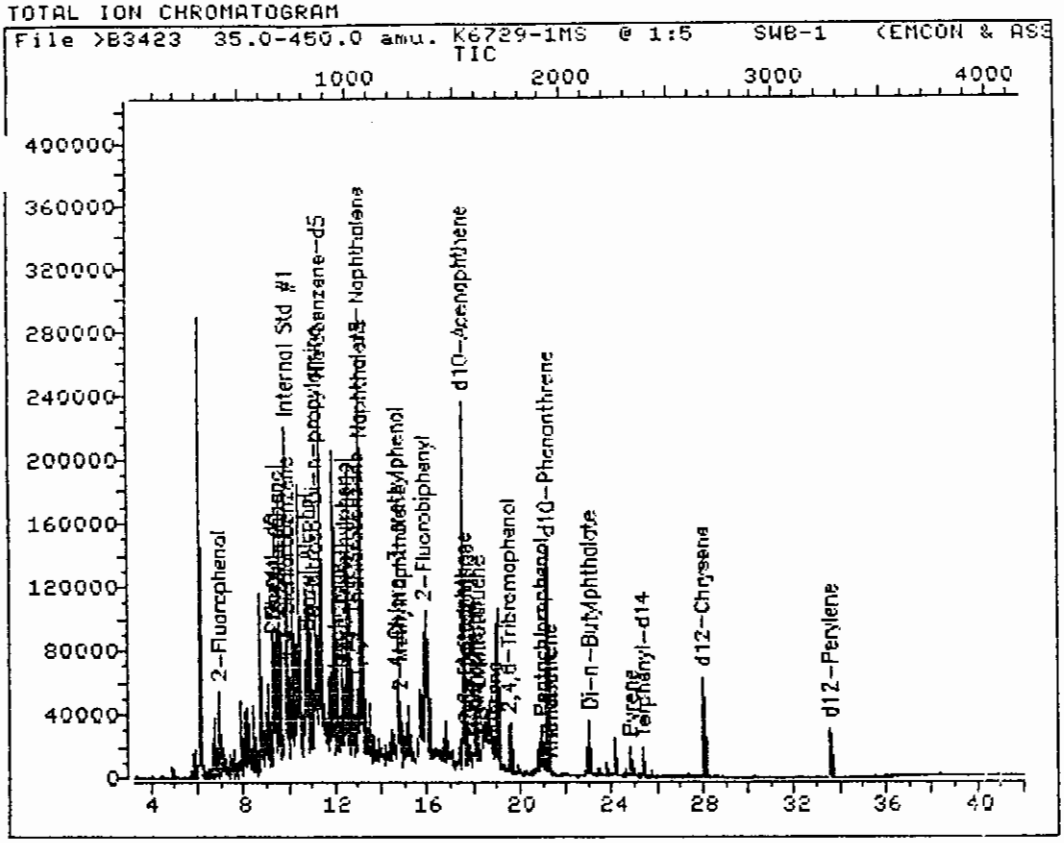
* Compound is ISTD

✓KY 12/4/91

Compound (46), 4-Nitrophenol, is less than MRL but was reported for spike recovery calculation purposes. JAR 12/4/91

Same for compound (48), 2,4-Dinitrotoluene. JAR 12/4/91

TOTAL ION CHROMATOGRAM



Data File: >B3423::D4 Quant Output File: ^B3423::D1
Name: K6729-1MS @ 1:5 Instrument ID: GCMSBNA1
Misc: SWB-1 (EMCON & ASSOC.) BTL# 4

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 14:05
Injected at: 911126 13:22

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911127 16:22
Output File: ^B3445::D1 Injected at: 911127 15:39
Data File: >B3445::D4 Dilution Factor: 1.00000
me: K6729-10MS ReR 8270 Instrument ID: GCMSBNA1
.sc: SWB-1 @ 1:5 BTL# 5

ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Date: 911127 11:19

	Compound		R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene		9.73	152.0	58690 ✓	40.00	ug/mL	95
4)	2-Fluorophenol		6.81	112.0	20450	14.49	ug/mL	89
6)	Phenol-d6		9.17	99.0	22199	10.35	ug/mL	89
7)	Phenol		9.20	94.0	26709	9.79	ug/mL	82
9)	2-Chlorophenol		9.31	128.0	34150	15.88	ug/mL	96
11)	1,4-Dichlorobenzene		9.77	146.0	17282	7.28	ug/mL	93
~~12)~~	~~Benzyl Alcohol~~	~~KY~~	~~10.64~~	~~108.0~~	~~1448~~	~~1.26~~	~~ug/mL~~	~~85~~
~~16)~~	~~4-Methylphenol~~	~~KY~~	~~11.01~~	~~107.0~~	~~3993~~	~~1.71~~	~~ug/mL~~	~~82~~
17)	N-Nitroso-Di-n-propylamine		10.99	70.0	20600	11.92	ug/mL	84
20)	*d8-Naphthalene		12.90	136.0	222577 ✓	40.00	ug/mL	85
21)	Nitrobenzene-d5		11.21	82.0	14011	7.02	ug/mL	91
~~22)~~	~~Isophorone~~	~~KY~~	~~11.95~~	~~82.0~~	~~5319~~	~~1.24~~	~~ug/mL~~	~~86~~
~~23)~~	~~2-Nitrophenol~~	~~KY~~	~~12.47~~	~~139.0~~	~~261^~~	~~.153~~	~~ug/mL~~	~~79~~
~~24)~~	~~2,4-Dimethylphenol~~	~~KY~~	~~12.29~~	~~122.0~~	~~6612~~	~~3.24~~	~~ug/mL~~	~~93~~
~~26)~~	~~bis(2-Chloroethoxy)methane~~	~~KY~~	~~12.55~~	~~93.0~~	~~218^~~	~~.0816~~	~~ug/mL~~	~~78~~
)	1,2,4-Trichlorobenzene		12.83	180.0	16780	8.61	ug/mL	97
29)	Naphthalene		12.95	128.0	164162	NR 27.61	ug/mL	97
32)	4-Chloro-3-methylphenol		14.55	107.0	23247	12.06	ug/mL	94
~~33)~~	~~2-Methylnaphthalene~~	~~KY~~	~~14.70~~	~~142.0~~	~~20238~~	~~5.77~~	~~ug/mL~~	~~97~~
34)	*d10-Acenaphthene		17.36	164.0	111548 ✓	40.00	ug/mL	84
39)	2-Fluorobiphenyl		15.74	172.0	35310	8.35	ug/mL	94
~~41)~~	~~Dimethylphthalate~~	~~KY~~	~~16.95~~	~~163.0~~	~~266^~~	~~.0748~~	~~ug/mL~~	~~68~~
44)	Acenaphthene		17.44	154.0	25228	6.98	ug/mL	92
46)	4-Nitrophenol Estimated conc., <MRL		17.92	65.0	1826 just NR	3.17	ug/mL	96
48)	2,4-Dinitrotoluene		18.05	165.0	5783	5.25	ug/mL	80
~~52)~~	~~Fluorene~~	~~KY~~	~~18.70~~	~~166.0~~	~~615~~	~~.166~~	~~ug/mL~~	~~92~~
56)	*d10-Phenanthrene		21.05	188.0	126185 ✓	40.00	ug/mL	97
58)	2,4,6-Tribromophenol		19.37	329.8	8728	16.92	ug/mL	92
61)	Pentachlorophenol		20.79	266.0	8950	13.46	ug/mL	99
~~62)~~	~~Phenanthrene~~	~~KY~~	~~21.10~~	~~178.0~~	~~1347~~	~~.333~~	~~ug/mL~~	~~88~~
~~63)~~	~~Anthracene~~	~~KY~~	~~21.10~~	~~178.0~~	~~1347~~	~~.354~~	~~ug/mL~~	~~88~~
64)	Di-n-Butylphthalate		22.90	149.0	37562	NR 9.25	ug/mL	99
66)	*d12-Chrysene		27.82	240.0	56679 ✓	40.00	ug/mL	98
67)	Pyrene		24.66	202.0	18822	6.63	ug/mL	96
68)	Terphenyl-d14		25.22	244.0	14733	8.94	ug/mL	88
74)	*d12-Perylene		33.28	264.0	48323 ✓	40.00	ug/mL	93

* Compound is ISTD

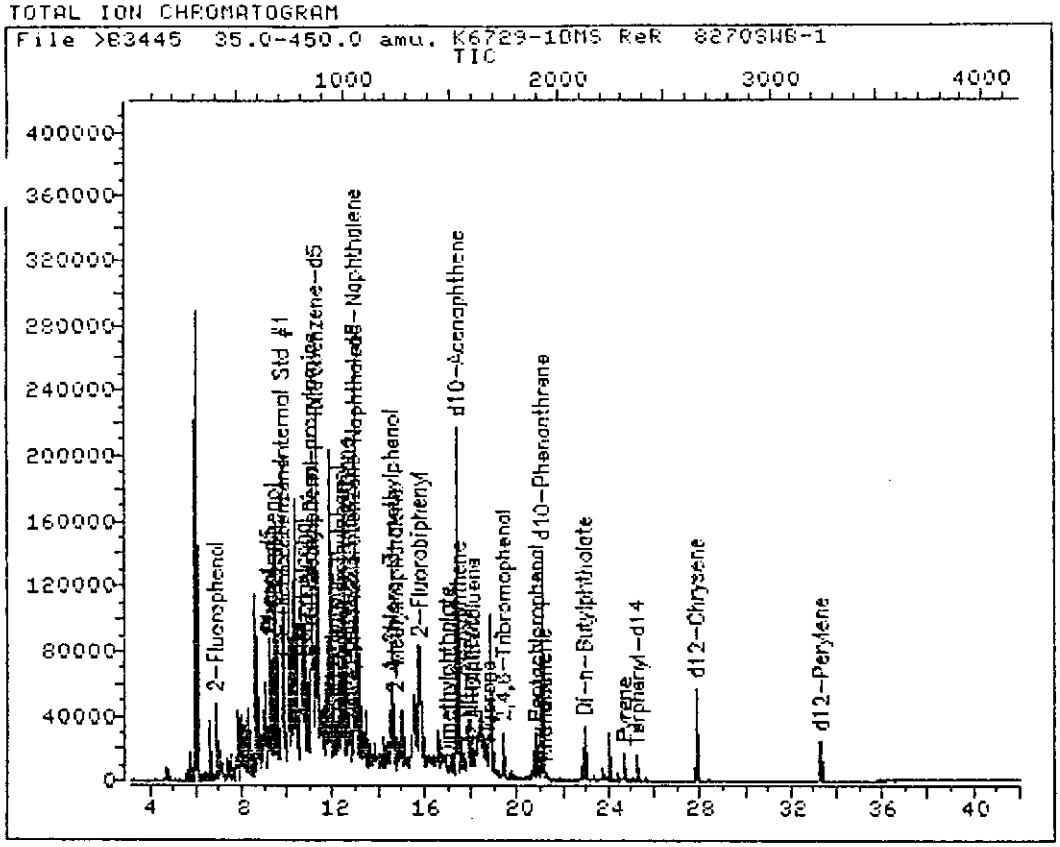
1.8
0.9
3.7
2.3
1.3
4.6

KY 12/3

Compound (46), 4-Nitrophenol, is <MRL, but was rpt'd. for spike recovery calc. purposes. KY 12/4/91

0.240

TOTAL ION CHROMATOGRAM



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Misc: SWB-1 BTL# 5

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911127 11:19

Operator ID: KEN-1
Quant Time : 911127 16:22
Injected at: 911127 15:39

Operator ID: KEN-1 Quant Rev: 7 Quant Time: 911126 21:49
Output File: ^B3432::D1 Injected at: 911126 21:06
Data File: >B3432::D4 Dilution Factor: 1.00000
me: BNA1121WB2LCS 8270 K6729-LCS Instrument ID: GCMSBNA1
.sc: (6729,6793,6765) Lab Control Sample BTL#13

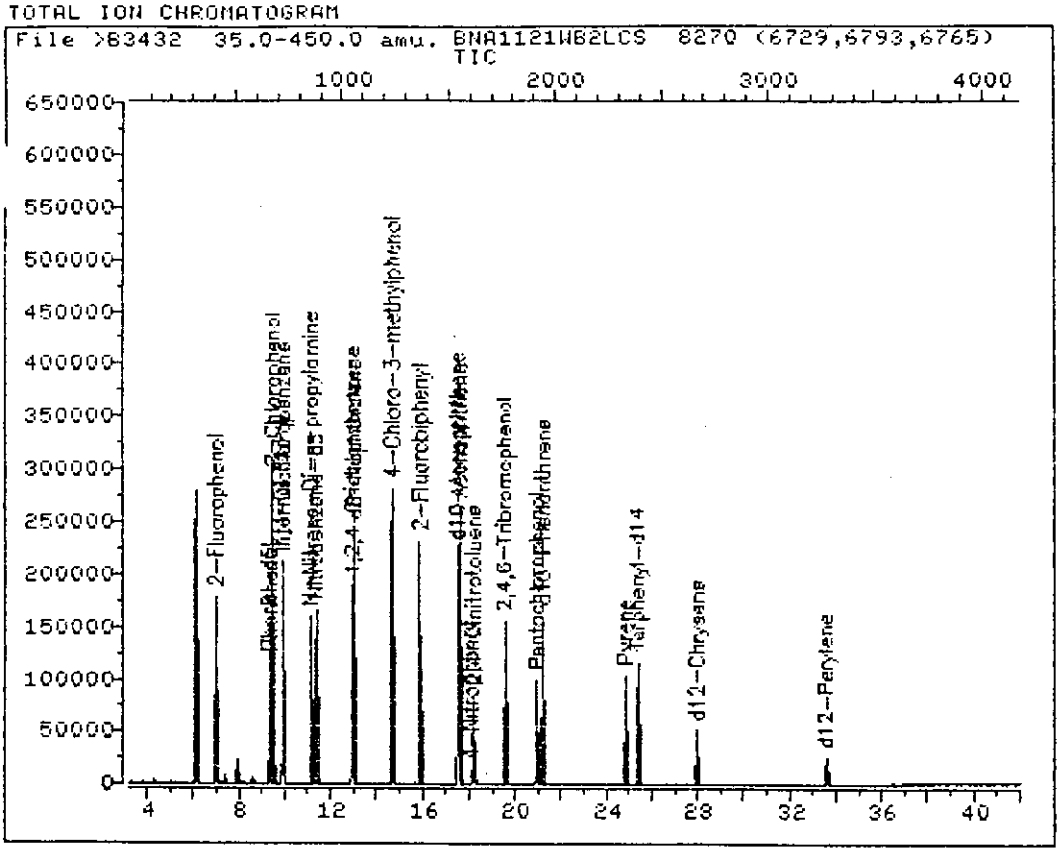
ID File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	9.84	152.0	66347	40.00	ug/mL	94
4)	2-Fluorophenol	6.95	112.0	82794	51.81	ug/mL	85
6)	Phenol-d6	9.28	99.0	78258	32.55	ug/mL	89
7)	Phenol	9.31	94.0	84078	27.29	ug/mL	84
9)	2-Chlorophenol	9.42	128.0	166584	69.64	ug/mL	98
11)	1,4-Dichlorobenzene	9.87	146.0	93822	35.60	ug/mL	94
17)	N-Nitroso-Di-n-propylamine	11.09	70.0	71250	36.43	ug/mL	98
20)	*d8-Naphthalene	13.00	136.0	262865	40.00	ug/mL	85
21)	Nitrobenzene-d5	11.31	82.0	104859	43.32	ug/mL	96
28)	1,2,4-Trichlorobenzene	12.92	180.0	92908	39.24	ug/mL	95
32)	4-Chloro-3-methylphenol	14.65	107.0	141782	61.16	ug/mL	96
34)	*d10-Acenaphthene	17.47	164.0	135182	40.00	ug/mL	84
39)	2-Fluorobiphenyl	15.85	172.0	184421	35.37	ug/mL	96
44)	Acenaphthene	17.55	154.0	147592	33.54	ug/mL	96
46)	4-Nitrophenol	18.03	65.0	7442	10.78	ug/mL	99
53)	2,4-Dinitrotoluene	18.15	165.0	42420	29.47	ug/mL	79
56)	*d10-Phenanthrene	21.17	188.0	154650	40.00	ug/mL	98
58)	2,4,6-Tribromophenol	19.49	329.8	52302	85.26	ug/mL	97
61)	Pentachlorophenol	20.90	266.0	33854	48.00	ug/mL	94
66)	*d12-Chrysene	27.95	240.0	59655	40.00	ug/mL	93
67)	Pyrene	24.80	202.0	116958	39.55	ug/mL	98
68)	Terphenyl-d14	25.34	244.0	103515	58.07	ug/mL	86
74)	*d12-Perylene	33.52	264.0	48106	40.00	ug/mL	92

* Compound is ISTD

KY 12/2/91

TOTAL ION CHROMATOGRAM



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Misc: (6729,6793,6765) K6729-LCS BTL#13
Lab Control Sample

Id File: ID_BDA::D1
Title: EPA METHOD 8270 INST. ID: GCMSBNA1 COLUMN ID: 30 M .25 DB-5
Last Calibration: 911113 08:36 Last Qcal Time: 911126 09:51

Operator ID: KEN-1
Quant Time : 911126 21:49
Injected at: 911126 21:06