U.S. Environmental Protection Agency Region V

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Lab Data Reference Sheet

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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

NOV 08 1990

DATE:

Review of Region 5 data for Sohigro Service Co.

TO: Director Chuck Elly
Region 5 Central Regional Laboratory

FROM: Data User:

Attached are the results for:

CRL Data Set Numbers: SF-7452
Sample Numbers: 91FF27 S48, S49, D49, S50, 91FF03R57
Parameter(s): VOA / WATER
Laboratory: CRL / WESTON ESAT

Results Status:

(✓) DATA ACCEPTABLE FOR USE*
(✓) DATA QUALIFIED AS TO USE for Vinyl chloride & vinyl acetate in all samples CMJ 11/7/90
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

If there are any questions regarding the data, refer them to ~~Steve Parker,~~ James H. Adams, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

TRANSMITTED BY
NOV 08 1990

U.S. EPA CENTRAL
REGIONAL LAB

RECEIVED BY/DATE:

DATA SET	SITE	BU/ACT.
SF-7452	Sohigro Services	TFA 302

SAMPLES	PARAMETER(S)
91FF27S48, S49, D49, S50. 91FF03R57 (5)	VOA / WATER

SAMPLED	RECEIVED	DUE	LAB
10/17/90	10/18/90	11/8/90	CRL / WESTON ESAT

SHIPPED	DATA RECEIVED	CONTRACT

TEAM LEADER	SECTION CHIEF	DC COORD	DATA COORD
[illegible]		C. Sims Bearden	

Comments By Reviewer:

~~THE DATA ARE ACCEPTABLE FOR USE.~~

SINCE THE STANDARD CALIBRATION CURVE CRITERIA ARE NOT ACCEPTABLE, THE RESULTS SHOULD BE CONSIDERED AS ESTIMATED FOR VINYL CHLORIDE AND ~~THE FOLLOWING PARAMETERS IN ALL THE SAMPLES,~~ VINYL ACETATE IN ALL THE SAMPLES. EXCEPT FOR THE ABOVE TWO PARAMETERS, THE DATA ARE ACCEPTABLE FOR USE.

DATA MANAGEMENT COORDINATOR

RECEIVED	TRANSMITTED	
(✓) REVIEWED	( ) UNREVIEWED	TEAM LEADER/DATE Babu Parvehwz, 10/29/90
(✓) REVIEWED	( ) UNREVIEWED	SECTION CHIEF/DATE [illegible] 10/30/90
(✓) REVIEWED	( ) UNREVIEWED	DC COORDINATOR/DATE James H. Adams, Jr. 11/7/90

REVIEWED BY CONTRACT COORDINATOR/DATE

RECEIVED	TRANSMITTED	
11-7-90	11-8-90	DATA MANAGEMENT COORDINATOR Griffin

CLERICAL SUPPORT

RECEIVED	COMPLETED

QUALIFIERS

PLEASE SAVE THIS INFO. FOR FUTURE USE, THANK YOU

The seven EPA-defined qualifiers to be used are as follows:

U - Indicates compound was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and for percent moisture. For example, 10 U for phenol in water if the sample final volume is the protocol-specified final volume. If a 1 to 10 dilution of extract is necessary, the reported limit is 100 U. For a soil sample, the value must also be adjusted for percent moisture. For example, if the sample had 24% moisture and a 1 to 10 dilution factor, the sample quantitation limit for phenol (330 U) would be corrected to:

$$\frac{(330\ U)}{D} \times df \qquad \text{where } D = \frac{100 - \%\ \text{moisture}}{100}$$

and df = dilution factor

$$\text{at } 24\%\ \text{moisture, } D = \frac{100-24}{100} = 0.76$$

$$\frac{(330\ U)}{.76} \times 10 = 4300\ U$$ rounded to the appropriate number of significant figures

For soil samples subjected to GPC clean-up procedures, the CRQL is also multiplied by 2, to account for the fact that only half of the extract is recovered.

J - Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L, but a concentration of 3 ug/L is calculated, report it as 3J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1 to 10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, report the concentration as 300J on Form I.

C - This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides $\geq$10 ng/ul in the final extract shall be confirmed by GC/MS.

B - This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag must be used for a TIC as well as for a positively identified TCL compound.

12/88

PLEASE SAVE
THIS INFO.
FOR FUTURE USE
THANKS

QUALIFIERS (CONTD.)

E - This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag will not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater than full scale, the sample or extract must be diluted and re-analyzed according to the specifications in Exhibit D. All such compounds with a response greater than full scale should have the concentration flagged with an "E" on the Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses shall be reported on separate Forms I. The Form I for the diluted sample shall have the "DL" suffix appended to the sample number.

- This flag identifies all compounds identified in an analysis at a secondary dilution factor. If a sample or extract is re-analyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag.

A - This flag indicates that a TIC is a suspected aldol-condensation product.

X - Other specific flags and footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the Sample Data Summary Package and the Case Narrative. If more than one is required, use "Y" and "Z", as needed. If more than five qualifiers are required for a sample result, use the "X" flag to combine several flags, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

The combination of flags "BU" or "UB" is expressly prohibited. Blank contaminants are flagged "B" only when they are also detected in the sample.

If analyses at two different dilution factors are required (see Exhibit D), follow the data reporting instructions given in Exhibit D and with the "D" and "E" flags above.

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

| METHOD BLK |

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/22/90
Lab File ID: >FC156 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	U
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	1.	U
71-43-2	Benzene	1.	U
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	1.	U
108-90-7	Chlorobenzene	1.	U
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91FF27S48

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC158 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	U
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	1.	J
75-35-4	1,1-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	1.	U
71-43-2	Benzene	1.	U
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	1.	U
108-90-7	Chlorobenzene	1.	U
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91FF27S48

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC158

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.68	1	J
2.				
3.				
4.				
5.				
6.				
7.				
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27.				
28.				

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91FF27S49

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC159 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	U
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	1.	U
71-43-2	Benzene	1.	U
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	1.	U
108-90-7	Chlorobenzene	1.	U
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91FF27D49

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC160 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	U
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	1.	U
71-43-2	Benzene	1.	U
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	1.	U
108-90-7	Chlorobenzene	1.	U
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
91FF27S50

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC161 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	U
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	1.	U
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	1.	U
71-43-2	Benzene	1.	U
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	1.	U
108-90-7	Chlorobenzene	1.	U
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91FF03R57

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC162 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q	
74-87-3	Chloromethane	3.	IU	
74-83-9	Bromomethane	3.	IU	
75-01-4	Vinyl Chloride	3.	IUJ	
75-00-3	Chloroethane	3.	IU	
75-09-2	Methylene_Chloride	1.	IU	
107-02-8	Acrolein	75.	IU	
67-64-1	Acetone	50.	IU	
107-13-1	Acrylonitrile	50.	IU	
75-15-0	Carbon Disulfide	2.	IU	X
75-35-4	1,1-Dichloroethene	1.	IU	
75-34-3	1,1-Dichloroethane	1.	IU	
156-60-5	1,2-Dichloroethene_(total)	1.	IU	
67-66-3	Chloroform	1.	IJ	
107-02-2	1,2-Dichloroethane	1.	IU	
78-93-3	2-Butanone	20.	IU	
71-55-6	1,1,1-Trichloroethane	1.	IU	
56-23-5	Carbon Tetrachloride	1.	IU	
108-05-4	Vinyl Acetate	10.	IUJ	
75-27-4	Bromodichloromethane	1.	IU	
78-87-5	1,2-Dichloropropane	1.	IU	
10061-01-5	cis-1,3-Dichloropropene	1.	IU	
79-01-6	Trichloroethene	1.	IU	
71-43-2	Benzene	1.	IU	
124-48-1	Dibromochloromethane	1.	IU	
10061-02-6	trans-1,3-Dichloropropene	1.	IU	
79-00-5	1,1,2-Trichloroethane	1.	IU	
110-75-8	2-Chloroethyl_Vinylether	1.	IU	
75-25-2	Bromoform	1.	IU	
108-10-1	4-Methyl-2-pentanone	4.	IU	
591-78-6	2-Hexanone	4.	IU	
127-18-4	Tetrachloroethene	1.	I	
79-34-5	1,1,2,2-Tetrachloroethane	1.	IU	
108-88-3	Toluene	1.	IU	
108-90-7	Chlorobenzene	1.	IU	
100-41-4	Ethylbenzene	1.	IU	
100-42-5	Styrene	2.	IU	
108-38-3	Meta Xylene	2.	IU	
95-47-6	O-&/or P-Xylene	2.	IU	

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91FF03R57

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC162

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 1

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	6.55	3	J
2.				
3.				
4.				
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28.				

ESAT CONTRACT **TID NO:** 10/10
TASK NO: 3777

DATASET CUSTODY TRANSFER FORM

Analytical testing was completed on Oct 24 **,19**90 **for:**

DATASET NO: SF-7452 **SITE NAME:** Sohigro Services

PARAMETER : VOA

MATRIX : WATER **SF DU/ACT NO: TFA** 302 **Y**____ **/C**____

SAMPLE NUMBERS: 91FF27S48, S49, S50, D49, 91FF03R57

NUMBER OF SAMPLES: 5

ESAT APPROVALS:

C Falkenberg	10/24/90	[signature]	10/24/90
(ANALYST	DATE)	(TEAM LEADER	DATE)
C Sims Bearden	10/25/90	D Kause	10/25/90
(QC COORDINATOR	DATE)	(ESAT TEAM MANAGER	DATE)

COMMENTS:

The subject dataset was transferred to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the date indicated below.

C Falkenberg	10/25/90	Babu Parmelee	10/25/90 3:00 pm
(DELIVERED BY	DATE)	(RECEIVED BY	DATE)

EPA APPROVALS:

Babu Parmelee	10/29/90
(EPA TASK MONITOR	DATE)

[✓] Reviewed
[ ] Unreviewed
[✓] Accepted
[ ] Rejected
[ ] Returned/_____ (Date)

18

COMMENTS: Ratings: Tech Quality: 3.0 ~~2.5~~; Compliance w/ schedule: 3.0 ~~2.5~~

[signature]	10/30/90	[✓] Reviewed	[ ] Unreviewed
(SECTION CHIEF	DATE)		
Jay Thrycker	10-30-90	Sylvia Griffin / 11-7-90	/ 11-8-90
(ESAT DPO	DATE)	(DATA COORD'R REC'D	TRANSMTD)

DOC.NO.: ESAT-05-0003-FORM
REVISION NO.: 05 (04/05/89) **FILE LOCATION NUMBER:** 5.6.1

Date: October 24,1990

To: Babu Paruchuri

From: Carsten Falkenberg

Re: Dataset SF-7452
Sohigro Services

Five (5) low level water samples from dataset SF-7452 were submitted for volatile organic analysis (VOA) by GC/MS utilizing EPA method 624NS. All samples were preserved at pH 2. All samples were analyzed within 7 days of sampling.

The tunings were acceptable with BFB meeting all QC requirements (Forms 5A).The initial calibration of 10/19/90 was acceptable with all compounds reporting %RSDs less than 35%, except Vinyl chloride (RRF=1.064 %RSD=44.3%) and Vinyl acetate (RRF=.479 %RSD=35.2%). There was one continuing calibration on 10/22/90. All compounds met the QC criteria of 35%D. Extreme room temperature fluctuations are causing many problems with calibrations, especially with the gases. The results from the appropriate samples are required to be estimated for these compounds. The Form Is are flagged.

All internal standard areas and retention times were within QC limits (Forms 8A).

All surrogates were within QC limits for all samples (Form 2A).

Sample 91FF27S48 was used for the matrix spike (MS) and matrix spike duplicate (MSD) analyses (Form 3A). All % recoveries and %RPDs met their respective QC criteria.

There was one (1) method blank associated with the samples. The method blank did not report any TCL compounds. The blank as well as all samples reported one "system" TIC at approximately 20.5 minutes. In addition a small peak was detected at approximately 5 minutes (CO2), which has been experimentally shown to be related to a valve change. These peaks were not reported as TICs in any of the samples.

There was one (1) Field Blank (91FF03R57) associated with the samples. The Field Blank reported Chloroform (1 ppb), Tetrachloroethene (1 ppb), and one TIC at 6.55 min.

Sample 91FF27S49 and the duplicate 91FF27D49 correlated very well. Neither reported any TCL compounds.

Sample 91FF27S48 reported Carbon disulfide (1 ppb). This sample also reported one TIC at 4.68 min.

Sample 91FF27S50 did not report any TCL compounds.

51/22

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: TOXIC SUBSTANCES

TFA302

DIVISION/BRANCH FIT SUPERFUND SAMPLE DATE 10-17-90 LAB ARRIVAL DATE 10-18-90 DUE DATE 11-~~7~~8-90

DU NUMBER TFA-~~102~~ DATA SET NUMBER 7452 STUDY Sottigo Service Co. PRIORITY — CONTRACTOR —

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER VOLATILE ORGANICS SCAN UG/L TOX 17664	pH	vials	WATER ABN ORGANICS SCAN UG/L TOX 17674	SEDIMENTS SOLIDS VOLATILE ORGANICS SCAN MG/KG (DRY) TOX 215622	SEDIMENTS SOLIDS ABN ORGANICS SCAN MG/KG (DRY) TOX 215722
91FF27S48	MSD/RW1 5-133776-783	X	2	6			
49	RW2 5-133794-97	X	2	3			
50	RW3 5-133813-15	X	2	3			
D49	Dup 5-133804-00	X	2	3			
91FF03R57	Blank 5-133822-4	X	2	3			
91FF27S48	RW1/MSD 5-133784-86				X		
91FF27S49	RW2 5-133798				X		
91FF27D49	DUPLICATE 5-133807				X		
91FF27S50	RW3 5-133816				X		
91FF03R57	BLANK 5-133825				X		

Shipment is complete

ANALYTICAL LABORATORY
TIME TRACKING RECORD

Task Number: 3777
TID Number: 10/10
SF Number: SF 7752
Site Name: Sohigro Services
Assigned To: CF

Date Assigned: 10/19/90
Date Due: 10/31/90 11/5/90
Estimated Hours: 12.5

VOA ✓ **BNA** ____ **Pest/PCBs** ____ **Other** ____

Extraction Record

Person:	Date:	Hours:
N/A		

Analysis Record

Person:	Date:	Hours:
CRF	10/19	3
	10/22, 23, 24	11

QA/QC Record

Person:	Date:	Hours:
DPL	10/24	2
CAB	10/25	2

18

LIMS Data Entry

Person:	Date:	Hours:

Comments

Total Hours: ____ **ETM:** ____

LIMS ENTRY for SF-7452

COMPOUND	48 MS	48 D	48	R57	
·Chloromethane					
·Bromomethane					
·Vinyl Chloride					
·Chloroethane					
·Methylene Chloride					
·Acetone					
·Acrolein					
·Carbon Disulfide			1\F 11.701 \B 4.5		
·Acrylonitrile					
·1,1-Dichloroethene	12\S 120	11\M 111\P3			
·1,1-Dichloroethane					
·1,2-Dichloroethene (total)					
·Chloroform				1\F 5.032 \B 5.6	
·1,2-Dichloroethane					
·2-Butanone					
·1,1,1-Trichloroethane					
·Carbon Tetrachloride					
·Vinyl Acetate					
·Bromodichloromethane					
·1,2-Dichloropropane					
·cis-1,3-Dichloropropene					
·Trichloroethene	11\S 110	10\M 100\P3			
·Dibromochloromethane					
·1,1,2-Trichloroethane					
Benzene	11\S 110	11\M 110\P0			
Trans-1,3-Dichloropropene					
2-Chloroethylvinylether					
Bromoform					
·4-Methyl-2-Pentanone					
·2-Hexanone					
·Tetrachloroethene				1\F 2.430 \B 4.8	
·1,1,2,2-Tetrachloroethane					
·Toluene					
·Chlorobenzene	9.8\S 98	10\M 100\P2			
·Ethylbenzene	9.8\S 98	10\M 100\P2			
·Styrene					
·M-Xylene					
·O-&/or P-Xylene					

Review # =

MS =
MSD =

2A
U.S. EPA - REGION V
WATER VOLATILE SURROGATE RECOVERY

Study Name:SOHIGRO SERVICE CO Data Set:SF-7452

Lab File ID: >FC165::A9 SAS No.: NA SDG No.: TFA302

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BEN)#	S3 (DCE)#	OTHER	TOT OUT
01	METHOD BLK	115	106	87		0
02	91FF27S48	126	109	88		0
03	91FF27S49	105	104	90		0
04	91FF27D49	97	102	91		0
05	91FF27S50	90	98	92		0
06	91FF03R57	96	98	91		0
07	91FF27S48MS	92	99	90		0
08	91FF27S48MSD	93	97	89		0
09	MDL STD	98	98	92		0
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26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(78-134)
S2 (BEN) = Benzene-d6	(88-112)
S3 (DCE) = 1,2-Dichloroethane-d4	(75-111)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

FORM II VOA-1 1/87 Rev.

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: SOHIGRO SERVICE CO Contract: ESAT/WESTON

Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302

Matrix Spike - EPA Sample No.: 91FF27S48

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	10.00	0.00	12.00	120	61-145
Trichloroethene	10.00	0.00	11.00	110	71-120
Benzene	10.00	0.00	11.00	110	76-127
Toluene	10.00	0.00	9.80	98	76-125
Chlorobenzene	10.00	0.00	9.80	98	75-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	10.00	11.00	111	3	14	61-145
Trichloroethene	10.00	10.00	100	3	14	71-120
Benzene	10.00	11.00	110	0	11	76-127
Toluene	10.00	10.00	100	2	13	76-125
Chlorobenzene	10.00	10.00	100	2	13	75-130

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

* Values outside of qc limits

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

COMMENTS: _____

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: SOHIGRO SERVICE CO Contract: ESAT/WESTON |

Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302

Lab File ID: >FC156 Lab Sample ID: 91FF27S48

Date Analyzed: 10/22/90 Time Analyzed: 1 8:28

Matrix: (soil/water) WATER Level: (low/med) LOW

Instrument ID: 87 3

THIS METHOD BLANK APPLIES TO THE FOLLOWING:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	91FF27S48	91FF27S48	>FC158	1 10:32
02	91FF27S49	91FF27S49	>FC159	1 11:19
03	91FF27D49	91FF27D49	>FC160	1 12:07
04	91FF27S50	91FF27S50	>FC161	1 12:54
05	91FF03R57	91FF03R57	>FC162	1 13:41
06	91FF27S48MS	91FF27S48MS	>FC163	1 14:29
07	91FF27S48MSD	91FF27S48MSD	>FC164	1 15:16
08	MDL STD	MDL STD	>FC165	1 16:04
09				
10				
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30				

COMMENTS: _____

FORM IV VOA 1/87 Rev.

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: SOHIGRO SERVICES Contract: ESAT/WESTON

Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302

Lab File ID: >FCBF9 BFB Injection Date: 10/19/90

Instrument ID: 87 3 BFB Injection Time: 8:20

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	19.4
75	30.0 - 60.0% OF MASS 95	42.6
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0(0.0)1
174	Greater than 50.0% of mass 95	64.2
175	5.0 - 9.0% of mass 174	5.1(8.0)1
176	Greater than 95.0%, but less than 101.0% of mass 174	62.0(96.6)1
177	5.0 - 9.0% of mass 176	4.1(6.6)2

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

THIS TUNE APPLIES TO THE FOLLOWING:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	15 PPB STD	15 PPB STD	>FC149	10/19/90	10:37
02	5 PPB STD	5 PPB STD	>IA019	10/19/90	11:38
03	10 PPB STD	10 PPB STD	>IB019	10/19/90	12:25
04	20 PPB STD	20 PPB STD	>ID019	10/19/90	13:13
05	25 PPB STD	25 PPB STD	>IE019	10/19/90	14:01
06					
07					
08					
09					
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18					
19					
20					
21					
22					

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: SOHIGRO SERVICE CO Contract: ESAT/WESTON

Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302

Lab File ID: >FC155 BFB Injection Date: 10/22/90

Instrument ID: 87 3 BFB Injection Time: 7:48

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% OF MASS 95	17.6
75	30.0 - 60.0% OF MASS 95	46.7
95	Base peak, 100% relative abundance	100.
96	5.0 - 9.0% of mass 95	8.4
173	Less than 2.0% of mass 174	.3(.5)1
174	Greater than 50.0% of mass 95	62.5
175	5.0 - 9.0% of mass 174	4.6(7.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	60.8(97.3)1
177	5.0 - 9.0% of mass 176	5.2(8.5)2

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

THIS TUNE APPLIES TO THE FOLLOWING:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	MTEHOD BLK	METHOD BLK	>FC156	10/22/90	8:28
02	15 PPB STD	15 PPB STD	>FC157	10/22/90	9:15
03	91FF27S48	91FF27S48	>FC158	10/22/90	10:32
04	91FF27S49	91FF27S49	>FC159	10/22/90	11:19
05	91FF27D49	91FF27D49	>FC160	10/22/90	12:07
06	91FF27S50	91FF27S50	>FC161	10/22/90	12:54
07	91FF03R57	91FF03R57	>FC162	10/22/90	13:41
08	91FF27S48MS	91FF27S48MS	>FC163	10/22/90	14:29
09	91FF27S48MSD	91FF27S48MSD	>FC164	10/22/90	15:16
10	MDL STD	MDL STD	>FC165	10/22/90	16:04
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA 1/87 Rev.

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: SOHIGRO SERVICE CO Contract:ESAT/WESTON
Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302
Instrument ID: 87 3 Calibration Date(s):10/19/90
Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) PACK

Max %RSD for CCC(*) = 35.0%

LAB FILE ID: RRF5.0=>IA019 RRF10.0=>IB019
RRF15.0=>FC149 RRF20.0=>ID019 RRF25.0=>IE019

COMPOUND	RRF5	RRF10	RRF15	RRF20	RRF25	RRF	% RSD
Chloromethane #	.582	.559	.800	.512	.404	.571	25.4#
Bromomethane	1.946	1.770	2.369	1.630	1.345	1.812	21.0
Vinyl_Chloride *	1.043	.967	1.862	.795	.653	1.064	44.3*
Chloroethane	4.592	3.824	4.976	3.599	2.926	3.984	20.4
Methylene_Chloride	2.547	2.392	2.188	2.317	2.086	2.306	7.8
Acrolein	.063	.075	.049	.078	.068	.066	17.3
Acetone	.091	.110	.104	.111	.100	.103	7.8
Acrylonitrile	.162	.199	.188	.197	.180	.185	8.2
Carbon_Disulfide	12.671	12.507	12.804	12.426	10.854	12.252	6.5
1,1-Dichloroethene *	4.749	4.465	4.571	4.254	3.708	4.350	9.2*
1,1-Dichloroethane #	8.728	8.045	7.544	7.799	6.958	7.815	8.3#
1,2-Dichloroethene_(total)	4.738	4.391	4.300	4.301	3.809	4.308	7.7
Chloroform *	5.914	5.488	5.087	5.331	4.823	5.328	7.8*
1,2-Dichloroethane	1.315	1.316	1.201	1.263	1.158	1.251	5.6
2-Butanone	.012	.016	.014	.015	.014	.014	9.2
1,1,1-Trichloroethane	2.033	1.943	1.909	1.824	1.590	1.860	9.1
Carbon_Tetrachloride	1.713	1.640	1.625	1.528	1.329	1.567	9.5
Vinyl_Acetate	.535	.567	.180	.584	.530	.479	35.2
Bromodichloromethane	.903	.898	.793	.873	.809	.855	6.0
1,2-Dichloropropane *	1.083	1.070	.970	1.054	.970	1.030	5.4*
cis-1,3-Dichloropropene	1.354	1.349	1.206	1.324	1.234	1.293	5.3
Trichloroethene	1.426	1.390	1.325	1.374	1.244	1.352	5.2
Dibromochloromethane	.425	.439	.387	.431	.404	.417	5.1
1,1,2-Trichloroethane	.295	.318	.271	.304	.284	.294	6.2
Benzene	3.931	3.769	3.430	3.645	3.308	3.616	7.0
trans-1,3-Dichloropropene	.210	.279	.213	.272	.243	.244	13.1
2-Chloroethyl_vinylether	.143	.135	.124	.131	.124	.131	6.0
Bromoform #	.201	.218	.194	.215	.199	.206	5.1#
4-Methyl-2-pentanone	.415	.468	.424	.465	.425	.439	5.7
2-Hexanone	.269	.296	.268	.304	.274	.282	5.9
Tetrachloroethene	2.872	2.533	2.558	2.510	2.286	2.552	8.2
1,1,2,2-Tetrachloroethane	.895	.883	.816	.889	.829	.862	4.3
Toluene *	5.353	4.645	4.354	4.549	4.192	4.619	9.7*
Chlorobenzene #	4.343	3.771	3.471	3.728	3.474	3.758	9.5#
Ethylbenzene *	3.559	3.043	2.904	2.988	2.729	3.045	10.2*
Styrene	3.764	1.862	3.516	3.858	3.642	3.328	24.9
Meta Xylene	3.997	3.497	3.358	3.479	3.293	3.525	7.9
O-&/or_P-Xylene	3.613	3.121	2.949	3.098	2.970	3.150	8.6
1,2-Dichloroethane-d4	1.010	1.080	1.106	1.156	1.160	1.102	5.6
Benzene-d6	3.388	3.251	3.219	3.251	3.136	3.249	2.8
Toluene-d8	6.982	6.085	6.245	6.069	5.943	6.265	6.6

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: SOHIGRO SERVICE CO Contract: ESAT/WESTON

Lab Code: CHICAGOIL Case No.: SF-7452 SAS No.: NA SDG No.: TFA302

Instrument ID: 87 3 Calibration Date: 10/22/90 Time: 9:15

Lab File ID: >FC157 Init. Calib. Date(s): 10/19/90 | second

Matrix: (soil/water) WATER Level: (low/med) LOW Column: (pack/cap) PACK

Max %D for CCC(*) = 35.0%

COMPOUND	RRF	RRF15	%D
Chloromethane #	.571	.495	13.4 #
Bromomethane	1.812	1.773	2.2
Vinyl Chloride *	1.064	1.084	1.9 *
Chloroethane	3.984	4.093	2.7
Methylene_Chloride	2.306	2.212	4.1
Acrolein	.066	.060	9.5
Acetone	.103	.091	12.0
Acrylonitrile	.185	.162	12.4
Carbon_Disulfide	12.252	11.701	4.5
1,1-Dichloroethene *	4.350	4.126	5.1 *
1,1-Dichloroethane #	7.815	7.358	5.9 #
1,2-Dichloroethene_(total)	4.308	4.039	6.2
Chloroform *	5.328	5.032	5.6 *
1,2-Dichloroethane	1.251	1.184	5.4
2-Butanone	.014	.012	16.3
1,1,1-Trichloroethane	1.860	1.772	4.7
Carbon_Tetrachloride	1.567	1.485	5.2
Vinyl Acetate	.479	.419	12.7
Bromodichloromethane	.855	.791	7.4
1,2-Dichloropropane *	1.030	.980	4.8 *
cis-1,3-Dichloropropene	1.293	1.201	7.1
Trichloroethene	1.352	1.255	7.1
Dibromochloromethane	.417	.376	9.8
1,1,2-Trichloroethane	.294	.267	9.4
Benzene	3.616	3.407	5.8
trans-1,3-Dichloropropene	.244	.257	5.3
2-Chloroethyl_vinylether	.131	.115	12.6
Bromoform #	.206	.184	10.7 #
4-Methyl-2-pentanone	.439	.383	12.7
2-Hexanone	.282	.245	13.1
Tetrachloroethene	2.552	2.430	4.8
1,1,2,2-Tetrachloroethane	.862	.784	9.1
Toluene *	4.619	4.434	4.0 *
Chlorobenzene #	3.758	3.595	4.3 #
Ethylbenzene *	3.045	2.905	4.6 *
Styrene	3.328	3.556	6.8
Meta Xylene	3.525	3.442	2.3
O-&/or_P-Xylene	3.150	3.100	1.6
1,2-Dichloroethane-d4	1.102	1.105	.2
Benzene-d6	3.249	3.227	.7
Toluene-d8	6.265	6.488	3.6

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Study Name:SOHIGRO SERVICE CO Data Set:SF-7452

SAS No.: NA SDG No.: TFA302 Contract: ESAT/WESTON

Lab File ID (Standard): >FC157 Date Analyzed:10/22/90

Instrument ID: 87 3 Time Analyzed: 9:15

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/wcap) PACK

		IS1(BCM) AREA #	RT	IS2(BCP) AREA #	RT	IS3(DCB) AREA #	RT
	12 HOUR STD	71858.	10.50	270038.	19.49	127077.	23.41
	UPPER LIMIT	143716.	11.00	540076.	19.59	254154.	23.91
	LOWER LIMIT	35929.	10.00	135019.	18.59	63539.	22.91
	EPA SAMPLE NO.						
01	METHOD BLK	68112.	10.50	261470.	19.48	112680.	23.40
02	15 PPB STD	71858.	10.50	270038.	19.49	127077.	23.41
03	91FF27S48	45400.	10.50	177974.	19.48	74105.	23.40
04	91FF27S49	68392.	10.50	260094.	19.48	121122.	23.43
05	91FF27D49	76091.	10.50	283377.	19.48	138337.	23.40
06	91FF27S50	82498.	10.50	309654.	19.51	155230.	23.43
07	91FF03R57	83817.	10.50	321590.	19.48	153369.	23.40
08	91FF27S48MS	75739.	10.50	283549.	19.51	142109.	23.44
09	91FF27S48MSD	82015.	10.50	311000.	19.48	150464.	23.44
10	MDL STD	74974.	10.50	282239.	19.49	132448.	23.44
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (BCP) = 2-Bromo-1-chloropropane
IS3 (DCB) = 1,4-Dichlorobutane

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

* Value outside QC limit.
\# Column used to flag internal standard area values with an asterisk

FORM VIII VOA 1/87 Rev.

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

91FF27S48MS

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC163 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	J
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	12.	
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	11.	
71-43-2	Benzene	11.	
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	10.	
108-90-7	Chlorobenzene	10.	
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
91FF27S48MSD

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC164 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	3.	U
74-83-9	Bromomethane	3.	U
75-01-4	Vinyl Chloride	3.	UJ
75-00-3	Chloroethane	3.	U
75-09-2	Methylene Chloride	1.	J
107-02-8	Acrolein	75.	U
67-64-1	Acetone	50.	U
107-13-1	Acrylonitrile	50.	U
75-15-0	Carbon Disulfide	2.	U
75-35-4	1,1-Dichloroethene	11.	
75-34-3	1,1-Dichloroethane	1.	U
156-60-5	1,2-Dichloroethene (total)	1.	U
67-66-3	Chloroform	1.	U
107-02-2	1,2-Dichloroethane	1.	U
78-93-3	2-Butanone	20.	U
71-55-6	1,1,1-Trichloroethane	1.	U
56-23-5	Carbon Tetrachloride	1.	U
108-05-4	Vinyl Acetate	10.	UJ
75-27-4	Bromodichloromethane	1.	U
78-87-5	1,2-Dichloropropane	1.	U
10061-01-5	cis-1,3-Dichloropropene	1.	U
79-01-6	Trichloroethene	10.	
71-43-2	Benzene	11.	
124-48-1	Dibromochloromethane	1.	U
10061-02-6	trans-1,3-Dichloropropene	1.	U
79-00-5	1,1,2-Trichloroethane	1.	U
110-75-8	2-Chloroethyl Vinylether	1.	U
75-25-2	Bromoform	1.	U
108-10-1	4-Methyl-2-pentanone	4.	U
591-78-6	2-Hexanone	4.	U
127-18-4	Tetrachloroethene	1.	U
79-34-5	1,1,2,2-Tetrachloroethane	1.	U
108-88-3	Toluene	10.	
108-90-7	Chlorobenzene	10.	
100-41-4	Ethylbenzene	1.	U
100-42-5	Styrene	2.	U
108-38-3	Meta Xylene	2.	U
95-47-6	O-&/or P-Xylene	2.	U

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MDL STD

Study Name: SOHIGRO SERVICE CO
Data Set: SF-7452 Date Received: 10/18/90
Lab File ID: >FC165 Date Analyzed: 10/22/90
Matrix: (soil/water) WATER Dilution Factor: 1.0
Sample wt/vol: 20 mL Level:(low/med) LOW

CAS NO.	COMPOUND	CONCENTRATION UNITS: ug/L	Q
74-87-3	Chloromethane	2.	J
74-83-9	Bromomethane	2.	J
75-01-4	Vinyl Chloride	3.	J
75-00-3	Chloroethane	2.	J
75-09-2	Methylene Chloride	1.	
107-02-8	Acrolein	27.	J
67-64-1	Acetone	43.	J
107-13-1	Acrylonitrile	39.	J
75-15-0	Carbon Disulfide	1.	J
75-35-4	1,1-Dichloroethene	.8	J
75-34-3	1,1-Dichloroethane	.9	J
156-60-5	1,2-Dichloroethene (total)	.9	J
67-66-3	Chloroform	1.	J
107-02-2	1,2-Dichloroethane	1.	J
78-93-3	2-Butanone	14.	J
71-55-6	1,1,1-Trichloroethane	.9	J
56-23-5	Carbon Tetrachloride	.8	J
108-05-4	Vinyl Acetate	2.	J
75-27-4	Bromodichloromethane	.9	J
78-87-5	1,2-Dichloropropane	.9	J
10061-01-5	cis-1,3-Dichloropropene	1.	
79-01-6	Trichloroethene	.9	J
71-43-2	Benzene	.9	J
124-48-1	Dibromochloromethane	.9	J
10061-02-6	trans-1,3-Dichloropropene	.9	J
79-00-5	1,1,2-Trichloroethane	.9	J
110-75-8	2-Chloroethyl Vinylether	2.	
75-25-2	Bromoform	.9	J
108-10-1	4-Methyl-2-pentanone	3.	J
591-78-6	2-Hexanone	4.	J
127-18-4	Tetrachloroethene	.8	J
79-34-5	1,1,2,2-Tetrachloroethane	.9	J
108-88-3	Toluene	.9	J
108-90-7	Chlorobenzene	.9	J
100-41-4	Ethylbenzene	.9	J
100-42-5	Styrene	.7	J
108-38-3	Meta Xylene	2.	J
95-47-6	O-&/or P-Xylene	2.	

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B_ = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91FF27S50

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC161

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 0

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
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20.				
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23.				
24.				
25.				
26.				
27.				
28.				

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91FF27D49

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC160

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 0

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

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

91FF27S49

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC159

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 0

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

U.S. EPA - REGION V

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

METHOD BLK

Study Name: SOHIGRO SERVICE

Data Set: SF-7452

Matrix: WATER

Lab File ID: >FC156

Date Received: 10/18/90

Dilution Factor: 1.00000

Date Analyzed: 10/22/90

CONCENTRATION UNITS:
ug/L or ug/Kg
ug/L

Number TICs found: 0

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

QUANT REPORT

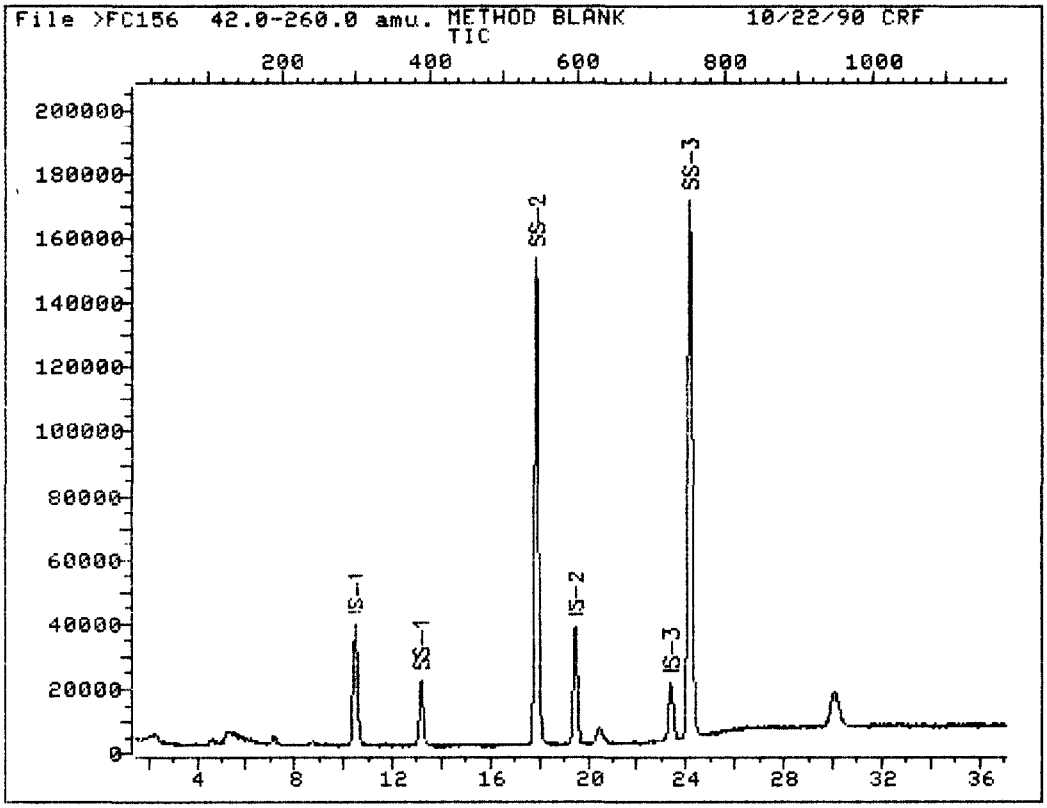
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 10:49
Output File: ^FC156::L2 Injected at: 901022 08:28
Data File: >FC156::A5 Dilution Factor: 1.00000
Name: METHOD BLANK
Misc: 10/22/90 CRF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	68112	10.00	UG/L	94
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	65334	8.68	UG/L	85
17)	*2-Bromo-1-chloropropane	19.48	77.0	261470	10.00	UG/L	99
26)	BENZENE-D6	17.88	84.0	898404	10.65	UG/L	98
33)	*1,4-Dichlorobutane	23.40	55.0	112680	10.00	UG/L	94
38)	TOLUENE-D8	24.19	98.0	843614	11.54	UG/L	97

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC156::A5 Quant Output File: ^FC156::L2
Name: METHOD BLANK
Misc: 10/22/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901019 15:15

Operator ID: CARSTEN
Quant Time: 901022 09:08
Injected at: 901022 08:28

MS data file header from : >FC156

Sample: METHOD BLANK Operator: CARSTEN MS 10/22/90 8:28
Misc : 10/22/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC156 METHOD BLANK 10/22/90 CRF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 20214. Max Peaks: 5 Bunching: 1
Dnslope: 0.00 Results File IFC156 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	4.65	98	105	108	1748	~~31625~~ <100	22969	9.26	5.395
2	5.25	119	125	126	3539	46499 N.R	30698	12.37	7.210
3	7.18	182	189	197	2672	~~48580~~ TCL	32434	13.07	7.618
4	20.48	621	630	644	5190	131363 N.R.	91487	36.87	21.488
5	30.10	939	949	968	10646	584513 BFB 10/23/90	248161	100.00	58.288

Sum of corrected areas: 425749.

Summary of Unknowns PBM Library Search and Quantitation

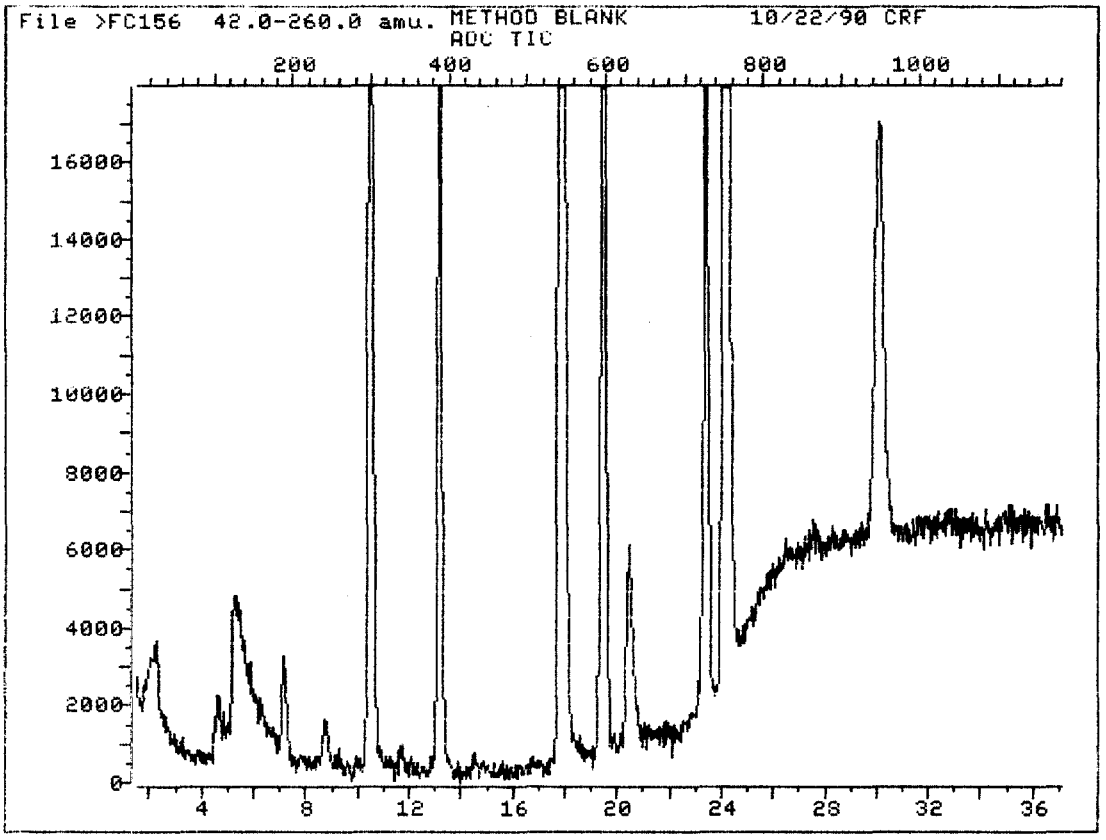
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	431238.	10.50	1.51 - 14.99
2	10.0	436301.	19.48	14.99 - 21.44
3	10.0	202136.	23.40	21.44 - 37.08

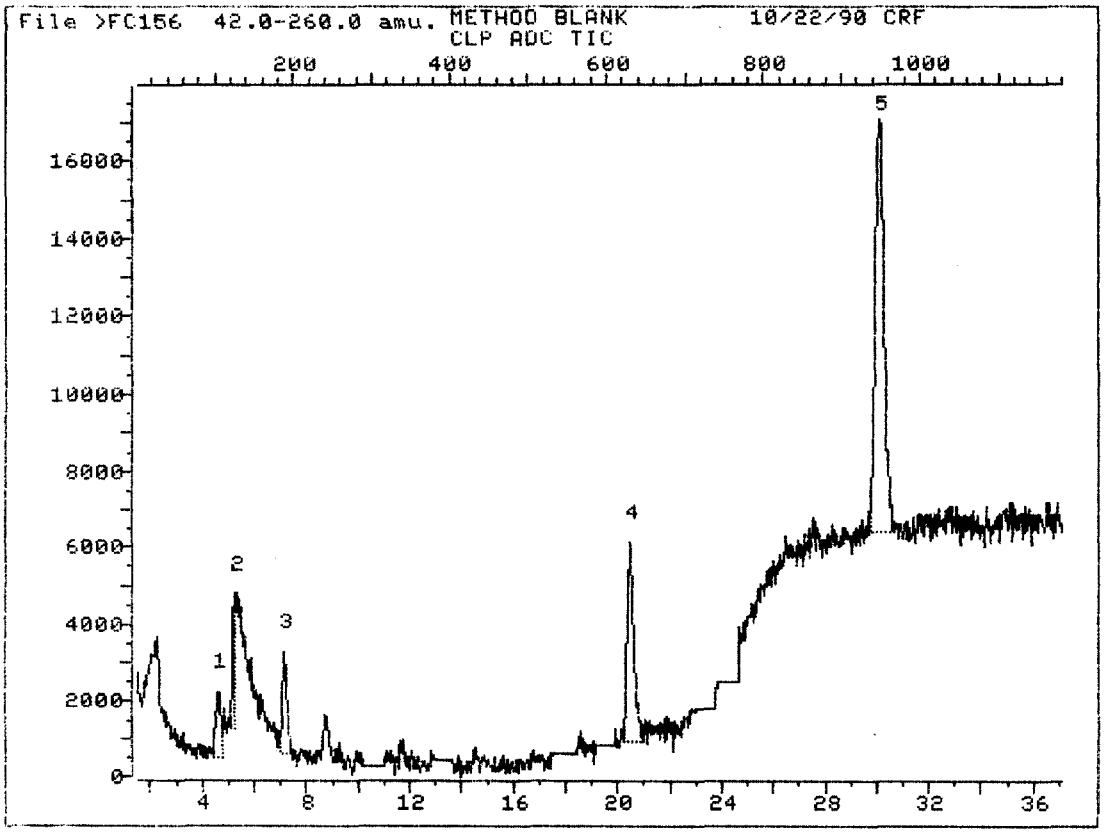
Dilution Factor (DF) = 0.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 0.00 Amount Used (AU) = 0.00

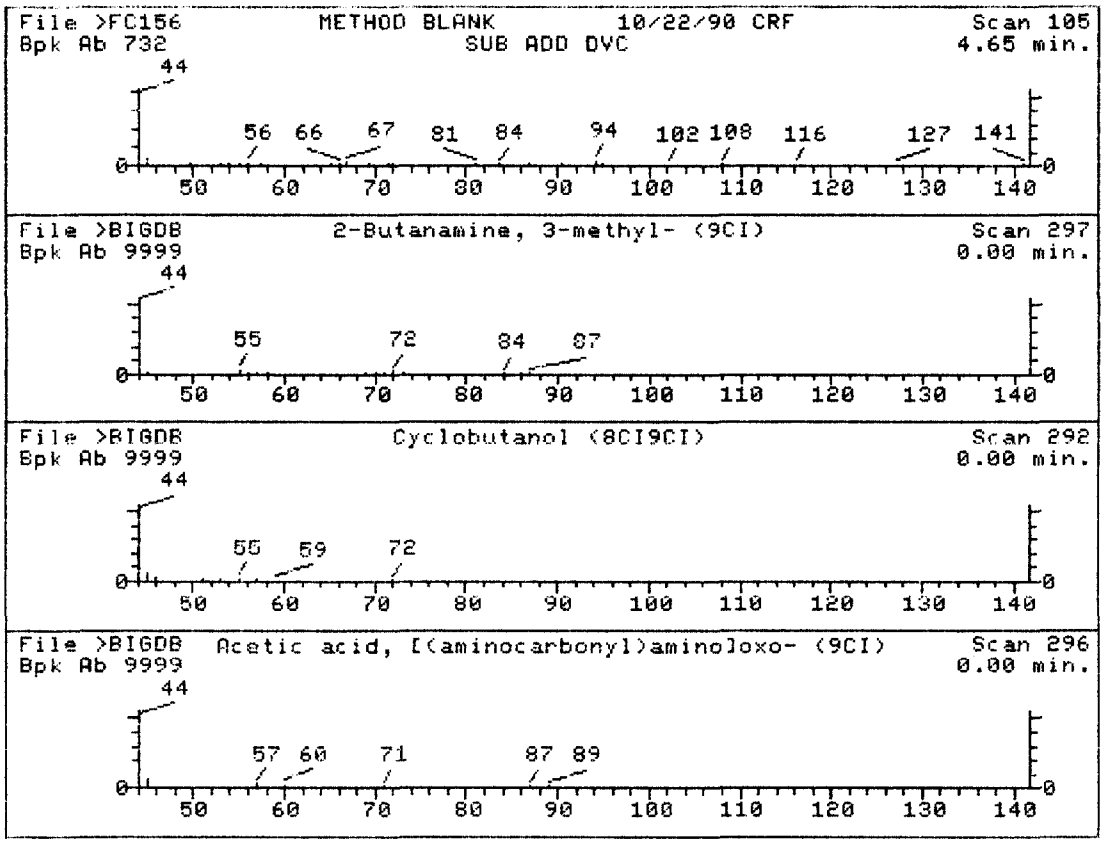
Correction Factor = ******** = (AM / AU) / (DF * FS)

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

8:47 AM TUE., 23 OCT., 1990


File >FC156 42.0-260.0 amu. METHOD BLANK 10/22/90 CRF
ADC TIC
200 400 600 800 1000
16000 14000 12000 10000 8000 6000 4000 2000 0
4 8 12 16 20 24 28 32 36


File >FC156 42.0-260.0 amu. METHOD BLANK 10/22/90 CRF
CLP ADC TIC
200 400 600 800 1000
1
2
3
4
5
16000 14000 12000 10000 8000 6000 4000 2000 0
4 8 12 16 20 24 28 32 36



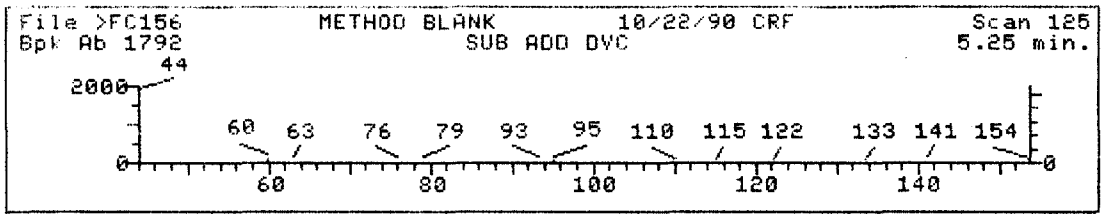
L106

. Unknown #,1
Area = 22969.00 Tentative Concentration is .500

1. 2-Butanamine, 3-methyl- (9CI) 87 C5H13N
2. Cyclobutanol (8CI9CI) 72 C4H8O
3. Acetic acid, [(aminocarbonyl)aminoloxo- (9CI) 132 C3H4N2O4

Sample file: >FC156 Spectrum #: 105
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

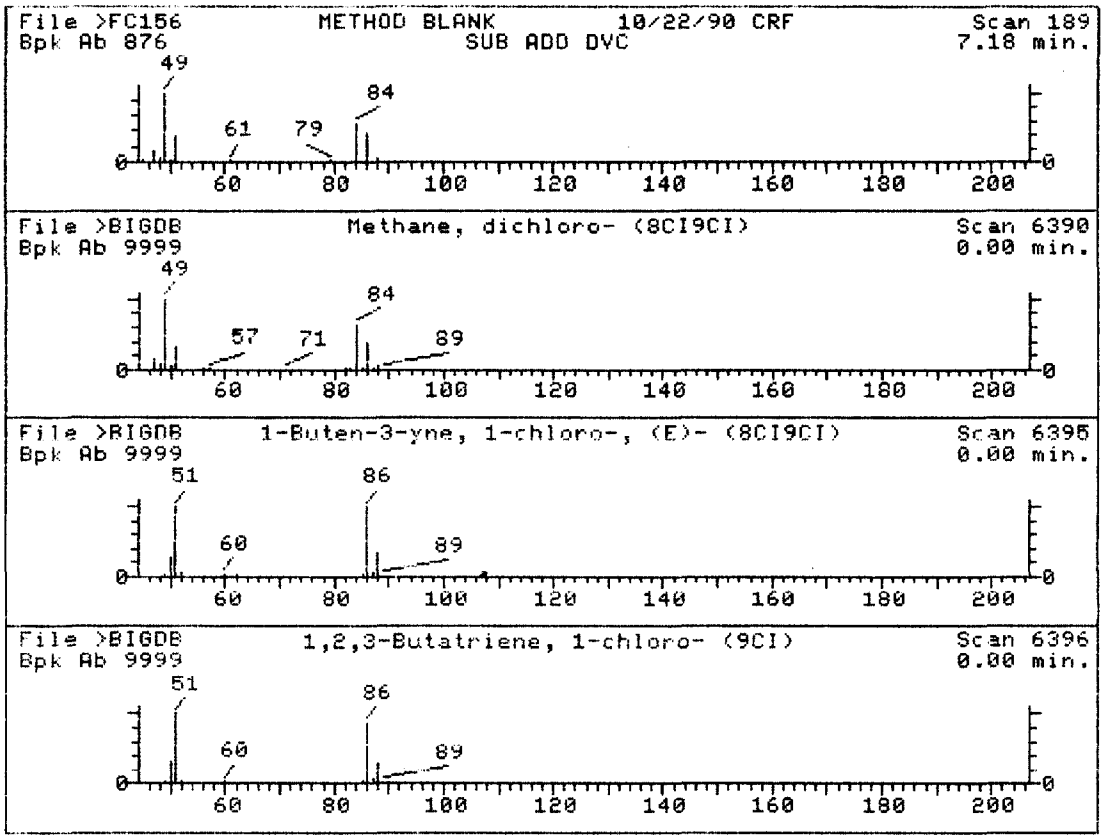
	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	43*	598743	297	"BIGDB	23	49	1	0	72	22	17	14
2.	43*	2919235	292	"BIGDB	23	51	1	0	85	25	17	14
3.	35	585052	296	"BIGDB	33	45	1	0	73	27	14	12



. Unknown #,2
Area = 30698.00 Tentative Concentration is .700

Sample file: >FC156 Spectrum #: 125

No data base entries were retrieved.

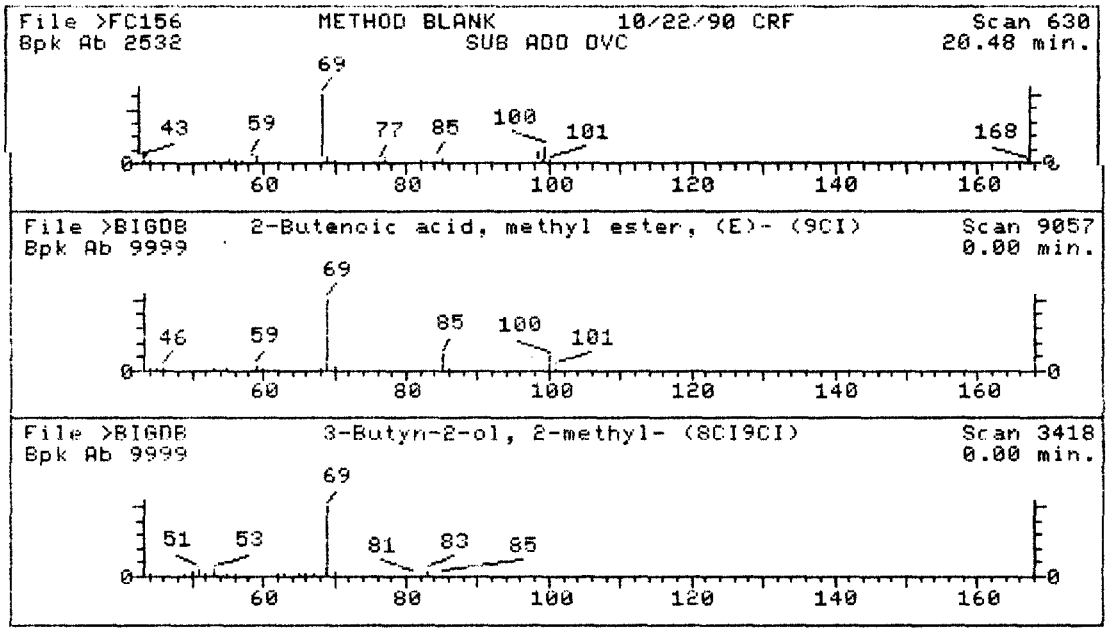


. Unknown #,3
Area = 32434.00 Tentative Concentration is .800

1.	Methane, dichloro- (8CI9CI)	84 CH2Cl2
2.	1-Buten-3-yne, 1-chloro-, (E)- (8CI9CI)	86 C4H3Cl
3.	1,2,3-Butatriene, 1-chloro- (9CI)	86 C4H3Cl
4.	1-Buten-3-yne, 1-chloro-, (Z)- (8CI9CI)	86 C4H3Cl
5.	1-Buten-3-yne, 2-chloro- (8CI9CI)	86 C4H3Cl

Sample file: >FC156 Spectrum #: 189
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	74*	75092	6390	"BIGDB	66	33	2	0	90	11	39	45
2.	11*	20374918	6395	"BIGDB	22	43	2	0	38	63	2	13
3.	11*	20658213	6396	"BIGDB	22	44	3	0	38	63	2	12
4.	11*	20374907	6394	"BIGDB	22	45	2	0	38	63	2	13
5.	11*	17712366	6393	"BIGDB	22	54	3	0	40	62	2	12



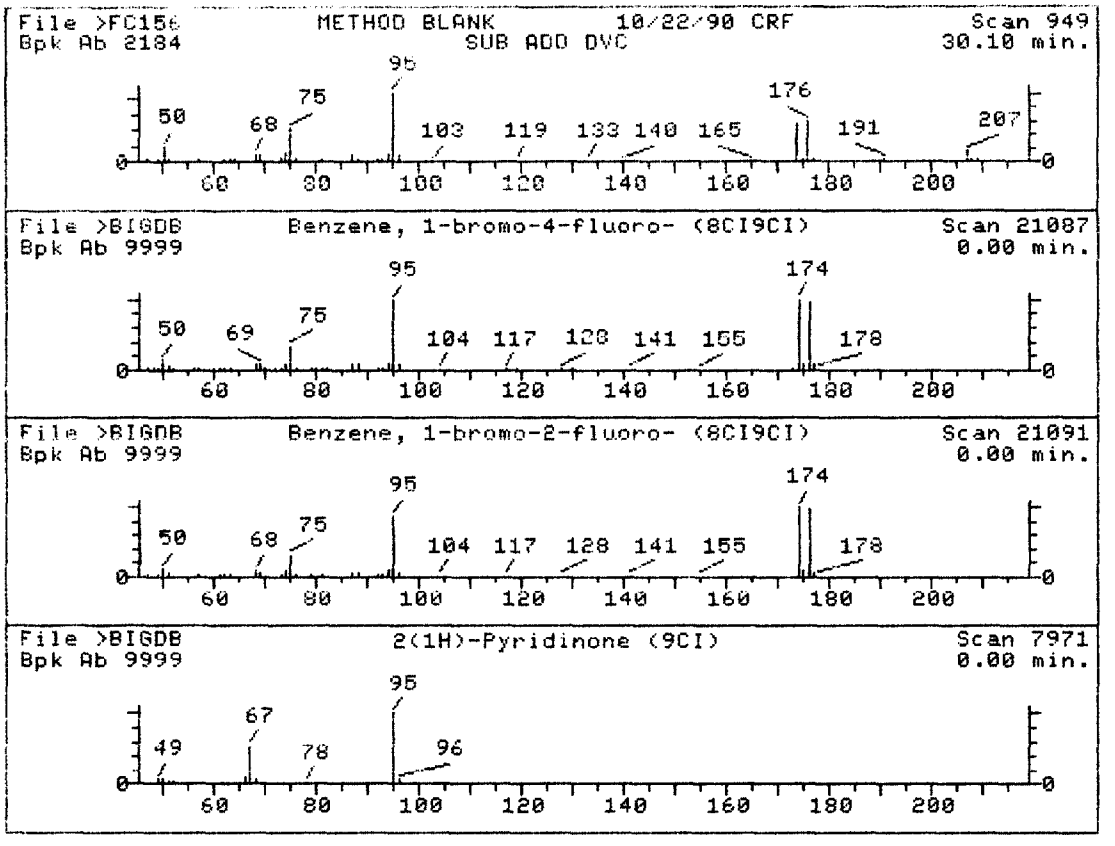
N.R.

Unknown #,4
Area = 91487.00 Tentative Concentration is 2.00

1. 2-Butenoic acid, methyl ester, (E)- (9CI) 100 C5H8O2
2. 3-Butyn-2-ol, 2-methyl- (8CI9CI) 84 C5H8O

Sample file: >FC156 Spectrum #: 630
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	623438	9057	"BIGDB	21	67	2	0	100	16	20	13
2.	30*	115195	3418	"BIGDB	21	58	2	0	100	35	12	13



. Unknown #,5
Area = 248161.0 Tentative Concentration is 12.00

1. Benzene, 1-bromo-4-fluoro- (8CI9CI)	174	C6H4BrF
2. Benzene, 1-bromo-2-fluoro- (8CI9CI)	174	C6H4BrF
3. 2(1H)-Pyridinone (9CI)	95	C5H5NO
4. Pyridine, 1-oxide (8CI9CI)	95	C5H5NO

Sample file: >FC156 Spectrum #: 949
Search speed: 1 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	460004	21087	"BIGDB	97	13	2	3	74	13	51	73
2.	47*	1072851	21091	"BIGDB	43	64	0	0	50	43	16	48
3.	11*	142085	7971	"BIGDB	24	67	2	0	100	63	2	14
4.	11*	694597	7972	"BIGDB	21	80	2	0	79	62	2	13

QUANT REPORT

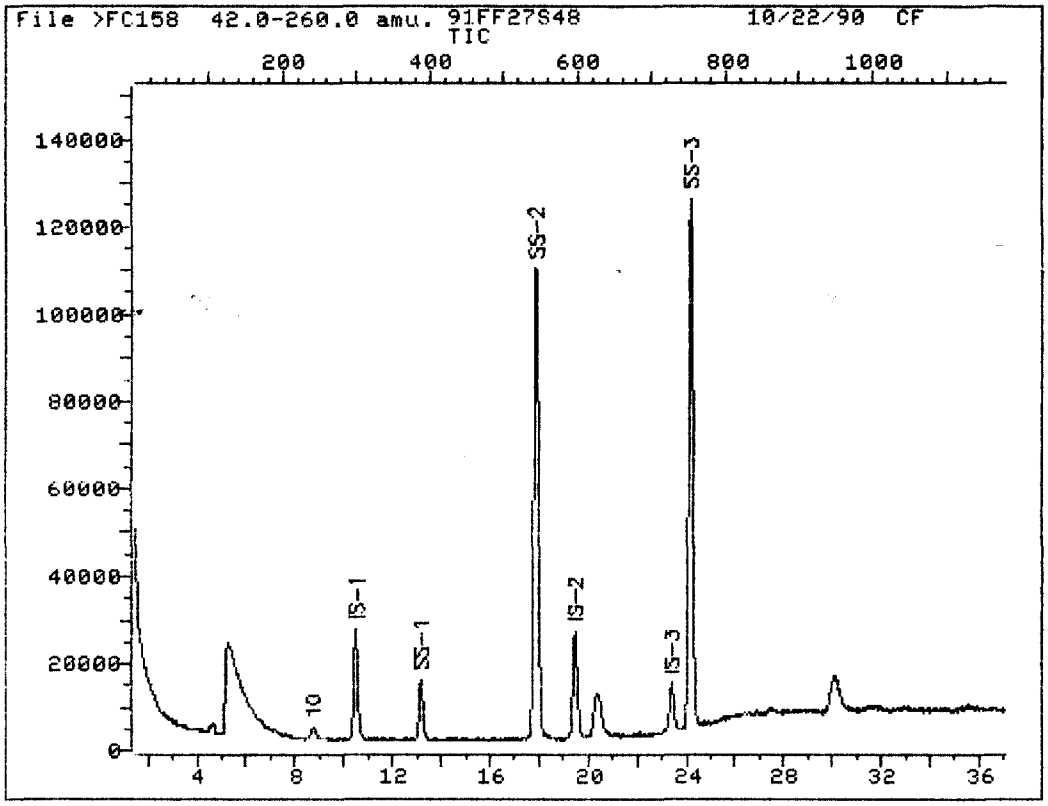
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 11:12
Output File: ^FC158::L2 Injected at: 901022 10:32
Data File: >FC158::A9 Dilution Factor: 1.00000
Name: 91FF27S48
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	45400	10.00	UG/L	96
10)	CARBON DISULFIDE	8.75	76.0	30235	.57	UG/L	100
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	44237	8.82/	UG/L	84
17)	*2-Bromo-1-chloropropane	19.48	77.0	177974	10.00	UG/L	99
26)	BENZENE-D6	17.88	84.0	626650M	10.91	UG/L	97
33)	*1,4-Dichlorobutane	23.40	55.0	74105	10.00	UG/L	90
38)	TOLUENE-D8	24.19	98.0	604244	12.57	UG/L	98

* Compound is ISTD

TOTAL ION CHROMATOGRAM

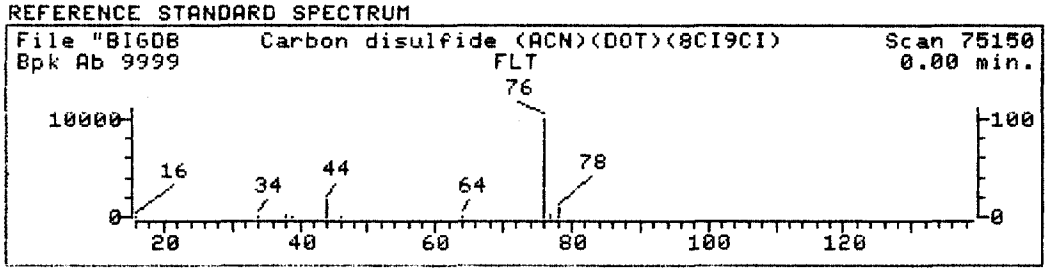


Data File: >FC158::A9 Quant Output File: ^FC158::L2
Name: 91FF27S48
Misc: 10/22/90 CF

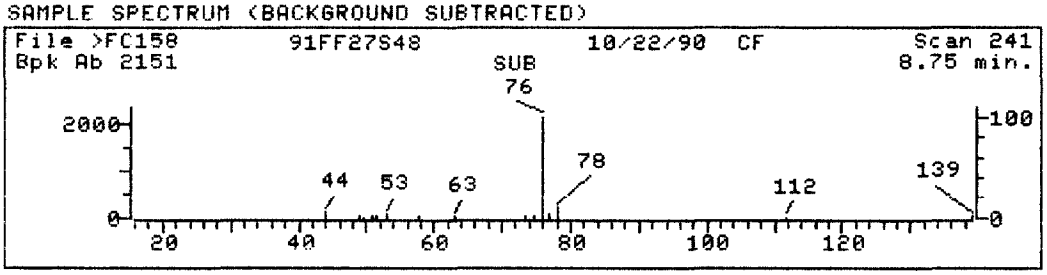
Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 11:12
Injected at: 901022 10:32

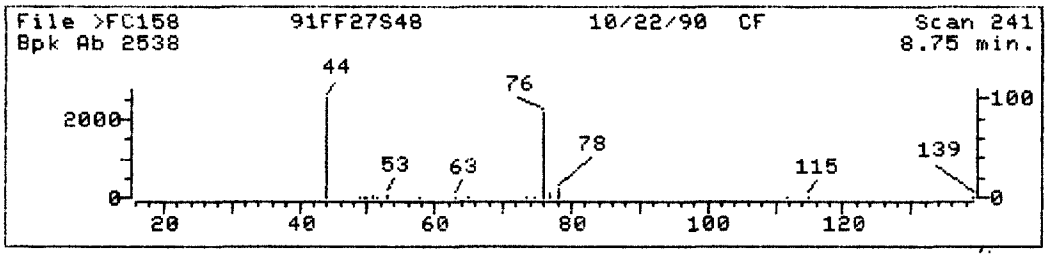
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >FC158::A9 Quant Output File: ^FC158::L2
Name: 91FF27S48
Misc: 10/22/90 CF
Quant Time: 901022 11:12 Quant ID File: IDCF3A::XX
Injected at: 901022 10:32 Last Calibration: 901022 10:16

Compound No: 10
Compound Name: CARBON DISULFIDE
Scan Number: 241
Retention Time: 8.75 min.
Quant Ion: 76.0
Area: 30235
Concentration: .57 UG/L
q-value: 100

MS data file header from : >FC158

Sample: 91FF27S48 Operator: CARSTEN MS 10/22/90 10:32
Misc : 10/22/90 CF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC158 91FF27S48 10/22/90 CF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 14185. Max Peaks: 4 Bunching: 1
Dnslope: 0.00 Results File IFC158 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	4.68	98	106	110	2444	65234	30018	12.63	4.641
2	5.25	118	125	126	20944	222122	200883	84.53	31.055
3	20.41	609	628	638	10654	257327	237645	100.00	36.738
4	30.10	941	949	966	7639	508029	178316	75.03	27.566

Sum of corrected areas: 646862.

Summary of Unknowns PBM Library Search and Quantitation

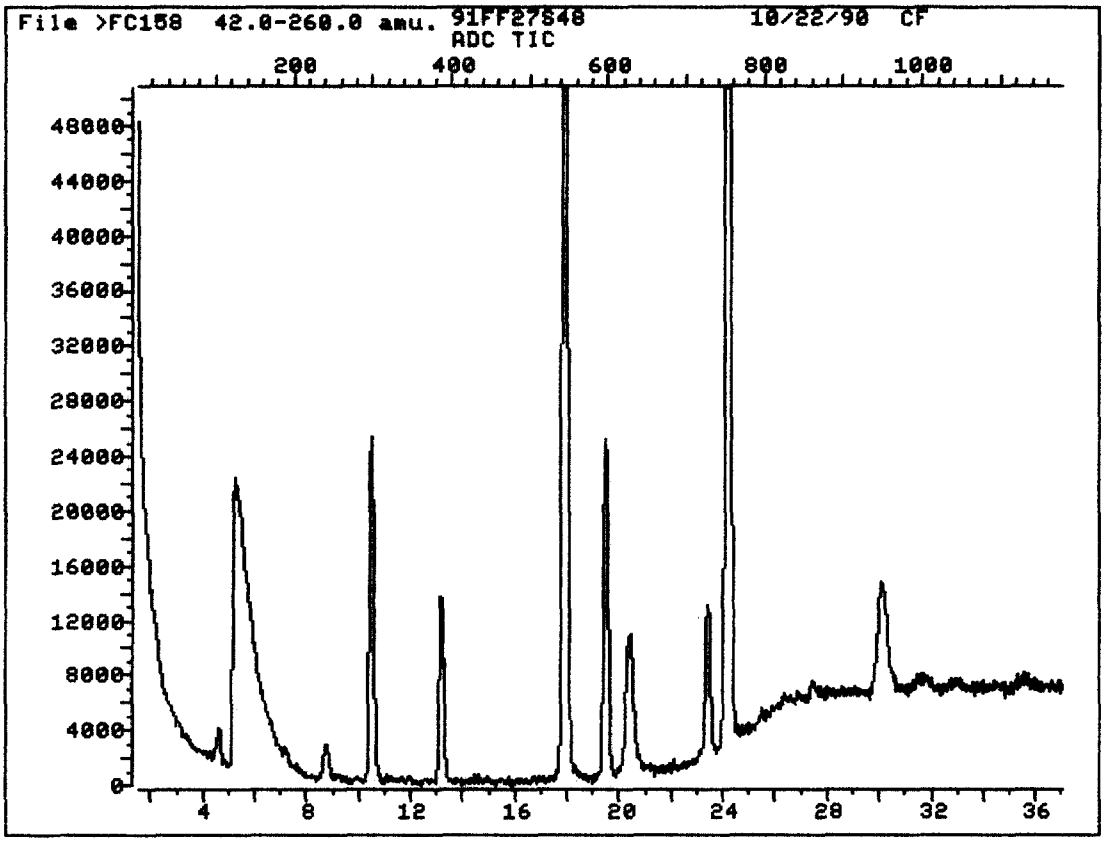
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	294715.	10.50	1.51 - 14.99
2	10.0	290899.	19.48	14.99 - 21.44
3	10.0	141848.	23.40	21.44 - 37.05

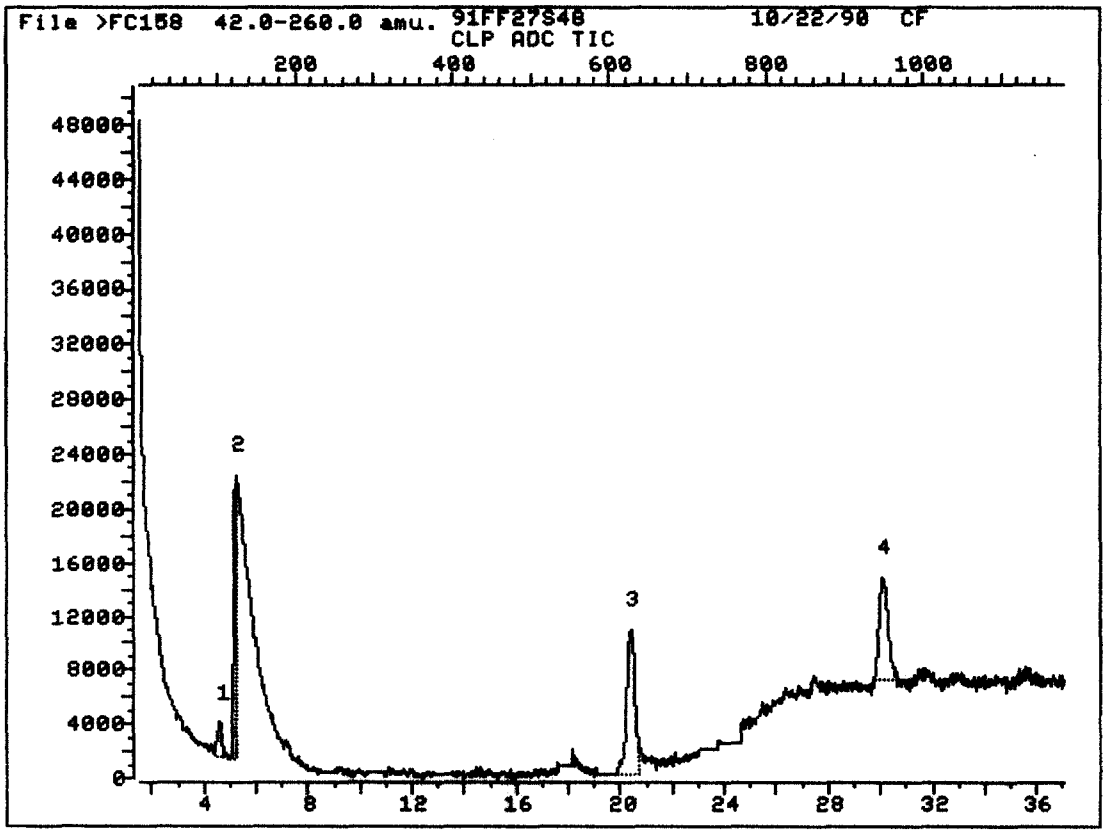
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 20.00 Amount Used (AU) = 20.00

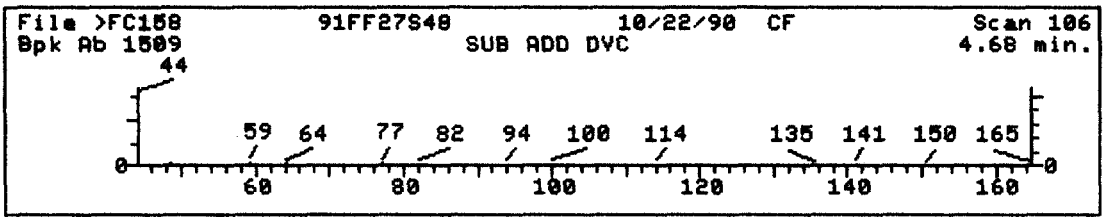
Correction Factor = 1.00 = (AM / AU) / (DF * FS)

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

3:08 PM TUE., 23 OCT., 1990


File >FC158 42.0-260.0 amu. 91FF27S48
ADC TIC
10/22/90 CF
200
400
600
800
1000
48000
44000
40000
36000
32000
28000
24000
20000
16000
12000
8000
4000
0
4
8
12
16
20
24
28
32
36


File >FC158 42.0-260.0 amu. 91FF27S48
CLP ADC TIC
10/22/90 CF
200
400
600
800
1000
48000
44000
40000
36000
32000
28000
24000
20000
16000
12000
8000
4000
0
1
2
3
4
4
8
12
16
20
24
28
32
36

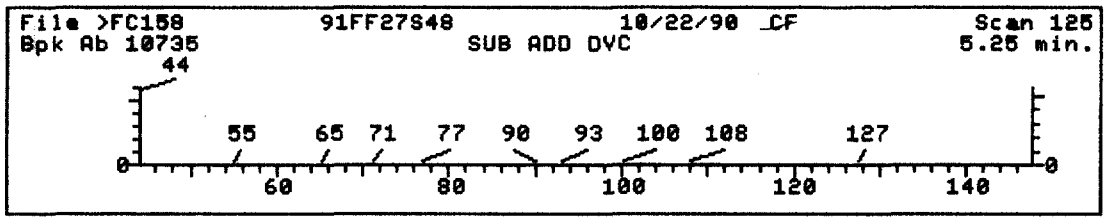


Unknown #,1

Area = 30018.00 Tentative Concentration is 1.000

Sample file: >FC158 Spectrum #: 106

No data base entries were retrieved.

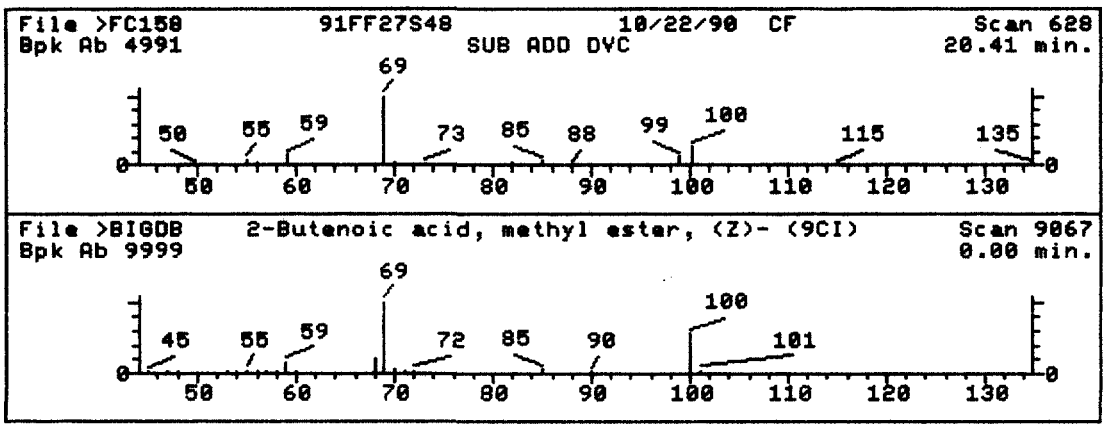


Value
Ch.

. Unknown #,2
Area = 200883.0 Tentative Concentration is 7.00

Sample file: >FC158 Spectrum #: 125

No data base entries were retrieved.



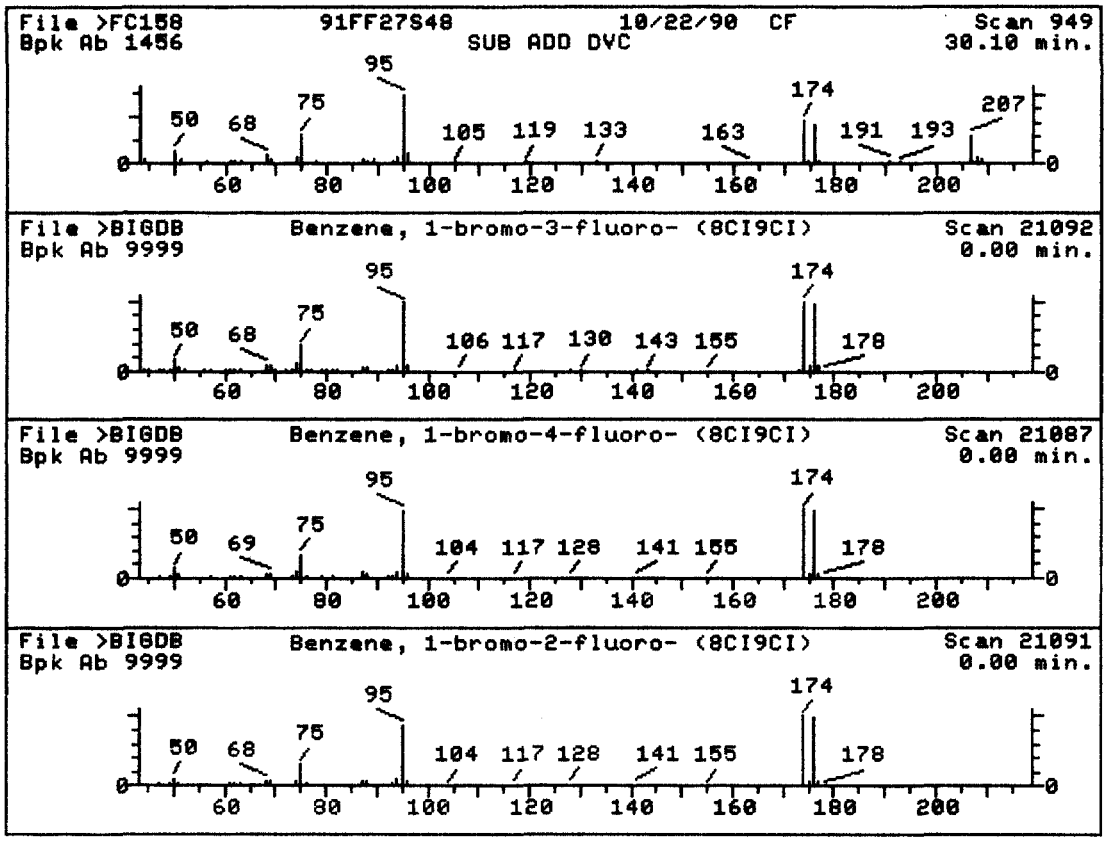
NIH

. Unknown #,3
Area = 237645.0 Tentative Concentration is 8.00

1. 2-Butenoic acid, methyl ester, (Z)- (9CI) 100 C5H8O2

Sample file: >FC158 Spectrum #: 628
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	4358592	9067	"BIGDB	20	61	2	0	49	41	8	13



. Unknown #,4
Area = 178316.0 Tentative Concentration is 13.00

1. Benzene, 1-bromo-3-fluoro- (8CI9CI) 174 C6H4BrF
2. Benzene, 1-bromo-4-fluoro- (8CI9CI) 174 C6H4BrF
3. Benzene, 1-bromo-2-fluoro- (8CI9CI) 174 C6H4BrF

BFB

Sample file: >FC158 Spectrum #: 949
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	67*	1073069	21092	"BIGDB	78	35	2	2	89	27	27	50
2.	62*	460004	21087	"BIGDB	75	35	2	2	93	27	25	49
3.	62*	1072851	21091	"BIGDB	69	38	2	2	94	27	25	42

QUANT REPORT

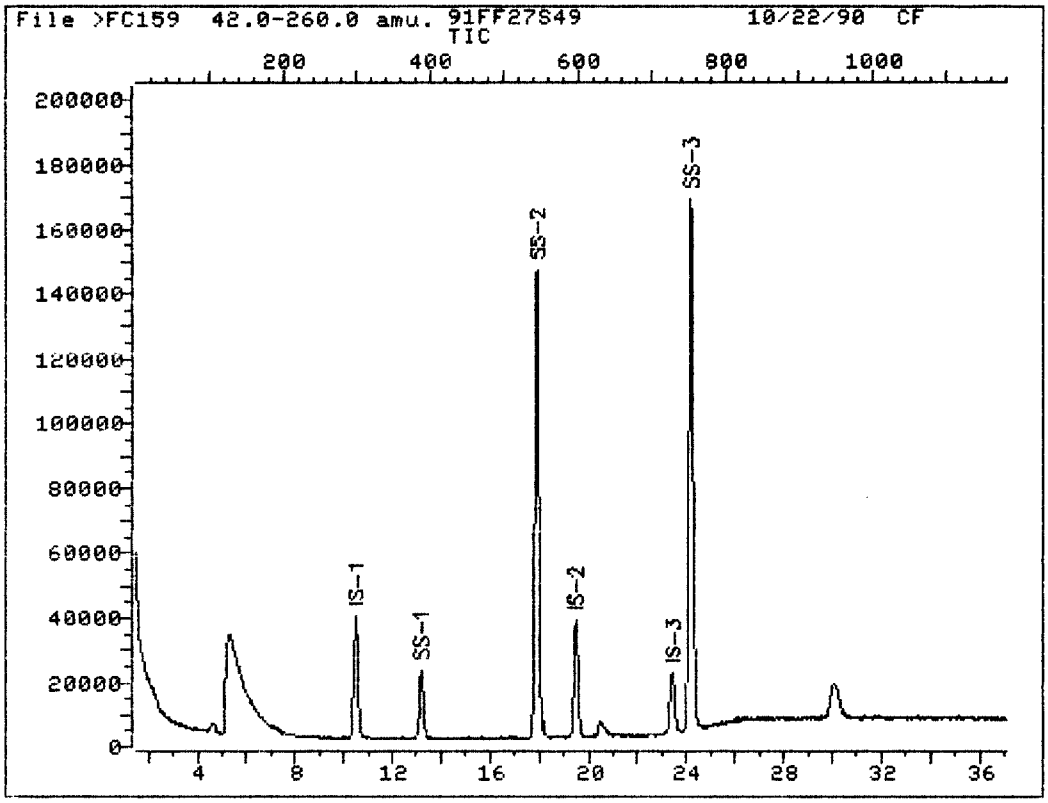
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 12:00
Output File: ^FC159::L2 Injected at: 901022 11:19
Data File: >FC159::A9 Dilution Factor: 1.00000
Name: 91FF27S49
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	68392	10.00	UG/L	97
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	68003	9.00	UG/L	84
17)	*2-Bromo-1-chloropropane	19.48	77.0	260094	10.00	UG/L	99
26)	BENZENE-D6	17.91	84.0	875769	10.43	UG/L	98
33)	*1,4-Dichlorobutane	23.43	55.0	121122	10.00	UG/L	93
38)	TOLUENE-D8	24.19	98.0	821496	10.45	UG/L	97

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC159::A9 Quant Output File: ^FC159::L2
Name: 91FF27S49
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 12:00
Injected at: 901022 11:19

MS data file header from : >FC159

Sample: 91FF27S49 Operator: CARSTEN MS 10/22/90 11:19
Misc : 10/22/90 CF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC159 91FF27S49 10/22/90 CF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 22368. Max Peaks: 4 Bunching: 1
Dnslope: 0.00 Results File IFC159 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	4.62	95	104	105	2736	68608	<10% ~~26489~~	1.78	1.459
2	5.31	118	127	170	30437	1658538	N.C. 1489366	100.00	82.030
3	20.51	623	631	639	4285	101163	N.R 68387	4.59	3.767
4	30.13	939	950	965	10186	561065	6FB 231402	15.54	12.745

10/23/90 CW

Sum of corrected areas: 1815644.

Summary of Unknowns PBM Library Search and Quantitation

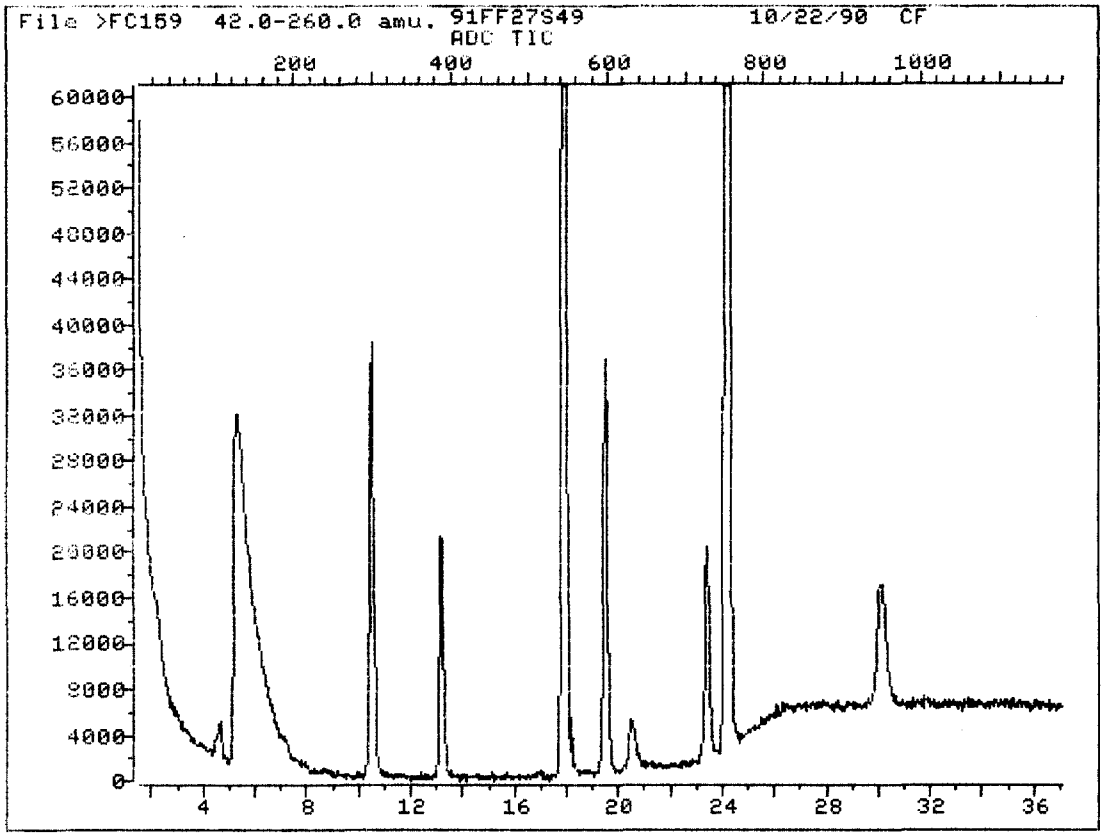
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	443029.	10.50	1.51 - 14.99
2	10.0	433047.	19.48	14.99 - 21.46
3	10.0	223680.	23.43	21.46 - 37.08

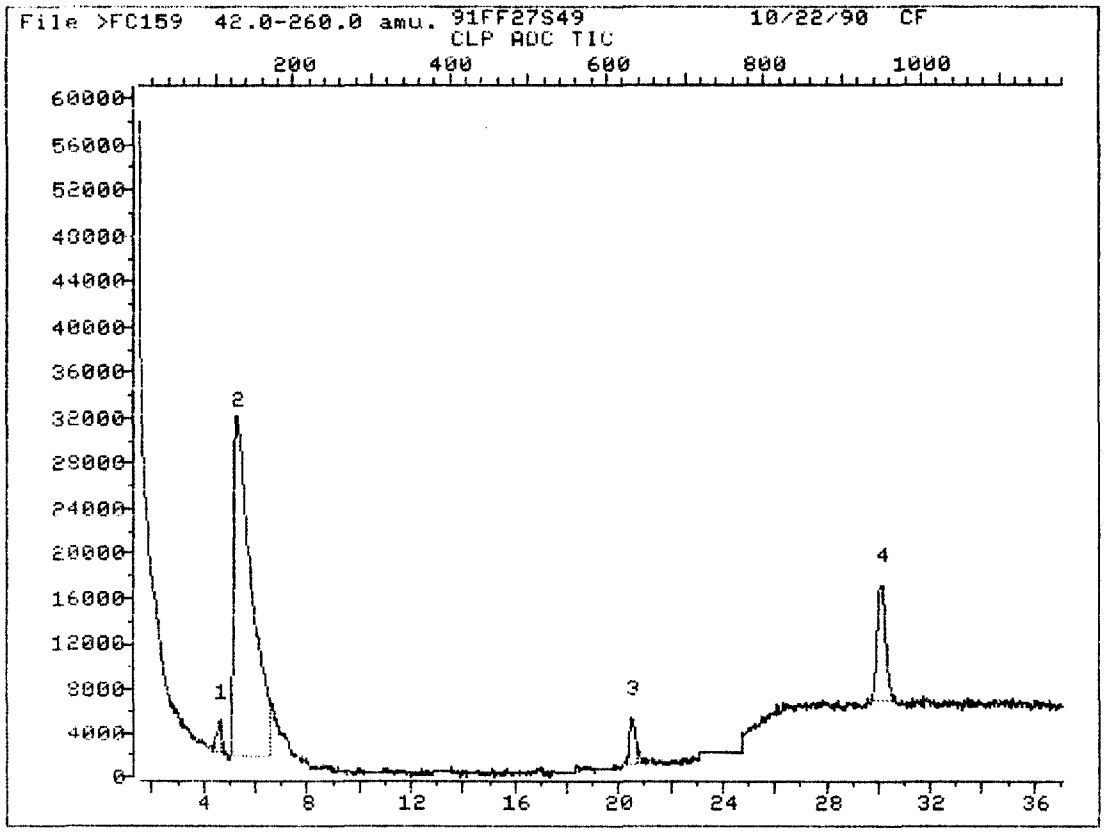
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 20.00 Amount Used (AU) = 20.00

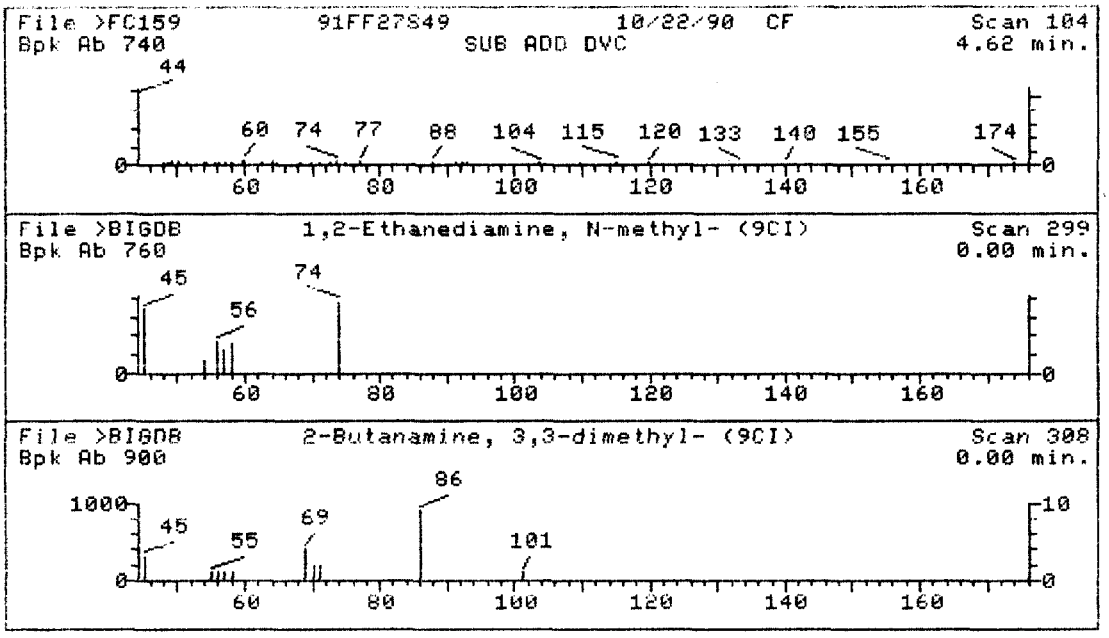
Correction Factor = 1.00 = (AM / AU) / (DF * FS)

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

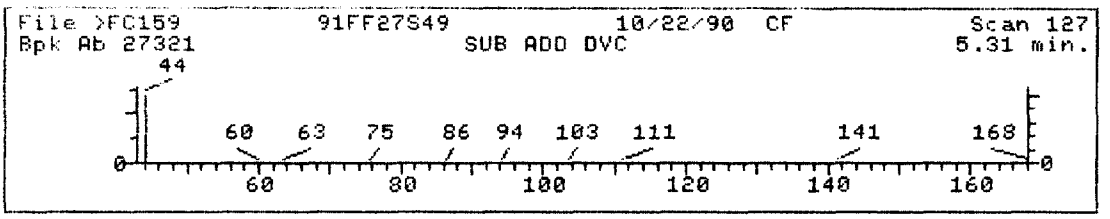
7:42 AM TUE., 23 OCT., 1990


File >FC159 42.0-260.0 amu. 91FF27S49 10/22/90 CF
ADC TIC
200 400 600 800 1000
60000 56000 52000 48000 44000 40000 36000 32000 28000 24000 20000 16000 12000 8000 4000 0
4 8 12 16 20 24 28 32 36


File >FC159 42.0-260.0 amu. 91FF27S49 10/22/90 CF
CLP ADC TIC
200 400 600 800 1000
60000 56000 52000 48000 44000 40000 36000 32000 28000 24000 20000 16000 12000 8000 4000 0
1
2
3
4
4 8 12 16 20 24 28 32 36



. Unknown #,1
Area = 26489.00 Tentative Concentration is .600

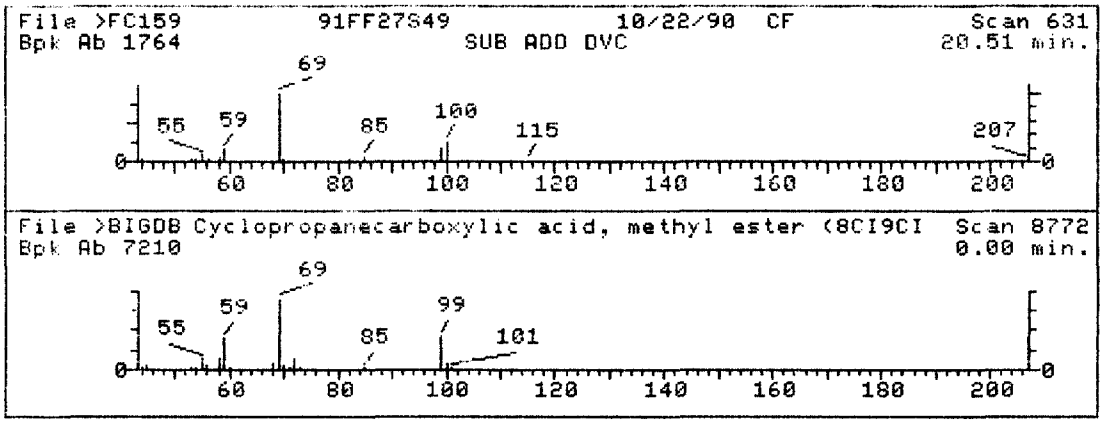


value change

. Unknown #,2
Area = 1489366. Tentative Concentration is 34.00

Sample file: >FC159 Spectrum #: 127

No data base entries were retrieved.



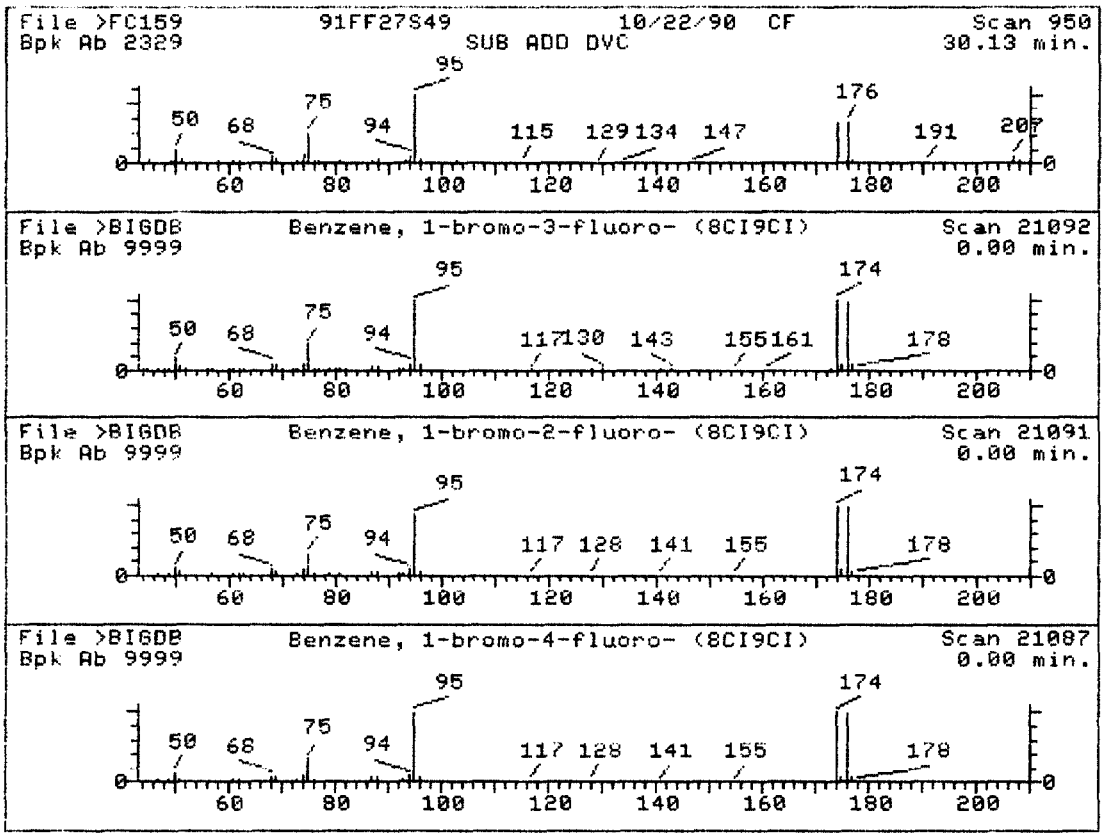
N.R.

. Unknown #,3
Area = 68387.00 Tentative Concentration is 2.00

1. Cyclopropanecarboxylic acid, methyl ester (8CI9CI) 100 C5H8O2

Sample file: >FC159 Spectrum #: 631
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	2868373	8772	"BIGDB	20	80	2	0	56	48	7	13



. Unknown #,4
Area = 231402.0 Tentative Concentration is 10.00

1. Benzene, 1-bromo-3-fluoro- (8CI9CI) 174 C6H4BrF
2. Benzene, 1-bromo-2-fluoro- (8CI9CI) 174 C6H4BrF
3. Benzene, 1-bromo-4-fluoro- (8CI9CI) 174 C6H4BrF

Sample file: >FC159 Spectrum #: 950
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	1073069	21092	"BIGDB	89	24	2	1	77	7	54	59
2.	81*	1072851	21091	"BIGDB	74	33	2	2	96	7	53	48
3.	81*	460004	21087	"BIGDB	69	41	2	3	68	6	53	42

QUANT REPORT

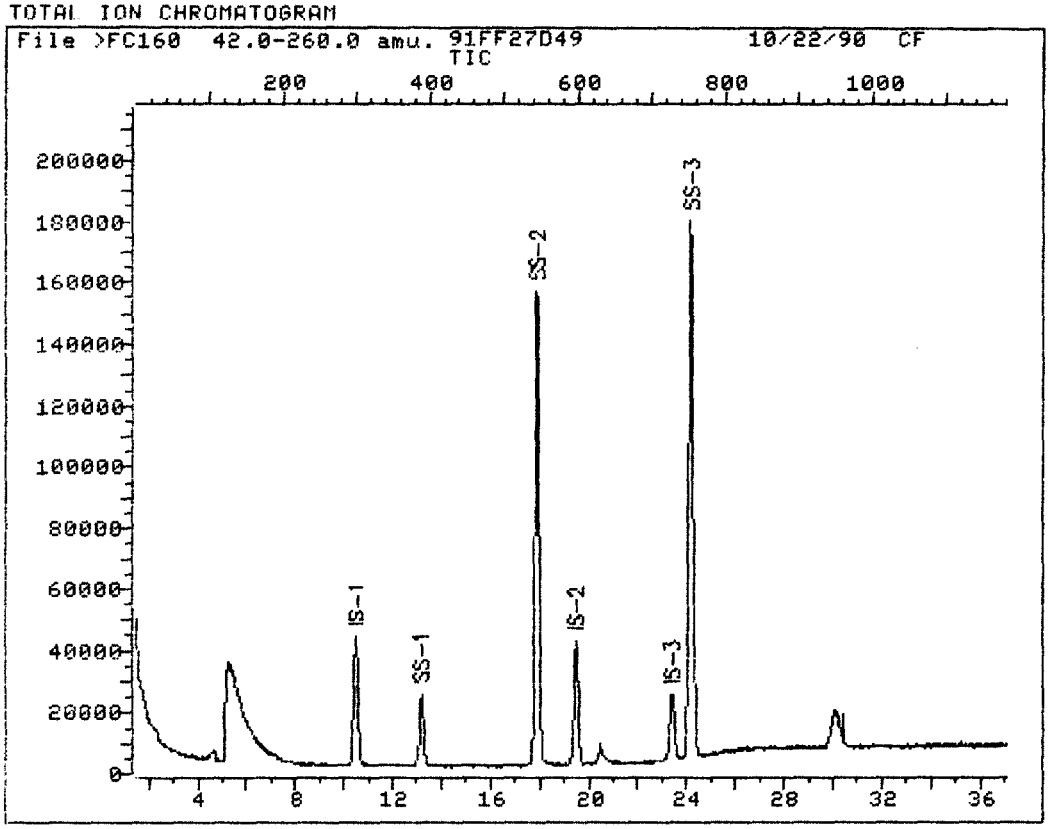
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 12:47
Output File: ^FC160::L2 Injected at: 901022 12:07
Data File: >FC160::A9 Dilution Factor: 1.00000
Name: 91FF27D49
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	76091	10.00	UG/L	95
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	76293	9.07	UG/L	84
17)	*2-Bromo-1-chloropropane	19.48	77.0	283377	10.00	UG/L	99
26)	BENZENE-D6	17.88	84.0	931421	10.18	UG/L	97
33)	*1,4-Dichlorobutane	23.40	55.0	138337	10.00	UG/L	95
38)	TOLUENE-D8	24.19	98.0	872419	9.72	UG/L	98

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC160::A9 Quant Output File: ^FC160::L2
Name: 91FF27D49
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 12:47
Injected at: 901022 12:07

MS data file header from : >FC160

Sample: 91FF27D49 Operator: CARSTEN MS 10/22/90 12:07
Misc : 10/22/90 CF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC160 91FF27D49 10/22/90 CF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 25993. Max Peaks: 3 Bunching: 1
Dnslope: 0.00 Results File IFC160 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	5.28	118	126	181	32104	1810880 N.C.	1635115	100.00	82.581
2	20.48	621	630	639	6261	110781 N.C.	86151	5.27	4.351
3	30.10	937	949	959	11849	514463 IFG 10/23/90	258755	15.82	13.068

Sum of corrected areas: 1980021.

Summary of Unknowns PBM Library Search and Quantitation

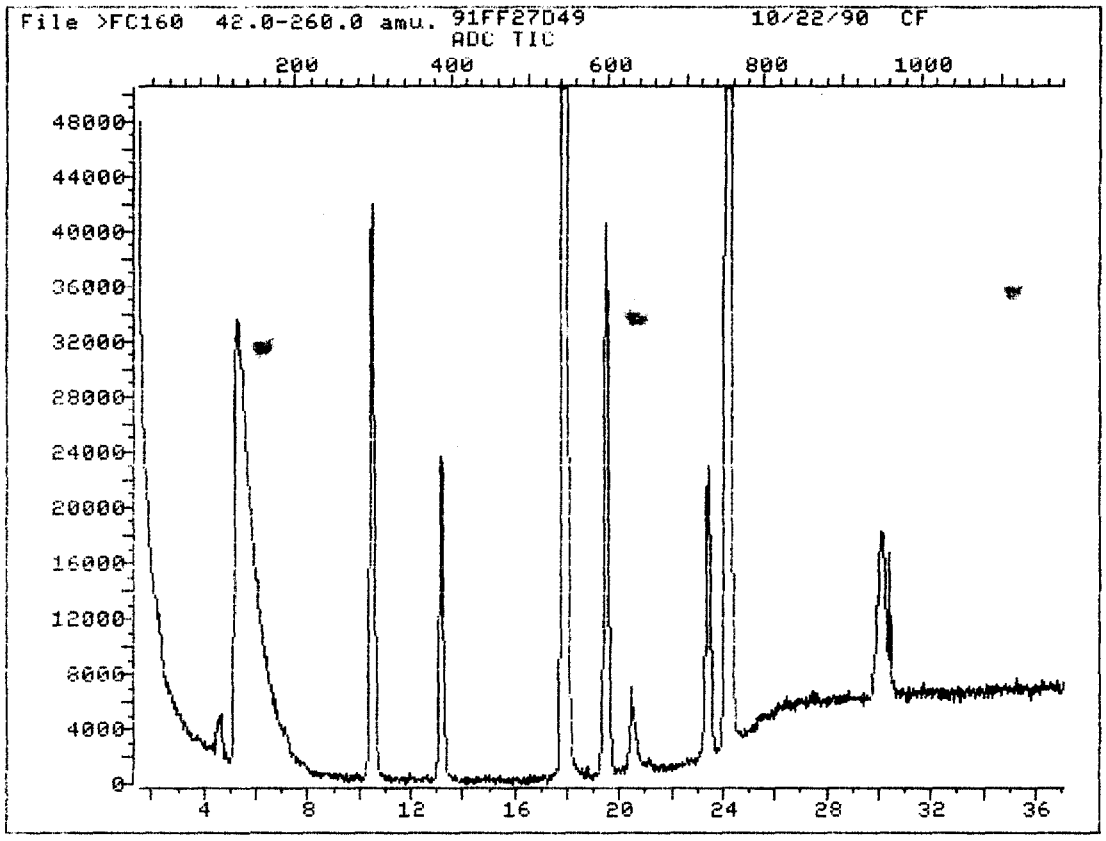
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	494331.	10.50	1.51 - 14.99
2	10.0	477497.	19.48	14.99 - 21.44
3	10.0	259934.	23.40	21.44 - 37.08

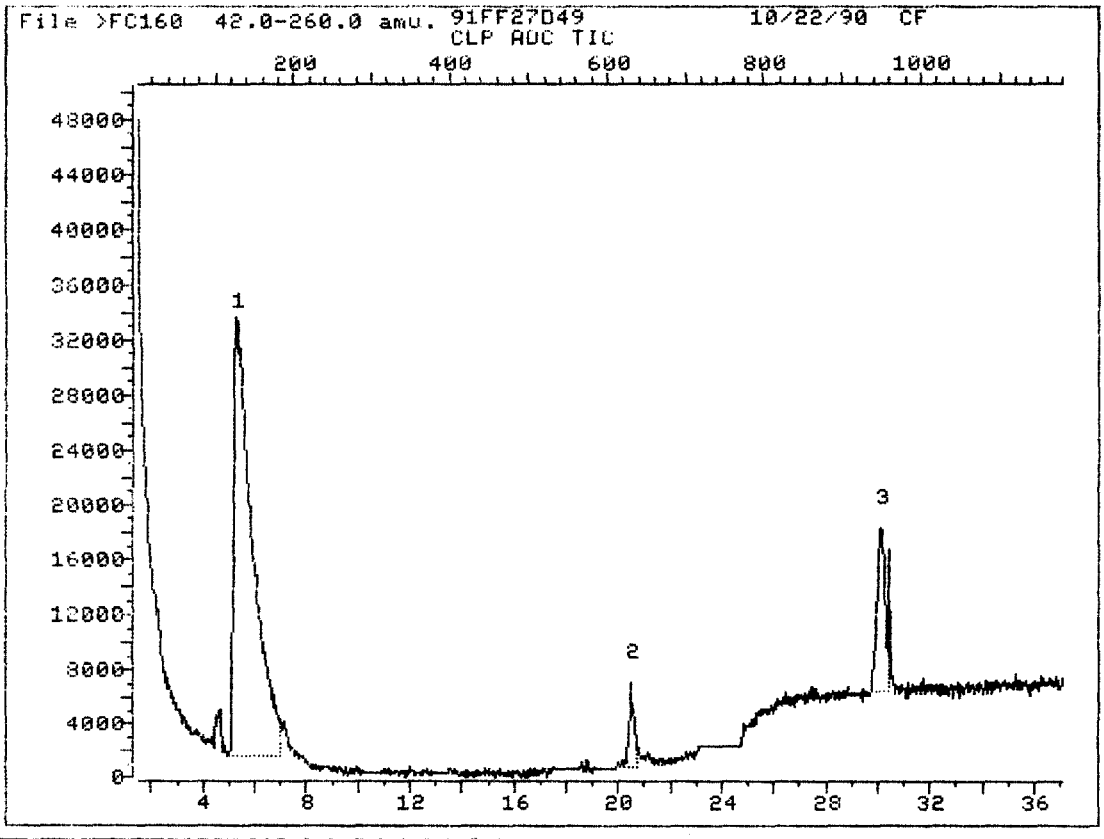
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 20.00 Amount Used (AU) = 20.00

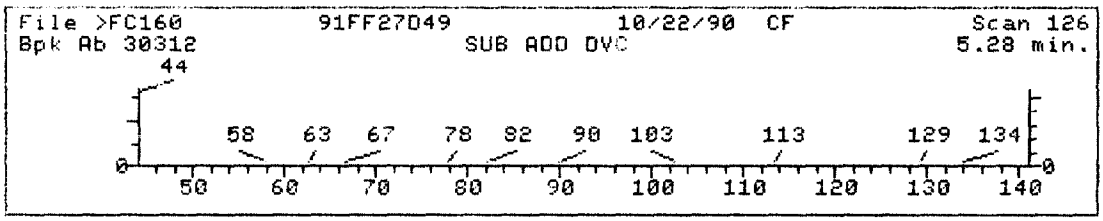
Correction Factor = 1.00 = (AM / AU) / (DF * FS)

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

7:56 AM TUE., 23 OCT., 1990


File >FC160 42.0-260.0 amu. 91FF27D49 10/22/90 CF
ADC TIC
200 400 600 800 1000
48000 44000 40000 36000 32000 28000 24000 20000 16000 12000 8000 4000 0
4 8 12 16 20 24 28 32 36


File >FC160 42.0-260.0 amu. 91FF27D49 10/22/90 CF
CLP ADC TIC
200 400 600 800 1000
48000 44000 40000 36000 32000 28000 24000 20000 16000 12000 8000 4000 0
1
2
3
4 8 12 16 20 24 28 32 36

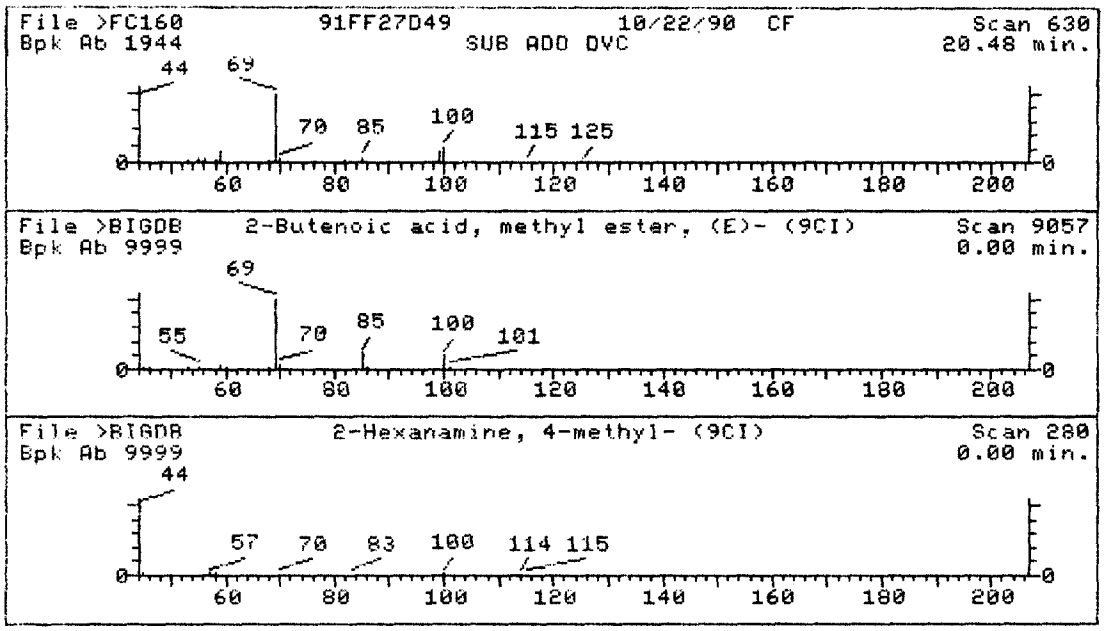


valve chart

. Unknown #,1
Area = 1635115. Tentative Concentration is 33.00

Sample file: >FC160 Spectrum #: 126

No data base entries were retrieved.



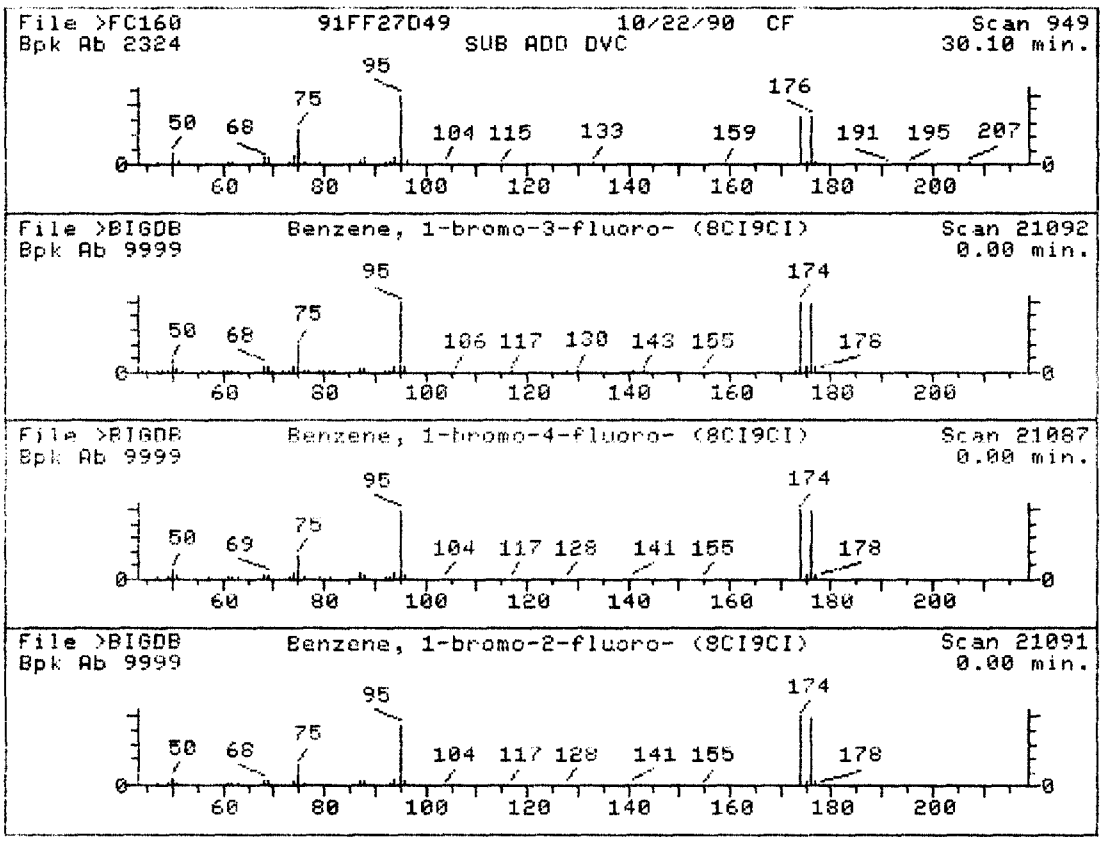
N.R.

. Unknown #,2
Area = 86151.00 Tentative Concentration is 2.00

1. 2-Butenoic acid, methyl ester, (E)- (9CI) 100 C5H8O2
2. 2-Hexanamine, 4-methyl- (9CI) 115 C7H17N

Sample file: >FC160 Spectrum #: 630
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	623438	9057	"BIGDB	25	63	2	0	100	48	7	14
2.	15*	105419	280	"BIGDB	20	55	1	0	93	57	3	14



. Unknown #,3
Area = 258755.0 Tentative Concentration is 10.00 µg/l

1. Benzene, 1-bromo-3-fluoro- (8CI9CI) 174 C6H4BrF
2. Benzene, 1-bromo-4-fluoro- (8CI9CI) 174 C6H4BrF
3. Benzene, 1-bromo-2-fluoro- (8CI9CI) 174 C6H4BrF

Sample file: >FC160 Spectrum #: 949
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	94*	1073069	21092	"BIGDB	79	34	0	0	67	13	64	94
2.	90*	460004	21087	"BIGDB	77	33	0	0	67	31	50	93
3.	78*	1072851	21091	"BIGDB	67	40	0	0	67	31	40	80

QUANT REPORT

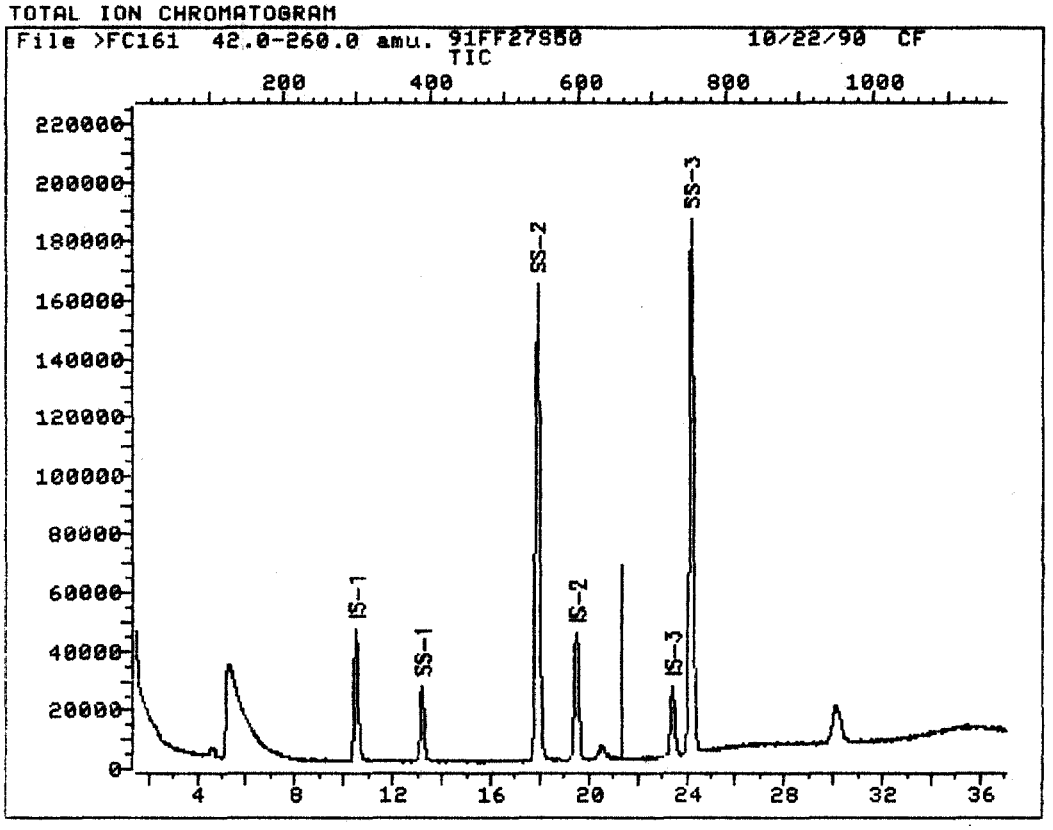
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 13:35
Output File: ^FC161::L2 Injected at: 901022 12:54
Data File: >FC161::A9 Dilution Factor: 1.00000
Name: 91FF27S50
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	82498	10.00	UG/L	96
15)	1,2-DICHLOROETHANE-D4	13.21	65.0	83816	9.19	UG/L	86
17)	*2-Bromo-1-chloropropane	19.51	77.0	309654	10.00	UG/L	98
26)	BENZENE-D6	17.91	84.0	978151	9.79	UG/L	98
33)	*1,4-Dichlorobutane	23.43	55.0	155230	10.00	UG/L	93
38)	TOLUENE-D8	24.19	98.0	909893	9.03	UG/L	97

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC161::A9 Quant Output File: ^FC161::L2
Name: 91FF27S50
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 13:35
Injected at: 901022 12:54

MS data file header from : >FC161

Sample: 91FF27S50 Operator: CARSTEN MS 10/22/90 12:54
Misc : 10/22/90 CF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC161 91FF27S50 10/22/90 CF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 27890. Max Peaks: 4 Bunching: 1
Dnslope: 0.00 Results File IFC161 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	5.31	119	127	170	31357	1664512 v.c	1514554	100.00	75.742
2	20.51	624	631	641	4087	109942 r.l	72865	4.81	3.644
3	21.32	657	658	660	65916	126969	120269	7.94	6.015
4	30.14	937	950	960	13041	557487	291930	19.27	14.599

Sum of corrected areas: 1999618.

Summary of Unknowns PBM Library Search and Quantitation

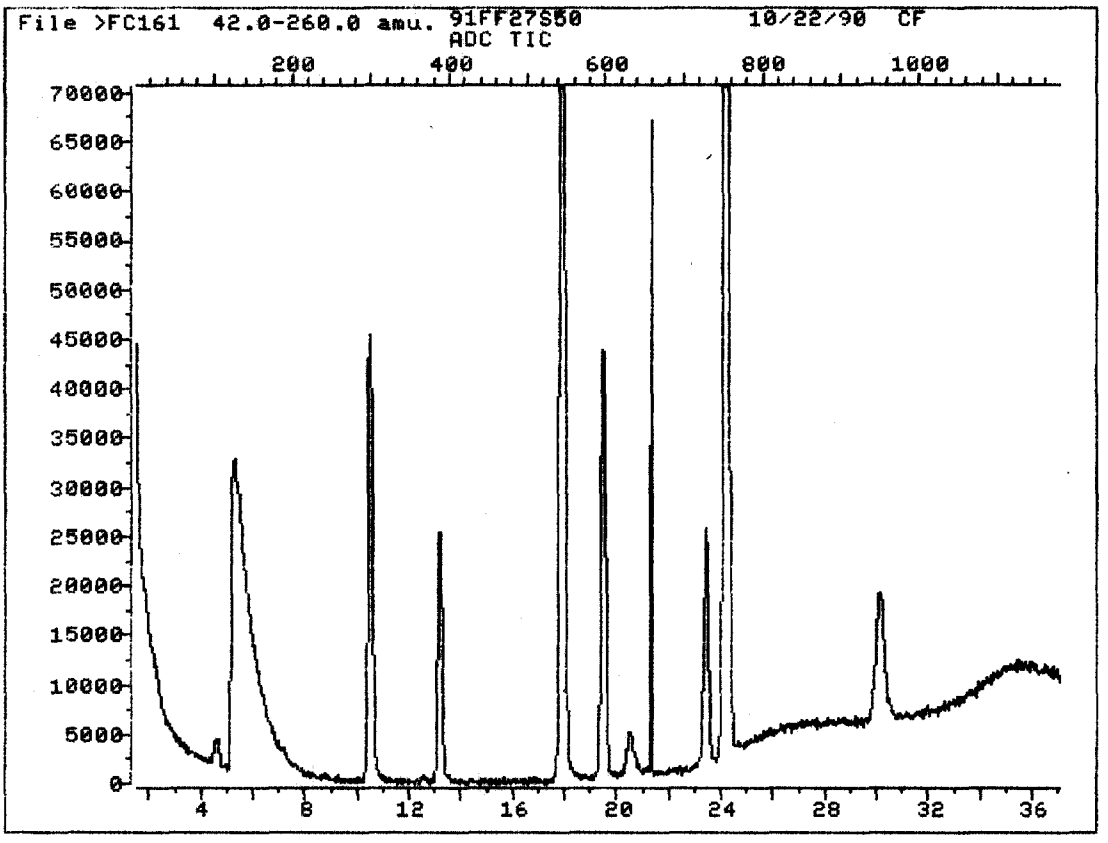
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	537071.	10.50	1.51 - 15.00
2	10.0	527550.	19.51	15.00 - 21.47
3	10.0	278898.	23.43	21.47 - 37.05

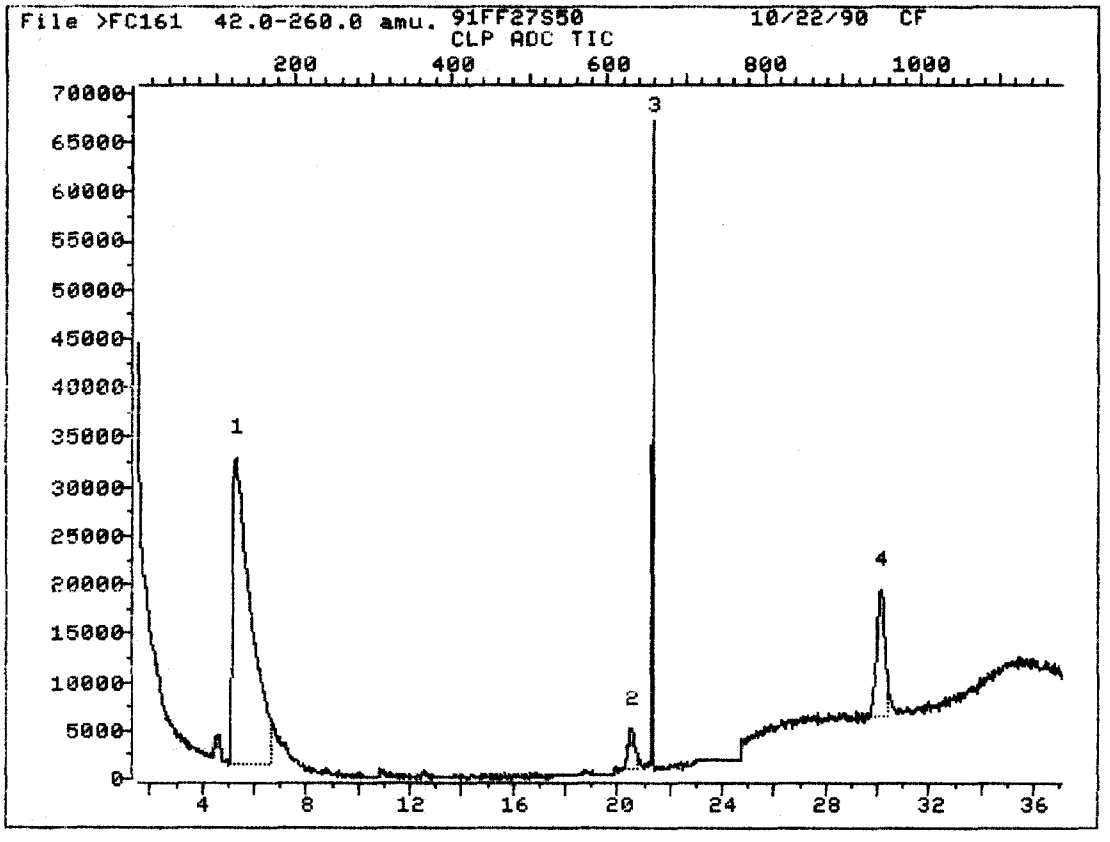
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 20.00 Amount Used (AU) = 20.00

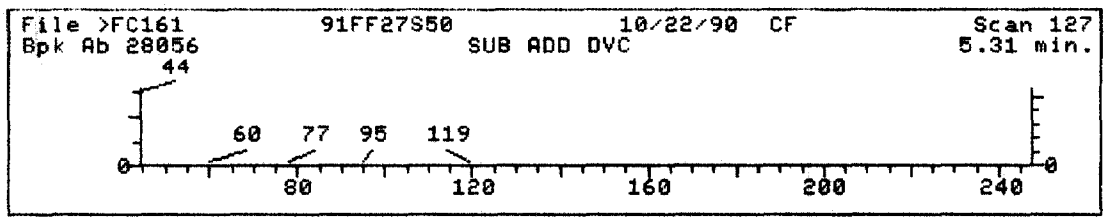
Correction Factor = 1.00 = (AM / AU) / (DF * FS)

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

8:09 AM TUE., 23 OCT., 1990


File >FC161 42.0-260.0 amu. 91FF27S50 10/22/90 CF
ADC TIC
200 400 600 800 1000
70000 65000 60000 55000 50000 45000 40000 35000 30000 25000 20000 15000 10000 5000 0
4 8 12 16 20 24 28 32 36


File >FC161 42.0-260.0 amu. 91FF27S50 10/22/90 CF
CLP ADC TIC
200 400 600 800 1000
70000 65000 60000 55000 50000 45000 40000 35000 30000 25000 20000 15000 10000 5000 0
1
2
3
4
4 8 12 16 20 24 28 32 36

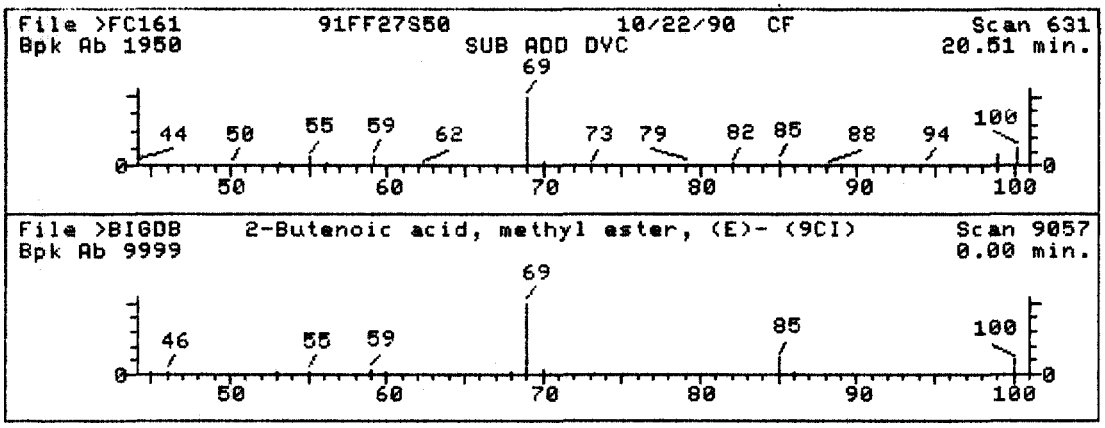


valig
ch

. Unknown #,1
Area = 1514554. Tentative Concentration is 28.00

Sample file: >FC161 Spectrum #: 127

No data base entries were retrieved.



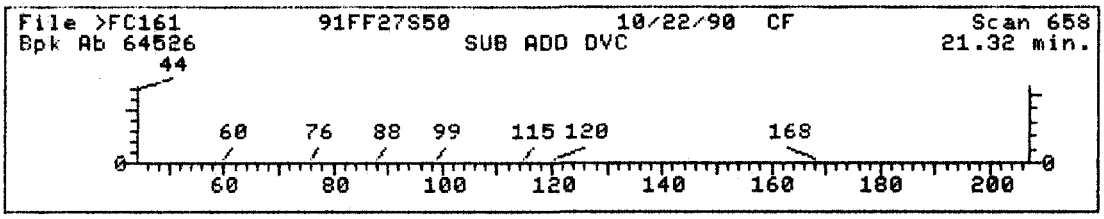
N.R.

. Unknown #,2
Area = 72865.00 Tentative Concentration is 1.000

1. 2-Butenoic acid, methyl ester, (E)- (9CI) 100 C5H8O2

Sample file: >FC161 Spectrum #: 631
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	623438	9057	"BIGDB	26	62	2	0	100	17	20	14

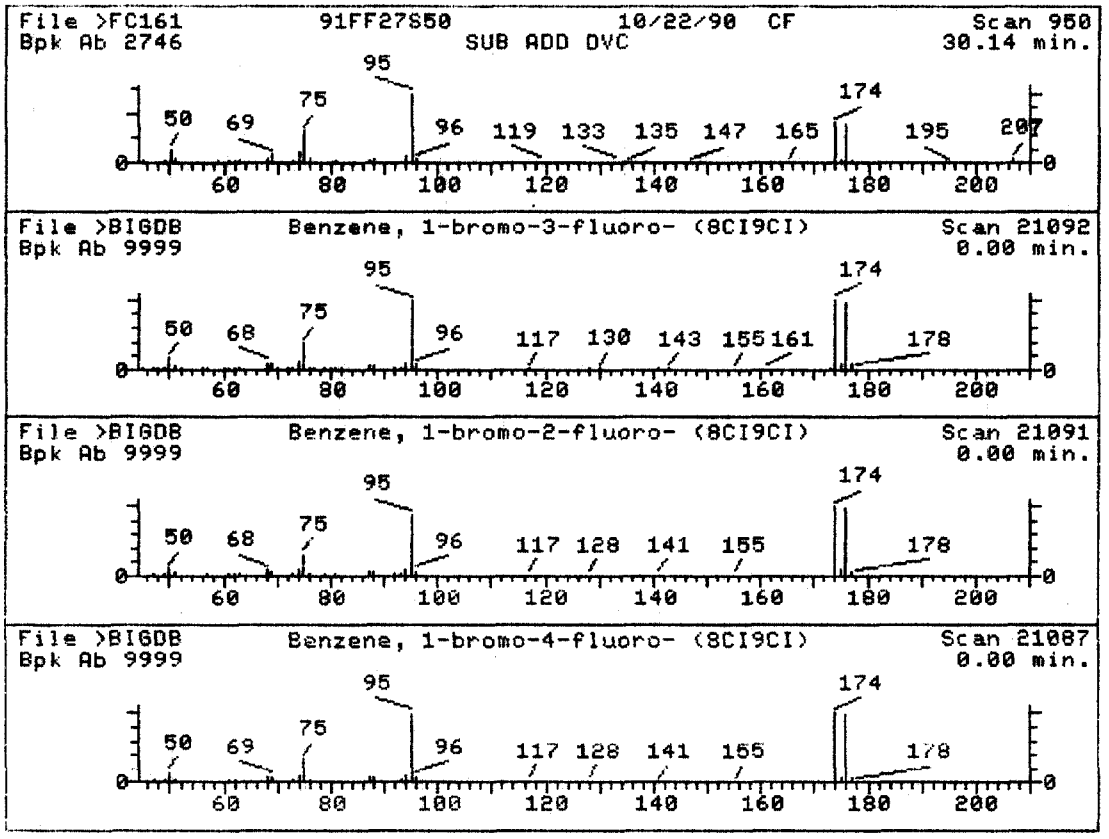


Spike.

. Unknown #,3
Area = 120269.0 Tentative Concentration is 2.00

Sample file: >FC161 Spectrum #: 658

No data base entries were retrieved.



. Unknown #,4
Area = 291930.0 Tentative Concentration is 10.00

1. Benzene, 1-bromo-3-fluoro- (8CI9CI)	174	C6H4BrF
2. Benzene, 1-bromo-2-fluoro- (8CI9CI)	174	C6H4BrF
3. Benzene, 1-bromo-4-fluoro- (8CI9CI)	174	C6H4BrF
4. Pyridine, 1-oxide (8CI9CI)	95	C5H5NO
5. 2(1H)-Pyridinone (9CI)	95	C5H5NO

Sample file: >FC161 Spectrum #: 950
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	88*	1073069	21092	"BIGDB	89	24	2	1	76	5	65	59
2.	84*	1072851	21091	"BIGDB	91	16	2	3	84	6	55	67
3.	83*	460004	21087	"BIGDB	81	29	2	3	68	6	54	53
4.	15*	694597	7972	"BIGDB	20	81	2	0	100	58	3	13
5.	11*	142085	7971	"BIGDB	23	68	3	0	100	62	2	12

QUANT REPORT

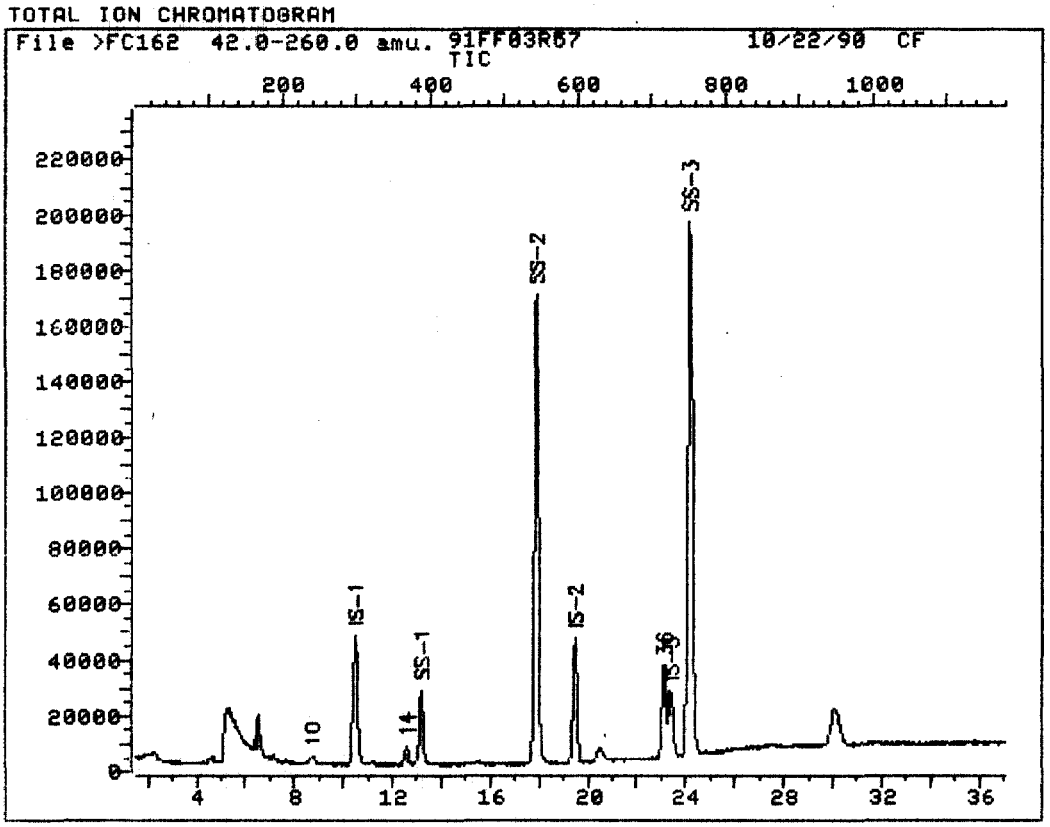
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 14:22
Output File: ^FC162::L2 Injected at: 901022 13:41
Data File: >FC162::A9 Dilution Factor: 1.00000
Name: 91FF03R57
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	83817	10.00	UG/L	96
14)	CHLOROFORM	12.61	83.0	30121	.71	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.21	65.0	84275	9.10	UG/L	83
17)	*2-Bromo-1-chloropropane	19.48	77.0	321590	10.00	UG/L	99
26)	BENZENE-D6	17.91	84.0	1018886	9.82	UG/L	98
33)	*1,4-Dichlorobutane	23.40	55.0	153369	10.00	UG/L	95
36)	TETRACHLOROETHENE	23.13	164.0	51051	1.37	UG/L	97
38)	TOLUENE-D8	24.19	98.0	954373	9.59	UG/L	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM

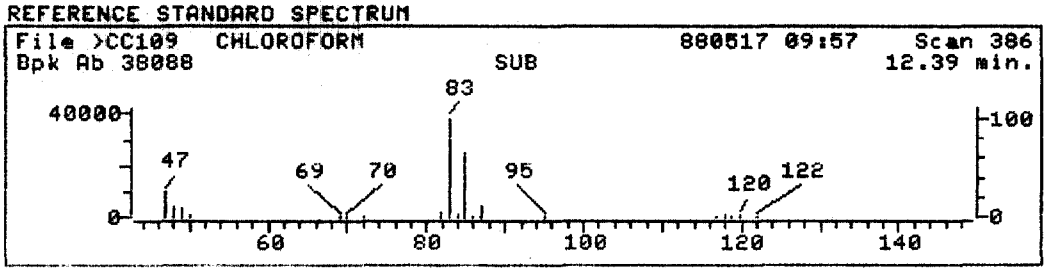


Data File: >FC162::A9 Quant Output File: ^FC162::L2
Name: 91FF03R57
Misc: 10/22/90 CF

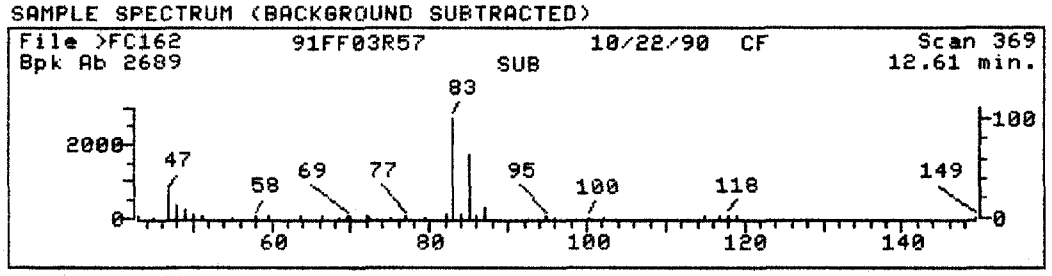
Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 14:22
Injected at: 901022 13:41

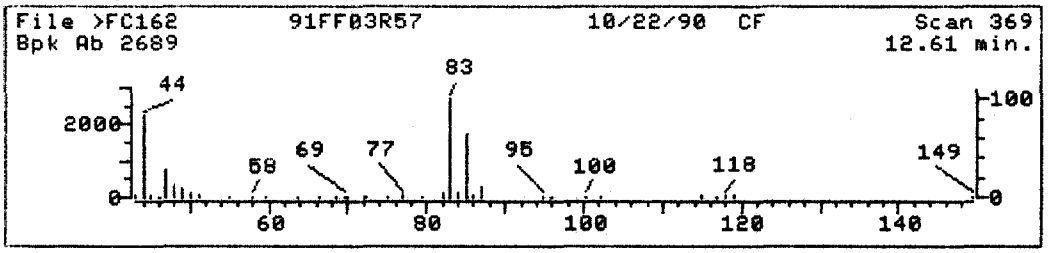
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)

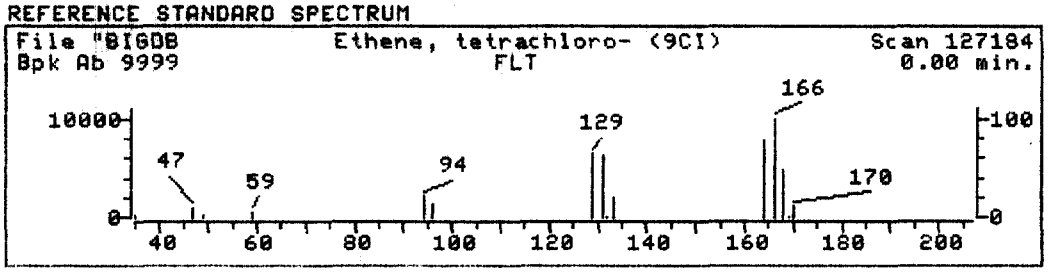


Data File: >FC162::A9
Name: 91FF03R57
Misc: 10/22/90 CF
Quant Time: 901022 14:22
Injected at: 901022 13:41

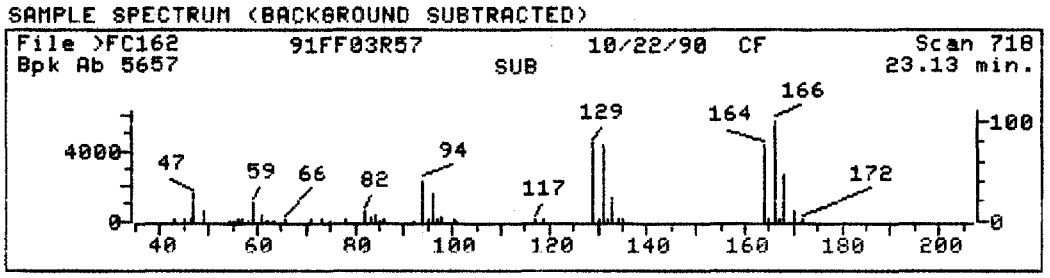
Quant Output File: ^FC162::L2
Quant ID File: IDCF3A::XX
Last Calibration: 901022 10:16

Compound No: 14
Compound Name: CHLOROFORM
Scan Number: 369
Retention Time: 12.61 min.
Quant Ion: 83.0
Area: 30121
Concentration: .71 UG/L
q-value: 99

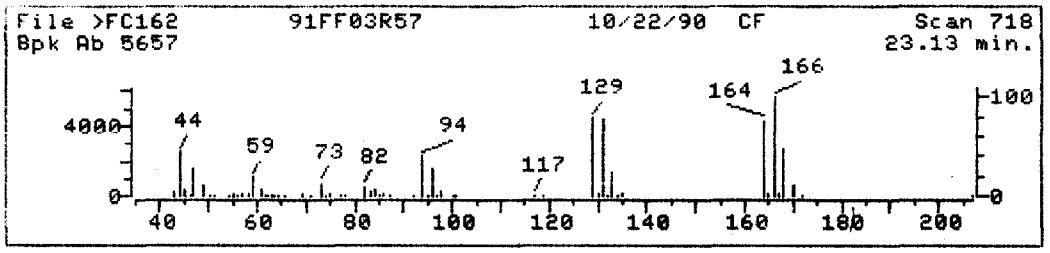
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >FC162::A9 Quant Output File: ^FC162::L2
Name: 91FF03R57
Misc: 10/22/90 CF
Quant Time: 901022 14:22 Quant ID File: IDCF3A::XX
Injected at: 901022 13:41 Last Calibration: 901022 10:16

Compound No: 36
Compound Name: TETRACHLOROETHENE
Scan Number: 718
Retention Time: 23.13 min.
Quant Ion: 164.0
Area: 51051
Concentration: 1.37 UG/L
q-value: 97

MS data file header from : >FC162

Sample: 91FF03R57 Operator: CARSTEN MS 10/22/90 13:41
Misc : 10/22/90 CF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: VOA#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC162 91FF03R57 10/22/90 CF
42.01 260.0 CLP ADC TIC
Upslope: .20 Area Reject: 28013. Max Peaks: 5 Bunching: 1
Dnslope: 0.00 Results File IFC162 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	5.25	118	125	159	19047	911788	820161 VC	100.00	59.161
2	6.55	165	168	178	15133	207270	139324 TIC	16.99	10.050
3	8.75	235	241	253	2717	51969	35950 TCL	4.38	2.593
4	20.54	622	632	644	4650	144711	95972 N.R	11.70	6.923
5	30.14	938	950	965	13032	660954	294916 GPB	35.96	21.273

Sum of corrected areas: 1386323.

Summary of Unknowns PBM Library Search and Quantitation

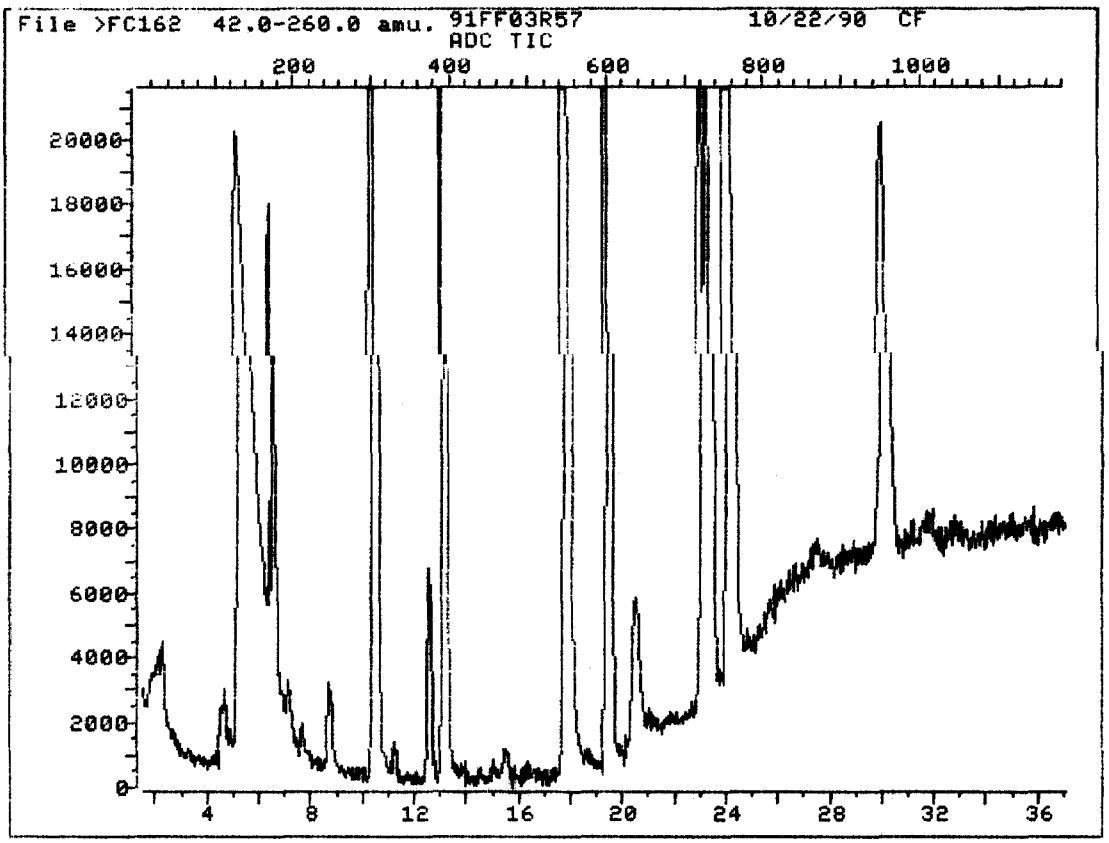
Standard	Concentration	Area	Retention Time	Unknown Window
1	10.0	554914.	10.50	1.51 - 14.99
2	10.0	551398.	19.48	14.99 - 21.44
3	10.0	280127.	23.40	21.44 - 37.08

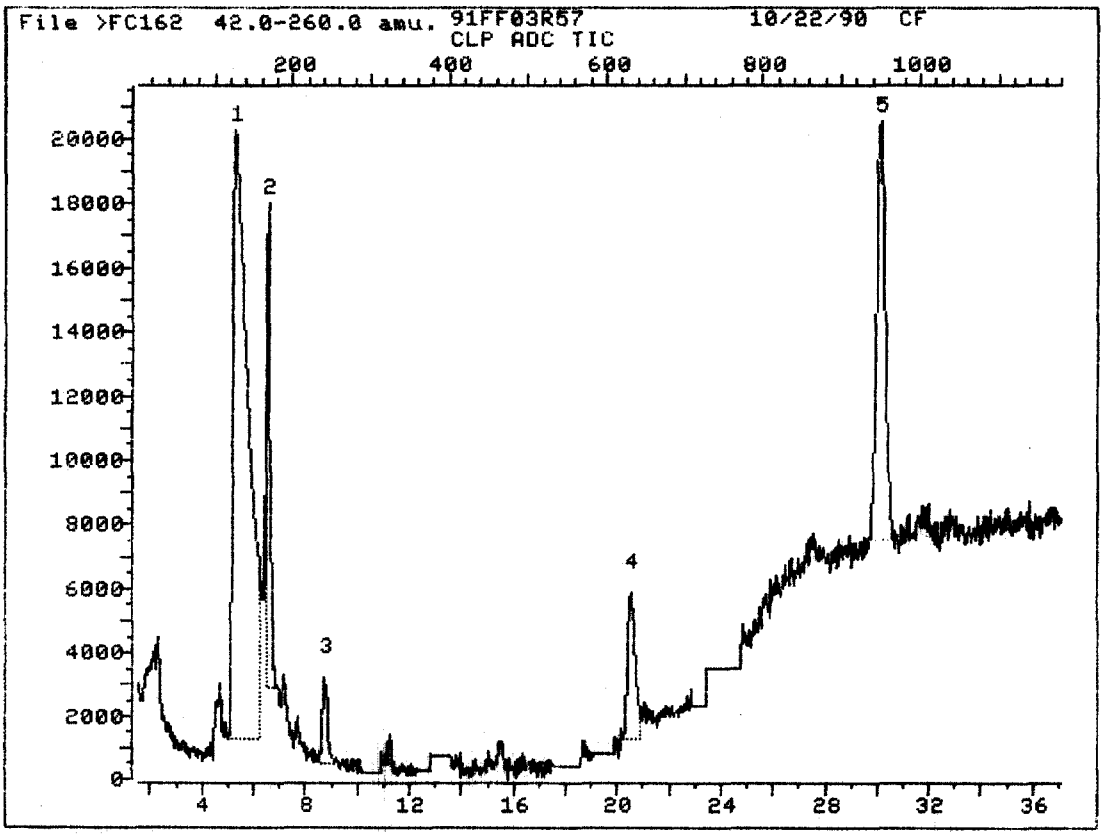
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 20.00 Amount Used (AU) = 20.00

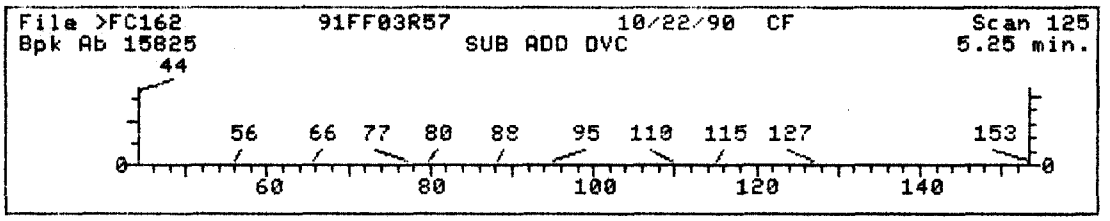
Correction Factor = 1.00 = (AM / AU) / (DF * FS)

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

8:23 AM TUE., 23 OCT., 1990


File >FC162 42.0-260.0 amu. 91FF03R57 10/22/90 CF
ADC TIC
200
400
600
800
1000
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
4
8
12
16
20
24
28
32
36


File >FC162 42.0-260.0 amu. 91FF03R57 10/22/90 CF
CLP ADC TIC
200
400
600
800
1000
1
2
3
4
5
20000
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
4
8
12
16
20
24
28
32
36

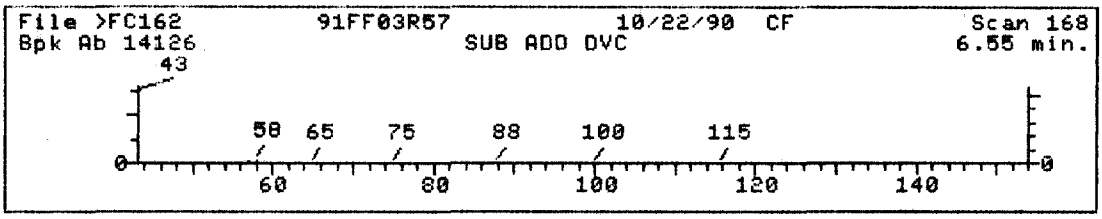


value change

. Unknown #,1
Area = 820161.0 Tentative Concentration is 15.00

Sample file: >FC162 Spectrum #: 125

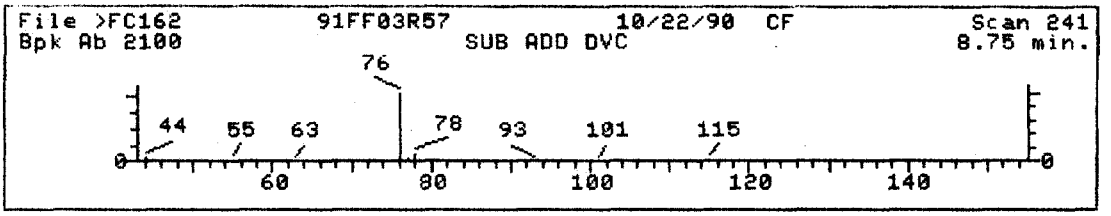
No data base entries were retrieved.



. Unknown #,2
Area = 139524.0 Tentative Concentration is 3.00

Sample file: >FC162 Spectrum #: 168

No data base entries were retrieved.

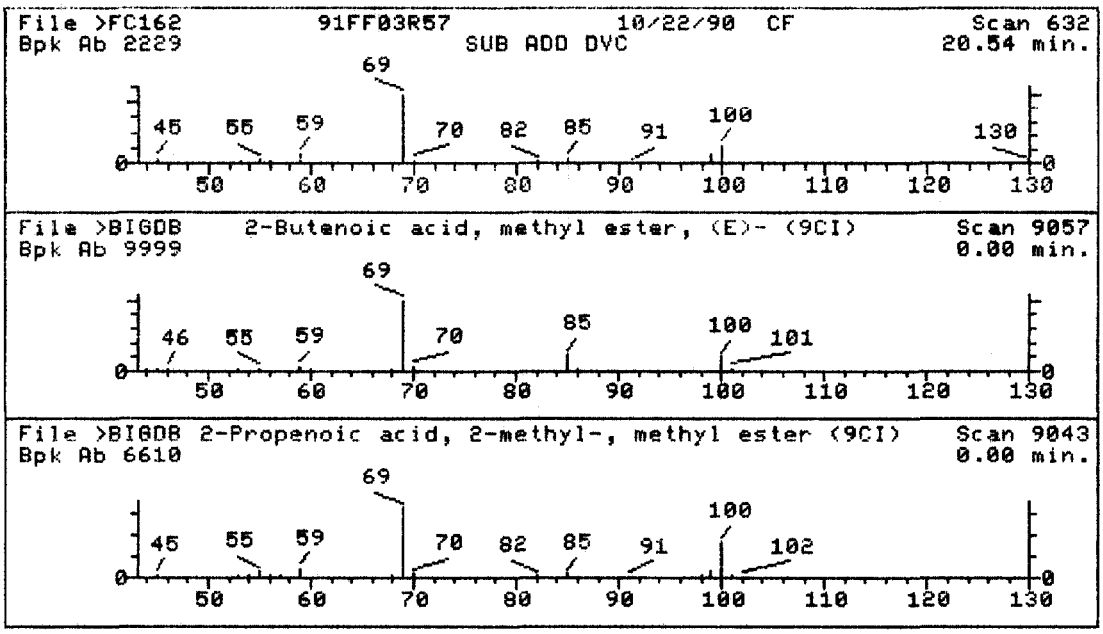


CS2 -TU

. Unknown #,3
Area = 35950.00 Tentative Concentration is .600

Sample file: >FC162 Spectrum #: 241

No data base entries were retrieved.



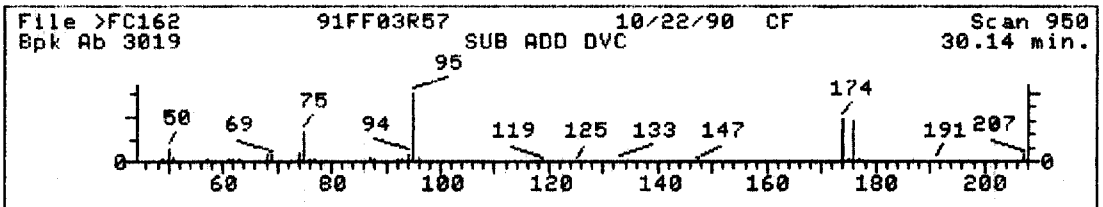
μg

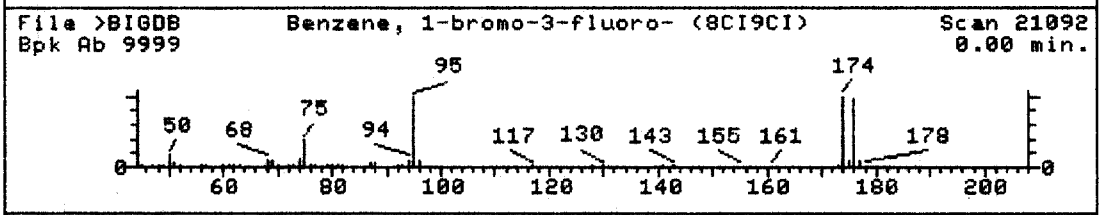
. Unknown #,4
Area = 95972.00 Tentative Concentration is 2.00

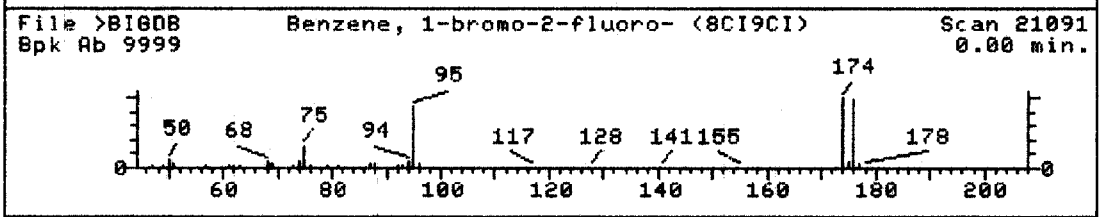
1. 2-Butenoic acid, methyl ester, (E)- (9CI) 100 C5H8O2
2. 2-Propenoic acid, 2-methyl-, methyl ester (9CI) 100 C5H8O2

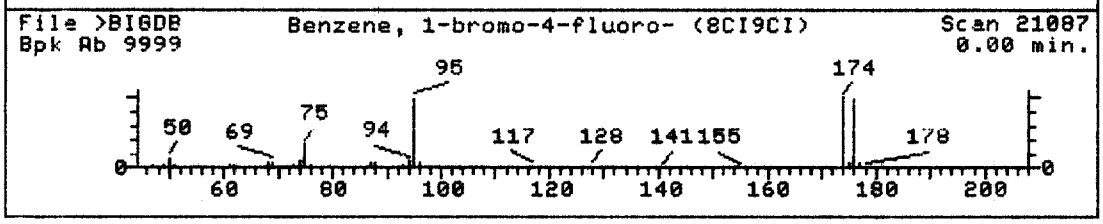
Sample file: >FC162 Spectrum #: 632
Search speed: 1 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	623438	9057	"BIGDB	26	62	2	0	100	19	20	14
2.	26*	80626	9043	"BIGDB	22	67	1	0	78	41	8	14









KB

Unknown #,5
Area = 294916.0 Tentative Concentration is 11.00

1. Benzene, 1-bromo-3-fluoro- (8CI9CI) 174 C6H4BrF
2. Benzene, 1-bromo-2-fluoro- (8CI9CI) 174 C6H4BrF
3. Benzene, 1-bromo-4-fluoro- (8CI9CI) 174 C6H4BrF

Sample file: >FC162 Spectrum #: 950
Search speed: 1 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	1073069	21092	"BIGDB	89	24	2	1	80	7	54	59
2.	83*	1072851	21091	"BIGDB	79	28	2	2	97	7	54	52
3.	79*	460004	21087	"BIGDB	63	47	2	2	92	7	48	34

QUANT REPORT

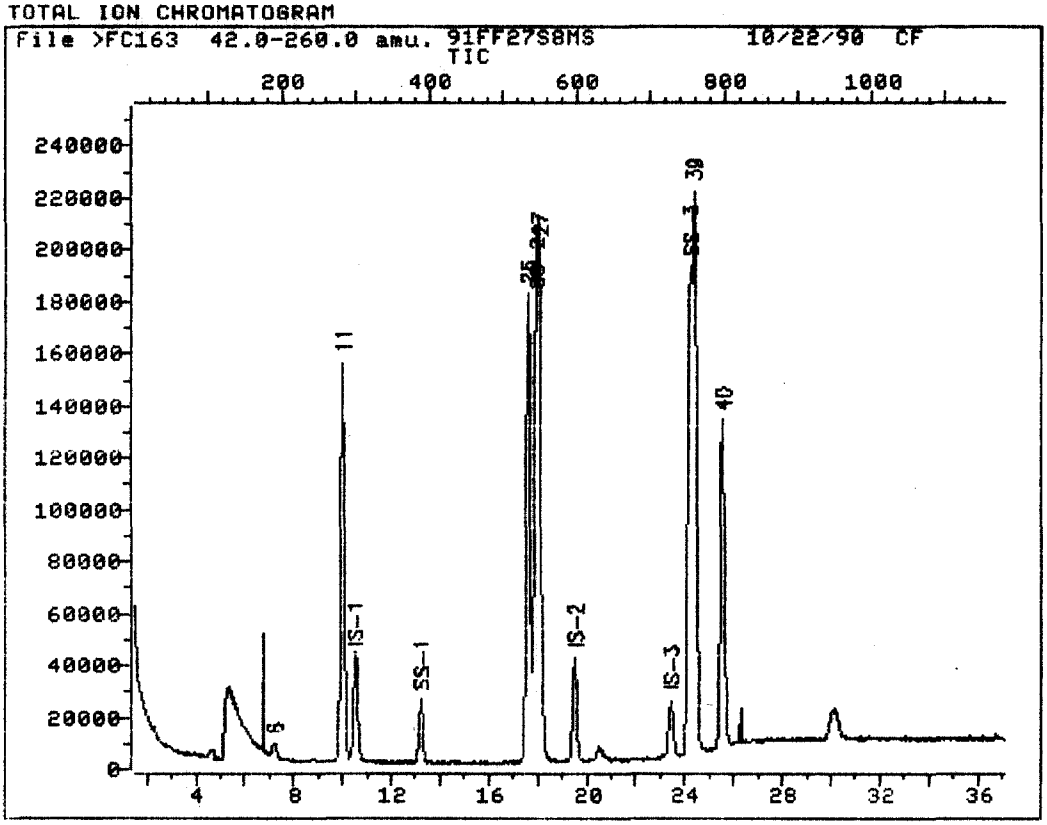
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 15:10
Output File: ^FC163::L2 Injected at: 901022 14:29
Data File: >FC163::A9 Dilution Factor: 1.00000
Name: 91FF27S8MS
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	75739	10.00	UG/L	97
6)	METHYLENE CHLORIDE	7.21	84.0	13607	.81	UG/L	93
11)	1,1-DICHLOROETHENE	9.99	96.0	359762	11.51	UG/L	84
15)	1,2-DICHLOROETHANE-D4	13.21	65.0	75710	9.05	UG/L	85
17)	*2-Bromo-1-chloropropane	19.51	77.0	283549	10.00	UG/L	99
25)	TRICHLOROETHENE	17.58	130.0	373986	10.51	UG/L	99
26)	BENZENE-D6	17.92	84.0	907067	9.91	UG/L	97
27)	BENZENE	18.07	78.0	1015544	10.51	UG/L	96
33)	*1,4-Dichlorobutane	23.44	55.0	142109	10.00	UG/L	93
38)	TOLUENE-D8	24.22	98.0	850089	9.22	UG/L	98
39)	TOLUENE	24.37	92.0	615134	9.76	UG/L	97
40)	CHLOROBENZENE	25.55	112.0	503172	9.85	UG/L	97

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC163::A9 Quant Output File: ^FC163::L2
Name: 91FF27S8MS
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 15:10
Injected at: 901022 14:29

QUANT REPORT

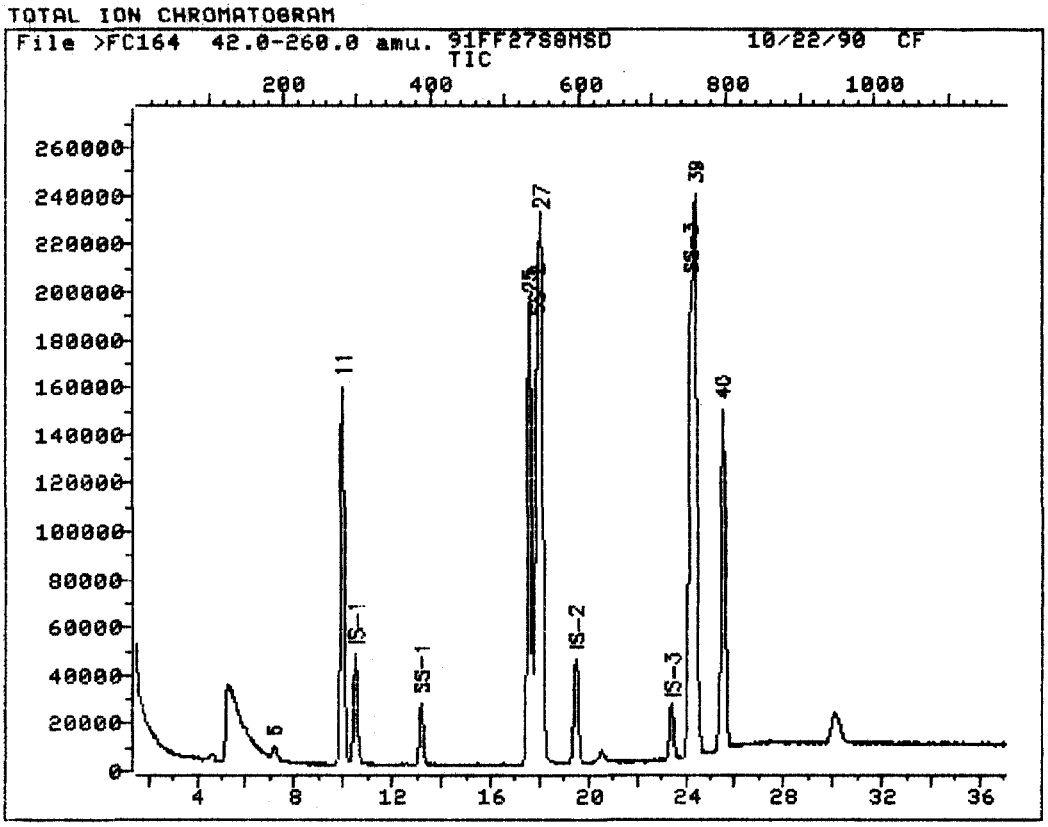
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 15:57
Output File: ^FC164::L2 Injected at: 901022 15:16
Data File: >FC164::A9 Dilution Factor: 1.00000
Name: 91FF27S8MSD
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	82015	10.00	UG/L	96
6)	METHYLENE CHLORIDE	7.15	84.0	14392	.79	UG/L	92
11)	1,1-DICHLOROETHENE	9.98	96.0	377778	11.16	UG/L	84
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	81087	8.95	UG/L	82
17)	*2-Bromo-1-chloropropane	19.48	77.0	311000	10.00	UG/L	97
25)	TRICHLOROETHENE	17.58	130.0	396258	10.15	UG/L	97
26)	BENZENE-D6	17.88	84.0	972187	9.69	UG/L	98
27)	BENZENE	18.04	78.0	1114124	10.52	UG/L	97
33)	*1,4-Dichlorobutane	23.43	55.0	150464	10.00	UG/L	94
38)	TOLUENE-D8	24.19	98.0	909690	9.32	UG/L	99
39)	TOLUENE	24.37	92.0	666593	9.99	UG/L	96
40)	CHLOROBENZENE	25.52	112.0	563453	10.42	UG/L	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC164::A9 Quant Output File: ^FC164::L2
Name: 91FF27S8MSD
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 15:57
Injected at: 901022 15:16

QUANT REPORT

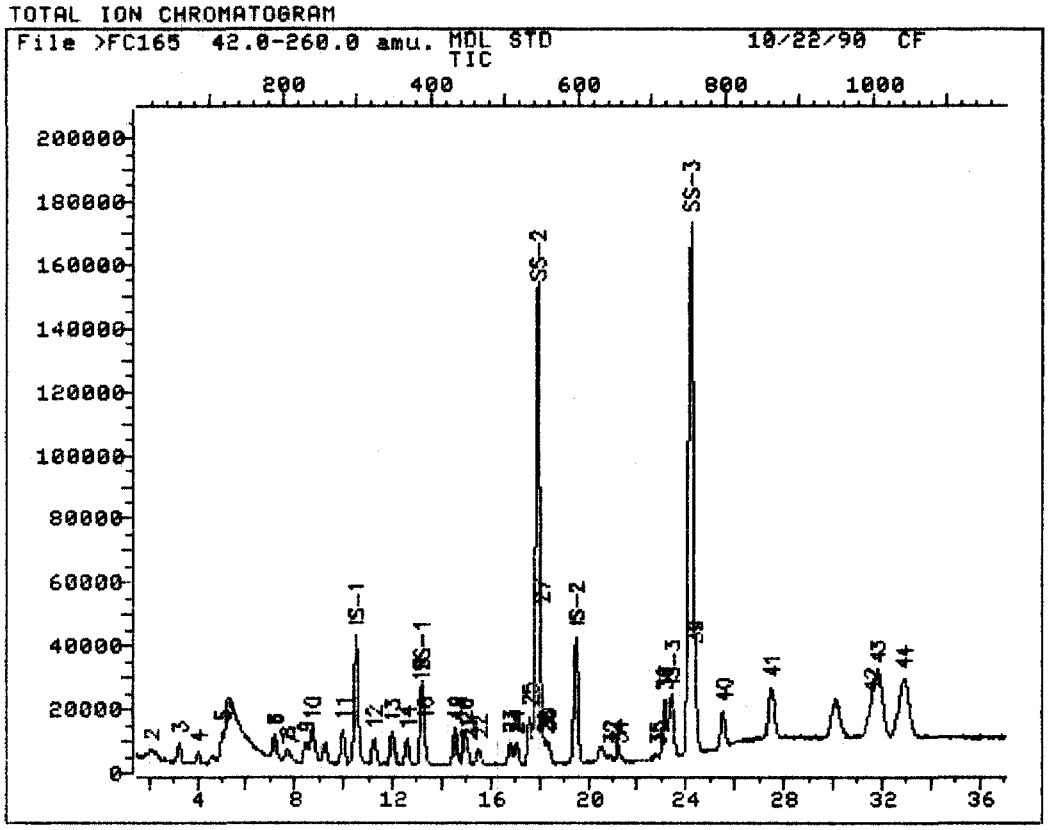
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 16:44
Output File: ^FC165::L2 Injected at: 901022 16:04
Data File: >FC165::A9 Dilution Factor: 1.00000
Name: MDL STD
Misc: 10/22/90 CF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	74974	10.00	UG/L	98
2)	CHLOROMETHANE	2.09	50.0	7988	2.15	UG/L	100
3)	BROMOMETHANE	3.26	94.0	25457	1.91	UG/L	91
4)	VINYL CHLORIDE	4.05	62.0	21048	2.59	UG/L	98
5)	CHLOROETHANE	5.04	64.0	51994	1.69	UG/L	96
6)	METHYLENE CHLORIDE	7.18	84.0	20715	1.25	UG/L	90
7)	ACROLEIN	7.82	56.0	12350	27.40	UG/L	85
8)	ACETONE	7.70	43.0	29169	42.77	UG/L	96
9)	ACRYLONITRILE	8.45	53.0	47445	39.02	UG/L	95
10)	CARBON DISULFIDE	8.72	76.0	105771	1.21	UG/L	100
11)	1,1-DICHLOROETHENE	9.99	96.0	25210	.81	UG/L	81
12)	1,1-DICHLOROETHANE	11.25	63.0	49551	.90	UG/L	95
13)	1,2-DICHLOROETHENE (TOTAL)	11.98	96.0	25857	.85	UG/L	86
14)	CHLOROFORM	12.61	83.0	35883	.95	UG/L	98
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	75920	9.16	UG/L	84
16)	1,2-DICHLOROETHANE	13.30	62.0	8515	.96	UG/L	93
17)	*2-Bromo-1-chloropropane	19.49	77.0	282239	10.00	UG/L	97
18)	2-BUTANONE	13.15	72.0	4760	14.09	UG/L	97
19)	1,1,1-TRICHLOROETHANE	14.57	97.0	43209	.86	UG/L	97
20)	CARBON TETRACHLORIDE	14.93	117.0	35277	.84	UG/L	98
21)	VINYL ACETATE	15.08	43.0	27916	2.36	UG/L	96
22)	BROMODICHLOROMETHANE	15.50	83.0	20667	.93	UG/L	82
23)	1,2-DICHLOROPROPANE	16.80	63.0	25755	.93	UG/L	90
24)	CIS-1,3-DICHLOROPROPENE	17.04	75.0	36321	1.07	UG/L	97
25)	TRICHLOROETHENE	17.59	130.0	31198	.88	UG/L	94
26)	BENZENE-D6	17.89	84.0	894736	9.82	UG/L	97
27)	BENZENE	18.04	78.0	91057	.95	UG/L	99
28)	DIBROMOCHLOROMETHANE	18.25	129.0	9760	.92	UG/L	96
29)	TRANS-1,3-DICHLOROPROPENE	18.28	75.0	6242M	.86	UG/L	
30)	1,1,2-TRICHLOROETHANE	18.34	97.0	7142	.95	UG/L	99
31)	2-CHLOROETHYL VINYLETHER	19.33	63.0	5906M	1.83	UG/L	
32)	BROMOFORM	20.93	173.0	4702	.91	UG/L	89
33)	*1,4-Dichlorobutane	23.44	55.0	132448	10.00	UG/L	92
34)	4-METHYL-2-PENTANONE	21.27	43.0	16358	3.22	UG/L	95
35)	2-HEXANONE	22.83	43.0	12692	3.91	UG/L	79
36)	TETRACHLOROETHENE	23.14	164.0	25716	.80	UG/L	96
37)	1,1,2,2-TETRACHLOROETHANE	23.17	83.0	9757	.94	UG/L	91
38)	TOLUENE-D8	24.19	98.0	839211	9.77	UG/L	98
39)	TOLUENE	24.37	92.0	52549	.89	UG/L	98
40)	CHLOROBENZENE	25.55	112.0	43805	.92	UG/L	99
41)	ETHYLBENZENE	27.51	106.0	32693	.85	UG/L	95
42)	STYRENE	31.56	104.0	33913	.72	UG/L	95
43)	META XYLENE	31.83	106.0	78078	1.71	UG/L	98
44)	O-&/OR P-XYLENE	32.89	106.0	91706	2.23	UG/L	94

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC165::A9 Quant Output File: ^FC165::L2
Name: MDL STD
Misc: 10/22/90 CF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901022 10:16

Operator ID: CARSTEN
Quant Time: 901022 16:44
Injected at: 901022 16:04

```
Sequence File: BACF3J::XX
-----------------------------------------

Tune File: MTBFB3

CR List: A8,A3,A4,A5,A0,L2,S1
CR Cut-off:   800 blocks.
                                                   Report Data Archive
                                                  Quant | | ID Archive
Number of samples:   4                  Sample Size | | | | Output Archive
                                           Bottle | | | | | | |
Samp Data File     Sample Name                   | | | | | | |    Quant ID
 No. Method File   Misc Data                     | | | | | | |    Quant Output
---- ------------ ------------------------ ---------------  ------------
001) >IA019        5 PPB STD                 00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/19/90  CRF                Dil=1.00000    ^IA019::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
002) >IB019        10PPB STD                 00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/19/90  CRF                Dil=1.00000    ^IB019::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
003) >ID019        20PPB STD                 00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/19/90  CRF                Dil=1.00000    ^ID019::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
004) >IE019        25PPB STD                 00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/19/90  CRF                Dil=1.00000    ^IE019::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS

End of sequence file.
```

```
Sequence File: BACF3C::XX
-----------------------------------------

Tune File: MTBFB3

CR List: A8,A5,A3,A4,L2,S1,A0
CR Cut-off:   750 blocks.
                                                   Report Data Archive
                                                  Quant | | ID Archive
Number of samples:   2                  Sample Size | | | | Output Archive
                                           Bottle | | | | | | |
Samp Data File     Sample Name                    | | | | | | |    Quant ID
 No. Method File   Misc Data                      | | | | | | |    Quant Output
---- ------------ ------------------------ ----------------  ------------
001) >FC156       METHOD BLANK              00 3 Y F N N N    IDCF3A::XX
     VOA#3        10/22/90 CRF                 Dil=1.00000    ^FC156::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
002) >FC157       15 PPB STD                00 3 Y M N N N    IDCF3A::XX
     VOA#3        10/22/90 CRF                 Dil=1.00000    ^FC157::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS

End of sequence file.
```

Sequence File: BACF30::XX

Tune File: MTBFB3

CR List: A9,A5,A4,A3,L2,S1
CR Cut-off: 800 blocks.

Number of samples: 8

```
                                                  Report Data Archive
                                                 Quant | | ID Archive
                                        Sample Size | | | | Output Archive
                                           Bottle | | | | | |
Samp Data File     Sample Name                  | | | | | | |    Quant ID
 No. Method File   Misc Data                    | | | | | | |    Quant Output
---- ------------ ------------------------ ----------------  ------------
001) >FC158        91FF27S48                 00 3 Y F N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC158::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
002) >FC159        91FF27S49                 00 3 Y F N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC159::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
003) >FC160        91FF27D49                 00 3 Y F N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC160::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
004) >FC161        91FF27S50                 00 3 Y F N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC161::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
005) >FC162        91FF03R57                 00 3 Y F N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC162::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
006) >FC163        91FF27S8MS                00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC163::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
007) >FC164        91FF27S8MSD               00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC164::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
008) >FC165        MDL STD                   00 3 Y M N N N    IDCF3A::XX
     VOA#3         10/22/90  CF                 Dil=1.00000    ^FC165::L2
     REPRT OPTIONS: Aux:R2PRT, Label Meth:5, BG Sub, Scale time: 2.000
     REPRT OPTIONS: Qion replaces Scan#, Omit types:IS
```

End of sequence file.

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

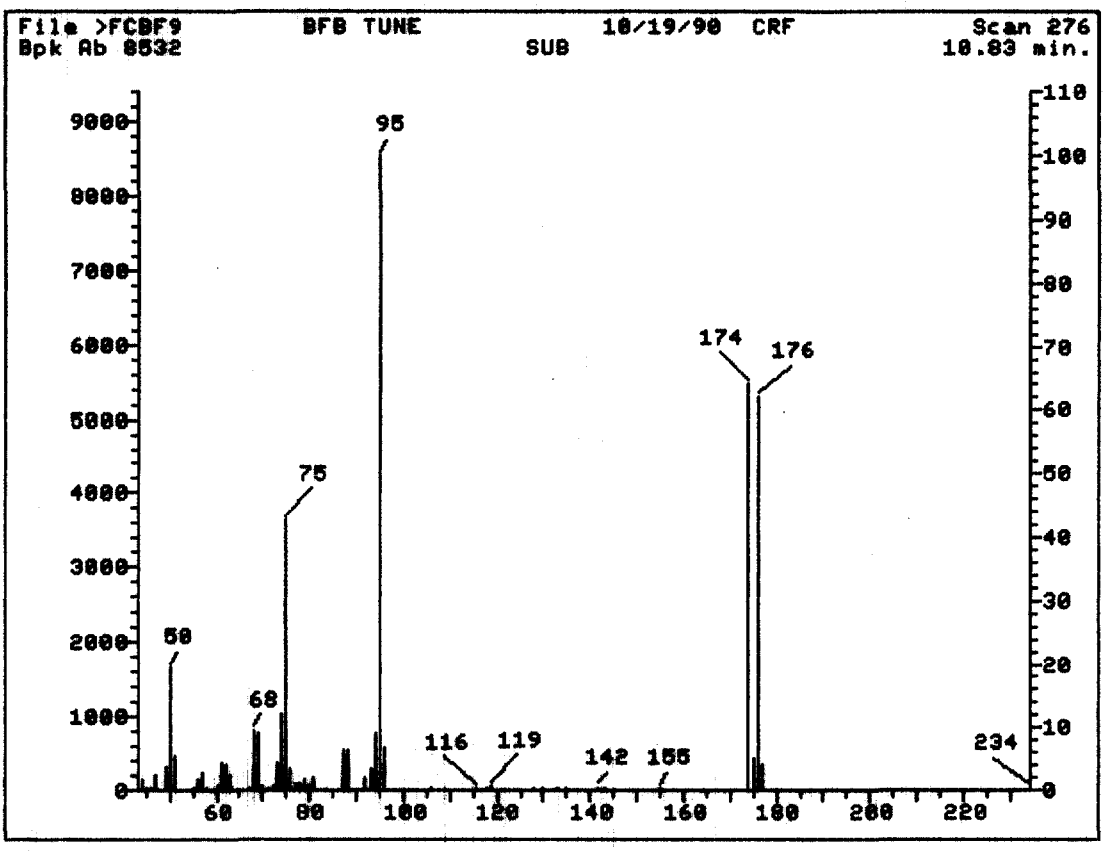
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	% Relative Abundance Appropriate Peak	Status
50	15-40% of mass 95	19.44	19.44	Ok
75	30-60% of mass 95	42.57	42.57	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	6.72	6.72	Ok
173	Less than 2% of mass 174	0.00	0.00	Ok
174	Greater than 50% of mass 95	64.16	64.16	Ok
175	5-9% of mass 174	5.15	8.02	Ok
176	95-101% of mass 174	61.98	96.60	Ok
177	5-9% of mass 176	4.09	6.60	Ok

Injection Date: 10/19/90
Injection Time: 08:20
Data File: >FCBF9
Scan: 276

MS data file header from : >FCBF9

Sample: BFB TUNE Operator: CARSTEN MS 10/19/90 8:20
Misc : 10/19/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0



MS data file header from : >FCBF9

Sample: BFB TUNE Operator: CARSTEN MS 10/19/90 8:20
Misc : 10/19/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FCBF9 BFB TUNE 10/19/90 CRF
276 SUB NRM

File: >FCBF9 Scan #: 276 Retn. time: 10.83

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
43.05	.563	67.15	.375	86.00	.129	118.05	.457	149.00	.070
44.05	1.793	68.00	9.459	87.00	6.317	118.95	.574	151.00	.082
45.05	.410	69.00	9.177	88.00	6.481	122.45	.164	154.15	.188
46.05	.539	70.00	.551	92.00	1.992	122.95	.059	155.00	.234
47.05	2.368	71.00	.340	93.00	3.305	126.95	.082	159.00	.047
49.05	3.645	72.15	.574	94.00	8.966	127.95	.352	173.90	64.158
50.05	19.444	73.00	4.337	95.00	100.000	129.80	.422	175.00	5.145
51.05	5.427	74.00	11.967	96.00	6.716	130.80	.035	175.90	61.978
55.05	.234	75.00	42.569	99.15	.152	132.20	.035	176.90	4.090
56.05	1.688	76.00	3.528	104.95	.082	132.95	.293	178.00	.188
57.05	2.637	77.00	1.102	105.95	.234	134.95	.281	181.70	.176
58.05	.246	78.00	.914	107.70	.152	141.75	.375	183.05	.094
60.05	.598	78.90	1.828	111.95	.152	143.00	.352	184.20	.188
61.00	4.266	79.90	.563	114.20	.012	145.15	.141	185.95	.141
62.00	3.997	81.00	2.110	114.95	.035	145.65	.129	234.25	.082
63.00	2.508	84.25	.105	115.80	.328				

MS data file header from : >FCBF9

Sample: BFB TUNE Operator: CARSTEN MS 10/19/90 8:20
Misc : 10/19/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

Compound	RF 5.00	RF 10.00	RF 15.00	RF 20.00	RF 25.00	$\overline{RRT}$	$\overline{RF}$	% RSD	
CHLOROMETHANE	.58197	.55870	.79967	.51241	.40347	.199	.57124	25.377	(Conc=10.0,15.0,20.0,25.0,30.0)
BROMOMETHANE	1.94644	1.76959	2.36934	1.63043	1.34484	.309	1.81213	21.044	(Conc=10.0,15.0,20.0,25.0,30.0)
VINYL CHLORIDE	1.04316	.96649	1.06223	.79489	.65353	.384	1.06406	44.200	(Conc=10.0,15.0,20.0,25.0,30.0)
CHLOROETHANE	4.59248	3.82440	4.97641	3.59886	2.92610	.479	3.98365	20.425	(Conc=10.0,15.0,20.0,25.0,30.0)
METHYLENE CHLORIDE	2.54663	2.39226	2.18772	2.31694	2.08608	.683	2.30593	7.752	(Conc=5.0,10.0,15.0,20.0,25.0)
ACROLEIN	.06278	.07499	.04874	.07781	.06757	.734	.06638	17.346	(Conc=225.0,300.0,375.0,450.0,525
ACETONE	.09154	.11047	.10427	.11094	.09964	.730	.10337	7.833	(Conc=225.0,300.0,375.0,450.0,525
ACRYLONITRILE	.16200	.19924	.18765	.19718	.17976	.799	.18517	8.166	(Conc=225.0,300.0,375.0,450.0,525
CARBON DISULFIDE	12.6707	12.5072	12.8038	12.4255	10.8543	.828	12.2523	6.489	(Conc=7.5,10.0,12.5,15.0,17.5)
1,1-DICHLOROETHENE	4.74944	4.46504	4.57105	4.25377	3.70845	.951	4.34955	9.214	(Conc=5.0,10.0,15.0,20.0,25.0)
1,1-DICHLOROETHANE	8.72781	8.04526	7.54379	7.79889	6.95807	1.072	7.81428	8.398	(Conc=5.0,10.0,15.0,20.0,25.0)
1,2-DICHLOROETHENE (TOTAL)	4.73849	4.39122	4.38036	4.30094	3.80906	1.141	4.30801	7.710	(Conc=5.0,10.0,15.0,20.0,25.0)
CHLOROFORM	5.91441	5.48794	5.08676	5.33058	4.82281	1.199	5.32850	7.794	(Conc=5.0,10.0,15.0,20.0,25.0)
1,2-DICHLOROETHANE-D4	1.00980	1.08001	1.10595	1.15564	1.16029	1.258	1.18234	5.686	(Conc=10.0,10.0,10.0,10.0,10.0)
1,2-DICHLOROETHANE	1.31513	1.31626	1.20129	1.26324	1.15780	1.267	1.25074	5.608	(Conc=5.0,10.0,15.0,20.0,25.0)
2-BUTANONE	.01237	.01558	.01405	.01550	.01404	.674	.01431	9.199	(Conc=75.0,100.0,125.0,150.0,175
1,1,1-TRICHLOROETHANE	2.03326	1.94279	1.90895	1.82395	1.58966	.746	1.85972	9.064	(Conc=5.0,10.0,15.0,20.0,25.0)
CARBON TETRACHLORIDE	1.71327	1.63967	1.62445	1.52775	1.32873	.766	1.56677	9.482	(Conc=5.0,10.0,15.0,20.0,25.0)
VINYL ACETATE	.53544	.56722	.18024	.58453	.53028	.772	.47954	35.203	(Conc=22.5,30.0,37.5,45.0,52.5)
BROMODICHLOROMETHANE	.90297	.89838	.79260	.87325	.80853	.795	.85515	6.011	(Conc=5.0,10.0,15.0,20.0,25.0)
1,2-DICHLOROPROPANE	1.08326	1.07029	.97018	1.05361	.97043	.860	1.02955	5.392	(Conc=5.0,10.0,15.0,20.0,25.0)
CIS-1,3-DICHLOROPROPENE	1.35367	1.34909	1.20560	1.32387	1.23419	.874	1.29328	5.312	(Conc=6.0,12.0,18.0,24.0,30.0)
TRICHLOROETHENE	1.42565	1.39825	1.32507	1.37395	1.24386	.902	1.35176	5.203	(Conc=5.0,10.0,15.0,20.0,25.0)
BENZENE-D6	3.38800	3.25122	3.21919	3.25063	3.13639	.918	3.24909	2.791	(Conc=10.0,10.0,10.0,10.0,10.0)
BENZENE	3.93076	3.76878	3.42959	3.64469	3.30815	.925	3.61639	6.951	(Conc=5.0,10.0,15.0,20.0,25.0)
DIBROMOCHLOROMETHANE	.42460	.43874	.38730	.43102	.40408	.937	.41715	5.051	(Conc=5.0,10.0,15.0,20.0,25.0)
TRANS-1,3-DICHLOROPROPENE	.21033	.27888	.21344	.27204	.24331	.939	.24360	13.894	(Conc=4.0,8.0,12.0,16.0,20.0)
1,1,2-TRICHLOROETHANE	.29528	.31829	.27066	.30365	.28396	.940	.29437	6.194	(Conc=5.0,10.0,15.0,20.0,25.0)
2-CHLOROETHYL VINYLETHER	.14249	.13456	.12354	.13104	.12405	.992	.13114	6.812	(Conc=5.0,10.0,15.0,20.0,25.0)
BROMOFORM	.20078	.21842	.19442	.21454	.19918	1.072	.20547	5.068	(Conc=5.0,10.0,15.0,20.0,25.0)
4-METHYL-2-PENTANONE	.41467	.46830	.42348	.46462	.42501	.908	.43922	5.741	(Conc=15.0,20.0,25.0,30.0,35.0)
2-HEXANONE	.26872	.29579	.26787	.30393	.27431	.973	.28212	5.894	(Conc=15.0,20.0,25.0,30.0,35.0)
TETRACHLOROETHENE	2.87191	2.53260	2.55785	2.50996	2.28548	.988	2.55156	8.211	(Conc=5.0,10.0,15.0,20.0,25.0)
1,1,2,2-TETRACHLOROETHANE	.89509	.88285	.81640	.88942	.82860	.989	.86247	4.290	(Conc=5.0,10.0,15.0,20.0,25.0)
TOLUENE-D8	6.98180	6.08544	6.24457	6.06869	5.94281	1.033	6.26466	6.624	(Conc=10.0,10.0,10.0,10.0,10.0)
TOLUENE	5.35304	4.64538	4.35439	4.54886	4.19181	1.041	4.61870	9.664	(Conc=5.0,10.0,15.0,20.0,25.0)
CHLOROBENZENE	4.34336	3.77131	3.47132	3.72771	3.47378	1.090	3.75749	9.472	(Conc=5.0,10.0,15.0,20.0,25.0)
ETHYLBENZENE	3.55917	3.04321	2.90428	2.98819	2.72900	1.174	3.04477	10.219	(Conc=5.0,10.0,15.0,20.0,25.0)
STYRENE	3.76357	1.86194	3.51576	3.85833	3.64248	1.349	3.32842	24.932	(Conc=7.5,10.0,12.5,15.0,17.5)

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

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

Calibration Report

Title: VOLATILES CRL624NS 05\23\90
Calibrated: 901019 15:09

Compound	Files: >IA019 RF 5.00	>IB019 RF 10.00	>FC149 RF 15.00	>ID019 RF 20.00	>IE019 RF 25.00	$\overline{RRT}$	$\overline{RF}$	% RSD	
META XYLENE	3.99703	3.49667	3.35818	3.47922	3.29283	1.361	3.52478	7.865	(Conc=10.0,20.0,30.0,40.0,50.0)
O-&/OR P-XYLENE	3.61252	3.12088	2.94881	3.09828	2.97029	1.406	3.15016	8.551	(Conc=12.5,25.1,37.6,50.1,62.7)

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

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

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

QUANT REPORT

Operator ID: CARSTEN
Output File: FC150::L2
Data File: FC150::AB
Name: METHOD BLK 3
Misc: 10/19/90 CRS

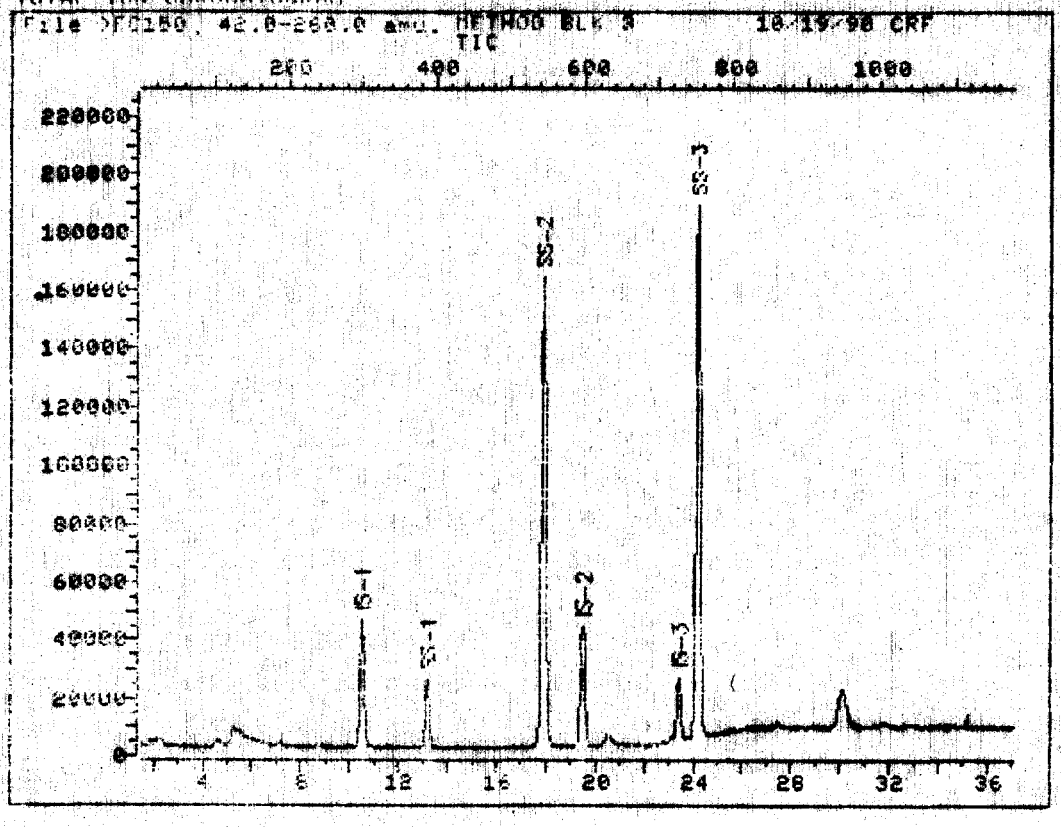
Quant Rev: 6
Quant Time: 901019 10:26
Injected at: 901019 09:45
Dilution Factor: 1.00000

ID File: IDCF3A::XX
Title: ID FOR 624NS HP # CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	79503	10.00	UG/L	95
15)	1,2-DICHLOROETHANE-D4	13.21	65.0	77559	8.80	UG/L	85
17)	*2-Bromo-1-chloropropane	19.51	77.0	297552	10.00	UG/L	99
26)	BENZENE-D6	17.92	84.0	981904	10.66	UG/L	98
33)	*1,4-Dichlorobutane	23.44	55.0	139899	10.00	UG/L	96
38)	TOLUENE-D8	24.19	98.0	919195	10.88	UG/L	99

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC150::A8 Quant Output File: ^FC150::L2
Name: METHOD BLK 3
Misc: 10/19/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 10:26
Injected at: 901019 09:45

QUANT REPORT

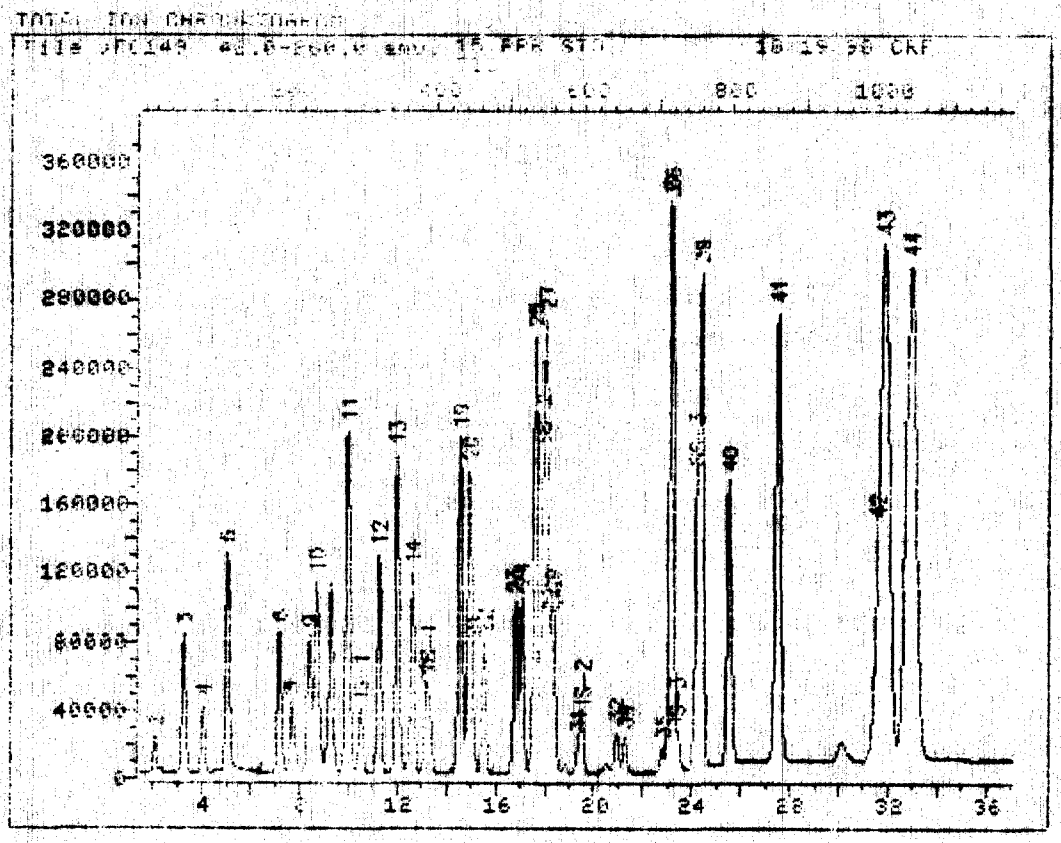
Operator ID: [illegible] Quant Rev: 6 Quant Time: 901019 11:18
Output File: ^FC149::L2 Injected at: 901019 10:37
Data File: [illegible]149::A8 Dilution Factor: 1.00000
Name: 15 PPB STD
Misc: 10/19/90 L

ID File: IDCF5A::XX
Title: ID FOR 624NS HP # CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	68855	10.00	UG/L	99
2)	CHLOROMETHANE	2.12	50.0	110122	48.30	UG/L	100
3)	BROMOMETHANE	3.26	94.0	326282	36.00	UG/L	94
4)	VINYL CHLORIDE	4.05	62.0	256447M	88.20	UG/L	98
5)	CHLOROETHANE	5.04	64.0	685302	35.51	UG/L	98
6)	METHYLENE CHLORIDE	7.18	84.0	225953	13.84	UG/L	89
7)	ACROLEIN	7.73	56.0	125858	233.41	UG/L	95
8)	ACETONE	7.67	43.0	269224	360.49	UG/L	96
9)	ACRYLONITRILE	8.39	53.0	484512	352.12	UG/L	96
10)	CARBON DISULFIDE	8.69	76.0	1102002	14.46	UG/L	100
11)	1,1-DICHLOROETHENE	9.99	96.0	472110	18.00	UG/L	94
12)	1,1-DICHLOROETHANE	11.26	63.0	779141	14.71	UG/L	95
13)	1,2-DICHLOROETHENE (TOTAL)	11.96	96.0	444152	15.99	UG/L	85
14)	CHLOROFORM	12.61	83.0	525373	14.26	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.22	65.0	76150	9.98	UG/L	87
16)	1,2-DICHLOROETHANE	13.31	62.0	124072	14.04	UG/L	93
17)	*2-Bromo-1-chloropropane	15.52	77.0	258938	10.00	UG/L	99
18)	2-BUTANONE	13.16	72.0	45471	118.20	UG/L	95
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	741451	17.71	UG/L	98
20)	CARBON TETRACHLORIDE	14.94	117.0	630948	18.64	UG/L	98
21)	VINYL ACETATE	15.06	43.0	175018	12.47	UG/L	96
22)	BROMODICHLOROMETHANE	15.51	83.0	307851	14.01	UG/L	96
23)	1,2-DICHLOROPROPANE	16.78	63.0	376823	13.79	UG/L	98
24)	CIS-1,3-DICHLOROPROPENE	17.05	75.0	561916	16.42	UG/L	99
25)	TRICHLOROETHENE	17.59	130.0	514666	15.83	UG/L	98
26)	BENZENE-D6	17.92	84.0	833571	10.39	UG/L	97
27)	BENZENE	19.05	78.0	1332078	14.53	UG/L	97
28)	DIBROMOCHLOROMETHANE	18.26	129.0	150430	13.92	UG/L	95
29)	TRANS-1,3-DICHLOROPROPENE	18.32	75.0	66322M	7.37	UG/L	44
30)	1,1,2-TRICHLOROETHANE	18.55	97.0	105127	13.58	UG/L	99
31)	2-CHLOROETHYL VINYLETHER	19.34	63.0	47984	14.11	UG/L	96
32)	BROMOFORM	20.91	173.0	75513	14.17	UG/L	98
33)	*1,4-Dichlorobutane	23.42	55.0	126351	10.00	UG/L	93
34)	4-METHYL-2-PENTANONE	21.27	43.0	133767	24.17	UG/L	96
35)	2-HEXANONE	22.81	43.0	84615	23.06	UG/L	96
36)	TETRACHLOROETHENE	23.15	164.0	484781	16.86	UG/L	98
37)	1,1,2,2-TETRACHLOROETHANE	23.18	83.0	154729	13.97	UG/L	97
38)	TOLUENE-D8	24.20	98.0	789008	10.34	UG/L	98
39)	TOLUENE	24.38	92.0	825273	14.49	UG/L	99
40)	CHLOROBENZENE	25.53	112.0	657907	13.63	UG/L	98
41)	ETHYLBENZENE	27.52	106.0	550438	14.95	UG/L	98
42)	STYRENE	31.60	104.0	555274	11.50	UG/L	99
43)	META XYLENE	31.87	106.0	1272927	29.41	UG/L	97

	Compound	R.T.	Q ion	Area	Conc	Units	q
44)	O-&/OR P-XYLENE	32.93	106.0	1400919	35.94	UG/L	98

* Compound is ISTD



Data File: >>PC149::A8 Quant Output File: ^PC149::L2
Name: 15 PPB S/D
Misc: 10/19/90 CPF

Id File: IDCF3A1:XX
Title: ID FOR 624NS HP #: CF 09\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 11:18
Injected at: 901019 10:37

QUANT REPORT

Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901019 12:19
Output File: ^IA019::L2 Injected at: 901019 11:38
Data File: >IA019::A8 Dilution Factor: 1.00000
Name: 5 PPB STD
Misc: 10/19/90 CHF

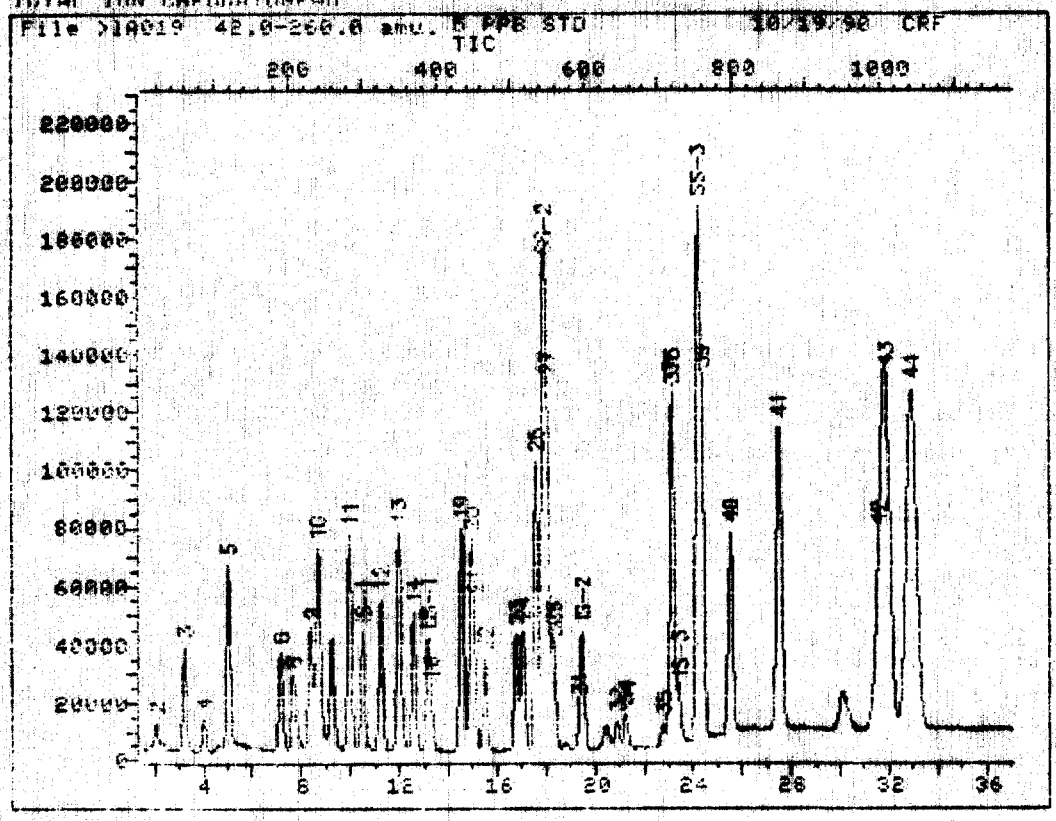
ID File: IDCF3A::XX
Title: ID FOR 624NS HP #: CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	73959	10.00	UG/L	96
2)	CHLOROMETHANE	2.09	50.0	43042	17.58	UG/L	100
3)	BROMOMETHANE	3.26	94.0	143957	14.79	UG/L	96
4)	VINYL CHLORIDE	4.05	62.0	72151	24.70	UG/L	95
5)	CHLOROETHANE	5.04	64.0	339655	16.38	UG/L	98
6)	METHYLENE CHLORIDE	7.18	84.0	94173	5.37	UG/L	91
7)	ACROLEIN	7.73	56.0	104421	180.38	UG/L	94
8)	ACETONE	7.66	43.0	152337	189.90	UG/L	99
9)	ACRYLONITRILE	8.39	53.0	269580	182.40	UG/L	98
10)	CARBON DISULFIDE	8.69	76.0	702833	8.59	UG/L	100
11)	1,1-DICHLOROETHENE	9.99	96.0	175632	6.23	UG/L	84
12)	1,1-DICHLOROETHANE	11.25	63.0	322750	5.67	UG/L	95
13)	1,2-DICHLOROETHENE (TOTAL)	11.98	96.0	175227	5.86	UG/L	81
14)	CHLOROFORM	12.58	83.0	218712	5.53	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	74684	9.11	UG/L	85
16)	1,2-DICHLOROETHANE	13.31	62.0	48633	5.12	UG/L	93
17)	*2-Bromo-1-chloropropane	19.49	77.0	280907	10.00	UG/L	99
18)	2-BUTANONE	13.15	72.0	26061	62.45	UG/L	98
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	285579	6.29	UG/L	98
20)	CARBON TETRACHLORIDE	14.93	117.0	240635	6.55	UG/L	97
21)	VINYL ACETATE	15.05	43.0	338419	22.23	UG/L	95
22)	BROMODICHLOROMETHANE	15.51	83.0	126826	5.32	UG/L	99
23)	1,2-DICHLOROPROPANE	16.77	63.0	152147	5.13	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	17.05	75.0	228153	6.14	UG/L	98
25)	TRICHLOROETHENE	17.59	130.0	200237	5.68	UG/L	99
26)	BENZENE-D6	17.89	84.0	951713	10.94	UG/L	98
27)	BENZENE	18.04	78.0	552089	5.55	UG/L	96
28)	DIBROMOCHLOROMETHANE	18.28	129.0	59636	5.09	UG/L	89
29)	TRANS-1,3-DICHLOROPROPENE	18.31	75.0	23633M	2.42	UG/L	
30)	1,1,2-TRICHLOROETHANE	18.34	97.0	41473	4.94	UG/L	89
31)	2-CHLOROETHYL VINYLETHER	19.37	63.0	20013	5.42	UG/L	97
32)	BROMOFORM	20.91	173.0	28200	4.88	UG/L	98
33)	*1,4-Dichlorobutane	23.44	55.0	126072	10.00	UG/L	97
34)	4-METHYL-2-PENTANONE	21.27	43.0	78418	14.20	UG/L	94
35)	2-HEXANONE	22.81	43.0	50817	13.88	UG/L	98
36)	TETRACHLOROETHENE	23.14	164.0	181034	6.31	UG/L	97
37)	1,1,2,2-TETRACHLOROETHANE	23.17	83.0	56423	5.11	UG/L	96
38)	TOLUENE-D8	24.20	98.0	880209	11.56	UG/L	99
39)	TOLUENE	24.38	92.0	337434	5.94	UG/L	98
40)	CHLOROBENZENE	25.53	112.0	273788	5.68	UG/L	99
41)	ETHYLBENZENE	27.49	106.0	224356	6.11	UG/L	98
42)	STYRENE	31.57	104.0	355861	7.39	UG/L	94
43)	META XYLENE	31.90	106.0	503914	11.67	UG/L	97

	Compound	R.T.	Q ion	Area	Conc	Units	q
44)	O-&/OR P-XYLENE	32.93	106.0	569297	14.64	UG/L	96

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >IA019::PB
Name: 5 PPB STD
Misc: 10/19/90 CRF

Quant Output File: ^IA019::L2

Id File: IDCF3A::XX
Title: 10 FOR 624NS HP #: CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 12:19
Injected at: 901019 11:38

QUANT REPORT

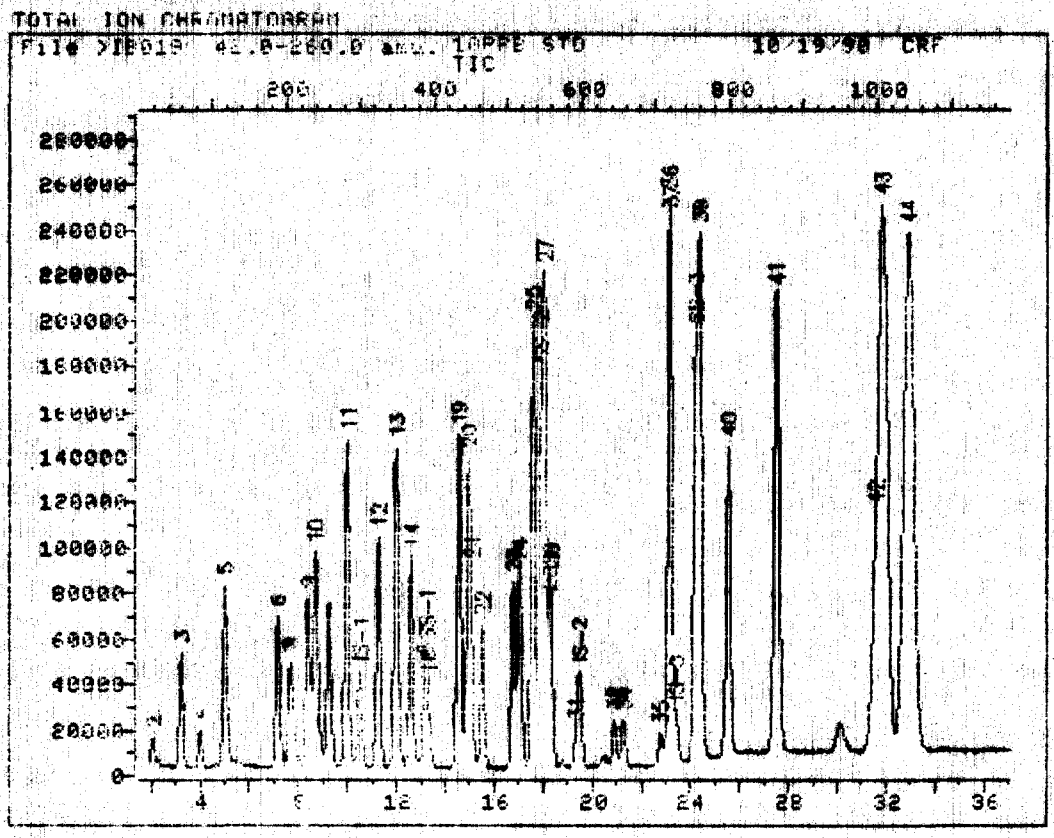
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901019 13:06
Output File: ^IB019::L2 Injected at: 901019 12:25
Data File: >IB019::A3 Dilution Factor: 1.00000
Name: 10PPB STD
Misc: 10/19/90 CRF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 LF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	77313	10.00	UG/L	94
2)	CHLOROMETHANE	2.09	50.0	64792	25.31	UG/L	100
3)	BROMOMETHANE	3.23	94.0	205219	20.16	UG/L	99
4)	VINYL CHLORIDE	4.02	62.0	112083	34.33	UG/L	99
5)	CHLOROETHANE	5.01	64.0	443514	20.46	UG/L	98
6)	METHYLENE CHLORIDE	7.15	84.0	184953	10.09	UG/L	92
7)	ACROLEIN	7.70	56.0	173936	287.29	UG/L	96
8)	ACETONE	7.67	43.0	256230	305.55	UG/L	95
9)	ACRYLONITRILE	8.39	53.0	462123	299.11	UG/L	97
10)	CARBON DISULFIDE	8.69	76.0	966972	11.30	UG/L	100
11)	1,1-DICHLOROETHENE	9.99	96.0	345206	11.72	UG/L	84
12)	1,1-DICHLOROETHANE	11.25	63.0	622003	10.46	UG/L	96
13)	1,2-DICHLOROETHENE (TOTAL)	11.98	96.0	339498	10.86	UG/L	83
14)	CHLOROFORM	12.58	83.0	424289	10.26	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.22	65.0	83499	9.74	UG/L	89
16)	1,2-DICHLOROETHANE	13.31	62.0	101764	10.25	UG/L	94
17)	*2-Bromo-1-chloropropane	19.49	77.0	283599	10.00	UG/L	98
18)	2-BUTANONE	13.13	72.0	44194	104.89	UG/L	96
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	550972	12.02	UG/L	98
20)	CARBON TETRACHLORIDE	14.94	117.0	465008	12.55	UG/L	98
21)	VINYL ACETATE	15.06	43.0	510139	33.19	UG/L	97
22)	BROMODICHLOROMETHANE	15.51	83.0	254781	10.59	UG/L	96
23)	1,2-DICHLOROPROPANE	16.78	63.0	303534	10.14	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	17.05	75.0	459120	12.25	UG/L	97
25)	TRICHLOROETHENE	17.59	130.0	394274	11.07	UG/L	97
26)	BENZENE-D6	17.89	84.0	922043	10.50	UG/L	98
27)	BENZENE	18.04	78.0	1068822	10.65	UG/L	98
28)	DIBROMOCHLOROMETHANE	18.25	129.0	124426	10.52	UG/L	91
29)	TRANS-1,3-DICHLOROPROPENE	18.32	75.0	63271	6.42	UG/L	97
30)	1,1,2-TRICHLOROETHANE	18.32	97.0	90268	10.65	UG/L	95
31)	2-CHLOROETHYL VINYLETHER	19.34	63.0	38162	10.25	UG/L	95
32)	BROMOFORM	20.91	173.0	61945	10.61	UG/L	96
33)	*1,4-Dichlorobutane	23.42	55.0	142224	10.00	UG/L	93
34)	4-METHYL-2-PENTANONE	21.27	43.0	133208	21.39	UG/L	95
35)	2-HEXANONE	22.78	43.0	84136	20.37	UG/L	99
36)	TETRACHLOROETHENE	23.14	164.0	360196	11.13	UG/L	96
37)	1,1,2,2-TETRACHLOROETHANE	23.17	83.0	125563	10.07	UG/L	92
38)	TOLUENE-D8	24.20	98.0	865495	10.08	UG/L	99
39)	TOLUENE	24.38	92.0	660685	10.31	UG/L	99
40)	CHLOROBENZENE	25.53	112.0	536371	9.87	UG/L	97
41)	ETHYLBENZENE	27.49	106.0	432817	10.44	UG/L	97
42)	STYRENE	31.57	104.0	264813^	4.87	UG/L	95
43)	META XYLENE	31.84	106.0	994620	20.42	UG/L	98

	Compound	R.T.	Q ion	Area	Conc	Units	q
44)	O-&/OR P-XYLENE	32.93	106.0	1114098	25.39	UG/L	98

* Compound is ISTD



Data File: >IB019::A3 Quant Output File: ^IB019::L2
Name: 10PPB STD
Misc: 10/19/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #1 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 13:06
Injected at: 901019 12:25

QUANT REPORT

Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901019 13:54
Output File: ^ID019::L2 Injected at: 901019 13:13
Data File: >ID019::A3 Dilution Factor: 1.00000
Name: 20PPB STD
Misc: 10/19/90 CPF

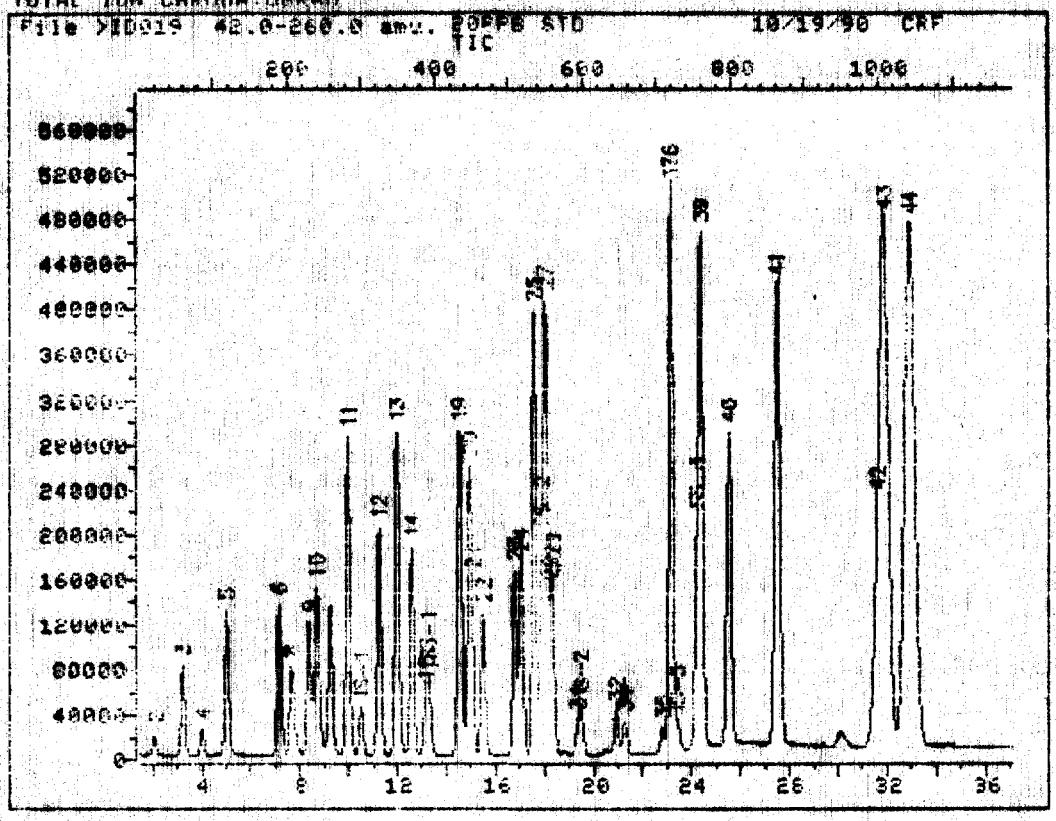
ID File: IDCF3A::XX
Title: ID FOR 624NS HP #: CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	79502	10.00	UG/L	95
2)	CHLOROMETHANE	2.09	50.0	101845	38.69	UG/L	100
3)	BROMOMETHANE	3.23	94.0	324056	30.96	UG/L	96
4)	VINYL CHLORIDE	4.02	62.0	157989	47.06	UG/L	96
5)	CHLOROETHANE	5.01	64.0	715291	32.10	UG/L	97
6)	METHYLENE CHLORIDE	7.15	84.0	368403	19.55	UG/L	91
7)	ACROLEIN	7.70	56.0	278361	447.14	UG/L	95
8)	ACETONE	7.67	43.0	396892	460.26	UG/L	96
9)	ACRYLONITRILE	8.39	53.0	705428	444.02	UG/L	98
10)	CARBON DISULFIDE	8.69	76.0	1481784	16.84	UG/L	100
11)	1,1-DICHLOROETHENE	9.99	96.0	676366	22.33	UG/L	84
12)	1,1-DICHLOROETHANE	11.26	63.0	1240071	20.27	UG/L	96
13)	1,2-DICHLOROETHENE (TOTAL)	11.98	96.0	683867	21.27	UG/L	85
14)	CHLOROFORM	12.58	83.0	842583	19.92	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.22	65.0	91876	10.42	UG/L	87
16)	1,2-DICHLOROETHANE	13.31	62.0	200861	19.68	UG/L	95
17)	*2-Bromo-1-chloropropane	19.50	77.0	292369	10.00	UG/L	97
18)	2-BUTANONE	13.13	72.0	67954	156.45	UG/L	95
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	1066533	22.57	UG/L	97
20)	CARBON TETRACHLORIDE	14.94	117.0	893335	23.38	UG/L	98
21)	VINYL ACETATE	15.06	43.0	804246	50.76	UG/L	98
22)	BROMODICHLOROMETHANE	15.51	83.0	510621	20.59	UG/L	96
23)	1,2-DICHLOROPROPANE	16.78	63.0	616084	19.97	UG/L	98
24)	CIS-1,3-DICHLOROPROPENE	17.05	75.0	928942	24.04	UG/L	97
25)	TRICHLOROETHENE	17.59	130.0	803400	21.88	UG/L	97
26)	BENZENE-D6	17.89	84.0	950382	10.50	UG/L	97
27)	BENZENE	18.05	78.0	2131188	20.59	UG/L	97
28)	DIBROMOCHLOROMETHANE	18.26	129.0	252033	20.66	UG/L	96
29)	TRANS-1,3-DICHLOROPROPENE	18.32	75.0	127259	12.52	UG/L	94
30)	1,1,2-TRICHLOROETHANE	18.35	97.0	177558	20.32	UG/L	99
31)	2-CHLOROETHYL VINYLETHER	19.37	63.0	76625	19.95	UG/L	97
32)	BROMOFORM	20.91	173.0	125450	20.85	UG/L	95
33)	*1,4-Dichlorobutane	23.42	55.0	146975	10.00	UG/L	92
34)	4-METHYL-2-PENTANONE	21.28	43.0	204861	31.83	UG/L	92
35)	2-HEXANONE	22.82	43.0	134011	31.40	UG/L	99
36)	TETRACHLOROETHENE	23.15	164.0	737803	22.06	UG/L	97
37)	1,1,2,2-TETRACHLOROETHANE	23.18	83.0	261445	20.30	UG/L	94
38)	TOLUENE-D8	24.20	98.0	891945	10.05	UG/L	99
39)	TOLUENE	24.39	92.0	1337137	20.18	UG/L	99
40)	CHLOROBENZENE	25.53	112.0	1095759	19.51	UG/L	97
41)	ETHYLBENZENE	27.50	106.0	878378	20.51	UG/L	99
42)	STYRENE	31.61	104.0	850617	15.14	UG/L	98
43)	META XYLENE	31.91	106.0	2045432	40.63	UG/L	98

	Compound	R.T.	Q ion	Area	Conc	Units	q
44)	O-&/OR P-XYLENE	32.94	106.0	2281402	50.31	UG/L	97

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >ID019::A3 Quant Output File: ^ID019::L2
Name: 20PPB STD
Misc: 10/19/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 13:54
Injected at: 901019 13:13

QUANT REPORT

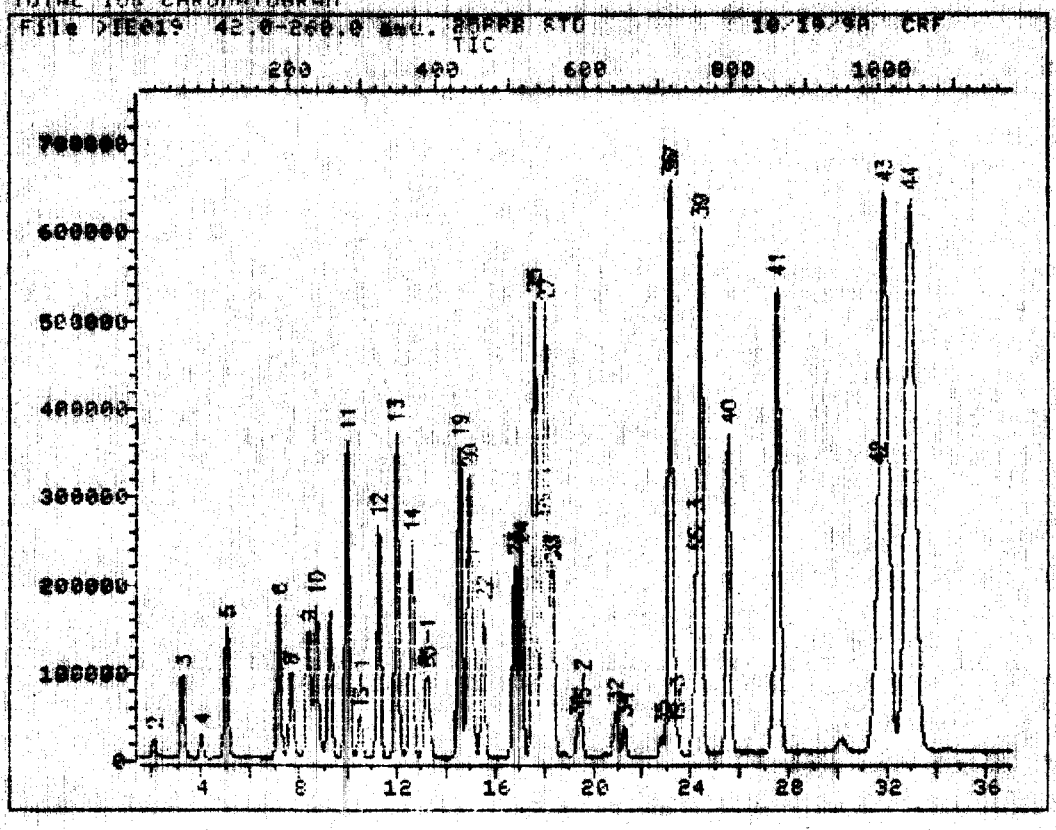
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901019 14:42
Output File: ^IE019::L2 Injected at: 901019 14:01
Data File: >IE019::A3 Dilution Factor: 1.00000
Name: 25PPB STD
Misc: 10/19/90 CRF

ID File: IDCF3A::XX
Title: ID FOR 624MS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.49	130.0	91625	10.00	UG/L	92
2)	CHLOROMETHANE	2.08	50.0	110904	36.56	UG/L	100
3)	BROMOMETHANE	3.25	94.0	369664	30.65	UG/L	96
4)	VINYL CHLORIDE	4.04	62.0	179640	46.43	UG/L	95
5)	CHLOROETHANE	5.03	64.0	804311	31.32	UG/L	98
6)	METHYLENE CHLORIDE	7.17	84.0	477843	22.00	UG/L	91
7)	ACROLEIN	7.69	56.0	325009	452.96	UG/L	95
8)	ACETONE	7.66	43.0	479313	482.30	UG/L	95
9)	ACRYLONITRILE	8.38	53.0	864716	472.26	UG/L	99
10)	CARBON DISULFIDE	8.68	76.0	1740417	17.16	UG/L	100
11)	1,1-DICHLOROETHENE	9.98	96.0	849467	24.33	UG/L	84
12)	1,1-DICHLOROETHANE	11.25	63.0	1593834	22.61	UG/L	96
13)	1,2-DICHLOROETHENE (TOTAL)	11.97	96.0	872512	23.55	UG/L	84
14)	CHLOROFORM	12.61	83.0	1104726	22.53	UG/L	99
15)	1,2-DICHLOROETHANE-D4	13.21	65.0	106312	10.47	UG/L	91
16)	1,2-DICHLOROETHANE	13.30	62.0	265208	22.55	UG/L	95
17)	*2-Bromo-1-chloropropane	19.52	77.0	335339	10.00	UG/L	97
18)	2-BUTANONE	13.15	72.0	82406	165.41	UG/L	97
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	1332689	24.59	UG/L	99
20)	CARBON TETRACHLORIDE	14.93	117.0	1113938	25.42	UG/L	99
21)	VINYL ACETATE	15.05	43.0	933577	51.37	UG/L	99
22)	BROMODICHLOROMETHANE	15.50	83.0	677830	23.83	UG/L	97
23)	1,2-DICHLOROPROPANE	16.80	63.0	813556	22.99	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	17.04	75.0	1241617	28.01	UG/L	99
25)	TRICHLOROETHENE	17.58	130.0	1042790	24.76	UG/L	99
26)	BENZENE-D6	17.92	84.0	1051754	10.13	UG/L	98
27)	BENZENE	18.07	78.0	2723380	23.36	UG/L	99
28)	DIBROMOCHLOROMETHANE	18.28	129.0	338756	24.21	UG/L	94
30)	1,1,2-TRICHLOROETHANE	18.34	97.0	238[illegible]	[illegible]	UG/L	99
31)	2-CHLOROETHYL VINYLETHER	19.34	63.0	10[illegible]	23.61	UG/L	99
32)	BROMOFORM	20.91	173.0	166985	24.20	UG/L	98
33)	*1,4-Dichlorobutane	23.44	55.0	165749	10.00	UG/L	94
34)	4-METHYL-2-PENTANONE	21.27	43.0	246556	33.97	UG/L	92
35)	2-HEXANONE	22.81	43.0	159134	33.06	UG/L	99
36)	TETRACHLOROETHENE	23.14	164.0	947039	25.11	UG/L	97
37)	1,1,2,2-TETRACHLOROETHANE	23.17	83.0	343351	23.64	UG/L	96
38)	TOLUENE-D8	24.20	98.0	985014	9.84	UG/L	98
39)	TOLUENE	24.38	92.0	1736972	23.25	UG/L	99
40)	CHLOROBENZENE	25.53	112.0	1439437	22.73	UG/L	98
41)	ETHYLBENZENE	27.52	106.0	1130821	23.41	UG/L	99
42)	STYRENE	31.63	104.0	1056540	16.68	UG/L	95
43)	META XYLENE	31.87	106.0	2728914	48.07	UG/L	97
44)	O-&/OR P-XYLENE	32.93	106.0	3086867	60.37	UG/L	96

* Compound is ISTD

TOTAL ION CHROMATOGRAM



Data File: >IE019::A3 Quant Output File: ^IE019::L2
Name: 25PPB STD
Misc: 10/19/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901018 10:48

Operator ID: CARSTEN
Quant Time: 901019 14:42
Injected at: 901019 14:01

GC/MS PERFORMANCE STANDARD

Bromofluorobenzene (BFB)

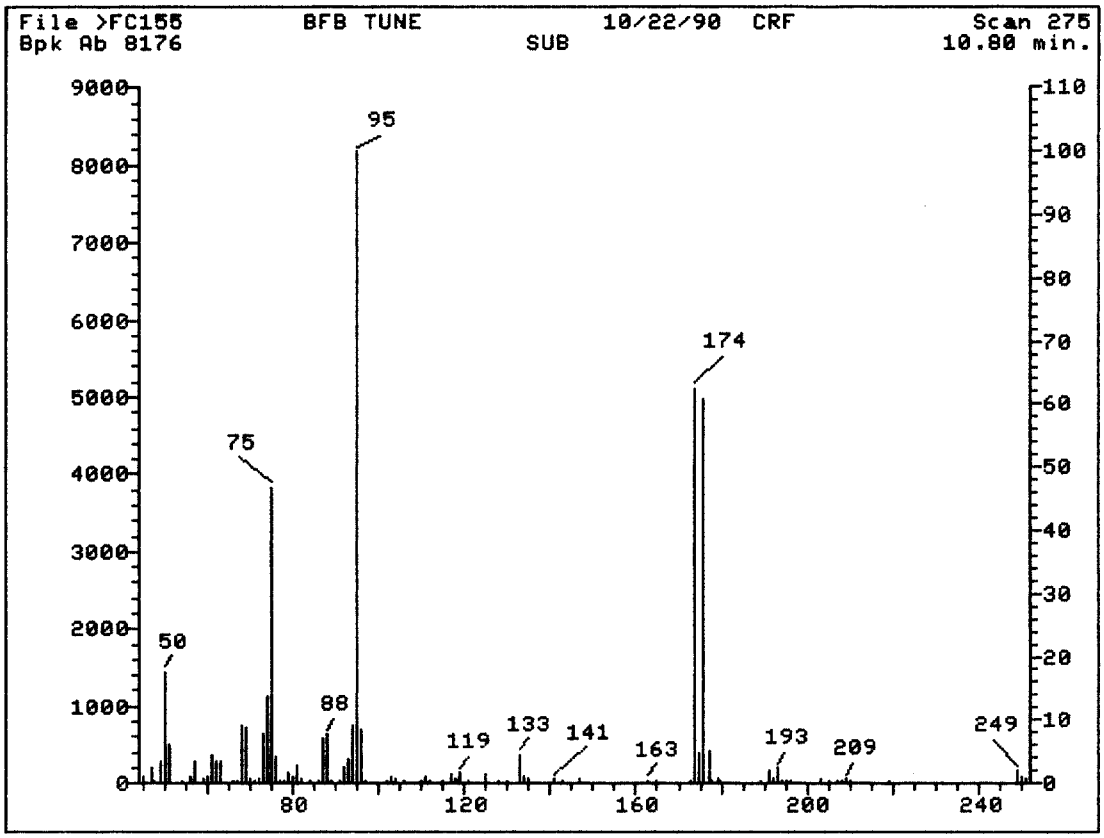
m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
50	15-40% of mass 95	17.58	17.58	Ok
75	30-60% of mass 95	46.71	46.71	Ok
95	Base peak, 100% relative abundance	100.00	100.00	Ok
96	5-9% of mass 95	8.37	8.37	Ok
173	Less than 2% of mass 174	.32	.51	Ok
174	Greater than 50% of mass 95	62.54	62.54	Ok
175	5-9% of mass 174	4.61	7.37	Ok
176	95-101% of mass 174	60.85	97.30	Ok
177	5-9% of mass 176	5.16	8.48	Ok

Injection Date: 10/22/90
Injection Time: 07:48
Data File: >FC155
Scan: 275

MS data file header from : >FC155

Sample: BFB TUNE Operator: CARSTEN MS 10/22/90 7:48
Misc : 10/22/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0



MS data file header from : >FC155

Sample: BFB TUNE Operator: CARSTEN MS 10/22/90 7:48
Misc : 10/22/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

>FC155 BFB TUNE 10/22/90 CRF
275 SUB NRM

File: >FC155 Scan #: 275 Retn. time: 10.80

m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.	m/z	Int.
43.95	.514	72.00	.575	95.00	100.000	133.05	4.415	179.90	.379
45.05	1.162	73.00	7.644	96.00	8.366	133.80	.893	188.95	.465
47.05	2.458	74.00	13.931	97.15	.220	135.05	.624	190.05	.049
47.80	.294	75.00	46.710	102.20	.416	139.05	.196	190.95	2.018
49.05	3.315	76.00	3.951	102.95	1.174	141.05	.636	191.95	.819
50.05	17.576	77.00	.232	103.95	.648	143.00	.391	192.95	2.238
51.05	6.152	78.00	.526	104.95	.147	146.90	.599	193.95	.220
53.95	.342	78.90	1.578	105.80	.404	149.00	.098	195.05	.208
56.05	.978	80.00	1.040	109.95	.391	155.75	.135	196.05	.208
57.05	3.327	80.90	2.703	111.05	.954	157.00	.147	202.95	.624
59.05	.771	81.90	.758	112.05	.281	161.00	.037	204.95	.477
60.05	.966	84.00	.489	114.95	.281	162.90	.404	206.95	.440
61.00	4.342	86.00	.440	116.95	1.358	165.00	.257	208.05	.489
62.00	3.547	87.00	7.045	117.95	.807	169.00	.110	208.95	.612
63.00	3.412	88.00	7.730	118.95	1.663	172.90	.318	210.05	.281
65.90	.232	89.00	.404	119.95	.135	173.90	62.537	219.20	.232
67.00	.501	90.00	.086	120.95	.404	174.90	4.611	249.00	1.896
68.00	9.039	91.00	.257	124.95	1.211	175.90	60.849	250.00	.917
69.00	8.929	92.00	2.226	125.80	.024	177.00	5.161	251.00	.844
70.00	.587	93.00	3.584	128.05	.367	177.90	.367	252.00	.086
71.00	.489	94.00	8.977	130.05	.269	179.00	.722		

MS data file header from : >FC155

Sample: BFB TUNE Operator: CARSTEN MS 10/22/90 7:48
Misc : 10/22/90 CRF
Sys. #: 3 MS model: 87 SW/HW rev.: IA ALS # : 0
Method file: BFB#3 Tuning file: MTBFB3 No. of extra records: 2
Source temp.: 200 Analyzer temp.: 0 Transfer line temp. : 0

Chromatographic temperatures :	0.	0.	0.	0.	0.
Chromatographic times, min. :	0.0	0.0	0.0	0.0	0.0
Chromatographic rate, deg/min:	0.0	0.0	0.0	0.0	0.0

QUANT REPORT

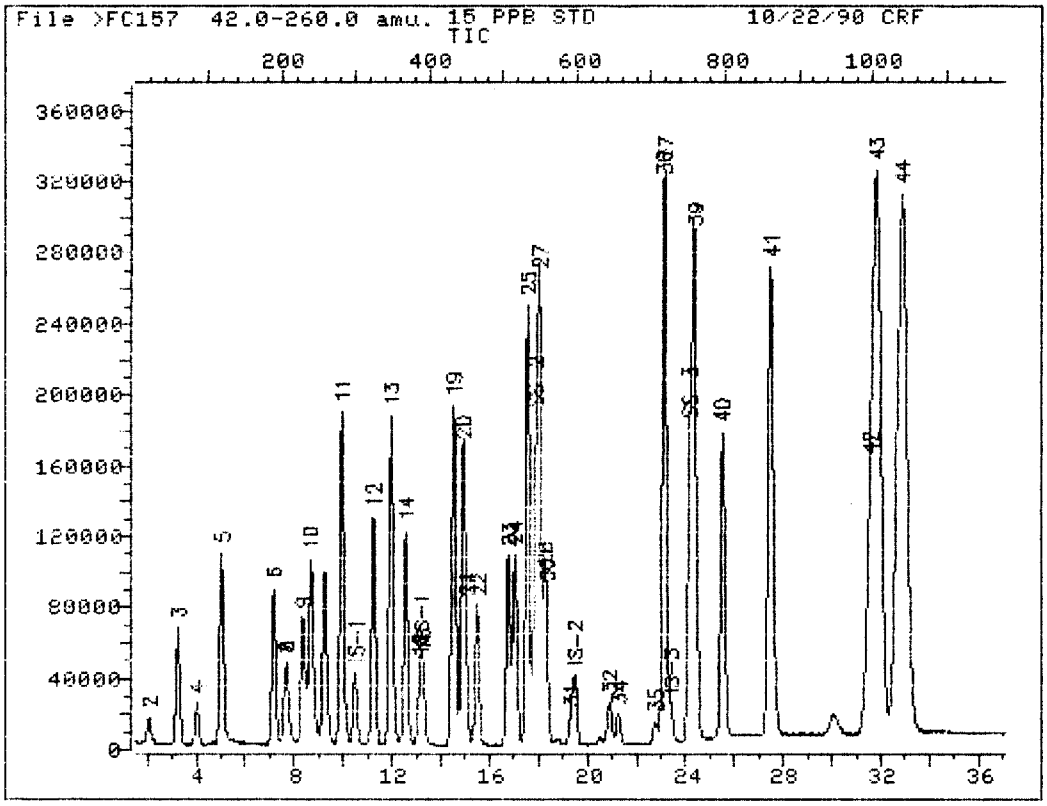
Operator ID: CARSTEN Quant Rev: 6 Quant Time: 901022 09:56
Output File: ^FC157::L2 Injected at: 901022 09:15
Data File: >FC157::A5 Dilution Factor: 1.00000
Name: 15 PPB STD
Misc: 10/22/90 CRF

ID File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901019 15:15

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	10.50	130.0	71858	10.00	UG/L	97
2)	CHLOROMETHANE	2.09	50.0	71077	17.32	UG/L	100
3)	BROMOMETHANE	3.26	94.0	254820	19.57	UG/L	94
4)	VINYL CHLORIDE	4.05	62.0	155830	20.36	UG/L	98
5)	CHLOROETHANE	5.04	64.0	588206	20.55	UG/L	98
6)	METHYLENE CHLORIDE	7.15	84.0	238446	14.39	UG/L	87
7)	ACROLEIN	7.70	56.0	161997	339.63	UG/L	97
8)	ACETONE	7.67	43.0	245120	329.99	UG/L	92
9)	ACRYLONITRILE	8.36	53.0	437003	328.43	UG/L	98
10)	CARBON DISULFIDE	8.66	76.0	1051048	11.94	UG/L	100
11)	1,1-DICHLOROETHENE	9.96	96.0	444742	14.23	UG/L	84
12)	1,1-DICHLOROETHANE	11.22	63.0	793038	14.12	UG/L	96
13)	1,2-DICHLOROETHENE (TOTAL)	11.98	96.0	435393	14.06	UG/L	82
14)	CHLOROFORM	12.58	83.0	542388	14.17	UG/L	98
15)	1,2-DICHLOROETHANE-D4	13.18	65.0	79406	10.02	UG/L	83
16)	1,2-DICHLOROETHANE	13.28	62.0	127561	14.19	UG/L	94
17)	*2-Bromo-1-chloropropane	19.49	77.0	270038	10.00	UG/L	99
18)	2-BUTANONE	13.12	72.0	40417	104.61	UG/L	98
19)	1,1,1-TRICHLOROETHANE	14.54	97.0	717712	14.29	UG/L	99
20)	CARBON TETRACHLORIDE	14.90	117.0	601585	14.22	UG/L	99
21)	VINYL ACETATE	15.06	43.0	423790	32.73	UG/L	96
22)	BROMODICHLOROMETHANE	15.51	83.0	320597	13.88	UG/L	97
23)	1,2-DICHLOROPROPANE	16.77	63.0	396969	14.28	UG/L	97
24)	CIS-1,3-DICHLOROPROPENE	17.05	75.0	583827	16.72	UG/L	98
25)	TRICHLOROETHENE	17.56	130.0	508503	13.93	UG/L	99
26)	BENZENE-D6	17.89	84.0	871465	9.93	UG/L	98
27)	BENZENE	18.04	78.0	1379906	14.13	UG/L	97
28)	DIBROMOCHLOROMETHANE	18.25	129.0	152399	13.53	UG/L	94
30)	1,1,2-TRICHLOROETHANE	18.34	97.0	108047	13.59	UG/L	99
31)	2-CHLOROETHYL VINYLETHER	19.31	63.0	46408	13.11	UG/L	98
32)	BROMOFORM	20.88	173.0	74351	13.40	UG/L	96
33)	*1,4-Dichlorobutane	23.41	55.0	127077	10.00	UG/L	93
34)	4-METHYL-2-PENTANONE	21.27	43.0	121827	21.83	UG/L	93
35)	2-HEXANONE	22.78	43.0	77917	21.73	UG/L	99
36)	TETRACHLOROETHENE	23.11	164.0	463190	14.29	UG/L	96
37)	1,1,2,2-TETRACHLOROETHANE	23.14	83.0	149474	13.64	UG/L	95
38)	TOLUENE-D8	24.17	98.0	824515	10.36	UG/L	97
39)	TOLUENE	24.38	92.0	845225	14.40	UG/L	98
40)	CHLOROBENZENE	25.50	112.0	685364	14.35	UG/L	97
41)	ETHYLBENZENE	27.49	106.0	553649	14.31	UG/L	98
42)	STYRENE	31.57	104.0	564786	13.35	UG/L	96
43)	META XYLENE	31.81	106.0	1312354	29.30	UG/L	97
44)	O-&/OR P-XYLENE	32.86	106.0	1481082	37.00	UG/L	96

* Compound not ISTD

TOTAL ION CHROMATOGRAM



Data File: >FC157::A5 Quant Output File: ^FC157::L2
Name: 15 PPB STD
Misc: 10/22/90 CRF

Id File: IDCF3A::XX
Title: ID FOR 624NS HP #3 CF 08\22\90 2 COMPONENT TRAP
Last Calibration: 901019 15:15

Operator ID: CARSTEN
Quant Time: 901022 09:56
Injected at: 901022 09:15

Calibration Check Report

Title: VOLATILES CRL624NS 05\23\90
Calibrated: 901019 15:09

Check Standard Data File: >FC157
Injection Time: 901022 09:15

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
CHLOROMETHANE	.57124	.49457	13.42	Average	(Conc=20.00)
BROMOMETHANE	1.81213	1.77308	2.15	Average	(Conc=20.00)
VINYL CHLORIDE	1.06406	1.08429	1.90	Average	(Conc=20.00)
CHLOROETHANE	3.98365	4.09284	2.74	Average	(Conc=20.00)
METHYLENE CHLORIDE	2.30593	2.21220	4.06	Average	(Conc=15.00)
ACROLEIN	.06638	.06012	9.43	Average	(Conc=375.00)
ACETONE	.10337	.09096	12.00	Average	(Conc=375.00)
ACRYLONITRILE	.18517	.16217	12.42	Average	(Conc=375.00)
CARBON DISULFIDE	12.2523	11.7014	4.50	Average	(Conc=12.50)
1,1-DICHLOROETHENE	4.34955	4.12612	5.14	Average	(Conc=15.00)
1,1-DICHLOROETHANE	7.81478	7.35745	5.85	Average	(Conc=15.00)
1,2-DICHLOROETHENE (TOTAL)	4.30801	4.03938	6.24	Average	(Conc=15.00)
CHLOROFORM	5.32850	5.03203	5.56	Average	(Conc=15.00)
1,2-DICHLOROETHANE-D4	1.10234	1.10504	.24	Average	(Conc=10.00)
1,2-DICHLOROETHANE	1.25074	1.18345	5.38	Average	(Conc=15.00)
2-BUTANONE	.01431	.01197	16.31	Average	(Conc=125.00)
1,1,1-TRICHLOROETHANE	1.85972	1.77188	4.72	Average	(Conc=15.00)
CARBON TETRACHLORIDE	1.56677	1.48519	5.21	Average	(Conc=15.00)
VINYL ACETATE	.47954	.41850	12.73	Average	(Conc=37.50)
BROMODICHLOROMETHANE	.85515	.79149	7.44	Average	(Conc=15.00)
1,2-DICHLOROPROPANE	1.02955	.98003	4.81	Average	(Conc=15.00)
CIS-1,3-DICHLOROPROPENE	1.29328	1.20112	7.13	Average	(Conc=18.00)
TRICHLOROETHENE	1.35176	1.25539	7.13	Average	(Conc=15.00)
BENZENE-D6	3.24909	3.22719	.67	Average	(Conc=10.00)
BENZENE	3.61639	3.40670	5.80	Average	(Conc=15.00)
DIBROMOCHLOROMETHANE	.41715	.37624	9.81	Average	(Conc=15.00)
TRANS-1,3-DICHLOROPROPENE	.24360	.25655	5.32	Average	(Conc=12.00)
1,1,2-TRICHLOROETHANE	.29437	.26675	9.38	Average	(Conc=15.00)
2-CHLOROETHYL VINYLETHER	.13114	.11457	12.63	Average	(Conc=15.00)
BROMOFORM	.20547	.18356	10.66	Average	(Conc=15.00)
4-METHYL-2-PENTANONE	.43922	.38347	12.69	Average	(Conc=25.00)
2-HEXANONE	.28212	.24526	13.07	Average	(Conc=25.00)
TETRACHLOROETHENE	2.55156	2.42997	4.77	Average	(Conc=15.00)
1,1,2,2-TETRACHLOROETHANE	.86247	.78416	9.08	Average	(Conc=15.00)
TOLUENE-D8	6.26466	6.48831	3.57	Average	(Conc=10.00)
TOLUENE	4.61870	4.43419	3.99	Average	(Conc=15.00)
CHLOROBENZENE	3.75749	3.59553	4.31	Average	(Conc=15.00)
ETHYLBENZENE	3.04477	2.90453	4.61	Average	(Conc=15.00)
STYRENE	3.32842	3.55555	6.82	Average	(Conc=12.50)
META XYLENE	3.52478	3.44241	2.34	Average	(Conc=30.00)

RF - Response Factor from daily standard file at 15.00 UG/L

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

%Diff - % Difference from original average or curve

Calibration Check Report

Title: VOLATILES CRL624NS 05\23\90
Calibrated: 901019 15:09

Check Standard Data File: >FC157
Injection Time: 901022 09:15

Compound	$\overline{RF}$	RF	%Diff	Calib Meth	
O-&/OR P-XYLENE	3.15016	3.09973	1.60	Average	(Conc=37.60)

RF - Response Factor from daily standard file at 15.00 UG/L

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

%Diff - % Difference from original average or curve