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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAY 21 1998

Analytical Chemistry Laboratory Branch(ACLB)
Building 306, BARC-East
Beltsville, MD 20705

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

MEMORANDUM

SUBJECT: Carfentrazone-Ethyl (F-8426) Herbicide
Results of Laboratory Evaluation for
Carfentrazone-ethyl in/on Saltwater.

ECM Project #ECM0123W1.
ACLB Project #B97-61.

FROM: Juan F. Negron, Chemist
Analytical Chemistry Laboratory Branch

THRU: Francis D. Griffith, Jr., Chief
Analytical Chemistry Laboratory Branch

THRU: Donald A. Marlow
Laboratory Coordinator
Biological and Economic Analysis Division (7503W)

TO: Elizabeth Buhl, Chief
Fate and Monitoring Branch
Environmental Fate and Effects Division (7507C)

INTRODUCTION

The Analytical Chemistry Laboratory Branch was requested by Environmental Fate and Effects Division(EFED) to conduct an environmental chemistry method validation on Carfentrazone-ethyl in filtered and unfiltered salt water. The request came through the ECL (see the memo, dated Jan 21 1997, "Transfer of Environmental Method to EPA/ACB for Laboratory Evaluation"). ACB received neither the method nor the samples to validate the "Analytical Methodology for the Determination of Carfentrazone-ethyl (F-8426) and its Metabolites in/on Bare Soil," MRID # 441650-40.

CONCLUSIONS

1. The method was validated within the parameters set in the ECM SOP recovery guidelines. ACLB agrees with the limit of detection (LOD) established in the method.

2. ACLB feels that the method should describe the procedure for filtering the salt water.

COMMENTS

1. The analyte recoveries are expressed in mg/L. ACLB used ug/g, although mg/L recoveries are also included in this report.

2. In the method under section "2.3 APPARATUS AND MATERIALS" the following list should include the phrase "or equivalent" for the following items:

a. HPLC Pump.
b. HPLC Detector.
c. Autoinjector.
D. Data Acquisition System.
E. HPLC Column.

3. The method does not mention any eluant loss during filtering. ACLB concludes that in any future submision the registrant should present data to support the filtering procedure. In order to verify the study data, the laboratory will not have filtered salt water; therefore, the method should provide a sample preparation step as to how to prepare filtered salt water.

4. The method does not specify sample preparation. For any future submission using this method to gather data, the method needs to be revised to reflect adequate sample preparation.

5. The method instructs the analyst to calculate the recoveries by using a standard curve over a range from 0.033 ug/ml to 1.1 ug/ml. Since ACLB and the registrant's response is linear, the recoveries can also be calculated by using a single point calibration as long as the response is within the distribution of the initial point calibration values. A note should be included in any future revision to the method.

6. ACLB concludes that there are adequate validation data presented.

7. ACLB ran 36 samples within 24 hours.

8. The analytical standard was received from FMC. The purity of F-8426 was >97 %. The standard was not available from EPA's Repository at RTP-NC as of June 18, 1997. The remaining unused portion of the standard will be retained in ACLB's repository.

9. The matrix, filtered and unfiltered salt water, was obtained from Toxikon Environmental Sciences.

10. Description of instrumentation used in the EPA validation is as follows:
   a. HP 1050 pump,
   b. HP 1050 detector-UV,
   c. HP 3396 series II integrator,
   d. HP 9122c disk,
   e. HP 1050 autosampler.
   f. HP 1050 solvent reservoir.
   g. The mobile phase was 50% acetonitrile in water.
   h. The flow was one ml/min.
   I. The instrument was set to 50 ul injection for 0.1 and 1.1 mg/L and 100 ul injection for 0.045mg/L (LOD).
   j. Supelco LC-8-DB, 15 cm x 4.6 mm x 5 micron.

11. ACLB concludes the method is suitable to gather residue data for Carfentrazone-Ethyl in filtered and unfiltered salt water. 11

12. For questions please contact Mr. Juan F. Negron(ACB) at (301)504-8232.

METHOD SUMMARY

ACB used the method entitled "Analytical Method Validation in Filtered and Unfiltered water," by K.L.Wenger, dated June 4, 1996, and coded FMC study #V96-0046 (MRID 441650-02).

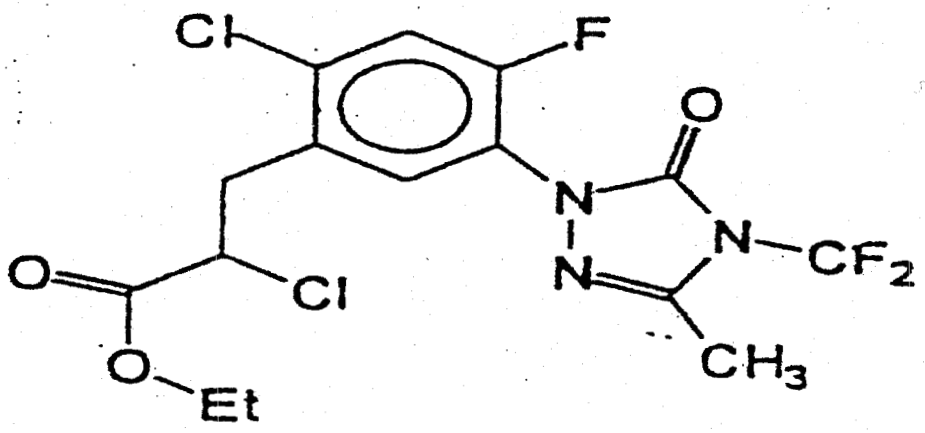
The filtered and unfiltered salt water samples were fortified at 0.1 ug/g and 1.0 ug/g, and were run in quadruplicate.

Five milliliters of unfiltered and/or filtered salt water was pipetted into a tared/calibrated test tube and weighed.

The sample was brought to a desired volume with acetonitrile in water (1/1, v/v). The residue was quantitated on a Liquid Chromatograph equipped with an ultraviolet(UV) detector set at 272nm.

CHEMICAL STRUCTURE

The chemical name of F-8426 is ethyl 2-Clair-3-[2-Clair-4-fluor-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,22,4-triazol-1-yl]propanoate. The chemical structure of F-8426 is as follows:



F8426

Attachments:

Linearity response,
Chromatograms.
Spread sheet with formulae.

cc: ECMV file(B97-61), Reading file, Analyst(JFNegron), A:Dupuy(ECL/BSL).
ACLB: 7503W;BARC-E 306:JFNegron:12/29/97:edit JFN:1/6/98:(301)504-8232
RDI:QAPanel:12/15/97:BrCh:FGriffith:12/31/97.

ANALYTICAL CHEMISTRY LABORATORY BRANCH
METHOD VALIDATION RESULTS
ACLB no. - B97-61
ECM no. - ECM0123W1
ECMV of Carfentrazone-Ethyl(F8426)

Conversion unit of ug/g to ug/ml.
1 ug/ml = 1mg/L

Unfiltered saltwater

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< .04	0	N/A						
< .04	0	N/A						
0.035	0.044	79.5				0.036	0.045	80.0
0.035	0.044	79.5				0.036	0.045	80.0
0.035	0.044	79.5				0.036	0.045	80.0
0.030	0.044	68.2	0.03375	0.0025	7.407407	0.030	0.045	66.7

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< 0.10	0	N/A						
< 0.10	0	N/A						
0.096	0.109	88.1				0.0978	0.111	88.1
0.096	0.109	88.1				0.0976	0.111	87.9
0.093	0.109	85.3				0.0946	0.111	85.2
0.091	0.110	82.7	0.094	0.002449	2.60584	0.0925	0.111	83.3

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< 0.10	0	N/A						
< 0.10	0	N/A						
0.92	1.09	84.4				0.937	1.11	84.4
0.91	1.09	83.5				0.926	1.11	83.4
0.95	1.09	87.2				0.968	1.11	87.2
0.92	1.09	84.4	0.925	0.017321	1.872487	0.943	1.11	85.0

Filtered saltwater

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< .04	0	N/A						
< .04	0	N/A						
0.043	0.044	97.7				0.044	0.045	97.8
0.043	0.043	100				0.044	0.045	97.8
0.045	0.044	102				0.046	0.045	106
0.047	0.044	107	0.0445	0.001915	4.303043	0.048	0.045	107

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< 0.10	0	N/A						
< 0.10	0	N/A						
0.08	0.109	73.4				0.082	0.111	73.4
0.106	0.109	97.2				0.108	0.111	97.3
0.116	0.109	106				0.118	0.111	106
0.102	0.109	93.6	0.101	0.015188	15.03734	0.104	0.111	93.7

PPM Found ug/g	PPM Added ug/g	Recoveries %	PPM-Avg Found ug/g	STD Dev. ug/g	RSD %	Found mg/L	Added mg/L	Recovery %
< 0.10	0	N/A						
< 0.10	0	N/A						
1.00	1.09	91.7				1.02	1.11	91.9
1.04	1.10	94.5				1.06	1.11	95.5
0.97	1.09	89.0				0.99	1.11	89.2
0.99	1.09	90.8	1.00	0.029439	2.94392	1.01	1.11	91.0

$$RSD = \frac{\text{STD Dev. X } 100}{\text{Avg. found}}$$

Conversion unit:

$$\text{PPM found Mg/L} = \frac{\text{PPM found ug/g X Sample weight}}{\text{Sample Volumne}}$$

$$\text{PPM Added Mg/L} = \frac{\text{ug of F-8426}}{\text{Sample volumne}}$$

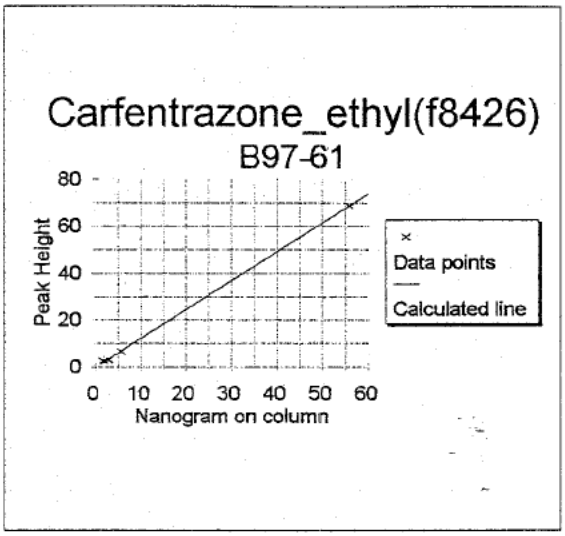
Project	: B97-61
Date	: 12/1/97
Name	: Juan F. Negron
Compound	: Carfentrazone-Ethyl
Instrument	: HP 1050 Solvent resevoir, EPA property #735533
	: HP 1050 Pump, EPA property # 735530
	: HP 1050 Autosampler, property # 735529
	: HP 3396 Series II integrator, EPA property # 735532
	: HP 9122C Disk, EPA property # 735549
Detector	: HP 1050 Detector, UV at 272nm; EPA property # 735531
Column	: Supelco Lc-8-DB, 15.0 cm, 4.6mm, 5 um ; col. # 089550AD
Mobile phase	: 50% Acetonitrile in water (Channel A).
Composition	: 100 % A
Flow	: 1 ml/min.
Injection	: 50 ul

Run #	Pk Ht. 1	Pk Ht. 2	Pk Ht. Avg.	Conc. ug/ml	On col. ng
171..172	2.8	3.1	2.95	0.03339	1.6695
173..174	3.35	3.25	3.3	0.05565	2.7825
175..176	7.1	6.9	7	0.1113	5.565
177..178	69.4	68.55	68.975	1.113	55.65

1 1.538402
60 74.3198

Regression Output:

Constant		0.304819
Std Err of Y Est		0.530808
R Squared		0.99982
No. of Observations		4
Degrees of Freedom		2
X Coefficient(s)	1.233583	
Std Err of Coef.	0.011694	



Project : B97-61
Date : 12/09/97
Name : Juan F. Negron
Compound : Carfentrazone-Ethyl
Instrument : HP 1050 Solvent resevoir, EPA property #735533
: HP 1050 Pump, EPA property # 735530
: HP 1050 Autosampler, property # 735529
: HP 3396 Series II integrator, EPA property # 735532
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Detector : HP 1050 Detector, UV at 272nm; EPA property # 735531
Column : Supelco Lc-8-DB, 15.0 cm, 4.6mm, 5 um ; col. # 089550AD
Mobile phase : 50% Acetonitrile in water (Channel A).
Composition : 100 % A
Flow : 1 ml/min.
Injection : 100 ul
Commodity : Unfiltered saltwater
Spike level : Took 1 ml of 0.2226 ug/ml of F-8426 for 0.04ppm
Sample volumne : Took a 5 ml pipette and weight.

12/11/97
JMM

F-8426

Conversion unit of ug/g to ug/ml.
1 ug/ml = 1 mg/L

Name Run #..#	Sample Weight g	Pk. Height cm 1	Pk. Height cm 2	Pk. Height cm 3	Pk. Height cm 4	Pk. Height cm avg.	Std Avg. cm	Std. conc. ug/ml	Final Volumne ml	PPM Found ug/g	PPM Added ug/g	Recovery %	Found mg/L	Added mg/L	Recovery %	STD Dev. ug/g
Std 234..237		6.65	6.25	10.10	6.40	7.35		0.05565								
B97-61-50%ACN/WATER-Bk-3 238..241	3.9124	N/A	N/A	N/A	N/A	N/A			6	< 0.04	0	N/A				
B97-61-UfSW-C-3 242..245	5.0962	N/A	N/A	N/A	N/A	N/A			6	< 0.04	0	N/A				
Std 246..249		10.00	7.10	7.05	6.50	7.66	7.69	0.05565								
B97-61-UfSW- .04-1 250..253	5.1055	4.45	4.20	4.10	3.65	4.10			6	0.035	0.044	80.0	0.0356	0.045	79.1	0.002484
B97-61-UfSW- .04-2 254..257	5.1013	3.70	4.65	4.20	3.80	4.09			6	0.035	0.044	80.3	0.036	0.045	80.0	
Std 258..261		9.60	6.85	7.50	6.90	7.71	7.71	0.05565								
B97-61-UfSW- .04-3 262..265	5.0981	3.65	3.80	3.45	3.15	3.51			7	0.035	0.044	80.1	0.036	0.045	80.0	
B97-61-UfSW- .04-4 266..269	5.0803	2.50	4.10	2.75	2.60	2.99			7	0.030	0.044	68.5	0.030	0.045	66.7	
Std 270..273	The instrument stop by it self.							0.05565								

$$\text{PPM found} = \frac{\text{sample response X standard conc. X final vol.}}{\text{standard response X sample weight}}$$

$$\text{Spike level} = \frac{\text{ug of F-8426}}{\text{sample weight}}$$

Convertion unit:

$$\text{PPM found Mg/L} = \frac{\text{PPM found ug/g X Sample weight}}{\text{Sample Volumne}}$$

$$\text{PPM Added Mg/L} = \frac{\text{ug of F-8426}}{\text{Sample volumne}}$$

Project : B97-61
Date : 11/17/97
Name : Juan F. Negron
Compound : Carfentrazone-Ethyl
Instrument : HP 1050 Solvent resevoir, EPA property #735533
: HP 1050 Pump, EPA property # 735530
: HP 1050 Autosampler, property # 735529
: HP 3396 Series II integrator, EPA property # 735532
: HP 9122C Disk, EPA property # 735549
Detector : HP 1050 Detector, UV at 272nm; EPA property # 735531
Column : Supelco Lc-8-DB, 15.0 cm, 4.6mm, 5 um ; col. # 089550AD
Mobile phase : 50% Acetonitrile in water (Channel A).
Composition : 100 % A
Flow : 1 ml/min.
Injection : 50 ul
Commodity : Unfiltered saltwater
Spike level : Took 1 ml of 0.5565 ug/ml of F-8426 for 0.1ppm
: Took 1 ml of 5.565 ug/ml of F-8426 for 1ppm.
Sample volumne : Took a 5 ml pipette and weight.

12/12/97

F-8426

Conversion unit of ug/g to ug/ml.
1 ug/ml = 1 mg/L

Name Run #..#	Sample Weight g	Pk. Height cm 1	Pk. Height cm 2	Pk. Height cm 3	Pk. Height cm 4	Pk. Height cm avg.	Std Avg. cm	Std. conc. ug/ml	Final Volumne ml	PPM Found ug/g	PPM Added ug/g	Recovery %	Found mg/L	Added mg/L	Recovery %	STD Dev. ug/g
Std 90..93		7.75	6.80	7.00	6.65	7.05	6.89	0.07791								
B9761-50%ACN/water-Bk-1 94..97	4.5731	N/A	N/A	N/A	N/A	N/A			9	< 0.1	0	N/A				
B97-61-UfSW- C -1 98..101	5.1074	N/A	N/A	N/A	N/A	N/A			9	< 0.1	0	N/A				
Std 102..105		7.40	6.95	6.55	6.00	6.73	6.80	0.07791								
B97-61-UfSW- .1-1 106..109	5.0929	4.65	4.65	5.00	4.65	4.74			9	0.096	0.109	87.9	0.0978	0.111	88.1	0.002449
B97-61-UfSW- .1-2 110..113	5.0858	4.50	4.65	4.85	5.00	4.75			9	0.096	0.109	87.7	0.0976	0.111	87.9	
Std 114..117		7.40	6.00	7.05	7.00	6.86	6.95	0.07791								
B97-61-UfSW- .1-3 118..121	5.0881	4.80	4.25	4.75	4.90	4.68			9	0.093	0.109	85.3	0.0946	0.111	85.2	
B97-61-UfSW- .1-4 122..125	5.0805	4.50	4.55	4.75	4.60	4.60			9	0.091	0.110	82.7	0.0925	0.111	83.3	
Std 126..129		7.55	7.00	6.60	7.00	7.04	7.04	0.07791								
B9761-50%ACN/water-Bk-2 130..133	4.5667	N.D.	N.D.	N.D.	N.D.	N.D.			9	< 0.1	0	N/A				
B97-61-UfSW-C-2 134..137	5.0885	N.D.	N.D.	N.D.	N.D.	N.D.			9	< 0.1	0	N/A				
Std 138..141		7.65	6.75	7.00	6.70	7.03	6.89	0.07791								
B97-61-UfSW- 1- 1 142..145	5.0940	34.60	34.60	34.30	34.10	34.40			12	0.92	1.09	84.4	0.937	1.11	84.4	0.017321
B97-61-UfSW- 1- 2 146..149	5.0878	34.90	34.05	34.05	34.05	34.26			12	0.91	1.09	83.5	0.926	1.11	83.4	
Std 150..153		7.00	7.10	6.10	6.75	6.74	6.56	0.07791								
B97-61-UfSW- 1- 3 154..157	5.0928	33.80	34.05	33.75	33.90	33.88			12	0.95	1.09	86.9	0.968	1.11	87.2	
B97-61-UfSW- 1- 4 158..161	5.1257	32.80	33.50	33.05	33.15	33.13			12	0.92	1.09	84.7	0.943	1.11	85.0	
Std 162..165		6.90	6.10	6.45	6.05	6.38		0.07791								

$$\text{PPM found} = \frac{\text{sample response X standard conc. X final vol.}}{\text{standard response X sample weight}}$$

$$\text{Spike level} = \frac{\text{ug of F-8426}}{\text{sample weight}}$$

Conversion unit:

$$\text{PPM found Mg/L} = \frac{\text{PPM found ug/g X Sample weight}}{\text{Sample Volumne}}$$

$$\text{PPM Added Mg/L} = \frac{\text{ug of F-8426}}{\text{Sample volumne}}$$

Project	: B97-61
Date	: 12/09/97
Name	: Juan F. Negron
Compound	: Carfentrazone-Ethyl
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Detector	: HP 1050 Detector, UV at 272nm; EPA property # 735531
Column	: Supelco Lc-8-DB, 15.0 cm, 4.6mm, 5 um ; col. # 089550AD
Mobile phase	: 50% Acetonitrile in water (Channel A).
Composition	: 100 % A
Flow	: 1 ml/min.
Injection	: 100 ul
Commodity	: Filtered saltwater
Spike level	: Took 1 ml of 0.2226 ug/ml of F-8426 for 0.04ppm
Sample volumne	: Took a 5 ml pipette and weight.

12/11/97
Mm

F-8426

Conversion unit of ug/g to ug/ml.
1 ug/ml = 1 mg/L

Name Run #..#	Sample Weight g	Pk. Height cm 1	Pk. Height cm 2	Pk. Height cm 3	Pk. Height cm 4	Pk. Height cm avg.	Std Avg. cm	Std. conc. ug/ml	Final Volumne ml	PPM Found ug/g	PPM Added ug/g	Recovery %	Found mg/L	Added mg/L	Recovery %	STD Dev. ug/g
Std 198..201		7.30	9.25	8.40	6.15	7.78		0.05565								
B97-61-50%ACN/WATER-Bk-3 202..205	3.9144	N/A	N/A	N/A	N/A	N/A			6	< 0.04	0	N/A				
B97-61-FSW-C-3 206..209	5.1070	N/A	N/A	N/A	N/A	N/A			6	< 0.04	0	N/A				
Std 210..213		9.10	8.00	9.40	8.60	8.78	8.19	0.05565								
B97-61-FSW- .04-1 214..217	5.0794	5.55	5.70	4.85	5.40	5.38			6	0.043	0.044	98.6	0.0439	0.045	97.6	0.001865
B97-61-FSW- .04-2 218..221	5.1356	5.40	5.90	5.50	4.85	5.41			6	0.043	0.043	99.3	0.044	0.045	97.8	
Std 222..225		6.80	6.20	9.95	7.40	7.59	7.47	0.05565								
B97-61-FSW- .04-3 226..229	5.1085	5.35	5.00	5.00	5.05	5.10			6	0.045	0.044	103	0.046	0.045	102	
B97-61-FSW- .04-4 230..233	5.1056	5.80	5.35	5.25	5.00	5.35			6	0.047	0.044	108	0.048	0.045	107	
Std 234..237		6.65	6.25	10.10	6.40	7.35		0.05565								

$$\text{PPM found} = \frac{\text{sample response X standard conc. X final vol.}}{\text{standard response X sample weight}}$$

$$\text{Spike level} = \frac{\text{ug of F-8426}}{\text{sample weight}}$$

Convertion unit:

$$\text{PPM found Mg/L} = \frac{\text{PPM found ug/g X Sample weight}}{\text{Sample Volumne}}$$

$$\text{PPM Added Mg/L} = \frac{\text{ug of F-8426}}{\text{Sample volumne}}$$

Project : B97-61
Date : 11/17/97
Name : Juan F. Negron
Compound : Carfentrazone-Ethyl
Instrument : HP 1050 Solvent resevoir, EPA property #735533
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Detector : HP 1050 Detector, UV at 272nm; EPA property # 735531
Column : Supelco Lc-8-DB, 15.0 cm, 4.6mm, 5 um ; col. # 089550AD
Mobile phase : 50% Acetonitrile in water (Channel A).
Composition : 100 % A
Flow : 1 ml/min.
Injection : 50 ul
Commodity : Filtered saltwater
Spike level : Took 1 ml of 0.5565 ug/ml of F-8426 for 0.1ppm
: Took 1 ml of 5.565 ug/ml of F-8426 for 1ppm.
Sample volumne : Took a 5 ml pipette and weight.

12/12/97

F-8426

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Name Run #..#	Sample Weight g	Pk. Height cm 1	Pk. Height cm 2	Pk. Height cm 3	Pk. Height cm 4	Pk. Height cm avg.	Std Avg. cm	Std. conc. ug/ml	Final Volumne ml	PPM Found ug/g	PPM Added ug/g	Recovery %	Found mg/L	Added mg/L	Recovery %	STD Dev. ug/g
Std 15..18		6.15	3.45	3.25	3.65	4.13		0.05565								
B97-61-50%ACN/WATER-Bk-1 19..22	5.0021	N/A	N/A	N/A	N/A	N/A			9	< 0.1	0	N/A				
B97-61-FSW-C-1 25..28	5.0898	Contaminated , not good.							9	< 0.1	0	N/A				
Std 29,30,32,33		8.40	7.75	7.45	10.30	8.48	7.90	0.07791								
B97-61-FSW- .1-1 34..37	5.0910	4.50	4.60	4.55	4.70	4.59			9	0.080	0.109	73.2	0.0815	0.111	73.4	0.015188
B97-61-FSW- .1-2 38..41	5.0923	5.75	5.60	6.60	6.35	6.08			9	0.106	0.109	97.2	0.108	0.111	97.3	
Std 42..45		7.20	7.65	7.35	7.05	7.31	7.26	0.07791								
B97-61-FSW- .1-3 46..49	5.0905	6.20	6.05	6.00	6.20	6.11			9	0.116	0.109	106	0.118	0.111	106	
B97-61-FSW- .1-4 50..53	5.1016	4.60	5.25	5.50	6.15	5.38			9	0.102	0.109	93.6	0.104	0.111	93.7	
Std 54..57		7.00	7.25	7.15	7.40	7.20	7.16	0.07791								
B9761-50%ACN/water-Bk-2 58..61	4.5682	N.D.	N.D.	N.D.	N.D.	N.D.			9	< 0.1	0	N/A				
B97-61-FSW-C-2 62..65	5.0941	N.D.	N.D.	N.D.	N.D.	N.D.			9	< 0.1	0	N/A				
Std 66..69		7.60	6.55	7.20	7.10	7.11	7.12	0.07791								
B97-61-FSW- 1- 1 70..73	5.1060	38.60	39.30	39.10	39.05	39.01			12	1.00	1.090	91.7	1.02	1.11	92.0	0.029102
B97-61-FSW- 1- 2 74..77	5.0797	40.80	40.40	40.05	40.20	40.36			12	1.04	1.100	94.5	1.06	1.11	95.2	
Std 78..81		7.60	7.00	6.50	7.40	7.13	7.09	0.07791								
B97-61-FSW- 1- 3 82..85	5.0985	37.55	38.15	37.05	37.35	37.53			12	0.971	1.090	89.1	0.990	1.11	89.2	
B97-61-FSW- 1- 4 86..89	5.1076	38.60	38.30	38.15	37.85	38.23			12	0.990	1.090	90.8	1.01	1.11	91.1	
Std 90..93		7.75	6.80	7.00	6.65	7.05		0.07791								

$$\text{PPM found} = \frac{\text{sample response X standard conc. X final vol.}}{\text{standard response X sample weight}}$$

$$\text{Spike level} = \frac{\text{ug of F-8426}}{\text{sample weight}}$$

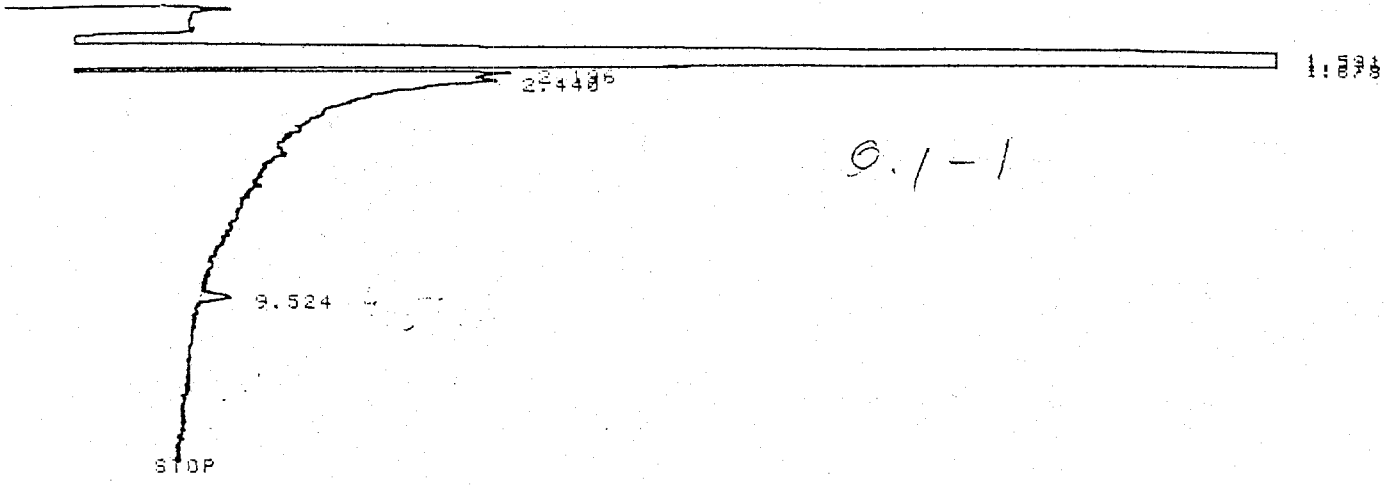
Conversion unit:

$$\text{PPM found Mg/L} = \frac{\text{PPM found ug/g X Sample weight}}{\text{Sample Volumne}}$$

$$\text{PPM Added Mg/L} = \frac{\text{ug of F-8426}}{\text{Sample volumne}}$$

5.0910g @ FSW
final Vol = 9mL

* RUN # 36 NOV 14, 1997 20:19:17
START



9.1-1

Closing signal file A:Q57FCE46.BNC

RUN# 36 NOV 14, 1997 20:19:17

SAMPLE# 2

SIGNAL FILE: A:Q57FCE46.BNC

B97-61; LC-80B,15cm,4.6mm,5uM,50uL-INJ.

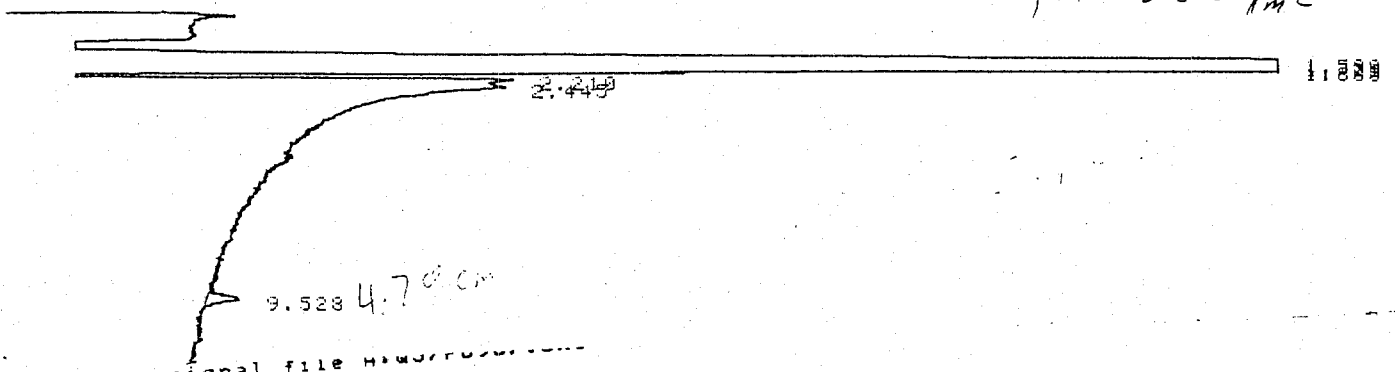
ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
9.524	VP	2893	.221	218	1	1.073	F-8426

TOTAL AREA=1983391
MUL FACTOR=1.0000E+00

5.0910g @ FSW
final Vol = 9mL

* RUN # 37 NOV 14, 1997 20:35:33
START



4.7 @ CM

Closing signal file

RUN# 39 NOV 14, 1997 21:08:06

SAMPLE# 3

FILE: A:Q57FD987.BNC

Closing signal file A:05305026.BNC

RUN# 70 NOV 15, 1997, 05:33:25

SAMPLE# 11

SIGNAL FILE: A:05305026.BNC

B97-61: LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

ESTD-AREA

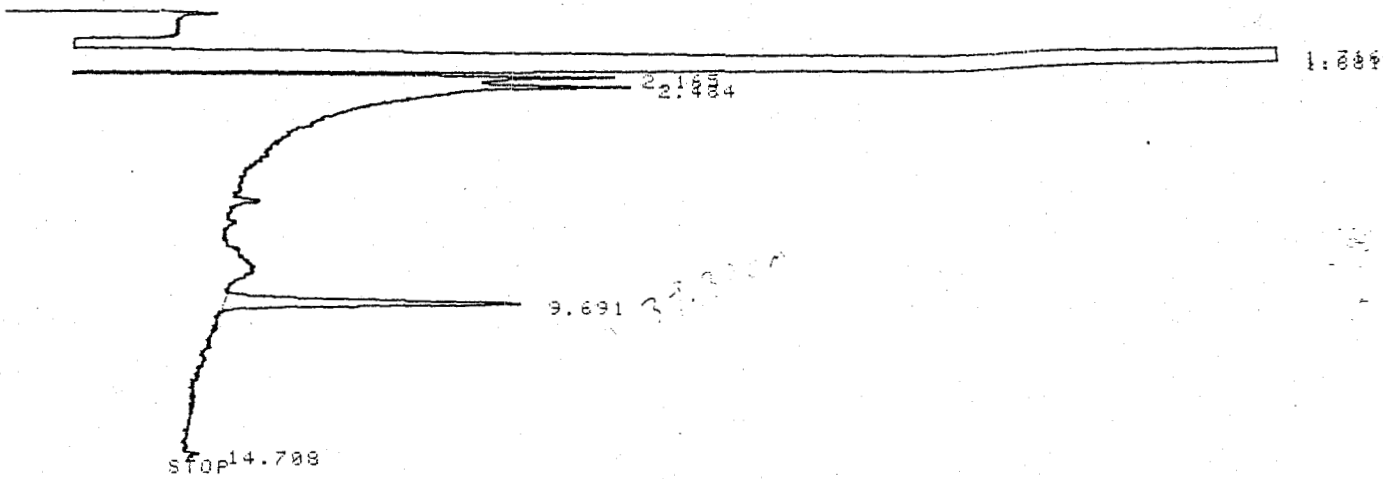
RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
9.694	VV	30702	.239	2139	1	11.388	F-8426

TOTAL AREA=1875667
MUL FACTOR=1.0000E+00

FSW
5.1060 g of F-8426
final vol = 12mL

1.0 - 1

* RUN # 71 NOV 15, 1997 05:49:44
START



Closing signal file A:Q58053F9.BNC

RUN# 71 NOV 15, 1997 05:49:44

SAMPLE# 11

SIGNAL FILE: A:Q58053F9.BNC

B97-61: LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

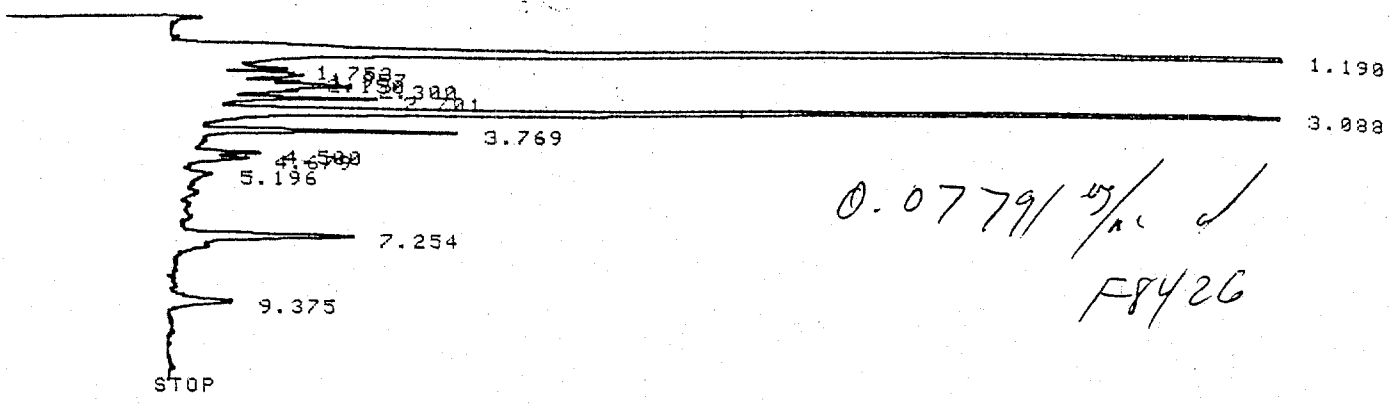
ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
9.691	PP	29041	.230	2101	1	10.772	F-8426

TOTAL AREA=1630180
MUL FACTOR=1.0000E+00

RUN# 72 NOV 15, 1997 06:06:03

* RUN # 24 NOV 14, 1997 14:29:36
START



0.0779/5/1.0

F8426

RUN# 24 NOV 14, 1997 14:29:36

SAMPLE# 17

B97-61; LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
9.375	VV	5742	.224	427	1	2.130	F-8426

TOTAL AREA= 408935
MUL FACTOR=1.0000E+00

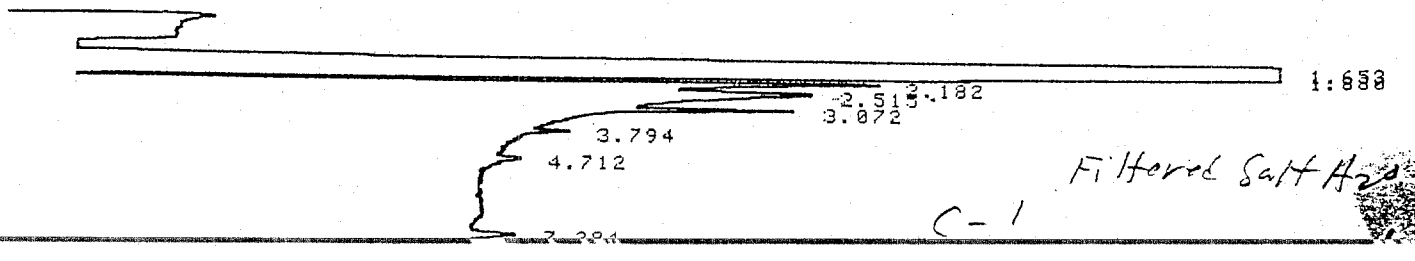
* OP # 2

RUN DATA STORAGE
Store signal data [Y/N*]: Y
Device [A*]: BREAK

* LIST: LIST
PEAK CAPACITY: 1242

ZERO = 5, 49.640
ATT 2^ = 0
CHT SP = 0.4
AR REJ = 0
THRSH = 0
PK WD = 0.10

* RUN # 25 NOV 14, 1997 14:43:08
START



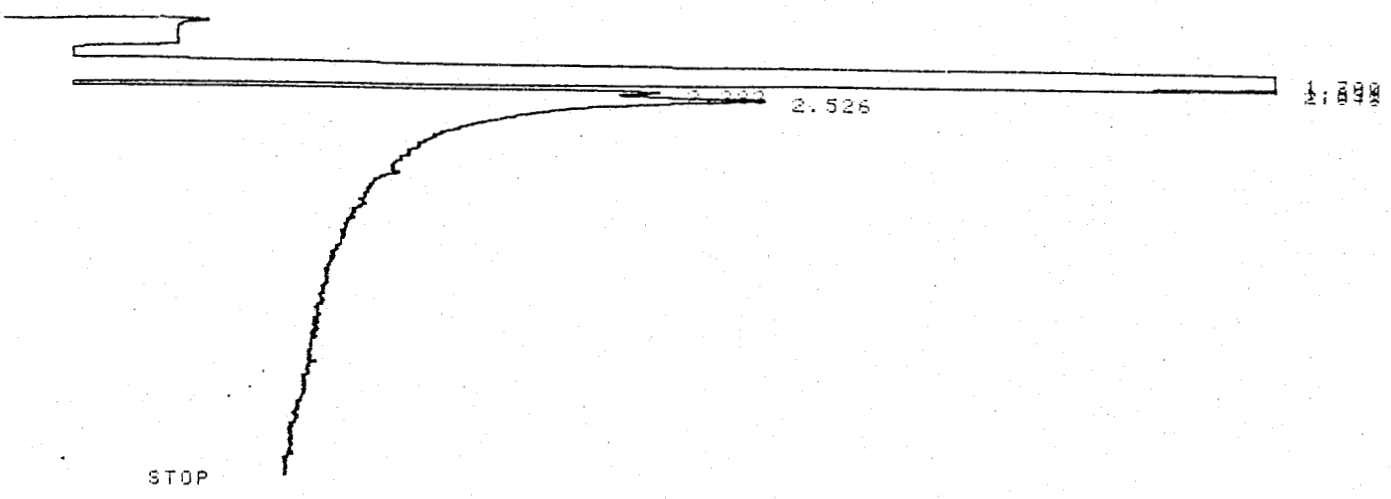
Filtered Salt H2O

C-1

5.0170 g
final vol = 9mL

C-2

* RUN # 62 NOV 15, 1997 03:22:47
START



Closing signal file A:Q5803187.BNC

RUN# 62 NOV 15, 1997 03:22:47

SAMPLE# 9

SIGNAL FILE: A:Q5803187.BNC

B97-61: LC-808,15cm,4.6mm,5uM,50uL-INJ.

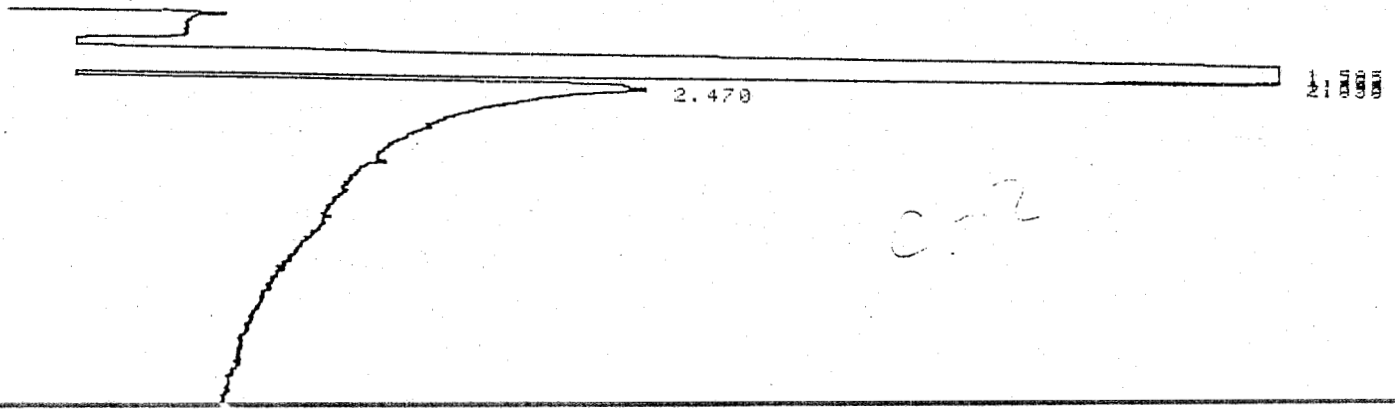
NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.700	1895974	BV	.198	65.68832
1.891	194101	VV	.118	6.72486
2.048	85521	VP	.086	2.96298
2.283	125617	PV	.172	4.35215
2.526	585105	VV	.835	20.27167

TOTAL AREA=2886318
MUL FACTOR=1.0000E+00

5.0941g of FSW
final vol = 9mL

* RUN # 63 NOV 15, 1997 03:39:07
START



C-2

SAMPLE# 1 .05 mg/mL Std

SIGNAL FILE: A:Q57F64F1.BNC

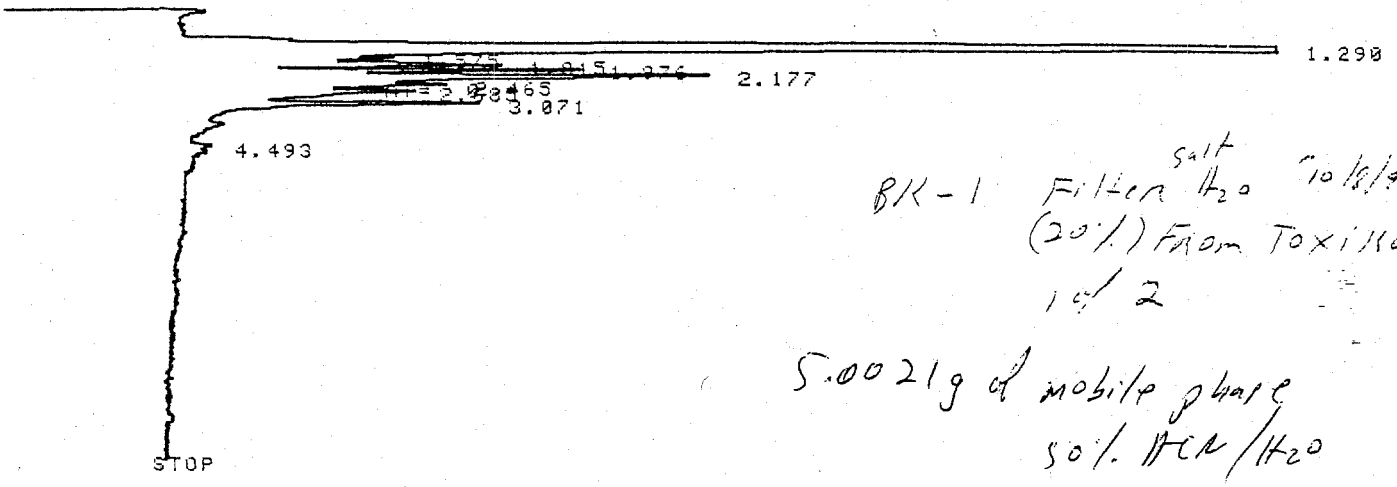
B97-61; LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
7.256	VV	1283	.160	134	1R	.476	F-8426

TOTAL AREA= 47733
MUL FACTOR=1.0000E+00

* RUN # 19 NOV 14, 1997 13:06:07
START



BK-1 Filter salt H_2O 10/8/97
(20%) From Toxilled
1 of 2

5.0021g of mobile phase
50% MeOH/H_2O

final vol = 9mL

Closing signal file A:Q57F68C0.BNC

RUN# 19 NOV 14, 1997 13:06:07

SAMPLE# 2

SIGNAL FILE: A:Q57F68C0.BNC

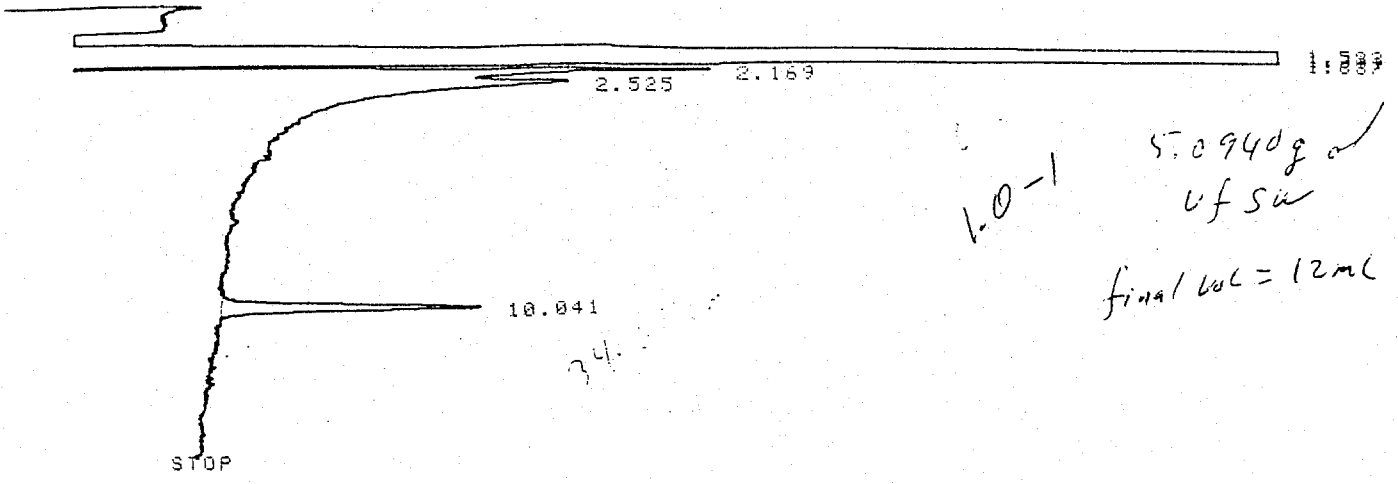
B97-61; LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.290	771750	PB	.066	88.30566
1.575	1041	BV	.051	.11911
1.815	10056	VP	.114	1.15063
1.976	13742	PV	.105	1.57240
2.177	33655	VV	.179	3.85089
2.465	11380	VV	.138	1.30213
2.685	15656	VV	.216	1.79140
3.071	15278	VP	.144	1.74815
4.493	1395	PV	.140	.15962

TOTAL AREA= 873953
MUL FACTOR=1.0000E+00

* RUN # 142 NOV 16, 1997 01:07:02
START



1.0-1 5.0940 g of uf sw
final vol = 12mL

Error storing signal to A:Q5816337.BNC
ATTEMPTED WRITE PAST END OF FILE

RUN# 142 NOV 16, 1997 01:07:02

SAMPLE# 29

B97-61; LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

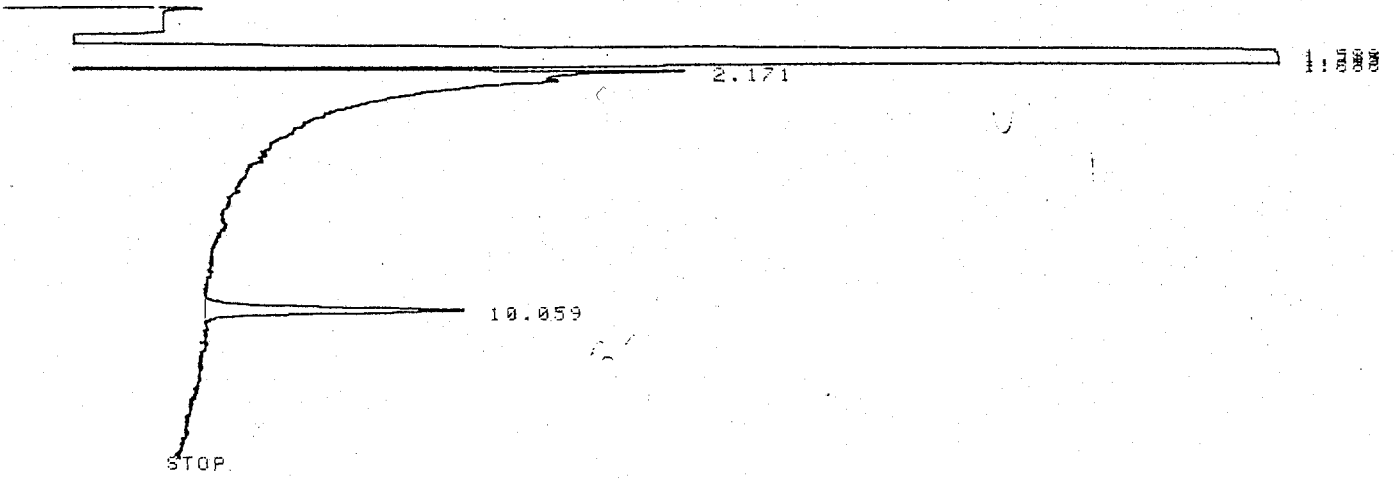
ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
10.041	PV	27682	.248	1864	1	10.268	F-8426

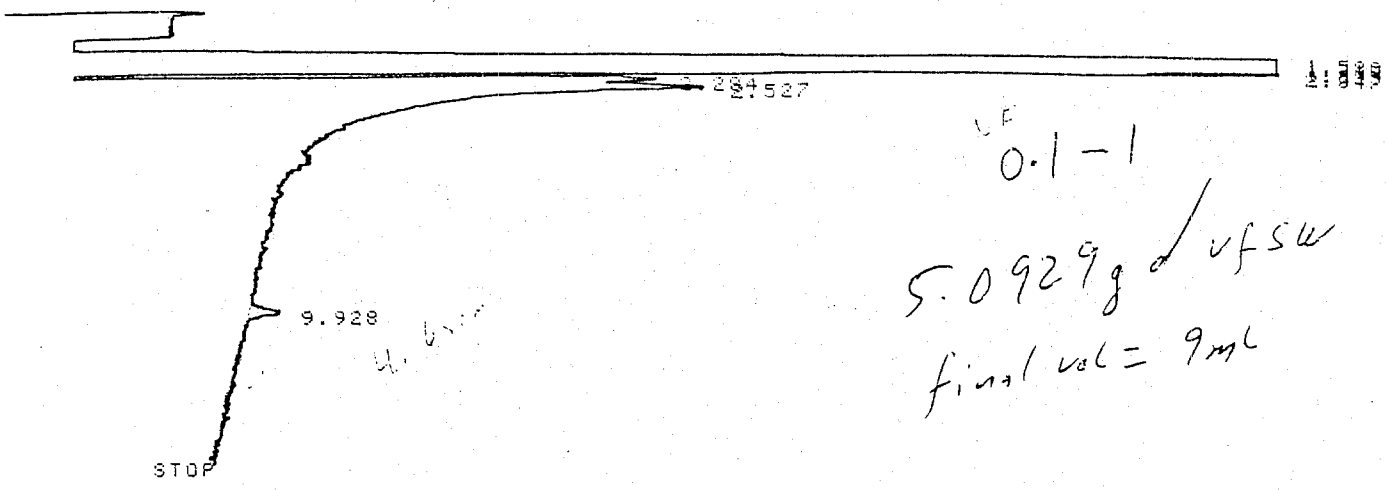
TOTAL AREA=1763613
MUL FACTOR=1.0000E+00

5.0940 g of uf sw
final vol = 12mL

* RUN # 143 NOV 16, 1997 01:23:13
START



* RUN # 106 NOV 15, 1997 15:21:55
START



0.1 – 1
5.0929 g of ufsw
final vol = 9mL

Closing signal file A:Q5800A14.BNC

RUN# 106 NOV 15, 1997 15:21:55

SAMPLE# 20

SIGNAL FILE: A:Q5800A14.BNC

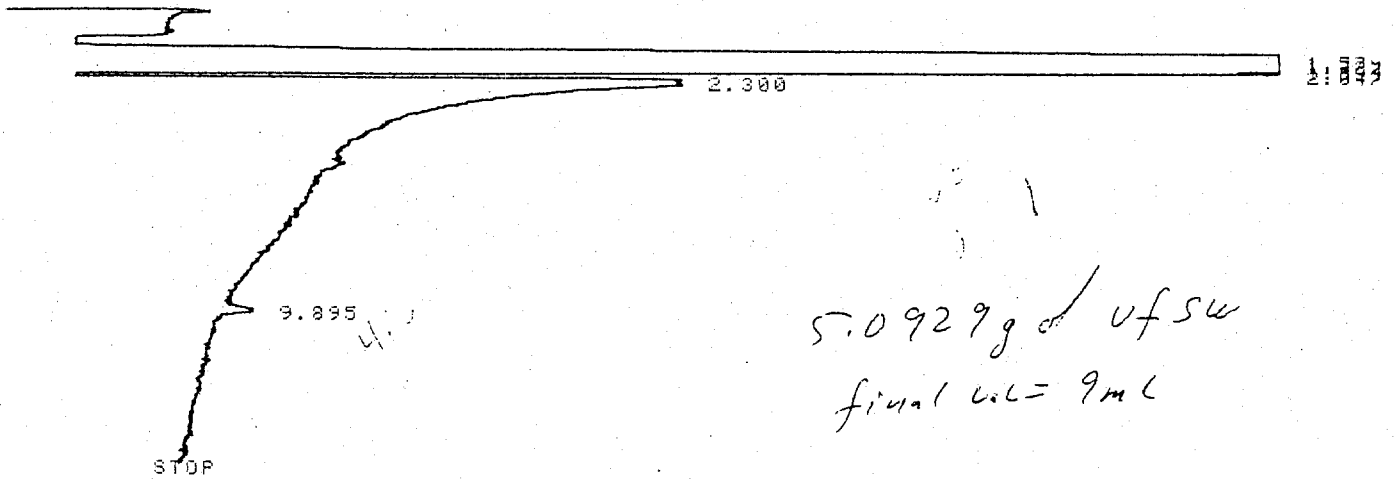
B97-61: LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

ESTD-AREA

RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
9.928	PP	3946	.285	231	1	1.464	F-8426

TOTAL AREA=2300371
MUL FACTOR=1.0000E+00

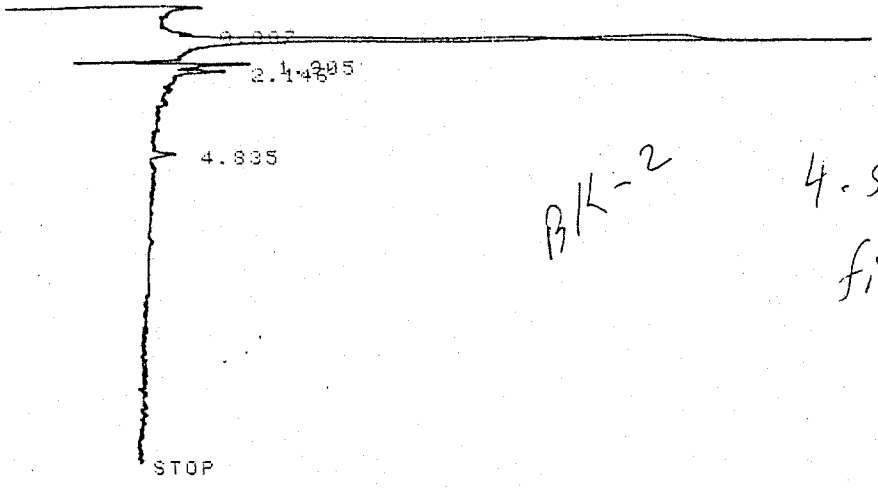
* RUN # 107 NOV 15, 1997 15:38:18
START



5.0929 g of ufsw
final vol = 9mL

Closing signal file A:Q5800DEA.BNC

* RUN # 132 NOV 15, 1997 22:24:58
START



Blk-2

4.5667g of 5ml ACN/H2O
final vol = 9mL

Error storing signal to A:Q5813038.BNC
ATTEMPTED WRITE PAST END OF FILE

RUN# 132 NOV 15, 1997 22:24:58

SAMPLE# 26

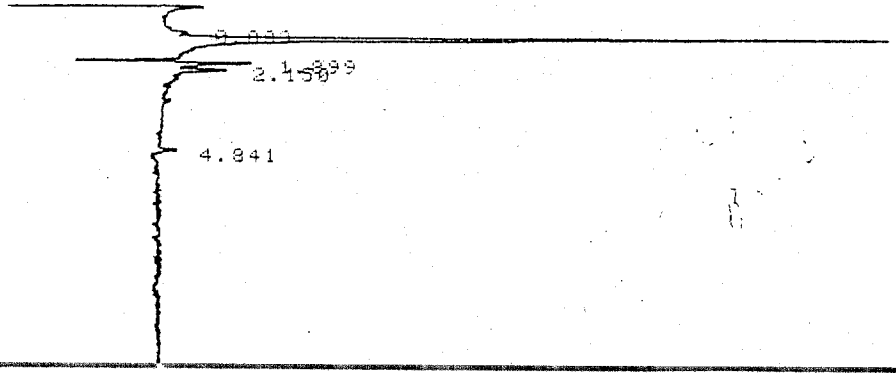
897-61: LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.887	1436	PV	.138	2.10931
1.090	29683	VB	.100	43.60082
1.905	13094	BV	.168	19.23354
2.146	22670	VV	.361	33.29957
4.835	1196	PB	.113	1.75678

TOTAL AREA= 68079
MUL FACTOR=1.0000E+00

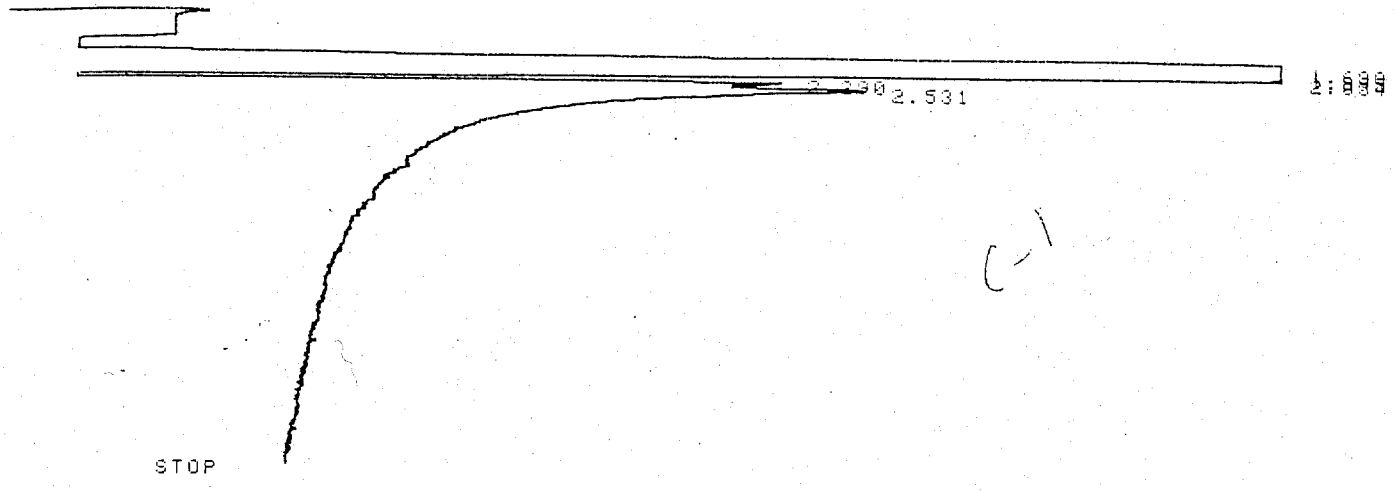
* RUN # 133 NOV 15, 1997 22:41:11
START



4.5667g of 5ml ACN/H2O
final vol = 9mL

5.1074g of UFSW
final vol = 9mL

* RUN # 98 NOV 15, 1997 13:10:54
START



Closing signal file A:Q580885F.BNC

RUN# 98 NOV 15, 1997 13:10:54

SAMPLE# 18

SIGNAL FILE: A:Q580885F.BNC

B97-61: LC-8DB,15cm,4.6mm,5uM,50uL-INJ.

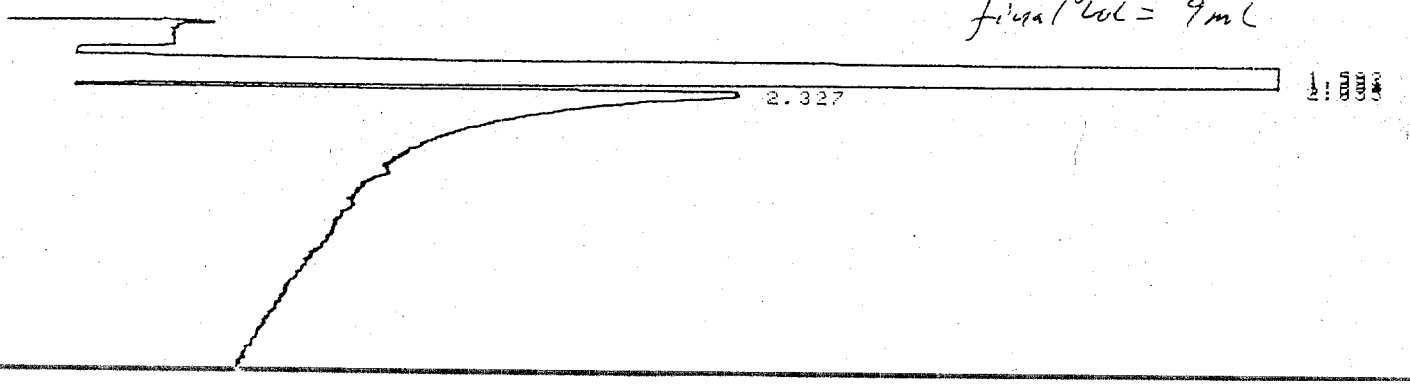
NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
1.698	1994556	BV	.199	68.54938
1.895	225239	VV	.125	7.74107
2.054	104326	VP	.096	3.58550
2.290	136561	PV	.175	4.69336
2.531	448981	VB	.643	15.43069

TOTAL AREA=2909662
MUL FACTOR=1.0000E+00

* RUN # 99 NOV 15, 1997 13:27:18
START

5.1074g of UFSW
final vol = 9mL



STOP

Closing signal file A:05A22DB8.BNC

ufsw
BK-3

RUN# 241 DEC 9, 1997 22:03:35

SAMPLE# 11

SIGNAL FILE: A:05A22DB8.BNC

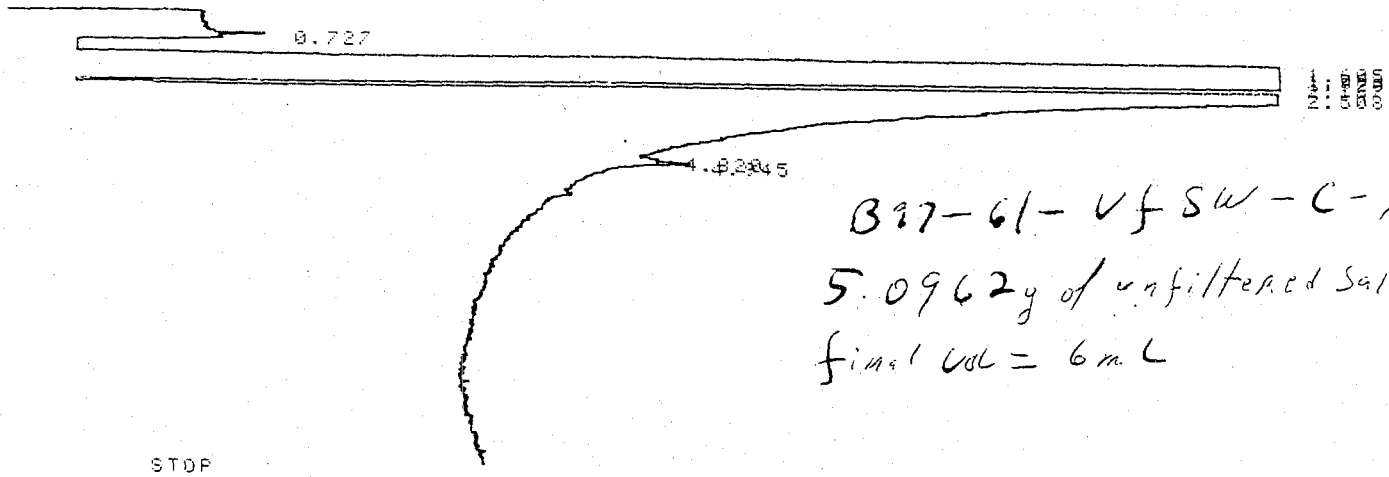
B97-61:JC-8DB,15CM,4.6mm,5uM,100UL-INJ.

NO CALIB PEAKS FOUND
AREA%

RT	AREA	TYPE	WIDTH	AREA%
.752	88267	VV	.165	4.38179
.925	85067	VV	.135	4.22293
1.275	138983	VP	.158	6.89945
1.481	790794	PV	.155	39.25691
1.743	144293	VV	.111	7.16305
1.905	622558	VV	.445	30.90527
3.050	134538	VV	.503	6.67879
5.100	9907	BV	.451	.49181

TOTAL AREA=2014407
MUL FACTOR=1.0000E+00

* RUN # 242 DEC 9, 1997 22:20:31
START



B97-61- ufsw-C-3
5.0962g of unfiltered Saltwa
final vol = 6mL

STOP

Closing signal file A:05A231AF.BNC

RUN# 242 DEC 9, 1997 22:20:31

SAMPLE# 12

SIGNAL FILE: A:05A231AF.BNC

B97-61:JC-8DB,15CM,4.6mm,5uM,100UL-INJ.

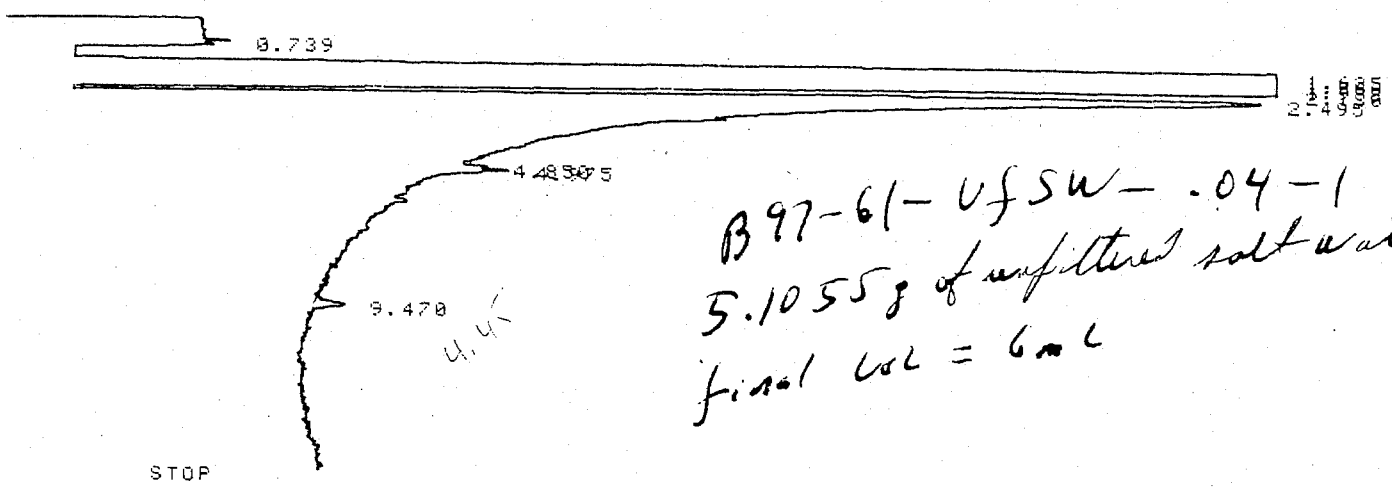
NO CALIB PEAKS FOUND

ESTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
	9.408	VP	5640	.275	342	1	2.092	F-8426

TOTAL AREA= 324644
MUL FACTOR=1.0000E+00

* RUN # 250 DEC 10, 1997 00:35:29
START



B97-61-UfSW-.04-1
5.1055g of unfiltered salt water
final vol = 6mL

STOP

Closing signal file A:05A25152.BNC

RUN# 250 DEC 10, 1997 00:35:29

SAMPLE# 14

SIGNAL FILE: A:05A25152.BNC

B97-61;JC-8DB,15CM,4.6mm,5uM,100UL-INJ.

ESTD-AREA

	RT	TYPE	AREA	WIDTH	HEIGHT	CAL#	AMOUNT	NAME
	9.470	PP	3724	.258	241	1	1.381	F-8426

TOTAL AREA=5637933
MUL FACTOR=1.0000E+00

* RUN # 251 DEC 10, 1997 00:52:19
START

UfSW - .04-1