8807 Cary Algonquin Road
Post Office Box 130
Cary, Illinois 60013

Telephone: 312-639-8818
800-334-8525

MeadCompuChem

May 6, 1983

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153

Dear Mr. Thompson:

Thank you for selecting Mead CompuChem® for your recent sample analysis. We have completed the analysis that you requested and have enclosed a summary of the CompuChem data for your review. Additional data details are available for purchase if you require them.

As you know, EPA has proposed detection limits for the priority pollutants in the December 3, 1979, Federal Register, and we have reported all priority pollutant concentrations which have exceeded these limits. In addition, we have permanently stored a complete record of your data on magnetic tape. This includes chromatograms, mass spectra, calibration and quality control data for the organics. Therefore, your original data is readily available for future reference. Should you require additional information from your data base, please contact us at 1/800-334-8525.

In order to expedite data to you, we have forwarded the results to all completed analyses. If you submitted more samples than are included in the enclosed results, the data will be forthcoming upon completion of our final review.

Your confidence in our CompuChem service is appreciated. We look forward to a continuing association.

Sincerely,

Customer Service Dept.
Mead CompuChem®

Enclosure:

Report: Sample Identifier Number: 29378 CompuChem Number: 3499

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3. REPORT OF QUALITY CONTROL DATA *

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B. DUPLICATE ANALYSIS
C. METHOD BLANK ANALYSIS
D. SURROGATE SPIKE RECOVERIES

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Mead CompuChem

1A. REPORT OF DATA

RR-92

SAMPLE IDENTIFIER NUMBER: 29378

COMPUCHEM SAMPLE NUMBER: 3499

SUBMITTED TO:

Mr. David Thompson
Centec
2160 Industrial Drive
Salem, VA 24153

Gerald D Wright

GERALD D. WRIGHT, CPIM
MANAGER, PRODUCTION PLANNING AND CONTROL

R. L. MYERS, PH.D.
PRESIDENT

PAUL E. MILLS
DIRECTOR OF QUALITY ASSURANCE

JAMES J. ZOLDAK
DIRECTOR OF LABORATORY OPERATIONS

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EXHIBIT I - LABORATORY CHRONICLE

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	Date
Received/Refrigerated	04/25/83
Organics	
Extracted	04/28/83
Analyzed	
1. Volatiles	04/29/83
2. Acids	05/02/83
3. Base/Neutrals	05/06/83
4. Pesticides/PCBS	05/06/83
Inorganics	
1. Metals	Not Requested
2. Cyanides	04/27/83
3. Phenols	04/29/83

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EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	VOLATILE ORGANICS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1V.	ACROLEIN	BDL	100	
2V.	ACRYLONITRILE	BDL	100	
3V.	BENZENE	BDL	10	
4V.	BIS (CHLOROMETHYL) ETHER	BDL	10	
5V.	BROMOFORM	BDL	10	
6V.	CARBON TETRACHLORIDE	BDL	10	
7V.	CHLOROBENZENE	BDL	10	
8V.	CHLORODIBROMOMETHANE	BDL	10	
9V.	CHLOROETHANE	BDL	10	
10V.	2-CHLOROETHYLVINYL ETHER	BDL	10	
11V.	CHLOROFORM	50	10	319
12V.	DICHLOROBROMOMETHANE	14	10	406
13V.	DICHLORODIFLUOROMETHANE	BDL	10	
14V.	1,1-DICHLOROETHANE	BDL	10	
15V.	1,2-DICHLOROETHANE	BDL	10	
16V.	1,1-DICHLOROETHYLENE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	1,3-DICHLOROPROPYLENE	BDL	10	
19V.	ETHYLBENZENE	BDL	10	
20V.	METHYL BROMIDE	BDL	10	
21V.	METHYL CHLORIDE	BDL	10	
22V.	METHYLENE CHLORIDE	BDL	10	
23V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
24V.	TETRACHLOROETHYLENE	BDL	10	
25V.	TOLUENE	BDL	10	
26V.	1,2-TRANS-DICHLOROETHYLENE	BDL	10	
27V.	1,1,1-TRICHLOROETHANE	BDL	10	
28V.	1,1,2-TRICHLOROETHANE	BDL	10	
29V	TRICHLOROETHYLENE	BDL	10	
30V.	TRICHLOROFLUOROMETHANE	BDL	10	
31V.	VINYL CHLORIDE	BDL	10	

BDL = BELOW DETECTION LIMIT

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EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	ACID EXTRACTABLE ORGANICS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1A.	2-CHLOROPHENOL	BDL	25	
2A.	2,4-DICHLOROPHENOL	BDL	25	
3A.	2,4-DIMETHYLPHENOL	BDL	25	
4A.	4,6-DINITRO-O-CRESOL	BDL	250	
5A.	2,4-DINITROPHENOL	BDL	250	
6A.	2-NITROPHENOL	BDL	25	
7A.	4-NITROPHENOL	BDL	25	
8A.	P-CHLORO-M-CRESOL	BDL	25	
9A.	PENTACHLOROPHENOL	BDL	25	
10A.	PHENOL	BDL	25	
11A.	2,4,6-TRICHLOROPHENOL	BDL	25	

BDL = BELOW DETECTION LIMIT

CLW

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	BASE-NEUTRAL EXTRACTABLE ORGANICS	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1B.	ACENAPHTHENE	BDL	10	
2B.	ACENAPHTHYLENE	BDL	10	
3B.	ANTHRACENE	BDL	10	
4B.	BENZIDINE	BDL	10	
5B.	BENZO (A) ANTHRACENE	BDL	10	
6B.	BENZO (A) PYRENE	BDL	10	
7B.	3,4-BENZOFLUORANTHENE	BDL	10	
8B.	BENZO (GHI) PERYLENE	BDL	25	
9B.	BENZO (K) FLUORANTHENE	BDL	10	
10B.	BIS (2-CHLOROETHOXY) METHANE	BDL	10	
11B.	BIS (2-CHLOROETHYL) ETHER	BDL	10	
12B.	BIS (2-CHLOROISOPROPYL) ETHER	BDL	10	
13B.	BIS (2-ETHYLHEXYL) PHTHALATE	BDL	10	
14B.	4-BROMOPHENYL PHENYL ETHER	BDL	10	
15B.	BUTYL BENZYL PHTHALATE	BDL	10	
16B.	2-CHLORONAPHTHALENE	BDL	10	
17B.	4-CHLOROPHENYL PHENYL ETHER	BDL	10	
18B.	CHRYSENE	BDL	10	
19B.	DIBENZO (A,H) ANTHRACENE	BDL	25	
20B.	1,2-DICHLOROBENZENE	BDL	10	
21B.	1,3-DICHLOROBENZENE	BDL	10	
22B.	1,4-DICHLOROBENZENE	BDL	10	
23B.	3,3'-DICHLOROBENZIDINE	BDL	10	
24B.	DIETHYL PHTHALATE	BDL	10	
25B.	DIMETHYL PHTHALATE	BDL	10	
26B.	DI-N-BUTYL PHTHALATE	BDL	10	
27B.	2,4-DINITROTOLUENE	BDL	10	
28B.	2,6-DINITROTOLUENE	BDL	10	
29B.	DI-N-OCTYL PHTHALATE	BDL	10	
30B.	1,2-DIPHENYLHYDRAZINE	BDL	10	
31B.	FLUORANTHENE	BDL	10	
32B.	FLUORENE	BDL	10	
33B.	HEXACHLOROBENZENE	BDL	10	
34B.	HEXACHLOROBUTADIENE	BDL	10	
35B.	HEXACHLOROCYCLOPENTADIENE	BDL	10	

Continued...

BDL = BELOW DETECTION LIMIT

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EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	BASE-NEUTRAL EXTRACTABLE ORGANICS (Continued)	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
36B.	HEXACHLOROETHANE	BDL	10	
37B.	INDENO (1,2,3-CD) PYRENE	BDL	25	
38B.	ISOPHORONE	BDL	10	
39B.	NAPHTHALENE	BDL	10	
40B.	NITROBENZENE	BDL	10	
41B.	N-NITROSODIMETHYLAMINE	BDL	10	
42B.	N-NITROSODI-N-PROPYLAMINE	BDL	10	
43B.	N-NITROSODIPHENYLAMINE	BDL	10	
44B.	PHENANTHRENE	BDL	10	
45B.	PYRENE	BDL	10	
46B.	1,2,4-TRICHLOROBENZENE	BDL	10	

BDL = BELOW DETECTION LIMIT

CLW

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	PESTICIDES/PCB'S	CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1P.	ALDRIN	BDL	10	
2P.	ALPHA-BHC	BDL	10	
3P.	BETA-BHC	BDL	10	
4P.	GAMMA-BHC	BDL	10	
5P.	DELTA-BHC	BDL	10	
6P.	CHLORDANE	BDL	10	
7P.	4,4'-DDT	BDL	10	
8P.	4,4'-DDE	BDL	10	
9P.	4,4'-DDD	BDL	10	
10P.	DIELDRIN	BDL	10	
11P.	ALPHA-ENDOSULFAN	BDL	10	
12P.	BETA-ENDOSULFAN	BDL	10	
13P.	ENDOSULFAN SULFATE	BDL	10	
14P.	ENDRIN	BDL	10	
15P.	ENDRIN ALDEHYDE	BDL	10	
16P.	HEPTACHLOR	BDL	10	
17P.	HEPTACHLOR EPOXIDE	BDL	10	
18P.	PCB-1242	BDL	10	
19P.	PCB-1254	BDL	10	
20P.	PCB-1221	BDL	10	
21P.	PCB-1232	BDL	10	
22P.	PCB-1248	BDL	10	
23P.	PCB-1260	BDL	10	
24P.	PCB-1016	BDL	10	
25P.	TOXAPHENE	BDL	10	

BDL = BELOW DETECTION LIMIT

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CompuChem employs Methods 624 and 625 for priority pollutant analysis. These methods were proposed by the U.S. E.P.A. in Volume 44 of the Federal Register on December 3, 1979. As these methods are currently in a "proposed" status, all aspects of the methods may not be validated until the U.S. E.P.A. promulgates the methods in "final" form.

EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	INORGANICS PRIORITY POLLUTANTS	CONCENTRATION (MG/L)	DETECTION LIMIT (MG/L)
14M.	CYANIDE, TOTAL	BDL	0.01

INORGANICS
CONVENTIONALS

(NONE ORDERED)

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EXHIBIT II - COMPOUND LIST

SAMPLE IDENTIFIER: 29378
COMPUCHEM SAMPLE NUMBER: 3499

	INORGANICS PRIORITY POLLUTANTS	CONCENTRATION (MG/L)	DETECTION LIMIT (MG/L)
15.	PHENOLS, TOTAL	BDL	0.01

INORGANICS
CONVENTIONALS

(NONE REQUESTED)

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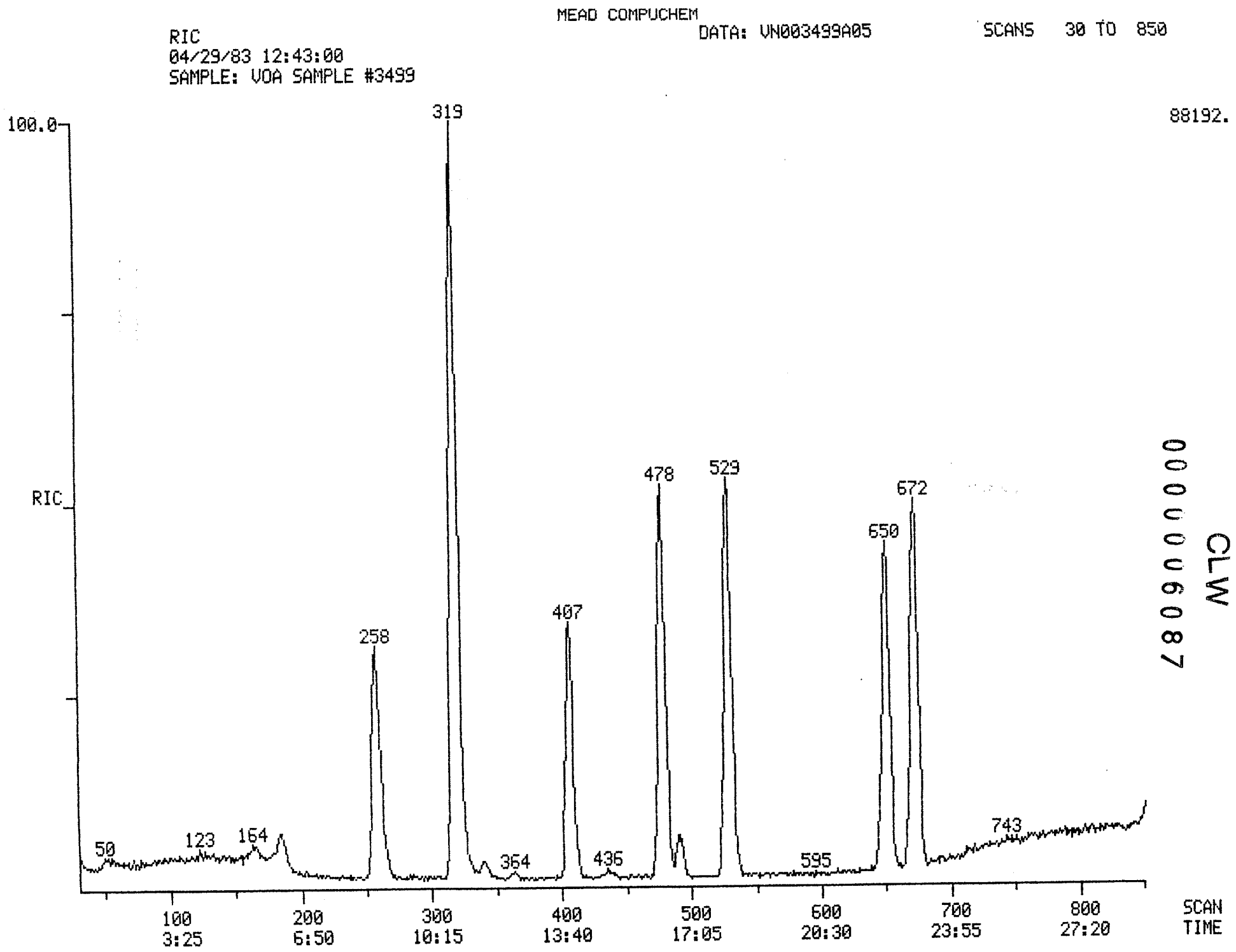
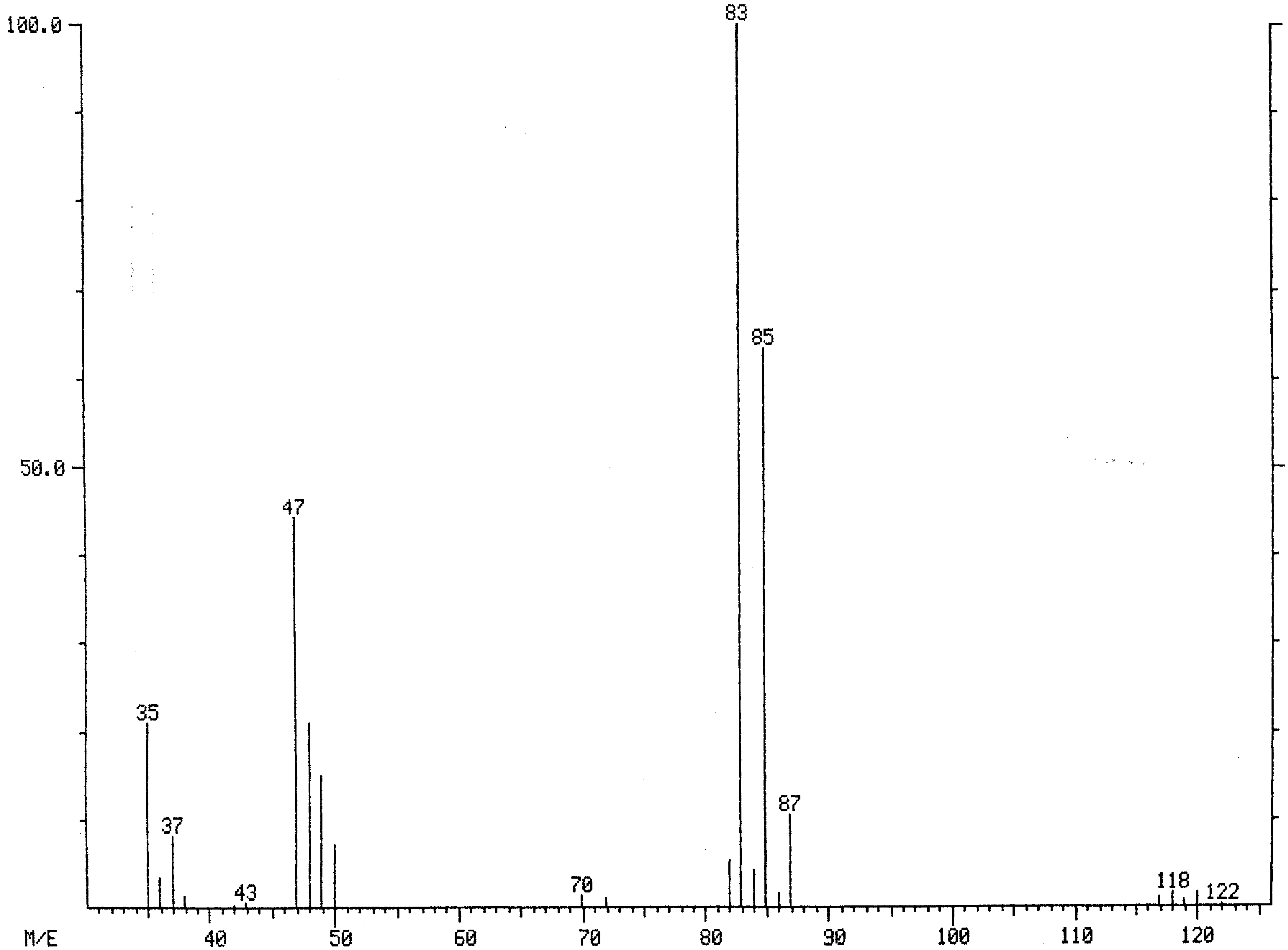

MEAD COMPUCHEM
DATA: VN003499A05
SCANS 30 TO 850
RIC
04/29/83 12:43:00
SAMPLE: VOA SAMPLE #3499
100.0
88192.
RIC
319
478
529
672
650
407
258
50
123
164
364
436
595
743
CLW
00006087
100
3:25
200
6:50
300
10:15
400
13:40
500
17:05
600
20:30
700
23:55
800
27:20
SCAN
TIME

MEAD COMPUCHEM

MASS SPECTRUM
04/29/83 12:43:00 + 10:54
SAMPLE: VOA SAMPLE #3499
ENHANCED (S 15B 2N)

DATA: VN003499A05 #319

BASE M/E: 83
RIC: 81920.



CLW
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~~CLW~~
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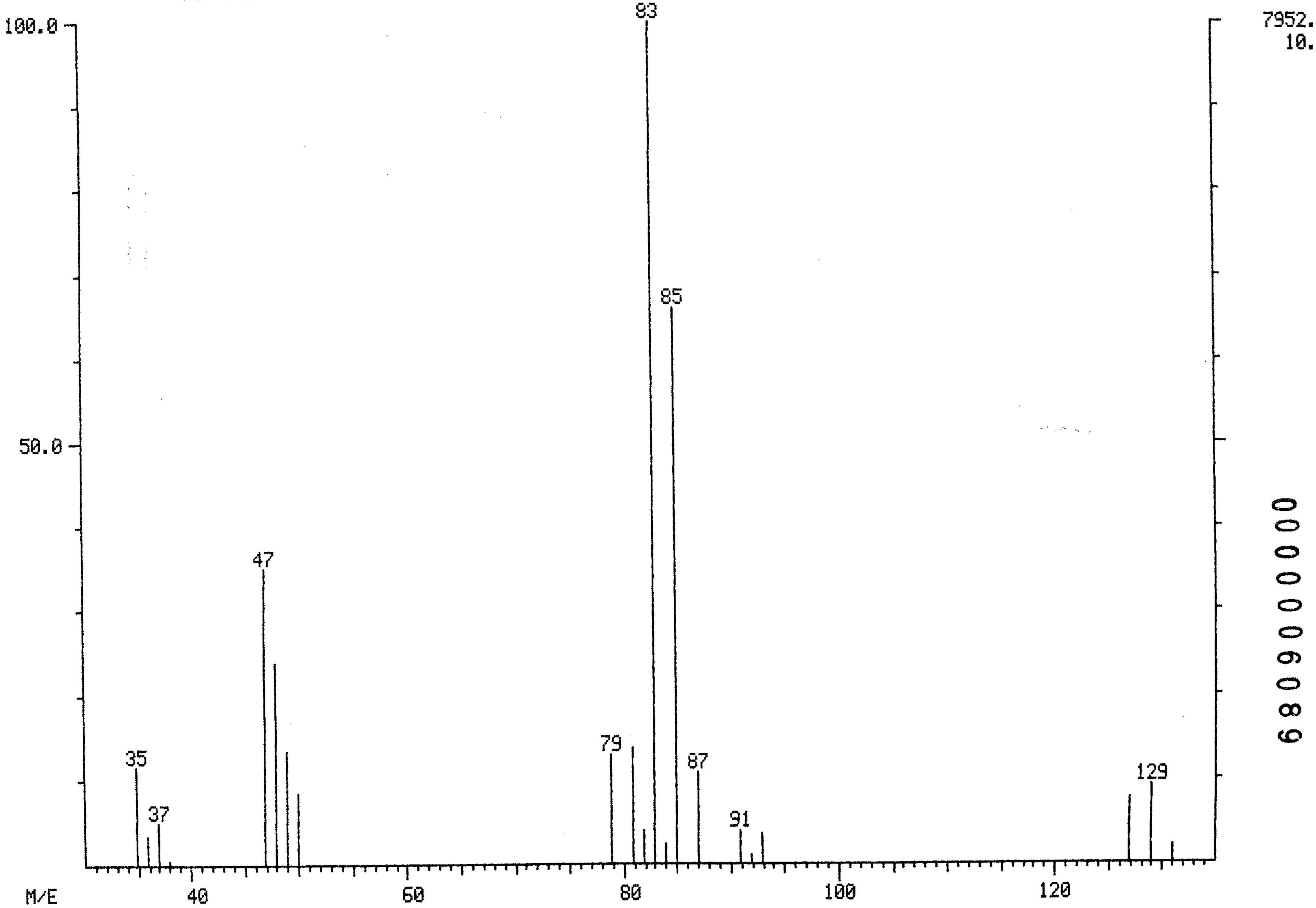
MEAD COMPUCHEM

MASS SPECTRUM
04/29/83 12:43:00 + 13:52
SAMPLE: VOA SAMPLE #3499
ENHANCED (S 15B 2N)

DATA: VN003499A05 #406

BASE M/E: 83
RIC: 26912.



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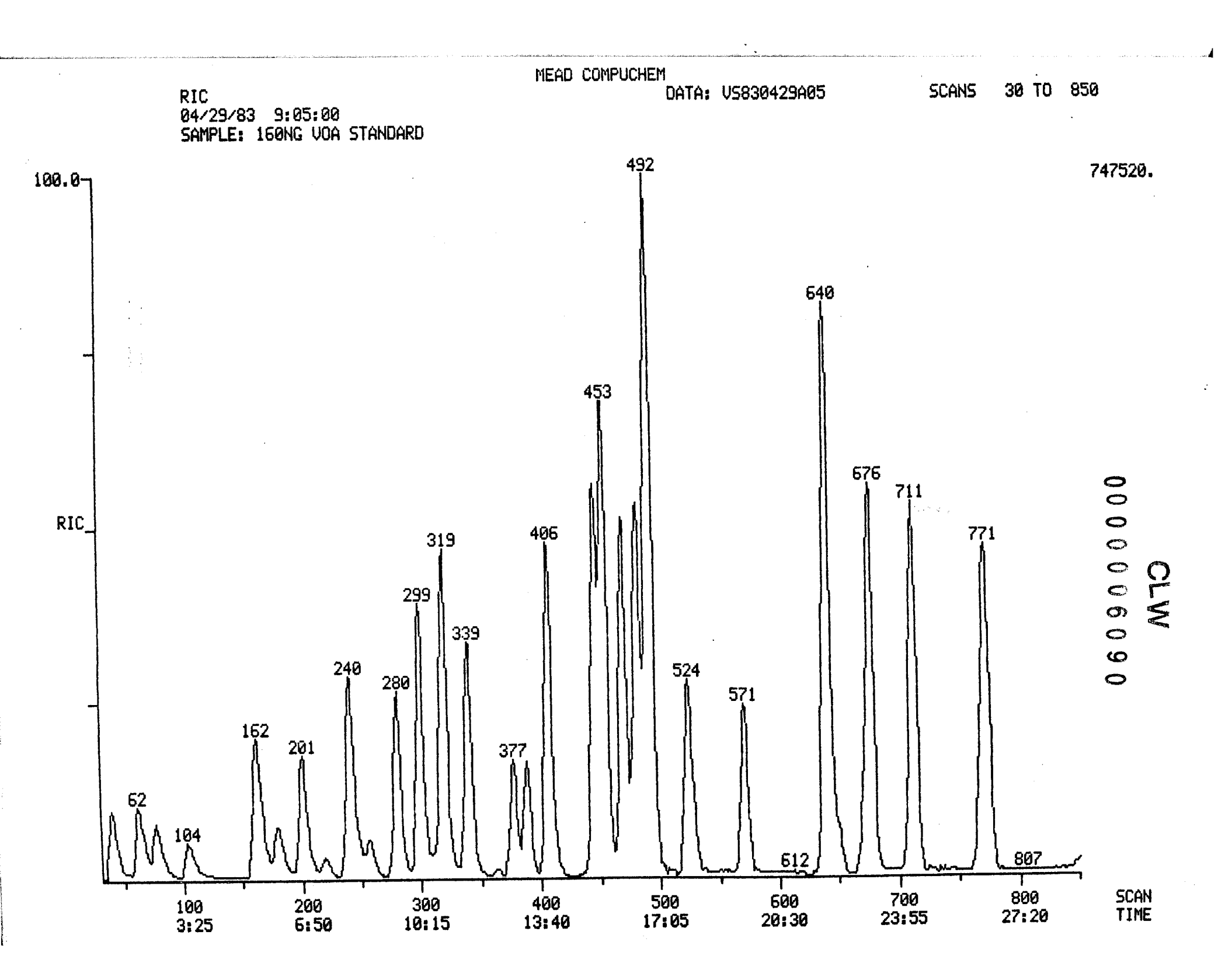
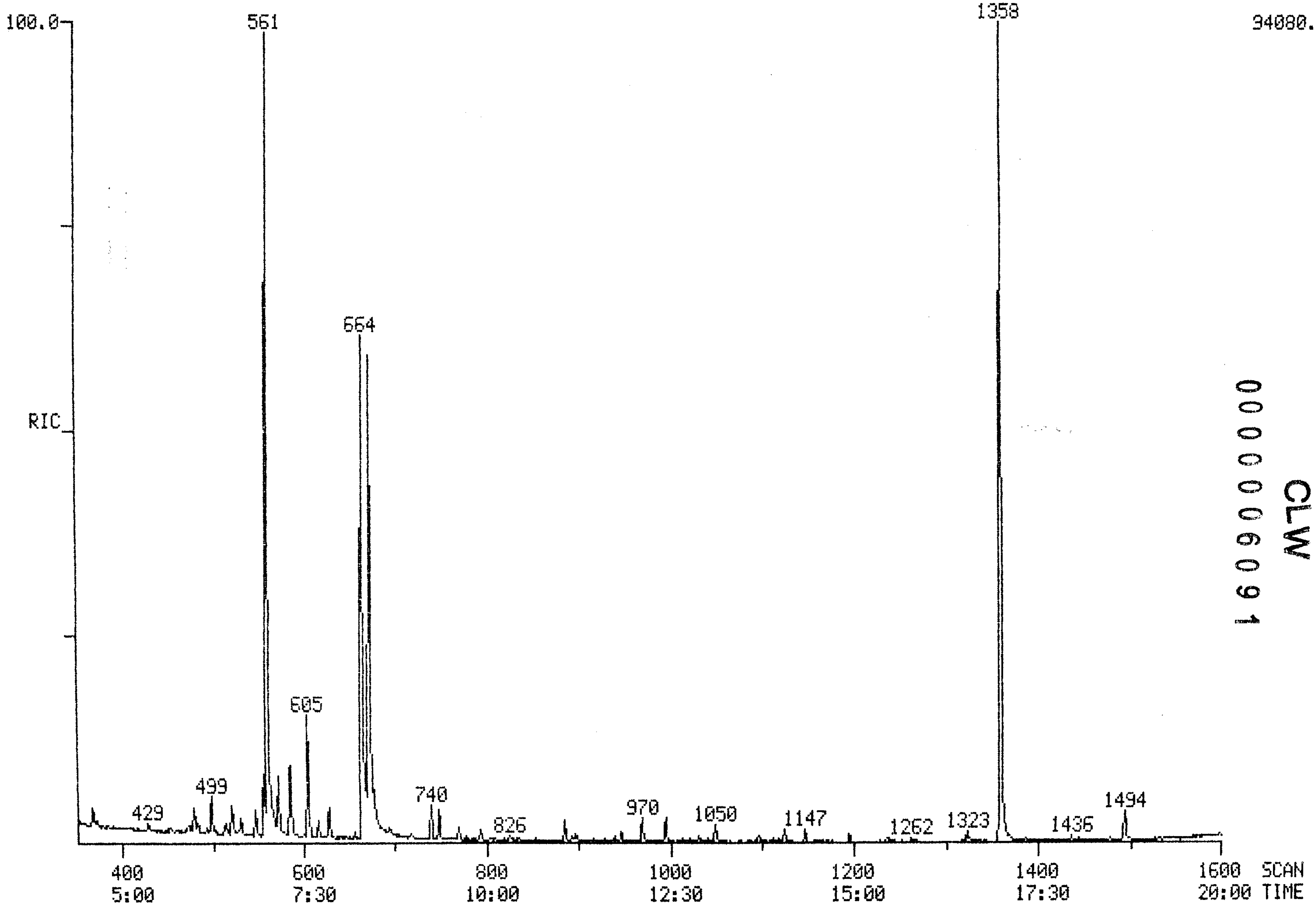

MEAD COMPUCHEM
RIC
04/29/83 9:05:00
SAMPLE: 160NG VOA STANDARD
DATA: VS830429A05
SCANS 30 TO 850
100.0
747520.
RIC
492
640
453
676
711
406
319
299
771
339
240
280
524
571
162
201
377
62
104
612
807
100
3:25
200
6:50
300
10:15
400
13:40
500
17:05
600
20:30
700
23:55
800
27:20
SCAN
TIME
CLW

MEAD COMPUCHEM

RIC
05/02/83 10:04:00
SAMPLE: ACID SAMPLE#3499

DATA: AC003499A02

SCANS 350 TO 1600

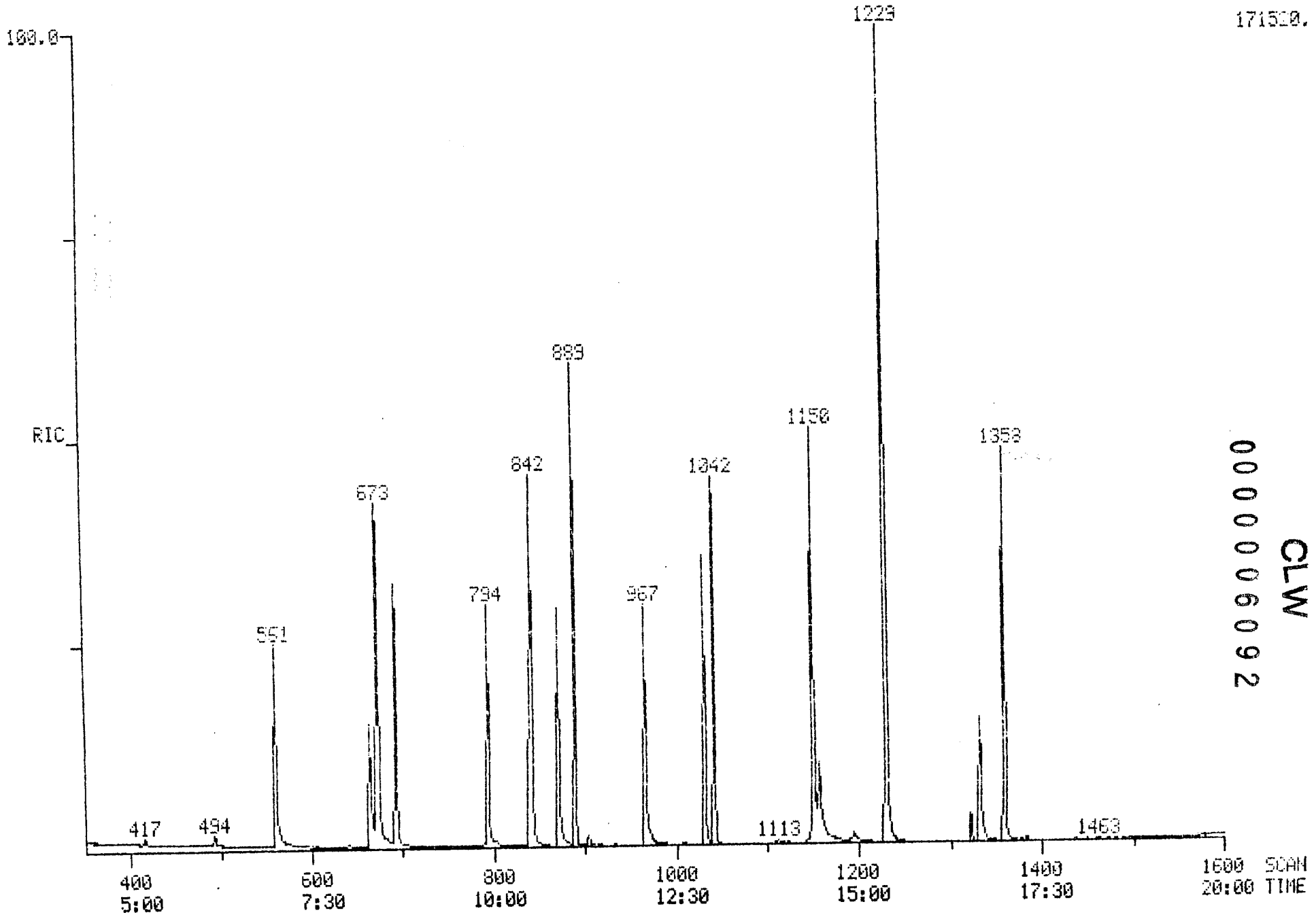


CLW
0000006091

MEAD COMPUCHEM

DATA: AS830502A02 SCANS 350 TO 1600

RIC
05/02/83 8:34:00
SAMPLE: ACID STD #3302, 40 NG. LOT #21028

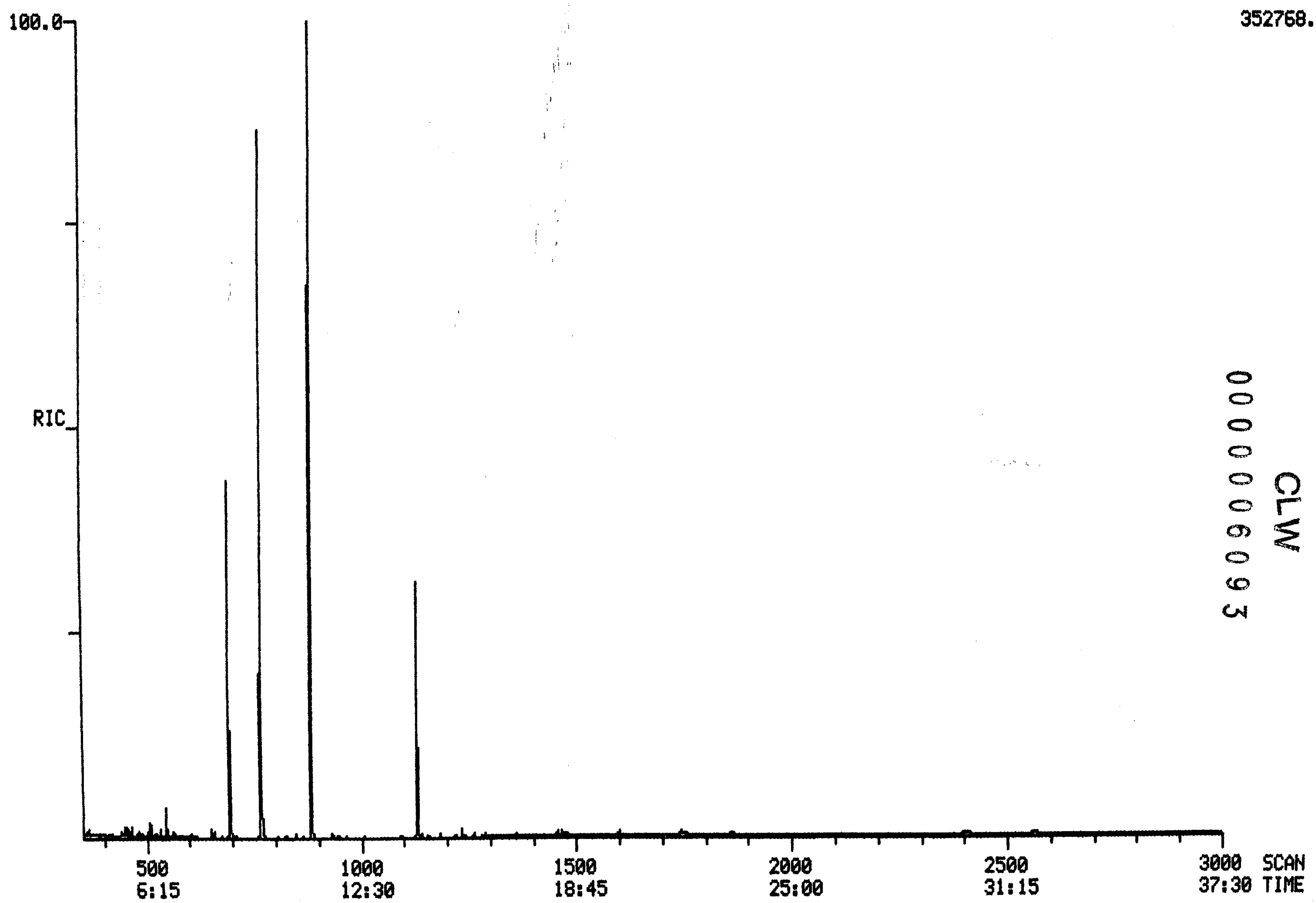


MEAD COMPUCHEM

RIC
05/06/83 10:38:00
SAMPLE: B/N SAMPLE #3499

DATA: BN003499A01

SCANS 350 TO 3000



CLW
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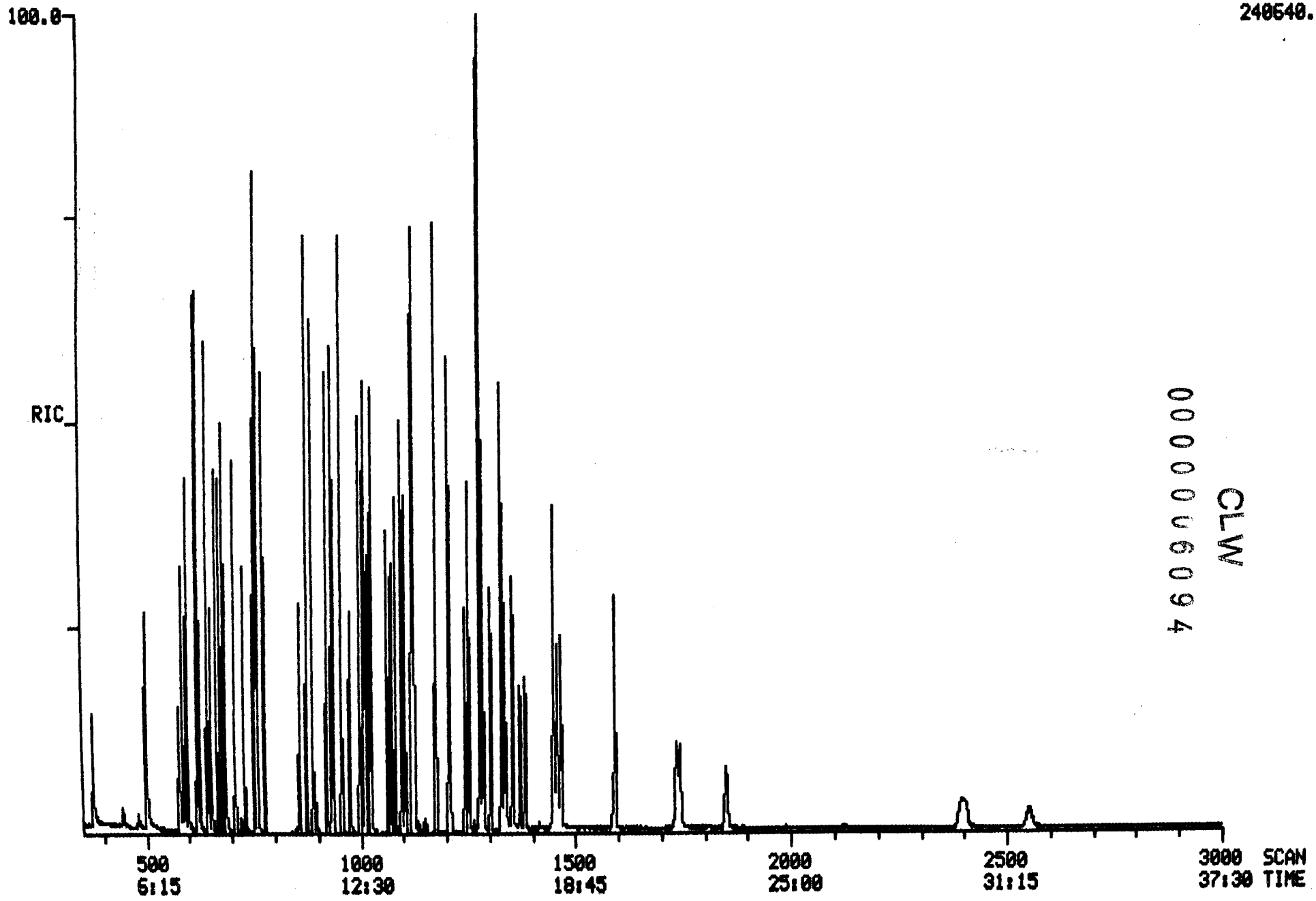
MEAD COMPUCHEM

RIC DATA: BS830506A01 SCANS 350 TO 3000

05/06/83 9:22:00

SAMPLE: 50NG B/N/P STANDARD #2304 EXP 5-6-83 LOT #21209



2. ANALYTICAL METHODS, DEFINITIONS AND EXPLANATIONS

The CompuChem report contains not only the concentrations of the priority pollutant compounds identified but also additional supportive information which is useful in the review of this data. A complete report includes the following (if ordered):

Priority Pollutant Data
- . GC/MS (VOA, B/N/P, Acid)
- . Pesticides (Method 608)
- . Inorganics

Other Analytical Data (EP Toxicity, etc.)
Conventional Permit Data

The GC/MS priority pollutant data is presented in summary form (concentration of each identified compound) along with the detection limits specified by EPA. In addition, a reconstructed total ion chromatogram (RIC) for each fraction and for the relevant instrument calibration (standards) runs are included.

Also included in the report are the spectra for all organic (except for certain pesticides) priority pollutant compounds identified above EPA specified detection limits, as well as a laboratory chronicle of completion dates.

To assist in the interpretation and utilization of this data, a Glossary of frequently used terms, a Compound Cross-Reference List and a typical Spectral Match Diagram with explanatory notation are also included.

If the Twenty Peak option has been ordered, the report also includes spectral match diagrams for as many as twenty (20) additional non-priority pollutant compounds with peaks greater than 25% of the intensity of the internal standard (d_{10}-anthracene).

If the Quality Control option has been ordered, the report also includes BFB and DFTPP tuning data for the GC/MS instruments, a summary of surrogate spike recovery data and the following:

Matrix Spike Data
Duplicate Data
Method Blank Data

Also included with the method blank is an RIC for each fraction plus spectra and spectral match diagrams for any compounds identified with concentrations greater than EPA specified detection limits found in the blank.

If the Chain-of-Custody option has been ordered, this information is included in the section with the sample data.

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ANALYTICAL METHODS

The analytical methods used by CompuChem for priority pollutant, RCRA and NPDES permit analyses are based on those promulgated by EPA. These methods have appeared in the Federal Register as noted below.

In summary, gas chromatography/mass spectrometry (GC/MS) is the analytical technique employed for the analysis of organic compounds while atomic absorption spectrophotometry (AAS) is used for the analysis of metals.

On occasion CompuChem also performs analyses for other parameters which are not on the priority pollutant list. In these cases also, EPA methods are used if available, and if not methods are developed and verified along guidelines suggested by EPA.

References for Methods

Volatile Organics	(Method 624) Federal Register 12-3-79
Acid Extractables	(Method 625) " " "
Base/Neutral/Pesticide Extractables	(Method 625) " " "
Pesticides	(Method 608) " " "
Inorganics	EPA: Analysis of Water and Waste Water (1974, 1979)
RCRA	Federal Register 5-19-80

GLOSSARY OF TERMS

ACID FRACTION

Those compounds which solvent extract from the sample when it is pH-adjusted acidic (pH<2).

BFB TUNING

Each GC/MS instrument dedicated to VOA analyses is certified according to protocol prior to each 8-hour shift by injecting BFB (bromofluorobenzene) and comparing relationships between ion abundances for certain key mass numbers. If the prescribed relative ion abundances are not present, the instrument is adjusted until the criteria are met. With the available QC option, these parameters are included in the report for the BFB analysis following the specific sample analyzed.

B/N/P FRACTION

Those compounds which solvent extract from the sample when it is pH-adjusted basic (pH>11). This includes the pesticides (P), bases (B) and since this step is performed first, the neutral (N) compounds.

DFTPP TUNING

Each GC/MS instrument dedicated to Base/Neutral or Acid analyses is certified according to protocol prior to each 8-hour shift by injecting DFTPP (decafluorotriphenylphosphine) and comparing the relationships between ion abundances for certain key mass numbers. If the prescribed relative ion abundances are not present, the instrument is adjusted until the criteria are met. With the available QC option, these parameters are included in the report for the DFTPP analysis following the specific sample analyzed.

INDISTINGUISHABLE ISOMERS

Compounds with essentially the same mass spectrum and which have the same elution time from the gas chromatograph. An example is anthracene and phenanthrene.

INTERNAL STANDARD

CompuChem uses the internal standard method of quantitation. The same amount of d_{10}-anthracene is added to both the calibration standard and the sample. All calculations are referenced to a signal produced by this compound. Then all results are automatically corrected for any change in instrument sensitivity.

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MATRIX SPIKES

Actual priority pollutants which are added to a second aliquot of the sample to determine the effect, if any, of the sample matrix on the analytical procedure.

METHOD BLANK

A sample of organic-free laboratory water which undergoes exactly the same extraction procedure at the same time as the actual samples. This monitors for possible contamination from glassware, solvents, or the extraction procedure.

PERCENT RECOVERY (SURROGATES AND MATRIX SPIKES)

The formula for determining percent recovery is:

$$\% \text{ Recovery (Spike)} = \frac{\text{Conc. in Spike - Conc. in Sample}}{\text{Amount of Spike Added}} \times 100\%$$

$$\% \text{ Recovery (Surrogate)} = \frac{\text{Amount found}}{\text{Amount added}} \times 100\%$$

PURITY VALUE (sometimes abbreviated PUR)

A mathematically devised index which indicates the "goodness of fit" between the spectrum in the sample and a compound in the library. The maximum value is 1000, and values greater than 800 indicate a high probability that the identification is correct. Values from 500 to 800 are only tentative and values less than 500 are not reliable. Also important is the relationship between purity values for the best, second and third matches; ideally the second and third purity scores are much lower than the first.

RIC - RECONSTRUCTED ION CHROMATOGRAM

A plot of the total ion current of the mass spectrometer during the analysis. The plot is analogous to a gas chromatogram where a peak indicates that a compound was detected at that time. The vertical axis is intensity and the horizontal axis is time (both minutes and mass spectral scan marks are labelled).

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A plot of the total ion current of the mass spectrometer during the analysis. The plot is analogous to a gas chromatogram where a peak indicates that a compound was detected at that time. The vertical axis is intensity and the horizontal axis is time (both minutes and mass spectral scan marks are labelled).

RPD - RELATIVE PERCENT DIFFERENCE

An average used to compare duplicate analyses:

$$RPD = \frac{2\ (C_1 - C_2)}{(C_1 + C_2)} \times 100\%$$

where C_1 and C_2 are the concentrations found in two separate aliquots of the same sample.

SATURATED ION

If a compound is present at a high enough concentration in the sample, the intensity of the major ions is generally so strong that the detector is overloaded by the signal. This is a result of the instrument having been adjusted for maximum sensitivity in order to reach lower detection limits.

SPECTRAL MATCH DIAGRAM

A display of the mass spectrum of the sample followed by the mass spectra of the three compounds in the library which are most similar to the sample (see Purity Value).

SURROGATES

A surrogate compound is chemically similar to one of the priority pollutants except that it is deuterated or fluorinated or in some other manner distinguishable by GC/MS from the other compounds in the sample.

TWENTY (20) PEAK SEARCH

An available option in which up to 20 non-priority peaks larger than half the internal standard peak are identified by searching the NBS spectral library. Only an estimate of concentration can be given which is:

Low	< 50 ug/l
Medium	50 - 200 ug/l
High	> 200 ug/l

VOA - VOLATILE ORGANICS ANALYSIS

Those highly volatile compounds detected by introducing the sample directly into the GC/MS through a purge and trap apparatus.

CLW

HOW TO INTERPRET "DATA: BN3436A4 #640"

In addition to the actual data, the headers of all RIC's, spectra, and spectral match diagrams contain informatin on the date, the sample and the instrumentation. Some of this information is coded in the following format:

DATA: BN3436A4 #640

BN

In this particular example, BN indicates that the sample analyzed was the base/neutral fraction. Other codes which are used are listed below:

VOA	Volatile Fraction	
AC	Acid Fraction	
BN	Base/Neutral Fraction	(Also includes Pesticides)
VOASTD	Volatile Standard	(sometimes VOASD)
ACSTD	Acid Standard	(sometimes ACSD)
BNSTD	Base/Neutral Standard	(sometimes BNSD)
VOABK	Volatile Blank	(sometimes VOAB)
ACBK	Acid Blank	(sometimes ACB)
BNBK	Base/Neutral Blank	(sometimes BNB)

3436

This is the CompuChem sample number. (In the case of a blank or standard, the number represents the date: two digits for month followed by two digits for day.)

A4

In this particular example, A4 indicates that the sample was run on the first shift (A) and on instrument #4. Other codes which are used include A, B, and C to denote the first, second and third shift respectively and instrument numbers 1 through 18.

From this information, CompuChem management also knows the chemist who performed the measurement, which senior spectroscopist reviewed the data, and which laboratory manager had the overall responsibility for the analysis.

#640

This is the scan number of the peak (or the compound). A specific peak on a RIC will be labelled with this number, and it will also appear in the header of the corresponding spectrum and/or the spectral match diagram.

CLW

COMPOUND CROSS-REFERENCE LIST

COMPOUND	NPDES PERMIT	STORET	CAS	EPA CONTRACTORS
VOLATILES				
acrolein	1V	34210	107-02-8	2V
acrylonitrile	2V	34215	107-13-1	3V
benzene	3V	34236	71-43-2	4V
bis (chloromethyl) ether	4V	N/A	542-88-1	N/A
bromoform	5V	32104	75-25-2	47V
carbon tetrachloride	6V	32102	56-23-5	6V
chlorobenzene	7V	34301	108-90-7	7V
chlorodibromomethane	8V	34105	124-48-1	51V
chloroethane	9V	34311	75-00-3	16V
2-chloroethylvinyl ether	10V	34576	110-75-8	19V
chloroform	11V	32106	67-66-3	23V
dichlorobromomethane	12V	32101	75-27-4	48V
dichlorodifluoromethane*	13V	N/A	75-71-8	50V
1,1-dichloroethane	14V	34496	75-34-3	13V
1,2-dichloroethane	15V	34531	107-06-2	10V
1,1-dichloroethylene	16V	34501	75-35-4	29V
1,2-dichloropropane	17V	34541	78-87-5	32V
1,2-dichloropropylene	18V	34561	542-75-6	33V
ethylbenzene	19V	34371	100-41-4	38V
methyl bromide	20V	34413	74-83-9	46V
methyl chloride	21V	34418	74-87-3	45V
methylene chloride	22V	34423	75-09-2	44V
1,1,2,2-tetrachloroethane	23V	34516	79-34-5	15V
tetrachloroethylene	24V	34475	127-18-4	85V
toluene	25V	34010	108-88-3	86V
1,2-trans-dichloroethylene	26V	34546	156-60-5	30V
1,1,1-trichloroethane	27V	34506	71-55-6	11V
1,1,2-trichloroethane	28V	34511	79-00-5	14V
trichloroethylene	29V	39180	79-01-6	87V
trichlorofluoromethane*	30V	34488	75-69-4	49V
vinyl chloride	31V	39175	75-01-4	88V

* Recently removed from list (Fed. Register 46, 5, January 8, 1981)

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COMPOUND CROSS-REFERENCE LIST (Continued)

COMPOUND	NPDES PERMIT	STORET	CAS	EPA CONTRACTORS
BASE/NEUTRALS (Cont'd)				
1,2-diphenylhydrazine	30B	34346	122-66-7	37B
fluoranthene	31B	34376	206-44-0	39B
fluorene	32B	34381	86-73-7	80B
hexachlorobenzene	33B	39700	118-71-1	9B
hexachlorobutadiene	34B	34391	87-68-3	52B
hexachlorocyclopentadiene	35B	34386	77-47-4	53B
hexachloroethane	36B	34396	67-72-1	12B
indeno (1,2,3-cd) pyrene	37B	34403	193-39-5	83B
isophorone	38B	34408	78-59-1	54B
naphthalene	39B	39250	91-20-3	55B
nitrobenzene	40B	34447	98-95-3	56B
N-nitrosodimethylamine	41B	34438	62-75-9	61B
N-nitrosodi-n-propylamine	42B	34428	621-64-7	63B
N-nitrosodiphenylamine	43B	34433	86-30-6	62B
phenanthrene	44B	34461	85-01-8	81B
pyrene	45B	34469	129-00-0	84B
1,2,4-trichlorobenzene	46B	34551	120-82-1	8B
PESTICIDES				
aldrin	1P	39330	309-00-2	89P
alpha-BHC	2P	39337	319-84-6	102P
beta-BHC	3P	39338	319-85-7	103P
gamma-BHC	4P	34259	58-89-9	104P
delta-BHC	5P	39340	319-86-8	105P
chlordane	6P	39350	57-74-9	91P
4,4'-DDT	7P	39300	50-29-3	92P
4,4'-DDE	8P	39320	72-55-9	93P
4,4'-DDD	9P	39310	72-54-8	94P
dieldrin	10P	39380	60-57-1	90P
alpha-endosulfan	11P	34361	115-29-7	95P
beta-endosulfan	12P	34356	115-29-7	96P
endosulfan sulfate	13P	34351	1031-07-8	97P
endrin	14P	39390	72-20-8	98P
endrin aldehyde	15P	34366	7421-93-4	99P
heptachlor	16P	39410	76-44-8	100P
heptachlor epoxide	17P	39420	1024-57-3	101P
PCB-1242	18P	39496	53469-21-9	106P
PCB-1254	19P	39504	11097-69-1	107P
PCB-1221	20P	39488	11104-28-2	108P
PCB-1232	21P	39492	11141-16-5	109P
PCB-1248	22P	39500	12672-29-6	110P
PCB-1260	23P	39508	11096-82-5	111P
PCB-1016	24P	34671	12674-11-2	112P
toxaphene	25P	39400	8001-35-2	113P

COMPOUND CROSS-REFERENCE LIST (Continued)

COMPOUND	NPDES PERMIT	STORET	CAS	EPA CONTRACTORS
ACIDS				
2-chlorophenol	1A	34586	95-57-8	24A
2,4-dichlorophenol	2A	34601	120-83-2	31A
2,4-dimethylphenol	3A	34606	105-67-9	34A
4,6-dinitro-o-cresol	4A	34657	534-52-1	60A
2,4-dinitrophenol	5A	34616	51-28-5	59A
2-nitrophenol	6A	34591	88-75-5	57A
4-nitrophenol	7A	34646	100-02-7	58A
p-chloro-m-cresol	8A	34452	59-50-7	22A
pentachlorophenol	9A	39094	87-86-5	64A
phenol	10A	34694	108-95-2	65A
2,4,6-trichlorophenol	11A	34621	88-06-2	21A
BASE/NEUTRALS				
acenaphthene	1B	34205	83-32-9	1B
acenaphthylene	2B	34200	208-96-8	77B
anthracene	3B	34220	120-12-7	78B
benzidine	4B	39120	92-87-5	5B
benzo (a) anthracene	5B	34526	56-55-3	72B
benzo (a) pyrene	6B	34247	50-32-8	73B
3,4-benzofluoranthene	7B	34230	205-99-2	74B
benzo (g,h,i) perylene	8B	34521	191-24-2	79B
benzo (k) fluoranthene	9B	34242	207-08-9	75B
bis (2-chloroethoxy) methane	10B	34278	111-91-1	43B
bis (2-chloroethyl) ether	11B	34273	111-44-4	18B
bis (2-chloroisopropyl) ether	12B	34283	39638-32-9	42B
bis (2-ethylhexyl) phthalate	13B	39100	117-81-7	66B
4-bromophenyl phenyl ether	14B	34636	101-55-3	41B
butylbenzyl phthalate	15B	34292	85-68-7	67B
2-chloronaphthalene	16B	34581	91-58-7	20B
4-chlorophenyl phenyl ether	17B	34641	7005-72-3	40B
chrysene	18B	34320	218-01-9	76B
dibenzo (a,h) anthracene	19B	34556	53-70-3	82B
1,2-dichlorobenzene	20B	34536	95-50-1	25B
1,3-dichlorobenzene	21B	34566	541-73-1	26B
1,4-dichlorobenzene	22B	34571	106-46-7	27B
3,3'-dichlorobenzidine	23B	34631	91-94-1	28B
diethyl phthalate	24B	34336	84-66-2	70B
dimethyl phthalate	25B	34341	131-11-3	71B
di-n-butyl phthalate	26B	39110	84-74-2	68B
2,4-dinitrotoluene	27B	34611	121-14-2	35B
2,6-dinitrotoluene	28B	34626	606-20-2	36B
di-n-octyl phthalate	29B	34596	117-84-0	69B

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COMPOUND CROSS-REFERENCE LIST (Continued)

COMPOUND	NPDES PERMIT	STORET	CAS	EPA CONTRACTORS
METALS, CYANIDE, and PHENOLS (ALL TOTAL)				
Antimony	1M		7440-36-0	
Arsenic	2M		7440-38-2	
Beryllium	3M		7440-41-7	
Cadmium	4M		7440-43-9	
Chromium	5M		7440-47-3	
Copper	6M		7550-50-8	
Lead	7M		7439-92-1	
Mercury	8M		7439-97-6	
Nickel	9M		7440-02-0	
Selenium	10M		7782-49-2	
Silver	11M		7440-22-4	
Thallium	12M		7440-28-0	
Zinc	13M		7440-66-6	
Cyanide	14M		57-12-5	
Phenols	15M		N/A	
DIOXIN				
2,3,7,8-tetrachlorodi-benzo-p-dioxin		34675	1764-01-6	129B

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